4th Global Symposium for Regulators (Geneva, 2003)

Promoting Universal Access to ICTs

Documents

Note: The documents of this seminar were numbered sequentially regardless of type of document. This PDF includes only *documents*.

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English	Remarks to the 2003 Global Symposium for Regulators	Muna Nijem, CEO Telecommunications Regulatory Commission, Jordan
English	Opening Remarks by Director of BDT	Hamadoun I. Touré, BDT Director
English	Opening Ceremony: Keynote Speech by Director of OFCOM	Marc Furrer, Director OFCOM, Switzerland

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Documents of the Global Symposium for Regulators (GSR)

8 – 9 December 2003 – Geneva, Switzerland

Document No. 3

Trends in Telecommunication Reform 2003:
Promoting Universal Access to ICTs
Practical Tools for Regulators (Executive Summary)

ITU

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TRENDS IN TELECOMMUNICATION REFORM 2003

Promoting Universal Access to ICTs

Practical Tools for Regulators

Executive summary

Septembre 2003

INTERNATIONAL TELECOMMUNICATION UNION

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TRENDS IN TELECOMMUNICATION REFORM 2003

Promoting Universal Access to ICTs

Practical Tools for Regulators

1. Introduction

ITU/BDT is pleased to present the fifth edition of *Trends in Telecommunication Reform* which is being published on the occasion of ITU TELECOM WORLD 2003. This year's edition of *Trends* focuses on practical tools for regulators to promote universal access to information and communication technologies.

This theme is of particular importance this year as world leaders convene for the first phase of the World Summit on the Information Society (WSIS) in December 2003 and affirm their commitment to create a global information society in which all citizens of the world are included.

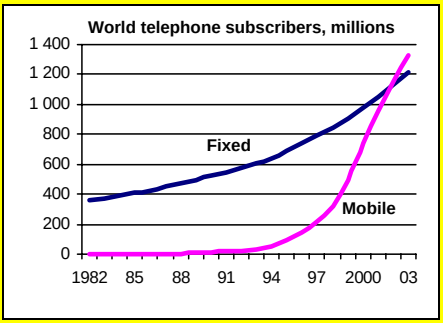
In keeping with the tradition established in earlier editions, *Trends 2003* includes one chapter highlighting global market trends. The other chapters explore universal access/service policies; the role of sector reform in achieving universal access – building on the experience of competition in mobile services; creation and operation of a universal service fund (USF); the role of minimum-subsidy auctions; access strategies through public facilities; and how regulators can promote rural access through innovative wireless solutions. The report also highlights USF success stories.

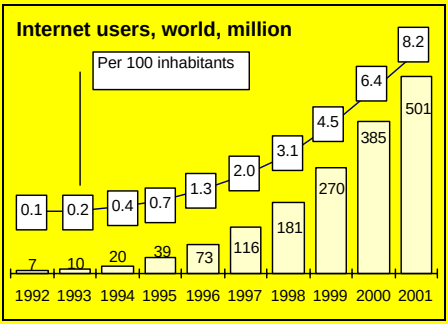
A competitive market, coupled with effective regulation, can go a long way toward ensuring ***universal access*** – widespread availability of telecommunications or ICT service-and even beyond that, to enabling ***universal service*** – that is, the availability of telecommunications or ICTs in the home. Access to telecommunication services has always been the target of universal access/service policy. Recently, with the growth of the Internet and of broadband access service, governments are exploring ways of incorporating Internet access in the basket of services included in their universal access/service definitions. As the chapters in this year's *Trends* illustrate, the first steps toward a universal access/service policy should be policies to harness the power of markets, on a sustainable basis, from the smallest entrepreneur up to the largest multinational carrier.

2. What's going on in the ICT sector?

Since mobile cellular services became commercially available in the early 1980s, they have advanced beyond imagination in terms of coverage, services, technology, handsets and regulation. The number of mobile subscribers has also outpaced the number of fixed-line subscribers. By the end of 2002, there were 1.155 billion mobile cellular subscribers around the world, compared with 1.129 billion fixed telephone lines. One in five people around the world now has a mobile phone – up from one in 339 in 1991. And many of these new subscribers are in developing countries given that mobile penetration in some developed markets has already approached 100 per cent.

Figure 1: What's going on?
Number of worldwide fixed and mobile telephone subscribers; Number of Internet users





Source: ITU World Telecommunication Indicators Database.

Internet and broadband

The Internet has grown at an astounding pace. At the beginning of 2003, there were an estimated 580 million Internet users around the world. Practically every country in the world is now online. The explosive growth of the Internet is driving demand for access at higher speeds. Broadband solutions are increasingly available for both wired and wireless technologies. Success factors vary from country to country and include platform-based competition (cable modem, DSL, fibre and wireless), development of innovative broadband technologies and applications, and affordable pricing such as flat-rate

packages. Factors that can stifle broadband roll-out include continued monopolies and low levels of competition, cross ownership between telephone and cable TV networks and caps on data that can be downloaded under flat-rate pricing packages.

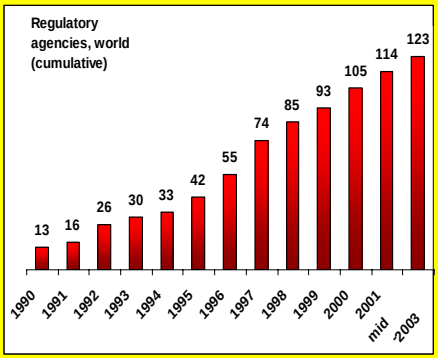
A new technology burst onto the wireless scene in 2003: Wi-Fi, or Wireless Fidelity. Its advent may well herald a new era for the ICT sector. Suddenly, inexpensive and easy-to-use subscriber equipment, often employing "free" unlicensed radio spectrum, can open the door to wireless broadband Internet access for the mass market. This new technology holds promise for rural and remote access because of its low-cost potential.

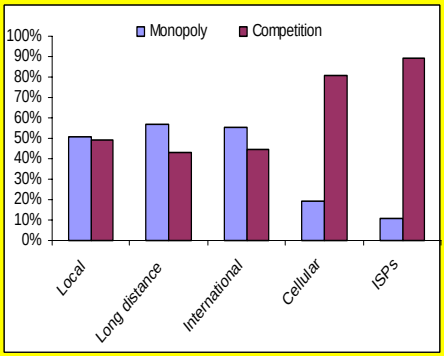
3. Regulatory developments

A vast majority of countries worldwide have reformed, or are in the process of reforming, their telecommunication sectors through the review and adoption of new legislation to adapt to the rapidly changing communication environment. They have done so by opening some market segments, if not all, to competition, allowing private participation, and establishing a national regulatory authority. As of mid-2003, 123 countries worldwide recognized the importance of establishing a regulatory authority to foster competition in the ICT sector in a fair and transparent fashion. As the development of ICTs is making the convergence of different types of network platforms and services a reality, more and more countries are responding either by merging their telecommunication and broadcasting regulatory authorities or improving coordination between various agencies involved in the ICT sector. Additional functions and tasks are required from regulators as a result of convergence, liberalization and market growth, including dispute resolution and consumer protection. At the same time, regional initiatives are taking place worldwide to harmonize national ICT legislative frameworks and work together toward the ultimate goal of providing universal access if not universal service to all citizens of the world.

The liberalization of telecommunication markets through the introduction of competition is changing the way countries approach universal access and service policies. This is due, in part, to the fact that services are being provisioned at a more rapid pace, prices are falling and new and innovative services are being introduced.

Figure 2: The Boom for Regulators (1990-2003) (figure on the left) **and Status of Liberalization (2003)** (figure on the right)





Source: ITU World Telecommunication Regulatory Database.

4. Universal Access and Service: What role for regulators and policy-makers?

Regulators and policy-makers have a critical role to play in ensuring that universal access/service goals are reached. One of the first steps is to set measurable targets. The first qualitative measurement usually stems from an examination of current market access figures. Regulators measure the difference between the current service penetration and the achievable level of penetration in a liberalized market. This is often termed the *market efficiency gap*. The market gap can be addressed, and even closed, through a solid sector reform policy framework. It does not necessarily require direct financial investment or subsidization. In addition to considering the market efficiency gap, it is important for regulators and policy-makers to look at the true *access gap*. This has been described as the difference between the population without service and that with service – even under efficient market conditions. The access gap concept posits that, even in the most efficient markets, a portion of the population may simply not be able to *afford* market prices. *Trends 2003* identifies options for regulators in addressing the access gap.

How have regulators sought to implement national access targets and affordability goals, once these have been defined? Generally, governments have imposed two types of universal service obligations (USOs). The first is a general obligation to provide service to all customers willing to pay regulated

rates for service. This obligation may be limited to certain geographic or population groups, such as a requirement to serve all urban areas, or to serve rural areas above a certain population. In addition, policy-makers and regulators have imposed obligations to extend certain types of designated services to a pre-specified number of subscribers or localities. These are referred to as roll-out or network build-out obligations, and are often incorporated into operators' licences.

The funding of universal access/service support schemes often requires some form of regulatory intervention. On one hand, governments can impose performance requirements or levies on operators, essentially directing them to pay the costs of providing universal access or universal service, either through rate mechanisms or though contributions to a special universal service fund. On the other hand, governments can provide incentives for carriers to provide universal access/service on their own, such as tax breaks or reduced licence fees offered to carriers that extend their networks or improve services in target areas. This policy choice, between setting mandates and providing incentives, is often captured in the term "pay or play". That is, a carrier can either pay to support universal access/service or undertake to provide it itself.

Universal access/service policies are often premised on the assumption that the provision of service in rural and remote areas is expensive and, therefore, unprofitable. They are further based on the idea that low-income users will not be able to afford access without some assistance from the government. This report demonstrates that, in many cases, untapped rural and remote markets can be surprisingly vibrant given appropriate regulatory conditions. The economic potential of rural markets can be measured not only by outgoing call revenue, but also revenue from calls terminated to new subscribers in rural areas. The viability of rural markets is linked to effective regulatory conditions. Regulators, for example, must ensure that rural operators do not face excessive licensing fees and are given flexibility in choosing appropriate technologies to provide quality service to rural populations.

Trends 2003 examines the key steps that governments can take to improve market efficiency through regulatory reform. It demonstrates how the introduction of competition in the mobile sector has benefited universal access efforts, and identifies which lessons from the mobile sector's growth can be more widely applied. The introduction of competition in the mobile sector has greatly reduced – and perhaps nearly eliminated – the universal

access problem for the urban poor in many developing countries. Mobile service has had a considerable impact on low-income users in rural areas, as well. The effect stems in large part from the availability of prepaid services, coupled with the development of mobile payphone services. Moreover, the development of competition in many mobile markets has forced down prices for end users. Finally, the ability of some mobile-phone users to send inexpensive SMS (short message service) messages provides an e-mail substitute in many developing countries where PC penetration is low.

The lessons learned from the mobile experience can be applied more widely. Reducing regulatory barriers is the cornerstone of any effective universal access regulation package. Such effective regulation packages include promoting fair interconnection and flexible tariff regulation, fostering public access and resale, licensing practices that enable operators to choose the most appropriate and cost-efficient technologies and minimizing regulatory fees and costs. *Trends 2003* explains why asymmetric interconnection regimes – providing higher termination rates for calls into rural areas than in urban areas – are of particular importance to rural operators. Since rural operators' income is largely based on incoming calls, asymmetric interconnection rates affect whether they will be financially viable. And, to the extent that rural operators seek government subsides to provide services, fair interconnection rates can actually reduce the size of such government subsidies.

Box: Nigeria's GSM Umbrella People

Nigeria is Africa's most populated nation with some 124 million inhabitants in 2002. Until August 2001, Nigeria had one of the lowest teledensity rates in the world. In February 2001 the government awarded three 15-year mobile cellular GSM licences for USD 285 million and the rise in the number of mobile subscribers has been nothing short of phenomenal. By December 2001, there were close to 400 000 GSM subscribers. The mobile operators managed to provide access to almost as many telephone subscribers in four months than had been installed in 40 years since independence (there were some 540 000 fixed lines at the end of December 2001). Growth has been relentless, reaching two million subscribers by March 2003. Mobile coverage was initially limited to Lagos, the largest city, and has now spread to 219 out of 550 local government areas. According to current plans, there will be some four million mobile subscribers by the end of 2003 and coverage is expected to be close to half the population.

..../...

Nigeria's business-friendly legal and regulatory environment has been cited as one of the key factors contributing to growth and investment in Nigeria's telecommunication sector. Although handsets and prepaid cards are expensive, service is being extended to those who cannot afford a mobile handset and prepaid card through "umbrella people".

Today, on countless streets in numerous Nigerian towns and cities, the GSM "umbrella people" are plying their wares. They are resellers of GSM wireless service – most of them young women who have settled into the business of selling phone calls, earning a high level of financial independence in the process.

Almost every Nigerian street is now decorated with umbrellas marking the stands operated by makeshift GSM resellers – thus giving these entrepreneurs their nickname: "umbrella people". They don't need to rent shops and, in most cases, permission to use the public space is unnecessary (or at least not sought). All they need is an umbrella, a plastic table and some chairs – and, of course, a Subscriber Identification Module (SIM) card and handset – and they are ready for business.

These impromptu businesses began when mobile service subscribers, who were able to obtain SIM cards and handsets, realized they could augment their meagre incomes by turning their phones into business assets. They could defray the cost of prepaid services (which can represent a substantial up-front investment). They could also turn a profit on GSM service resale, particularly if they could maintain a lucrative location at a prime intersection or other public location with a large flow of traffic. At this point, GSM resale has come to be a viable mode of self-employment for hundreds of young people who have to contend with the hard facts of a poor economy.

One interesting technique that has developed among the umbrella people is to procure handsets and subscriptions to each of Nigeria's three mobile service providers, then hire "subcontractors" (often young boys or girls) to operate each handset, tripling the potential returns.

While there are sometimes technical problems and unruly customers, the roadside GSM services can be lucrative, providing at least the daily income needed to keep on with life. Umbrella people reportedly have been able to exhaust two to three MTN prepaid cards, each valued at roughly USD 11.60, in a day, depending on the location. Umbrella resellers can net as much as USD 15.40 in a single day – in a country where an employer might pay USD 38 a month.

Critics of GSM services in Nigeria have frowned at the high tariffs and substandard services rendered by operators. But there is no doubt that GSM has assumed a role in providing universal access in Nigeria, while also appearing to give low-income Nigerians an avenue for gainful entrepreneurship.

Source: ITU (background on Nigerian market). Umbrella People text adapted from an editorial in the *Daily Trust*, Abuja, Nigeria, 29 April, 2003.

5. Tool kit

Trends 2003 includes three chapters that form a tool kit for policy-makers and regulators addressing the access gap that may remain even following sector reform. On the financing side, governments can draw upon a wealth of experience from countries around the globe in setting up and administering specialized universal access/service funds. The tool kit also examines how funds can be used, in conjunction with minimum-subsidy competitive auctions, to finance public telecommunication access facilities in rural areas, and explores policy and regulatory options to foster and support telecentres as key resources for community access to basic and advanced ICT services.

This tool kit is based on documents originally drafted and presented as telecommunication policy and regulatory models. They were prepared as part of a joint effort by the International Telecommunication Union and the Commonwealth Telecommunications Organisation to offer guidelines on universal service funds and related mechanisms.

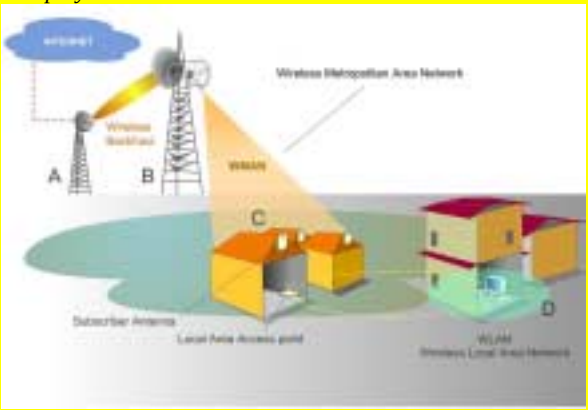
Trends 2003 also includes a series of valuable annexes, including one that analyzes the results of minimum-subsidy auctions in Chile, Peru and Colombia demonstrating that operators frequently bid and were awarded lower subsidies than the government had allocated for new rural public payphone projects. Another annex describes illustrative benchmark consumer rates and interconnection charges for projects financed by competitive auction mechanisms. In addition, there are annexes describing the universal service fund experiences of India, Jamaica and Malaysia.

6. Are new wireless technologies the universal access solution?

Trends 2003 further examines what a growing community of technologists, public-policy officials and telecommunication practitioners foresee as a revolution in rural universal access. This revolution will be founded on a new suite of wireless technologies such as WiFi, matched by supportive public policies and business approaches, that can provide Internet access and voice service cheaply to rural and under-served communities. New and creative enterprises can make rural and low-income markets profitable, affordable, sustainable and served in ways that meet national and local development objectives. But this also requires innovation and creative business and public policies. The report includes a simple economic model that summarizes and underlines how sensitive profitability is to conditions in the technological, business and policy environment.

Figure 3: Connectivity in Wireless Network

This illustration shows a collection of radios and antennas illustrating wireless backhaul, WMAN and WLAN deployments.



Source: Kaushik Gosh.

We need to think of ways to bring Wireless Fidelity (Wi-Fi) applications to the developing world, so as to make use of unlicensed radio spectrum to deliver cheap and fast Internet access.

Kofi Annan
United Nations Secretary-General

7. Conclusion

Regulators and policy-makers find themselves on the cusp of a new era. For the first time, the combined forces of competition policies that promote market entry, incentive regulation and new technologies promise to promote digital opportunities for all. This report is designed to assist those governments eager to use all the tools at their disposal to meet their national ICT development goals.

It is to be hoped that, in exploring these issues and creative responses, this report will be a catalyst for further innovation and experimentation, through sharing of experiences and approaches among regulators and other telecommunication professionals worldwide.

The publication will be presented in Geneva at ITU's Global Symposium for Regulators, scheduled for 8-9 December, 2003. This symposium will be the fourth annual gathering of regulators from around the world, attracting regulators and policy-makers from every region. The authors of each chapter will present their findings and discuss key issues with regulators during panel discussions on the topic of universal access/service.

For more information on this report and other regulatory activities of ITU, consult http://www.itu.int/ITU-D/treg/.

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Documents of the Global Symposium for Regulators (GSR)

8 – 9 December 2003 – Geneva, Switzerland

Document No. 5

Dispute resolution in the telecommunications sector

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Dispute resolution in the telecommunications sector

CURRENT PRACTICES AND FUTURE DIRECTIONS

THE WORLD BANK

International Telecommunication Union

Dispute Resolution in the Telecommunications Sector:

Current Practices and Future Directions

Discussion Paper

Prepared by

Robert R. Bruce
Rory Macmillan

Debevoise & Plimpton

Timothy St. J. Ellam
Hank Intven
Theresa Miedema

McCarthy Tétrault LLP

For

The International Telecommunication Union and The World Bank

October 2004

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PREFACE

The International Telecommunication Union (ITU) Telecommunication Development Bureau (BDT) and the World Bank commissioned two law firms, Debevoise & Plimpton and McCarthy Tétrault, to undertake a study on dispute resolution in the telecommunications sector as a contribution to the Global Symposium for Regulators (GSR) and the World Summit on the Information Society (WSIS), both of which took place in December 2003.

This Working Paper is the result of that study. It does not pretend to exhaust the range of issues and experiences that are relevant to dispute resolution in the telecommunications sector. This Working Paper does, however, describe how many disputes have been settled and explores many key issues facing policy-makers and regulators. It is hoped that this Working Paper will contribute to the understanding of telecommunications dispute resolution and to the dialogue on how to improve it.

In communicating with regulators and representatives of the telecommunications sector around the world, a remarkable range and depth of experience and expertise was discovered that is available to help resolve telecommunications disputes. Yet the art of telecommunications dispute resolution is still in its very early stages of development. Much can be done in most countries to improve the speed, efficiency and effectiveness of dispute resolution. Too often, telecommunications disputes have caused unnecessary disruptions and delays in the development of telecommunications markets. Improvement is clearly required.

The team was composed of Robert R. Bruce, a partner in the London office of Debevoise & Plimpton; Rory Macmillan, a mediator and lawyer at Debevoise & Plimpton; Timothy St. J. Ellam, a partner in the Calgary office of McCarthy Tétrault LLP; Hank Intven, a partner in the Toronto office of McCarthy Tétrault; and Theresa Miedema, a consulting lawyer with McCarthy Tétrault LLP.

We wish to thank David Satola of the World Bank's Legal Department and the staff and leadership of the ITU's Telecommunication Development Bureau (BDT), without whose initiative and support this study would not have been undertaken. We particularly thank BDT Director Hamadoun I. Touré, Doreen Bogdan-Martin, Susan Schorr, and Nancy Sundberg. We also wish to thank Curt Howard, Sherry Kerr, and Nicole Springer of McCarthy Tétrault for their considerable assistance in researching and preparing this report and John Alden of Freedom Technologies for his editing skills. The team particularly thanks researchers Celia Doudou, Dragana Radojevic, Manjolia Manoku, and David Lecocq.

Finally, we wish to acknowledge the invaluable assistance of regulators and other officials, in a wide range of countries, who provided input to the study. We benefited enormously from their insights, although we were constrained by time and resources to do full justice to the wealth of information and experience made available to us.

All information contained in this report is current as of December 31, 2003.

This Working Paper is not legal advice, nor should this report in any way be construed to be legal advice or a substitute for legal advice from competent legal counsel.

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EXECUTIVE SUMMARY

The global telecommunications sector is in the midst of a transformation caused by privatization, liberalization, and technological change. These trends have dramatically changed the way the sector functions. The number of service providers has increased substantially, as has the range of services they offer. Old business models and commercial arrangements are being abandoned or bypassed while new ones emerge. An era characterized by regional telephone monopolies that provided "plain old telephone service" is yielding to an era characterized by multiple providers of information and communications technology (ICT) services using Internet protocol (IP), wireless, and broadband technologies.

Some disputes are inevitable by-products of these changes, as new interests clash with traditional ones. Policy-makers and regulators are recognizing that effective dispute resolution is an increasingly important objective of telecommunications policy and regulation. Failure to resolve disputes quickly and effectively can:

- Delay the introduction of new services and infrastructure;
- Block or reduce the flow of capital from investors;
- Limit competition, leading to higher pricing and lower service quality; and
- Retard liberalization – and with it, general economic, social and technical development.

Ultimately, the test of successful dispute resolution – as with regulation generally – is its impact on investment, growth, and development in the sector. Successful dispute resolution is important for all countries that seek to facilitate the rapid diffusion of new communications infrastructure and ICT services. It is particularly crucial for countries that have historically experienced a lack of investment and growth. Rapid and effective resolution of disputes is a key component in bridging the "digital divide".

The experience documented in this report indicates that existing regulatory and legal institutions are not always well equipped to resolve disputes efficiently and effectively. The lack of resources, expertise, and time often lead to delays or suboptimal results in resolving disputes. Policy-makers, regulators and courts, therefore, are adopting a range of alternative approaches to dispute resolution.

This report documents a wide range of global experience with dispute resolution in telecommunications. It describes and analyses the major traditional and alternative approaches to dispute resolution, with a view to providing policy-makers and regulators with a better base of understanding to make decisions on resolving different types of disputes.

While recognizing that alternative dispute resolution is not the sole provenance of telecommunications (indeed some of the more innovative techniques for consensus-oriented dispute resolution can be found in the Internet and related spaces), the scope of this report is necessarily limited to developments in the telecommunications sector. Useful lessons can surely be drawn from experiences in other sectors that will undoubtedly have application in the sphere of telecommunications.

1 AN OVERVIEW OF DISPUTE RESOLUTION TECHNIQUES

There are various, common ways of resolving disputes, as discussed in this section.

Regulatory adjudication: Most regulatory bodies adjudicate disputes. They decide between the positions of disputing parties, typically after a formal process that involves the presentation of arguments by those parties. Adjudicated decisions are often subject to review within a regulatory agency and eventually by the courts or government officials. Regulatory adjudication can have the following advantages:

- There are well-structured channels for decision-making,
- It provides accountability on the part of official decision-makers,
- There are established mechanisms for coordinating decisions among agencies with related responsibilities, and
- It makes available the full force of the government's enforcement mechanisms.

On the other hand, regulatory adjudication can bring the disadvantages of delays, abuse by competitors, and lack of necessary economic, legal and financial expertise to resolve disputes efficiently and finally.

Court adjudication: While this report focuses on regulatory and alternative dispute resolution methods, court adjudication remains an important final recourse for many types of disputes, particularly those that are less policy-related. It has the advantage of bringing finality and official enforcement mechanisms to bear upon a dispute. But there also are a number of disadvantages: high costs and delays in some jurisdictions and a perceived lack of telecommunications-specific expertise to deal with many complex industry disputes.

Alternative dispute resolution: Alternative dispute resolution (ADR) involves less formal or official means of dispute resolution, such as negotiation, mediation and arbitration. Parties have traditionally pursued ADR processes voluntarily, sometimes by contractual commitment. Regulators are now increasingly turning to ADR approaches to help them deal with excessive pressures and demands on their limited resources available for resolving industry disputes.

Negotiation and mediation: Negotiation and mediation are flexible, consensual approaches that have the advantage of encouraging parties to identify common interests and "win-win" solutions. Negotiation and mediation processes can, however, be subject to abuse by disputing parties who seek to delay adverse resolution of disputes or to obtain information about the other party's case.

Regulators often require parties to try negotiation or mediation before bringing their disputes before the regulator. Some regulators or their staffs perform the role of mediator. Some parties prefer to use independent mediators instead. The involvement of regulators can induce parties to behave more reasonably. But it can also reduce parties' incentives to negotiate in a candid, constructive manner, because parties may see the presence of regulators as a precursor to a formal regulatory proceeding. This may then lead them to take a more adversarial, strategic approach.

Arbitration: Arbitration is an adjudication process in which the disputing parties appoint arbitrators but retain control over the design of the process. Arbitration awards usually are enforceable in courts, where they tend to be subject to limited review on procedural grounds, such as the scope of the arbitrators' authority. The advantages of arbitration include:

- Confidentiality;
- The parties' control over the design of the process;
- Speed, compared with most regulatory or judicial procedures; and
- In international arbitration, the neutrality of the forum (compared with the national courts of either of the parties).

Telecommunications regulators are increasingly encouraging parties to use arbitration as a way to resolve disputes. There are numerous, well-established arbitration institutions around the world that have developed their own procedures and trained arbitrators. Where individual countries lack such resources, they are often able to find them somewhere in their region.

2 COMMON TYPES OF DISPUTES IN TELECOMMUNICATIONS

Disputes arise in various circumstances. Those that have the greatest impact on telecommunications sector investment and growth include:

Disputes related to liberalization: Introducing competition often undermines the established financial and business interests of incumbent network operators. Many disputes arise from the incumbent's desire to protect its dominant position in the market. Reduction or termination of exclusive rights frequently has led to legal and regulatory disputes.

Investment and trade disputes: Disputes often arise where regulatory reforms diminish the value of private-sector interests. These include complaints by investors, operators, and service providers about early termination of exclusive rights, licensing of new competitors, new rate-setting structures and changes to licenses. Other claims are contractual or based on alleged breaches of legal or policy commitments.

Interconnection disputes: These are the most common type of dispute between service providers. New technologies have bred many different, alternative networks for providing services, including fixed, mobile, wireless local loop, limited mobility variations and fixed wireless Internet access, e.g., Wi-Fi and Wi-Max systems. Preventing and resolving technical, operational and pricing disputes are key to the development of competitive markets. Dominant operators often have greater market power than new competitors, making regulatory intervention necessary. Regulators are increasingly providing advance guidelines for the negotiation of interconnection arrangements. They are also developing specialized adjudication procedures to resolve interconnection disputes. Where regulators lack information and expertise, they are turning to international benchmarking and outside expert consultants for assistance.

Consumer disputes: Disputes between service providers and consumers are common, particularly in basic telephone service markets. Consumers often face problems stemming from their lack of bargaining power or the absence of competitive options to the incumbent operator. Regulators are using a variety of mechanisms to ensure effective resolution of consumer disputes. Many require the service providers themselves to resolve disputes initially. Appropriate supervision and appeal provisions are supplied, and informal mechanisms are sometimes used, such as ombudsmen schemes. Consumer protection agencies, as well as regulators, often address consumer disputes.

Radio frequency disputes: Radio frequency allocation and assignment disputes are dealt with internationally through mechanisms available through the ITU. Domestically, disputes may arise from interference, license conditions, and pricing.

3 KEY PERSPECTIVES ON DISPUTE RESOLUTION

Dispute resolution in the telecommunications sector is at a relatively early stage. While there are many complex issues and perspectives, some key ones are most relevant in designing dispute resolution processes.

Changing patterns and assumptions: With rapid technological development and convergence, the dispute resolution field is also changing by introducing alternative methods for resolving disputes. These trends allow telecommunications regulators to try new dispute resolution methods. This suggests that regulators should re-evaluate assumptions about the roles of regulators and market participants in resolving disputes.

Economics of dispute resolution: In evaluating the success of dispute resolution processes, it is important to consider economic costs to the sector as a whole. Costs may result from delays and lack of transparency and predictability. At a more "micro" level, the emergence of a "market" for dispute resolution techniques and professional services is likely to improve the quality of those techniques and services. Some regulators are giving parties a choice of alternative dispute resolution procedures. It is important to design appropriate economic incentives for the parties to resolve disputes. The allocation of responsibility for the costs of disputes, for example, can affect the manner in which parties behave.

Market power asymmetries: The appropriate choice of a dispute resolution technique in any situation depends partly on the comparative levels of parties' market power. Some regulators believe they can encourage the employment of ADR techniques when opposing parties have similar levels of market power and when parties are more likely to negotiate solutions that meet their mutual commercial interests. Regulatory intervention may be more necessary when one party needs protection from another party with greater market power.

Confidentiality and transparency: It is important to balance the competing priorities of protecting confidential business information and publishing well-reasoned decisions.

Dealing with complexity: Many disputes involve complex webs of interrelated issues that defy simple categorization. Pricing, technical, operational, licensing, and policy issues all must be considered when regulatory regimes are in transition. Jurisdictional overlaps among telecommunications sector, competition and consumer authorities, as well as between national, regional and international authorities, make disputes even more complicated. Authorities need to coordinate their actions to prevent delays and fragmented resolution of disputes. Consensus-building measures work particularly well in bridging jurisdictional boundaries.

4 The Role of Official and Non-Official Sectors in Dispute Resolution[1]

A well-resourced "official" sector, utilizing regulatory adjudication and the courts, is crucial to a successful dispute resolution environment. However, alternative approaches are often useful to deal with the lack of available regulatory or judicial resources, or where less formal techniques offer particular advantages.

Drawing on "non-official" resources: The commercial world's extensive experience with arbitration and other ADR techniques can help policy-makers and regulators encourage the use of non-official dispute resolution approaches in a regulated industry. Commercial arbitration illustrates how regulators can keep control over important policy issues and also ensure the usefulness of their dispute resolution systems – while easing their workload burdens.

Quality control over official and non-official processes: The type of dispute resolution process that is chosen influences what role regulators and courts will play in dispute resolution. Regulatory adjudication and arbitration require court oversight of procedures, because the parties have relinquished control over the outcome to the adjudicator or arbitrator. Regulatory adjudication may also appropriately be subject to various levels of "internal" agency and "external" court review for substantive appeal. It is important, however, not to undermine the credibility or timeliness of regulatory adjudication through over-use of review procedures.

Voluntary negotiated processes, including mediation, depend for their success on freedom from official review. Even where there are doubts about the efficacy of voluntary negotiations, regulators may be able to provide incentives for good faith engagement in negotiations instead of imposing substantive decisions.

1 *See,* Chapter 5.

Confidence factors in relying on non-official approaches: There are several important factors in gauging whether non-official dispute resolution approaches are as mature and suitable as regulatory adjudication or court action in any given setting. These factors include how professional the arbitration and mediation boards are, how well developed the arbitration and mediation institutions are, and how effective the oversight procedures are.

5 IMPROVING TELECOMMUNICATIONS DISPUTE RESOLUTION

At this early stage of development in global telecommunications-sector dispute resolution, it is not appropriate to provide uniform recommendations on how to design and conduct dispute resolution procedures. Countries vary in their stage of market development, regulatory approaches, dispute resolution and general business cultures, as well as in the types of disputes that commonly arise. These factors will result in different experiences with regulatory adjudication, arbitration, mediation, negotiation, ombudsmen schemes and other approaches described in the report.

Policy-makers and regulators can, however, take the following steps to improve approaches to dispute resolution:

- Publish adjudicated decisions and facilitate access to them through the Internet and other means, in order to provide resources for regulators, other adjudicators, disputing parties, and their advisors. Creation of a well-organized international database would be invaluable to promote adoption of best practices in resolving disputes.

- Publish examples of innovative dispute resolution procedures, including less formal approaches, in order to promote their adoption.

- Strengthen non-official ADR approaches by endorsing their usage, improving understanding of the legal frameworks in which they operate, and supporting them with official enforcement of their results.

- Tap into the human resources available for dispute resolution by establishing panels of arbitrators and mediators and collaborating with existing arbitration and mediation institutions.

- Improve networking among regulators internationally to exchange dispute resolution experience.

- Increase cross-pollination of ideas and collegial sharing of experiences between the telecommunications sector and the dispute resolution communities, in order to promote better application of effective techniques in resolving disputes.

- Harness new online resources and services to help policy-makers and regulators to improve dispute resolution techniques. Several are already being used to garner experience and perspectives in dispute resolution, such as the ITU's online Global Regulators Exchange (G-REX) and live virtual conferencing facilities. Collaboration with educational and other institutions and the "e-business" community offers further opportunities to build consultative networks.

- Recognize that dispute prevention is as important as dispute resolution. Reducing the contentiousness of the sector and reliance on destructive dispute processes would enhance its prospects for investment and growth. Use of consensus-building measures by policy-makers and regulators can engage parties in the sector and identify converging interests and mutual commercial opportunities.

6 CONCLUSION

Successful dispute resolution is increasingly important for attracting investment, competition, and development. Dispute resolution mechanisms in the telecommunications sector need to be as speedy as the networks and technologies they serve. Official dispute resolution mechanisms are important as a basic guarantee that sector policy will be implemented.

This report examines the current state of dispute resolution as of the beginning of 2004, explores key issues and offers suggestions to assist policy-makers and regulators as they evaluate, design, and manage dispute prevention and resolution processes.

Policy-makers and regulators should use minimal but well-focused regulatory intervention to create an environment where industry players have incentives to resolve disputes constructively. This can often involve the use of alternative dispute resolution mechanisms. Disputes can be enormously destructive to the sector, and effective dispute resolution is increasingly central to successful deployment of modern information infrastructure. This is particularly so where it is necessary to encourage investment and to foster competition. This is the best way to reach the under-served billions of people on the wrong side of the digital divide.

1 INTRODUCTION TO DISPUTE RESOLUTION

1.1 Dispute Resolution: A Pressing Priority for Policy-Makers and Regulators

The global telecommunications sector has been transformed over the past decade by privatization, liberalization, technological change, and growth in demand. These trends have contributed to economic growth and improved sector governance, but they also have produced an increasing number and variety of disputes that call for faster, more cost-effective and better resolution.

Competitive markets inevitably produce disputes, and competitive telecommunications markets are no exception. As new companies enter markets, with new and competing services, new relationships arise among service providers, network operators, and end users. In the rapid formation of these new relationships and deployment of new technologies, it is inevitable that some relationships and technologies will fail. The creation and evolution of competitive markets naturally increases the number and type of disputes among all players in those markets. These disputes may involve failures to fulfill contractual obligations, non-compliance with regulatory requirements, and a wide range of other issues.

Moreover, recent history in the sector has featured turbulent changes resulting not only from liberalization and competition, but also from a cycle of rapid market growth, followed by sudden, nearly catastrophic, financial collapse. This has also brought on disputes. Pressures inherent in a market undergoing liberalization produce incentives to use all available resources – including strategic use of dispute-resolving mechanisms – to gain business advantages. Extraordinary financial pressure on the sector – the high cost of financing and lack of cash reserves – raises the temperature further.

Some telecommunications disputes involve relatively inconsequential differences among customers, service providers, and infrastructure providers, while others raise fundamental regulatory issues. Disputes become particularly relevant for regulators where service providers have enough power in the market to resist liberalization and even abuse their market power, particularly in areas that distort the functioning of competitive markets. Interconnection provides many examples of this type of dispute. An obvious example is when a service provider with exclusive control over essential infrastructure facilities fails to reach a reasonable agreement to interconnect with its competitors or provide access to its network or facilities.

Recently developed or amended regulatory regimes give telecommunications regulators some role in dispute resolution. In some circumstances, this role can be awkward. Regulators are often accused of siding with either the incumbent or its competitors. Some regulators have extensive roles in proposing, issuing, and enforcing legislation and regulations, even as they are tasked with promoting overall development of the sector. Conflicts of interest may result, and they can be intense where there is little separation of governmental, shareholder, and regulatory interests. Often, governments have financial interests in operators through ownership of corporate shares or because the operators represent large sources of revenue, through license fees or revenue-sharing arrangements.

Because of the technical nature of some types of disputes, regulators may not have the necessary expertise to resolve them optimally. Strapped for resources and realizing limitations on their expertise, regulators often encourage the players to solve these disputes themselves, if possible, before involving the regulators. In some cases, regulators simply refuse to intervene, preferring to redirect disputants to alternative ways of resolving their disputes.

Recognizing the importance of efficient dispute resolution in developing a fully competitive market, regulators are increasingly focusing on these issues. For example, the European Union's (EU's) new Framework Directive introduced new rules for dispute resolution in the regulation of electronic

services and the use of radio frequency spectrum.[2] This is an example of a wider phenomenon, in which regulators and international institutions such as the World Bank and the International Telecommunication Union (ITU), are devoting resources to improve dispute resolution in the telecommunications sector. There is increasing emphasis on techniques often known as "alternative dispute resolution" (ADR). These techniques include arbitration, mediation and other mechanisms that are less formal than traditional forms of regulatory adjudication.

1.2 An Approach to Dispute Resolution

Ultimately, the test of successful dispute resolution – like regulation generally – is its impact on investment, growth and competition in the sector. This report focuses on mechanisms that harness underlying incentives for investment, growth and competition.

Prolonged, unresolved disputes can paralyze sector development, restrict investment in infrastructure and slow the development of services. This is particularly harmful for countries that have historically experienced a lack of investment and growth in their telecommunications sectors. Healthy resolution of disputes is therefore a key component in bridging the "digital divide". It is key to economic development. With that in mind, this report is concerned with both:

- Key regulatory issues that have faced policy-makers in recent years in the process of opening telecommunications markets around the world; and
- Emerging challenges and policy issues likely to face the sector in the next few years.

Whether policy-makers and regulators can address these challenges expeditiously and effectively will be crucial in narrowing the divide between populations that have access to advanced digital services and those that do not. Emerging challenges are arising, for example, as a consequence of:

- Increased convergence and substitution of mobile services for fixed services,
- The potential growth of unlicensed wireless networking, and
- The impact of IP technology on competition in the industry.

These challenges are also opportunities, since in many cases they offer unparalleled scope for increasing penetration of services to previously unserved populations.

Dispute resolution is a central theme in dealing with both new and existing challenges and opportunities facing the sector. This report focuses, therefore, on the critical resources required to make dispute resolution easier and less costly.

The report discusses ways that regulators and policy-makers can reduce delays in reaching "finality" of decisions. It suggests various procedural innovations and improvements in reviewing dispute resolution processes and regulatory decisions. It explores ways of sharing precedents, case histories, benchmarking data, and other relevant information among regulators and policy-makers around the world. The report also identifies ways that Internet-based consultation can be further developed, not only to exchange data and other information but also for real-time, face-to-face dialogue among regulators.

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2 Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive). The extension of the directive to cover radio frequency use in addition to interconnection marks an important development. Article 20 requires national regulatory authorities to issue binding resolutions of disputes arising under the regulatory regime "in the shortest possible time frame and in any case within four months except in exceptional circumstances". Given the unsustainable pressure this may impose on regulatory authorities, the Framework Directive contains a release valve, allowing national regulatory authorities to "decline to resolve a dispute through a binding decision where other mechanisms, including mediation, exist and would better contribute to a timely resolution of the dispute". Mediation is similarly encouraged for cross-border disputes in Article 21 of the Directive. http://europa.eu.int/information_society/topics/telecoms/regulatory/maindocs/comgreen/index_en.htm

The concerns of telecommunications and media regulators and competition authorities are increasingly seamless. Consequently, procedural innovation cannot be confined to the traditional telecommunications regulatory realm alone. Many of the most difficult and complex issues that have the greatest potential to delay or impede sector development defy traditional classification. This report explores how techniques often used to resolve commercial and private-sector disputes can apply to disputes involving regulatory and public sector concerns, as well. In some cases, this report questions whether legal institutions and processes designed in the last century – or even the 19th century in the case of certain important U.S. regulatory institutions – are best suited to facilitate the growth and expansion of new infrastructure for the 21st century. The report explores how innovation, flexibility, and imagination may be required to develop new legal, regulatory, and institutional structures to deal with disputes and handle the challenges of a rapidly changing telecommunications sector.

This does not mean the role of the judiciary should be restricted. Courts can continue to play an important role in resolving disputes. In fact, in many jurisdictions the courts themselves encourage ADR to supplement the judicial process.

This report explores the diversity of disputes facing regulators and policy-makers today and discusses various formal and informal approaches to deal with the different types of disputes. The report emphasizes the value of sharing experience across international jurisdictions, across economic sectors, and across disciplinary divides. Such sharing can provide guidance and insight for public officials and private-sector executives around the world. This is particularly valuable in countries that currently lack expertise and experience.

1.3 Defining "Disputes"

At the outset it is helpful to establish a working definition of the terms *dispute* and *dispute process*.

Traditional definitions of *dispute* can be narrow. For example:

> *"A dispute may be viewed as a class or kind of conflict which manifests itself in distinct, justiciable issues. It involves disagreement over issues capable of resolution by negotiation, mediation or third-party adjudication. The differences inherent in a dispute can usually be examined objectively, and a third party can take a view on the issues to assess the correctness of one side or the other".*[3]

Another example states that:

> *"An 'actual' dispute will not exist until a claim is asserted by one party which is 'disputed' by the other…"*[4]

This report relies on a broader notion of disputes that permits insights specific to a regulated industry. In such an industry, the relations and interests among private parties often affect other parties, with implications for public policy. Consequently, this report does not limit its exploration to disputes occurring only where one party has filed a formal claim against another. It goes further, exploring situations where conflicting interests among parties are blocking sector development, even though no formal dispute process is under way.

Moreover, in addition to examining how disputes play out among operators, this report also considers the "vertical" elements of dispute resolution. These are the levels of the decision-making and review that start with "self-regulatory" or informal dispute-resolution efforts, then build up to regulatory agency decisions, then internal reviews of such decisions, and finally, judicial review by administrative courts and by other government authorities.

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3 Brown and Marriot, *ADR Principles & Practice*, 2nd Edition, Nov. 1999, Sweet & Maxwell, page 2.

4 D. Foskett Q.C. in The Law and Practice of Compromise, quoted in Brown and Marriott, page 2.

The broad approach that this report takes to dispute resolution views dispute processes as a central part of overall regulatory policy, rather than focusing purely on legal procedures for isolated, specific arguments between pairs of disputants. Instead of the scope of the dispute and remedies being limited to the parties' complaints, related policy and market issues can be considered.

This report also suggests ways that policy-makers can narrow the circumstances in which they must intervene to resolve disputes and how they can create an environment in which industry players have incentives to act in ways that obviate the need for overt regulatory intervention. The report explores various techniques to increase consensus, decrease the scope of the dispute resolution process, and encourage more negotiation-driven and cooperative conduct in the sector. These techniques are an essential part of the overall discipline of dispute resolution.

1.4 Scope of this Report

This report is limited to dispute resolution in the telecommunications sector. The authors and the institutions supporting this report recognize that some of the innovations in ADR techniques for dispute prevention and consensus-oriented dispute resolution are found in other, sometimes related sectors, such as in the Internet and related spaces. Indeed, in its early years, the ethos behind resolving disputes related to the Internet, including domain name disputes, was based on informal procedures and building a community consensus. Even in the Internet world, however, these informal procedures have evolved into more formal (if still alternative) processes, including domain dispute resolution and related intellectual property rights issues through the World Intellectual Property Organization (WIPO)[5], new domain name dispute resolution rules and procedures established by the Internet Corporation for Assigned Names and Numbers (ICANN)[6], and the like.

As discussed in Chapters 6 and 7, the Internet itself has spawned new technological approaches to resolving disputes, including so-called online dispute resolution (ODR), for use both in the "on-line" world and the actual world. Indeed, as argued in this report, simultaneous developments are affecting the mechanisms for resolving disputes in the telecommunications sector. These include convergence in the sector, as well as the rapid evolution of techniques for resolving disputes. Useful lessons can surely be drawn from experiences in other sectors that will undoubtedly have application in the sphere of telecommunications.

5 *See, e.g.*, procedures carried out under the WIPO Arbitration and Mediation Center, available at: http://arbiter.wipo.int/center/index.html

6 Available at: http://www.icann.org/udrp/#udrp

2 AN OVERVIEW OF DISPUTE RESOLUTION TECHNIQUES

This section of the report discusses the various types of techniques available to resolve disputes in the telecommunications sector. It identifies features of the various dispute resolution techniques that are relevant for the sector and spotlights organizations that deal with dispute resolution.

2.1 Regulatory Adjudication

In this report, we use the term *regulatory adjudication* to refer to methods regulatory authorities use, exercising their legal powers, to make decisions resolving disputes brought before them. There are many approaches to regulatory adjudication, especially in countries with long-developed administrative traditions, such as the United States and Canada.

Many countries with newer regulatory agencies also have given these agencies power to consider and adjudicate disputes among players in the telecommunications sector. A good example is Morocco, where the regulator has been given broad power over interconnection dispute resolution (see Box 2-1).

Box 2-1 – Morocco's Approach to Interconnection Dispute Resolution

In 1997, Morocco implemented a sweeping restructuring of its telecommunications sector. The National Post Office and Telecommunication Agency (ONPT) was split into two separate entities for telecommunications and postal services. Additionally, an independent regulatory body, the National Telecommunication Regulatory Agency (in French, the Agence Nationale de Réglementation des Télécommunications or ANRT) was established. Under legislation enacted in the late 1990s (Law 24-96 and Decree 2-97-1025), ANRT was given broad responsibility for technical regulation of interconnection terms, including:

- Approving operator technical and tariff quotations, particularly those offered by Maroc Télécom;
- Revising interconnection agreements, if considered necessary by ANRT; and
- Establishing the procedures for submission of interconnection disputes and for settling those disputes if negotiations between operators have failed and one of the parties has requested ANRT's intervention.

Several disputes have been referred to ANRT concerning interconnection and abuse of dominant market position. In an early dispute between Médi Télécom and Maroc Télécom regarding interconnection tariffs, ANRT established a procedure that will be followed in later disputes. After an initial consultation period, the parties were still in disagreement. During a 30-day period set aside to hear the dispute and issue its decision, ANRT:

- Set up an internal interconnection committee;
- Consulted with two international experts, as well as its own internal experts – all of whom presented reports that arrived at the same conclusions; and
- Submitted a report containing a study of international benchmarks, a financial model and copies of the expert reports to ANRT's Management Committee.

With certain amendments, the report was approved and published by the Management Committee. Sensitive information pertaining to the dispute was not released. Overall, the decision was regarded as being fair to both parties.[7]

Regulatory agencies often have considerable flexibility in their procedures, which can range from formal, court-like hearings with oral or written evidence to much more informal or "legislative"

[7] ITU Effective Regulation Case Study: Morocco 2001. A. Gentzoglanis, N. Sundberg and S. Schorr. http://www.itu.int/ITU-D/treg

approaches to fact finding and determination. Telecommunications laws sometime dictate the choice of procedures, or in other cases, there are general laws that mandate administrative procedures. It is not unusual, however, for the regulator to be empowered to decide what procedures are most appropriate in the context of a particular dispute.

2.1.1 Who Decides?

In some cases, a regulatory agency will sit publicly as a court to consider a dispute (this is sometimes referred to as acting *en banc*). In other cases, the decisions are made out of the public view, but in any case, all agency members (i.e., commissioners) may participate in, or vote on, the decision.

However, for reasons of administrative efficiency, many regulatory agencies delegate the handling of specific disputes (or other matters) to a member of the agency (i.e., a commissioner), a staff employee, or another person. In the United States, some regulatory agencies refer issues to "administrative law judges" who make legal and factual determinations, which are then subject to agency review.

Such administrative law judges ("ALJs") or other delegated persons can sometimes assist a regulatory body in developing a "record" for agency action based on written and oral comments. A factual record can be developed through more formal procedures, similar to judicial proceedings, involving submission of written or oral testimony subject to cross-examination.

Alternatively and more typically, officials can evaluate the factual, legal, and policy-related issues through successive rounds of written comments or oral presentations. At a very minimum level, agencies often call for the public filing of submissions in written form, with increasing reliance on making this documentation available through the Internet. Some agencies – the New Zealand Commerce Commission is a good example – will rely on submissions by its staff members or contractors of the Commission as a basis for sharpening public comment from outside parties.

2.1.2 Inter-Agency Submissions

One issue typically facing regulatory bodies concerns the role of other governmental agencies in the regulatory process. In some regulatory frameworks, other governmental entities are treated strictly as third parties – with rights only equivalent to private parties. For example, in the United States, the Department of Justice's Antitrust Division might submit comments on Federal Communications Commission (FCC) proceedings like other private parties. The Department of State and the Department of Defense can participate similarly in FCC proceedings, as though they were private parties. In Canada, the Commissioner of Competition typically submits comments or expert's reports to the Canadian Radio-television and Telecommunications Commission (CRTC) in proceedings run by that regulator.

The United States has unique procedures arising from the fact that it has both federal and state regulatory authorities. For example, these procedures give state regulatory bodies representation on a federal-state "joint board" that addresses all interconnection-related issues that potentially involve conflicts between the jurisdictional responsibilities of the FCC and state regulators. The role of the joint board is merely advisory, and jurisdictional clashes between federal and state regulators are often resolved in the courts or through legislative intervention.

2.1.3 Internal Reviews Prior to Decisions

The process of agency decision-making is often complex and time-consuming. This is a source of both strengths and weaknesses of agency adjudication. Specialized divisions or bureaus within a regulatory body may be established to deal with different sectors of the industry that are under the jurisdiction of the agency. These bodies may take the initial responsibility for preparing a recommended decision for the regulatory agency as a whole. Advice and input are often provided through a consultation procedure involving other affected internal divisions within the agency.

In many regulatory bodies, a separate, specialized legal branch may conduct intensive reviews of recommended agency decisions. The scope of such "external" legal reviews may be focused only on whether a proposed agency decision meets expected legal requirements for reasoned decision-making

and is defensible in court. In other circumstances, such reviews may be more general in scope, allowing legal, technical, or policy advisors to exercise policy-driven analyses.

2.1.4 Internal Reviews After Decisions

In many cases, formal procedures exist that allow parties to ask a regulatory agency to reconsider a decision or order. Frequently a party to a dispute will seek to overturn an adverse decision by requesting such reconsideration. In order to provide some finality to their dispute-resolution or other decision-making processes, some agencies have established criteria to determine whether they will reconsider a decision. For example, the Canadian regulator has established the criteria set out in Box 2-2.

Box 2-2 – CRTC Guidelines to Review Decisions

In Telecom Public Notice CRTC 98-6, the CRTC announced guidelines for filing an application to request that the CRTC "review and vary" one of it decisions. Such applications are submitted under section 62 of the *Telecommunications Act.* The guidelines restated the test the Commission will use to determine whether to exercise its review power and identified five factors that will assist in assessing whether a decision should be reviewed for correctness:

(i) Whether the application raises an error of law, jurisdiction or fact;

(ii) The extent to which the issues raised in the application were central to the original decision;

(iii) The extent to which the facts or circumstances relied upon in the application were relied upon in the original decision;

(iv) The length of time since the original decision; and

(v) Whether the resulting decision would supersede the original decision in a prospective manner, as opposed to curing an error on a retrospective basis.

The weight to be given to each of these factors will depend on the circumstances of each case.[8]

2.1.5 Judicial Review

In many cases, the courts may review the decisions of regulatory agencies, through a process known as "judicial review". Such a process reduces the likelihood that some critical or new issue will go un-addressed. Exhausting the administrative process may tend to limit the potential issues addressed in judicial review, but it also can extend the overall timetable for decision-making. Many governments have carefully demarcated standards for judicial review.

Typically, judicial review is not intended to provide an opportunity for *de novo* review of the issues before the regulatory agency. Rather, the existence of established legal precedents in many countries, such as the United States, allows courts to give substantial deference to agency decision-making – provided that the agency's decisions are not shown to be "arbitrary and capricious". Typically, agency actions can be overturned when there is not a reasoned explanation for a departure from a past policy or decision of the agency. Or, a reviewing court can conclude that the agency's failure to address the factual predicates of a policy could constitute a basis for reversal of action. Seldom, however, will a reviewing body overturn an agency action and direct a different outcome. Instead, courts may "remand" or refer a decision back to the agency for further review and assessment, sometimes with instructions relating to the scope of the further review.

2.1.6 Political Review

In some countries, regulatory decisions are subject to review at the political level – for example by a minister or the national cabinet. Such review procedures can be highly problematic in cases where the minister or government also holds an ownership stake in one of the parties to a dispute (most often, an

8 CRTC Public Notice 98-6, www.crtc.gc.ca/archive/eng/Notices/1998/PT98-6.htm

incumbent telecommunications service provider). In such cases, there is usually an appearance – if not the reality – of a conflict of interest. Similarly such review procedures can lead to political favoritism or governance problems. ADR techniques are often useful techniques to avoid having ministers or other politicians caught in a conflict-of-interest position.

2.1.7 Interim measures

The subject of interim measures is closely related to matters of appeal and review. Interim measures involve the temporary suspension of regulatory decisions while courts or other review bodies are examining them. The use of interim measures raises two competing priorities:

- It is important to ensure that while the case is being decided on review, one or both parties will not be prejudiced in a way that, even if they win the case, they will have suffered irreparable harm.
- It is also important to ensure that no party abuses interim measures by simply prolonging a proceeding in order to avoid the implementation of policy.

In Germany, numerous decisions of the regulatory agency (the Regulierungsbehörde fur Telekummunikation und Post or RegTP) have been suspended in the national courts pending review. As illustrated in Box 4-4, Germany's procedures have brought considerable delays in implementation of the regulator's decisions. Similarly, in the Netherlands, a majority of pleas seeking interim suspension of the regulator's (Onafhankelitke Post en Telecom Auturiteit's or OPTA's) decisions have been granted.

In Spain, as in France, the filing of a claim with a national court contesting a decision of the Telecommunications Market Commission (CMT) is less likely to result in interim suspension of the CMT's ruling. The claiming party must specifically request such a suspension, and the courts will only grant it after considering:

- The likelihood that the party will succeed on the merits of the case when it is ultimately decided;
- An assessment of the different interests in the dispute; and
- The risk of irreparable harm to the party requesting the interim measure.

In practice, the Spanish courts have not accepted suspension requests. As a result, the CMT's resolutions – and therefore regulatory policy – have been implemented despite ongoing, lengthy court cases.

The German and Spanish examples illustrate two different approaches. There are arguments for and against each one. Regulators need to weigh the importance of implementing sector policy efficiently against the importance of protecting parties from the repercussions of the proceedings before they are finally determined.

2.1.8 Advantages of Regulatory Adjudication

There are a number of clear advantages to the traditional model of regulatory adjudication, at least when it is effectively and efficiently applied in appropriate situations. But it can have significant drawbacks. Both the advantages and disadvantages are discussed here and in the following sections.

An important advantage of regulatory adjudication is that it can draw upon the legitimacy of the official sector, as well as the benefit of its enforcement mechanisms. Another significant advantage of regulatory adjudication is that a well-staffed regulatory agency can access staff resources with different expertise – technical, economic, and legal – to provide input into decisions.

In cases where a regulator does not have the internal expertise to adequately analyze the technical, economic, legal, or other issues, it may retain consultants or other experts on a short-term basis to supplement its analytical capabilities. Box 2-3 sets out an example of a relatively new regulator that retained consultants to provide international experience in resolving a contentious interconnection dispute.

Box 2-3 – Botswana: Regulatory Adjudication of Interconnection Disputes

The Botswana Telecommunications Authority (BTA) was one of the first countries in Africa to establish an independent regulatory agency. In 1999, the agency resolved its first interconnection dispute, establishing an interconnection agreement between the incumbent Botswana Telecommunications Corporation (BTC) and the two major cellular operators in Botswana, Mascom Wireless and Vista Cellular (BTA Ruling No. 1 of 1999).

During the following years, disputes arose regarding the original level of interconnection termination charges. As in many countries, traffic patterns shifted dramatically as mobile telecommunications penetration levels surpassed fixed-line penetration, thereby undermining the assumptions of the original interconnection rates.

The regulator took action to resolve the dispute only after the parties were unable to agree on modifications to the earlier interconnection agreement. Given the technical nature of interconnection and related tariff issues, the BTA decided to supplement its staff resources by retaining an international consulting firm that had worked on interconnection rates in other countries.

The international consulting firm assisted BTA members and staff in dealing with economic and legal matters related to the interconnection dispute. But the dispute resolution process was essentially run as a normal regulatory adjudication. Parties to the dispute filed pleadings and replies supporting their position on issues underlying the dispute. The BTA, its staff, and the consultants reviewed the pleadings, met with the parties and undertook additional research relevant to international interconnection rates to support BTA's ultimate resolution of the dispute.

BTA Ruling No. 1 of 2003 set forth in substantial detail BTA's rationale for setting new interconnection charges through reliance on international benchmarks. The ruling set a precedent for resolving more general disputes that may arise in interconnection agreements.

The Ruling:

- Considered the legal basis and framework for dealing with interconnection disputes in Botswana. Under the *Telecommunications Act* of 1996, BTA can decide interconnection disputes and has wide latitude in setting "fair and reasonable" terms and conditions.
- Considered three major models for dealing with interconnection: revenue sharing, sender-keeps-all, and interconnection usage charges. The conclusion was that interconnection usage charges should be the basis for a new interconnection arrangement centering on termination charges independent of charges to consumers.
- Focused on various costing methodologies and benchmarking as two broad approaches to setting interconnection charges and reviewed the EU approach to developing benchmarks for interconnection charges at various tiers of the network, i.e., local, single tandem and national levels of interconnection. BTA carefully considered the use of benchmark data and the countries to be used in the benchmark study, concluding that the EU countries were viewed as representing a "good sample of countries that have reached or are in the process for reaching efficient cost-oriented termination charges for fixed networks …" (Ruling at 37).
- Concluded that Botswana should use the "national" level of interconnection – as opposed to local or single tandem interconnection charges – as the basis for termination charges. For determining fixed network termination charges, it was found that an average or mid-range of all fifteen EU countries would be fair and reasonable.
- Adopted a transition period, given that the proposed charge levels were significantly below current charges. It explicitly recognized that there is a trade-off between regulatory and financial objectives.

Box 2-3 – Botswana: Regulatory Adjudication of Interconnection Disputes *(cont'd)*

The ruling demonstrated a classic case of traditional regulatory adjudication. However, it was conducted by a fairly new regulatory agency that recognized the need to supplement staff resources with international consulting expertise to establish a good precedent based on international experience on complex interconnection issues.[9]

A traditional adjudication process can also give the public a channel to provide input into the decision-making process. Agencies are familiar with the use of public notice procedures and are exploiting the potential of the Internet to disseminate information, seek input, and encourage public dialogue. Agencies can often structure their procedures to address disputes on a generic rather than an *ad hoc* basis. Agencies can then act in a more legislative, rule-setting capacity, dealing with specific disputes in a narrower enforcement context. There is also tension when an agency seeks to evolve an overall regulatory framework in the midst of dealing with individual cases. This approach is often precedent-setting and flexible.

Some governments have established mechanisms to solicit advice and participation from specialized consumer protection and competition law agencies. One drawback to this is that regulatory agencies may not properly coordinate their activities with these specialized entities, resulting in problems or delays in the dispute resolution process. The same observation could be made, of course, about coordinating with governmental authorities on a vertical basis. Moreover, jurisdiction issues among federal, provincial/state, municipal, and even international officials often undermine efforts to frame comprehensive policy initiatives.

Finally, the very structured and hierarchical nature of the dispute resolution process can contribute to its legitimacy and accountability. For example, regulatory agencies can be made accountable through different avenues. There are varying mechanisms – i.e., appointment procedures, budgetary controls, review procedures, sharing of responsibilities – for oversight to be exercised at an executive level.

2.1.9 Disadvantages of Regulatory Adjudication

The potential drawbacks of regulatory adjudication can be significant and may justify paying close attention to alternative approaches to dispute resolution.

The overall process can become extraordinarily lengthy – consuming significant time to obtain input from parties, prepare recommended actions by staff, deliberate on decisions, reconsider decisions, and ultimately have those decisions reviewed by the courts. Often the complexity and volume of inputs by the parties is disproportionate to the practical needs of the decision-making process. This especially can be the case where agencies rely on more traditional evidentiary or fact-finding procedures.

One significant disadvantage of regulatory adjudication arises from the ever-present temptation for competitors to "game" the process, using it as part of an overall strategic response to the emergence of competitive market conditions. If the process is available and if regulators are ready to intervene, then a regulatory dispute resolution process is likely to become a permanent feature of liberalized markets. The critical question is how to encourage effective competition with well-focused regulatory intervention.

In addition, there may be too few resources, in terms of economic and technical advice or international best-practice information, to produce an optimal outcome. Some regulators also may be constrained by their legislative mandates to deal with the issues of sector development, such as the convergence of traditional telecommunications, media, and information. These prescribed policy mandates may limit agencies' abilities to be flexible in confronting significant disputes and sector issues. In a similar way,

9 ITU Botswana Mini-Case Study 2003, Recent Experience in Interconnection Disputes. This is one of five mini case studies on interconnection dispute resolution undertaken by ITU. Further information can be found on the web site at http://www.itu.int/ITU-D/treg.

traditional institutional structures may be less open than more informal consultative and dispute resolution mechanisms to new information about the impact of regulatory initiatives on investment in the sector.

In addition, regulatory adjudication may, like judicial adjudication, have limitations in that it may be the response of a single regulatory body, based on a narrow jurisdictional mandate and limited enforcement powers, to individual claims defined by parties on specific legal grounds. A significant risk of the regulatory process, then, is the tendency of regulatory bodies to fragment or compartmentalize decisions into separate proceedings. One of the potential advantages of more informal procedures may be their ability to address a wider range of related issues concurrently for resolution. We discuss below in further detail potential approaches and mechanisms for dealing with these important challenges. But we first turn to a discussion of arbitration and mediation techniques used to resolve telecommunications sector disputes.

2.2 Introducing Alternative Dispute Resolution

Alternative dispute resolution (ADR) encompasses several different techniques. Policy-makers and regulators are increasingly turning to these methods to resolve disputes. The European Union (EU) Framework Directive, for example, requires national regulatory authorities to resolve disputes within a certain time period and suggests that regulators use ADR methods. For an example of how such methods are being developed, see Box 2-4.

Box 2-4 – The United Kingdom's Approach to Applying the EU's ADR Directive

In November 2002 the United Kingdom's Office of Telecommunications (Oftel), now the Office of Communications (Ofcom), issued a consultation document, followed three months later by a statement, on "Dispute Resolution under the new EU Directives". This established how U.K. regulators would meet the EU's deadline for establishing dispute resolution mechanisms, in compliance with Articles 20 and 21 of the Framework Directive.

In its guidelines, Ofcom requires the parties in any dispute to demonstrate that they have attempted to resolve that dispute through commercial negotiations. Requiring such evidence is a clear signal from Ofcom to parties, encouraging them to resort first to available dispute resolution mechanisms.

Ofcom has gone even further, indicating that when it believes alternative dispute resolution methods would be more appropriate than regulatory intervention, Ofcom will decline to intervene. Ofcom identified suitable dispute resolution organizations, including the International Chamber of Commerce's International Court of Arbitration, the London Court of International Arbitration and, with respect to mediation and other informal dispute resolution techniques, the Centre for Effective Dispute Resolution, a leading European mediation organization.

We will first consider what ADR is and then review the legal, institutional, and jurisdictional frameworks in which ADR techniques are used.

ADR consists of a number of processes and procedures that are an alternative to litigation and other official procedures. In essence, ADR involves procedures for settling disputes by means other than litigation or administrative adjudication. ADR methods include arbitration and mediation, as well as numerous other hybrids and variations.[10]

The general philosophy underpinning ADR is that, where possible, it is more beneficial for parties to resolve their disputes by private processes and negotiated agreements than through contentious litigation or regulatory adjudication. A major benefit of ADR methods is that they can preserve and even enhance business relationships that might otherwise be damaged by the adversarial process. This

[10] In some jurisdictions, arbitration would be excluded from a strict definition of ADR as it is seen as a system of adjudication under a defined process.

does not mean ADR procedures are never contentious. But they do offer parties greater control over the procedures that will apply, and over the choice of adjudicators.

ADR can produce settlements and save costs, resulting in solutions that benefit all parties. ADR procedures can take the place of formal adjudication, or they can complement adjudication or litigation by producing settlements within those systems. Above all, the advantage of ADR is flexibility. Different kinds of disputes often require different kinds of procedures and approaches, and ADR usually makes this possible.

ADR procedures can be divided into three primary categories: negotiation, mediation and arbitration. However, it is important is to view dispute resolution processes as a continuum. At one end is negotiation, and at the other end is litigation or regulatory adjudication.

2.3 Negotiation

The fundamental key to all consensual ADR activity is negotiation. The key characteristic of negotiation is that it is a consensual process that may allow the parties to arrive at a mutually agreeable solution. Negotiations generally are held on a confidential basis, and they are usually "without prejudice" to any legal recourse the parties may have. Unlike mediation, there is usually no third-party facilitator involved in traditional negotiations.

As there is no third party involved, the parties can usually schedule the progress of the negotiations on their own. Negotiation permits dispute resolution at the lowest level of conflict and avoids adversarial procedures.

Before undertaking negotiations, parties must consider whether the dispute is suitable for negotiation. That is, is it possible for the parties themselves to resolve the dispute? Secondly, some consideration should be given to a reasonable time limit for the negotiations, given the particular circumstances of the case. Negotiations are often a prerequisite for starting formal dispute resolution procedures, so it is common for parties to agree to try good-faith negotiations for a certain period of time before taking the next step in the dispute resolution process. This may delay the start of official proceedings while the parties negotiate.

The main advantage of negotiation is that it may result in a solution that is favourable to each party, which may be very valuable to an ongoing business relationship. Reaching agreement by negotiation avoids the more adversarial processes found in other types of ADR.

Negotiation also has been used as an alternative to litigation in restructuring contracts, concessions and licenses of telecommunications operators. In this case, the negotiations are often held between the government or regulatory authorities and the operator. A recent example of such negotiations involved an agreement between the Organization of Eastern Caribbean States (OECS) and the dominant local operator, Cable and Wireless plc, to shorten the term of the original monopoly rights granted to the operator (see Box 2-5).

Box 2-5 – Agreement between Cable & Wireless (C&W) and OECS States

In April 2001, the member states of the OECS reached a negotiated settlement to end the monopoly that previously had been granted in licenses issued to the dominant regional telecommunications operator, C&W. This agreement followed, but differed from, an agreement to end C&W's monopoly in Jamaica. Key features of the OECS agreement are set out below.

Liberalization of the Telecommunications Sector – Competition was to be introduced on a phased basis, with transition to full competition and liberalization between 12 and 18 months from the date of the agreement. During the first phase, new licenses were only to be issued to competitors for limited types of networks and services. For example, a mobile cellular operator would have to pass international traffic over a point of interconnection to the international gateway switch of C&W.

Box 2-5 – Agreement between Cable & Wireless (C&W) and OECS States *(cont'd)*

During the transition phase, three working groups were set up to resolve lingering issues. These working groups were to reach consensus on recommendations for issues such as tariffs and rebalancing, cable TV, and wireless communications.

The OECS contracting states and C&W were to keep in mind and implement certain regulatory principles, such as:

- Promotion of competition,
- Consistency with the Telecommunications Acts,
- Clear and concise drafting,
- Protection of confidential information,
- Decisions made in accordance with the rules of natural justice and provision for a fair appeals process,
- Fees were to cover the cost of regulation,
- Regulation of access to submarine cables should be designed to protect competition and prevent anti-competitive practice, and
- Where possible, preservation of existing numbering, spectrum and domain-name allocations.

C&W and the contracting states were to make their best efforts to ensure that C&W's network was not bypassed. All parties agreed to ensure that any necessary rebalancing would be achieved substantially during phase one.

New C&W Operating Licenses – Each contracting state agreed to grant C&W a new, non-exclusive operating license or licenses to provide at least the same networks and services it provided before the expiry of the existing licenses under the Telecommunications Acts.

Settlement of Claims – C&W agreed to waive all claims against each contracting state arising as a result of the introduction of the Telecommunications Acts and the consequent termination of its exclusive operating licenses. The contracting states relinquished all claims against C&W for all breaches of those exclusive operating licenses.

Dispute Resolution – All disputes were to be referred to a Joint Committee comprised of the Eastern Caribbean Telecommunications Authority (ECTEL) and C&W representatives. The Committee was to resolve the matter within 15 days, and if unable to do so, the matter would be referred to arbitration in the state where the dispute arose.

Termination – If any of the parties failed to observe the terms of the agreement, and the breach was incapable of remedy, the agreement between C&W and the individual state would be terminated. The agreement between C&W and the states not involved in the breach would remain unaffected.

Note: This Agreement was scheduled to terminate on 7 April 2003, two years after it was signed.

2.4 Mediation and Conciliation

Mediation is a consensual process that involves a neutral third party in facilitating dispute resolution. Regulators frequently employ mediation to provide informal resolutions of important controversies facing key sector participants. Mediators also may be private individuals who are not involved in the regulatory process. Using regulatory intervention as a fall-back alternative, a regulator often may persuade parties that it is preferable to arrive at a mutually acceptable solution through mediation rather than through the potentially unpredictable alternative.

The core roles of a mediator can be summarized simply. The mediator will solicit the views of the parties on the nature of the dispute and its key issues. He or she will seek potential convergence of parties' interests and propose constructive win-win solutions. In striving to improve communication between parties and potentially develop a direct negotiation, one of the central activities of a mediator

is often to convey views of the dispute from one party to the other in a neutral way. At an appropriate moment in the mediation process, the mediator may be able to suggest potential solutions or views of the underlying issues to both sides.

Closely related to mediation is conciliation, which involves more formal procedures than mediation.

The United Nations (UN) has long encouraged conciliation and mediation to resolve disputes among states. Recently, the United Nations recognized that mediation and other dispute resolution techniques are becoming common in commercial practice (see Box 2-6).

Box 2-6 – UNCITRAL Model Law on International Commercial Conciliation

On 19 November, 2002, the United Nations General Assembly adopted a resolution encouraging all member states to give due consideration to enacting the Model Law on International Commercial Conciliation, which had been completed and adopted by the United Nations Commission on International Trade Law (UNCITRAL). In adopting the resolution, the General Assembly:

- Recognized the value for international trade of having methods for settling commercial disputes where a third person is requested to assist the parties to settle the dispute amicably;
- Noted that conciliation and mediation are increasingly used in commercial practice as an alternative to litigation;
- Considered that the use of such dispute settlement methods results in significant benefits; and
- Stated its belief that the Model Law will assist states in enhancing current legislation governing conciliation or mediation techniques and in formulating such legislation where none exists.

The Law applies to international commercial conciliation, but it does not apply to cases where a judge or arbitrator attempts to facilitate a settlement. Articles 1 and 2 of the Model Law establish definitions and rules of interpretation, while Article 3 allows parties to agree to exclude or vary part of the law. The substantive articles are as follows:

Article 4: Commencement is on the day on which the parties agree to engage in conciliation proceedings, and if the party that issued an invitation to conciliate does not receive a reply within a specified time (usually 30 days), it can consider the invitation rejected.

Article 5: Unless the parties agree that there shall be two or more, there shall be one conciliator. The parties should agree on the conciliator, who should be independent and impartial and of a nationality other than the parties.

Article 6: The parties can agree on the conduct of the conciliation, and if they cannot, the conciliator can conduct the proceedings in such a manner as he or she considers appropriate. The conciliator may propose settlement terms at any stage of the proceedings.

Article 7: The conciliator may meet or communicate with the parties together or separately.

Article 8: Unless information is given to the conciliator subject to a condition of confidentiality, all information concerning the dispute shall be disclosed to both parties.

Article 9: Unless required by law or consented to by the parties, all information relating to the proceedings shall be kept confidential.

Article 10: Generally, *no information* from the conciliation process is admissible in any other proceeding.

Article 11: The conciliation proceedings are terminated by a settlement agreement, a declaration by the conciliator that further efforts are no longer justified, or a declaration of termination by a party.

Article 12: Unless agreed to by the parties, the conciliator shall not act as arbitrator in any related disputes between the parties.

Article 13: Generally, the parties shall not resort to arbitral or judicial proceedings during conciliation.

Article 14: If a settlement agreement is reached, it is binding and enforceable.[11]

[11] General Assembly Resolution 57/18 – Model Law on International Commercial Conciliation of the United Nations Commission on International Trade Law. http://www.uncitral.org/en-index.htm

2.4.1 Advantages of Mediation

A good mediator will proceed with an "interest-based" rather than a "position-based" view of the issues in dispute. In other words, he or she will seek to explore the underlying incentives and financial, institutional, or personal grounds that might be the basis for reaching an agreement among the parties. Often, a solution may suggest itself that is broader or different than that identified by the parties as the immediate subject of a dispute. The mediator will explore with the parties whether the benefits of reaching an agreement exceed the costs of continuing a dispute.

Several aspects of the mediation process make it an effective tool for dispute resolution. The role of the mediator can be structured flexibly. For example, there are often advantages to co-mediation, in which two mediators rely on complementary skills and experience to try to bring the parties to agreement. The confidentiality of the mediation process is important to its success. Parties need assurance that efforts to narrow their differences will not be used to their disadvantage – that is, that no evidence of compromise proposals will be introduced into the record of a pending proceeding before a court or a regulatory body. Mediation, then, can create space within which parties may contemplate and reconsider their interests and priorities without fear of prejudicing their positions.

There are a number of additional benefits of mediation, including the following:

- It may preserve the long-term relationships upon which the telecommunications industry is based;
- Mediation costs are usually lower than adjudication or litigation;
- Parties can select a compatible mediator, usually without regulatory intervention;
- Mediation processes are more structured than negotiation (specific rules and procedures are available);
- Professional organizations are available to assist;
- Advancements in technology usually outpace the ability of the regulators to control it. There is a benefit in having a dispute mediated by parties who have more technical experience;
- Mediation facilitates resolution without public adversarial processes; and
- In addition to regulatory support, the benefits of mediation have led to judicial support for established mediation services and institutions.[12]

2.4.2 Disadvantages of Mediation

Whatever the benefits of mediation, there are also significant potential concerns about its use in a regulatory context. Views and experiences differ regarding the success of mediation, depending on whether it is consensual or mandated. The success of the process depends on the willingness of the parties to work together in good faith. The consensual nature can therefore be a weakness. Most regulatory agencies appear to refuse requests for mediation unless both parties have agreed to take part. On the other hand, providing a "window" for mediation before formal dispute resolution steps are initiated can create pressure on a dominant service provider to engage in a negotiated solution.

Article 20 of the EU Framework Directive[13] provides that Member States may allow a national regulatory agency to decline to resolve a dispute "where other mechanisms, including mediation, exist

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12 For example, see *IBM* v *Cable & Wireless*, where Colman J. said that "[CEDR] is one of the best known and most experienced dispute resolution service providers in this country. It has over the last 12 years made a major contribution to the development of mediation services available to parties to disputes who need advice on both a choice of mediator and on appropriate procedures for mediation". [2002] All ER (D) 277 (Oct.).

13 Article 20 of the Framework Directive of the European Union provides:
In the event of a dispute arising in connection with the obligations arising under this Directive between undertakings providing electronic communications networks or services in a Member State, the national regulatory authority concerned, shall, at the request of either party, issue a binding decision to resolve the dispute in the shortest possible timeframe and in any case within four months except in exceptional circumstances. The Member State concerned shall require that all parties cooperate fully with the national regulatory authority.
http://europa.eu.int./information_society/topics/telecoms/regulatory/maindocs/comgreen/index_en.htm

and would better contribute to resolution of the dispute in a timely manner". Within the EU, as in other jurisdictions, reliance on mediation varies. The Swedish regulator often uses mediation, and the Danish regulator, the National Telecommunications and IT Authority (NITA), has demonstrated skill and creativity in relying on informal dispute resolution mechanisms.[14]

Other EU regulators, including Ofcom and the Dutch regulator OPTA, have been more skeptical about the potential advantages of mediation. The key issue, however, is to identify situations where mediation may be a useful technique and where it will not. Ofcom, for example, has sought to establish a clear demarcation between the types of matters in which it will become engaged and those that it expects parties to resolve through private dispute resolution (see Box 2-7).

Box 2-7 – Ofcom Guidelines and Dispute Resolution Procedures

Ofcom has issued guidelines on the dispute resolution procedures that must be implemented by public communication providers in the United Kingdom.

The dispute resolution procedures follow the introduction of the 2003 *Communication Act* and the establishment of the Office of Telecommunications Ombudsman (OTELO), pursuant to EU directives.[15]

OTELO is a voluntary member organization with a preference for an ombudsman-type negotiation process rather than arbitration or mediation. However, the guidelines are not restricted to an ombudsman-type relationship. In order to be approved, an alternative dispute resolution process between communications operators and consumers must be:

(a) Independent and impartial;

(b) User-friendly and easily accessible by all consumers, including those with disabilities or language difficulties;

(c) Transparent, providing regular feedback to consumers through the process of the dispute;

(d) Effective (which Ofcom has stated will mean that most disputes are resolved within six weeks of the initial complaint);

(e) Free of charge to the customer, which also extends to costs not being awarded against an unsuccessful complainant; and

(f) Able to properly investigate disputes and make awards of appropriate compensation.

In addition to OTELO, other private dispute resolution organizations are expected to submit their ADR processes to Ofcom for approval.

The mediation process is subject to abuse by parties seeking to prolong a dispute. Some parties may use it to fish for information that might be relevant at another stage of a dispute resolution process and that might improve their position. Regulators can, however, create expectations – even on the part of reluctant and dominant service providers – about engaging in good faith negotiations. They can use their powers to hold parties to such expectations. They can establish indicators of good faith attempts

14 In Denmark, Section 65 of the Telecom Act allows regulators to intervene on a "reasonable request" and NITA must act within 1 month of availability of information and not later than two months from a request. In the absence of information, NITA can act on an interim basis. NITA manages mediation procedures that can last three to six months (and not be less than one month). Mediation is considered very successful by NITA and has been used in 10 cases. NITA can make an interim decision in mediation after two months if an [significant market power]SMP operator had not provided information two weeks before a decision.

15 See http://www.ofcom.org.uk/consultations/past/draft_guid_ccd/comp_disputes/complaints/?a=87101

to negotiate and can swiftly intervene to end the mediation process if it appears that no progress is being made.[16]

Since mediation is basically a voluntary exploration of interests in order to find a negotiated solution, it is often beneficial to both parties, unless it is found by one or both to have cost valuable time and money.

2.4.3 Factors for Success

A number of factors can contribute to the success of mediation. First, mediators and the parties must be able to establish a successful rapport. Second, while the parties have ultimate control over their participation in the overall process, the mediators' management of the discussions makes it more structured than negotiation. Parties normally agree to specific mediation rules and procedures available to them. Third, by diplomatic "reality checking" on the positions and assumptions of the parties, the mediator can enable parties to ease back from rigid, embedded, and unrealistic positions. Fourth, the mediator plays a critical role by focusing the parties on their underlying interests rather than the abstract merits of their positions. Fifth, good mediators demonstrate patience, insight, and psychological finesse to convince the parties to modify their entrenched positions.

Finally, successful mediation in the regulatory context can depend on the role of regulatory officials. Involving regulatory staff themselves as mediators, or having a neutral mediator report to the regulator, can discourage disputing parties from taking unreasonable positions during the mediation process. In some cases, however, involvement of regulatory staff may compromise the confidentiality of the dispute resolution process. Such confidentiality is a key element in the success of mediation because parties may wish to avoid potentially self-damaging consequences of changing their positions on important regulatory issues. In these cases, it can be preferable to use an outside neutral mediator, who can be trusted by both parties to maintain the confidentiality of the mediation process.

2.5 Arbitration

Arbitration is a method of dispute resolution (sometimes preceded by mediation) that takes the place of conventional litigation. It is a consensual process in which disputing parties agree to refer a dispute to a neutral third party arbitrator or panel of arbitrators for resolution. A commitment to arbitrate disputes is often included at the outset of commercial agreements, binding the parties to seek arbitration of any future disputes that may arise. The parties also may choose arbitration when the dispute arises, as an alternative to litigation or regulatory adjudication.

2.5.1 Advantages of Arbitration

Arbitration has several benefits. First, since it is generally a private, or "non-official" procedure offering more in the way of privacy and secrecy, it can offers better protection against disclosure and the use of the party's confidential business and strategic information. Parties can expressly agree that all information and documentation disclosed during arbitration will be held in confidence. ADR mechanisms are private by nature. As such, the common fear of a negative "precedent", may be diminished.[17] There is less need to maintain a rigid position out of fear that the outcome may harm a party in future cases. Moreover, with a desire to maintain existing commercial relationships, there often comes an increased willingness to reach a mutually acceptable compromise. The ability to resolve disputes privately and keep their existence confidential helps parties avoid a negative reputation as litigious or confrontational, which can be an impediment in the telecommunications community.

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16 For example, it is common to impose timelines on the mediation process. In the United Kingdom, Ofcom provides four months for the parties to try and resolve disputes under ADR, failing which, the matter is referred back to Ofcom. http://www.ofcom.org.uk/consultations/past/draft_guid_ccd/comp_disputes/comp_comp.pdf?a=87101

17 However, arbitration, by its nature, is a process in which a body of precedent is not built up that can be relied on, necessarily, in future cases. The feature of arbitration should be a factor taken into account in designing any ADR regime. *See, e.g.*, discussion at Chapter 6, Section A.(a).

Furthermore, parties may combine arbitration with informal negotiations or mediation, thus resolving their dispute in a manner similar to an assisted negotiation. This fosters a better continuing working relationship and is a particularly valuable approach if the parties' dealings require ongoing interaction.

Arbitrations can sometimes take less time than conventional litigation or regulatory adjudication. This is due to several factors, including:

- The ability to design and schedule the steps needed at an early stage of the proceedings,
- The ability to reduce steps that are otherwise mandatory in conventional litigation, and
- The increased availability and flexibility of arbitrators.

From the industry's perspective, the potential compressed timing is a benefit because it offers commercial advantages, including reduced interference with business objectives. In the case of international arbitration, there is a considerable advantage in the availability of more neutral forums for adjudicators than parties would find in either party's national courts.

2.5.2 A Well-Established Means of Dispute Resolution

In some jurisdictions (for example in Western Europe), arbitration is important in the operation of the civil justice system. It has a very long history, and for centuries has been widely used for the settlement of a variety of disputes between states, between state entities and private parties, and between private parties. Since the *New York Convention of 1958 on the Recognition and Enforcement of Arbitral Agreements and Awards*,[18] there has been an unprecedented growth in the use of arbitration for the settlement of disputes in international trade and investment.

The sources of the law of arbitration in international commercial disputes are international conventions such as the New York Convention of 1958 and the European Convention of 1961.[19] There are international model laws and model rules[20], national and municipal legislation in each country, and institutional rules such as those of the International Chamber of Commerce (ICC) and the London Court of International Arbitration (LCIA). Some jurisdictions, such as France, have separate rules or statutes for international and domestic disputes.

To those formal sources of arbitration law must be added an increasing body of academic writing, including reports of awards to which practitioners look for guidance, though not for precedence.[21]

One development of particular importance is the use of arbitration in bilateral investment treaties. The number of these treaties has risen from about 500 to 2,000 in the past decade. These treaties usually provide for arbitration, sometimes by reference to recognized institutions such as the International Chamber of Commerce (ICC) or the International Centre for the Settlement of Investment Disputes (ICSID). The ICC, ICSID and other organizations that assist with ADR are discussed in further detail in Annex C.

In many jurisdictions and internationally, arbitration is regarded as the primary means of dispute resolution for international trade, business, and investment disputes. For example, arbitration has assumed an important role in dispute resolution in North America under Chapter 11 of the North American Free Trade Agreement (NAFTA).

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18 New York Convention of 1958 on the Recognition and Enforcement of Foreign Arbitral Awards. http://www.jus.uio.no/lm/un.aribtration.recognition.and.enforcement.convention.new.york.1958/doc.html

19 See http://www.jus.uio.no/lm/europe.international.commercial.arbitration.convention.geneva.1961/

20 See http://www.eurolegal.org/arbitration/arblaws.htm for a selection of links to multiple national arbitration laws and rules.

21 For example, academic journals, though too numerous to name, include Arbitration (The Chartered Institute of Arbitrators); Arbitration International (LCIA), American Review of International Arbitration (Center of International Arbitration and Litigation Law); Bulletin of the International Court of Arbitration (ICC); ICSID Review/Foreign Investment Law Journal (ICSID); International Arbitration Law Review (Street & Maxwell); and World Trade and Arbitration Materials (Kluwer); to name a few.

2.5.3 Using Arbitration in Telecommunications Disputes

The use of arbitration as a dispute resolution tool normally depends upon agreement by or among the parties in a contractual arrangement. However, there are circumstances in which the use of arbitration may be encouraged or mandated either by regulatory policy or through legislation. Arbitration can be used for various types of disputes, such as interconnection disputes. In the United States, the *Telecommunications Act* of 1996 allows state regulatory commissions to use arbitration to resolve interconnection-related disputes. Likewise, Jordan has also turned to arbitration as a means of interconnection dispute resolution. Box 2-8 discusses the new Jordanian procedure.

Box 2-8 – Arbitrating Interconnection Disputes in Jordan

In July 2003, Jordan's Telecommunications Regulatory Commission (TRC) adopted an interconnection dispute process. Several features of the process were intended to produce higher-quality decision-making, more efficient processes, and a dispute resolution regime that gave substantial responsibility to the parties themselves.

The Jordanian process was applied to any dispute among licensees relating to, or arising out of, an interconnection agreement. The process was used more to interpret the execution of interconnection agreements once they were negotiated, rather than as a resource to support new entrants struggling to negotiate a fair agreement.

The process amplified the Jordanian telecommunications law's emphasis on negotiation and mediation. The law directed the TRC commissioner to draw up "guidelines for negotiations between the parties or disputants in the dispute, and …[to] propose a solution himself or by means of a mediator or persons appointed for this purpose..". (Law, Article 60) Thus, the interconnection dispute process included a requirement that the parties attempt to negotiate a good faith solution before bringing the dispute to the TRC. Moreover, it indicated that the TRC would first confirm that there was a genuine dispute and that the parties had sought to resolve the matter commercially (Articles 1.1 and 5.2).

The process imposed a timetable requiring the disputants to meet for negotiations within 10 working days of written notice of the dispute, allowing at least 20 working days for such negotiations. Such measures were designed to assist in resolving disputes before the parties became caught up in a more time- and resource-consuming tangle of formal proceedings.

The Jordanian approach gave responsibility for the dispute to the parties in several key ways. The parties could choose to utilize an arbitration process instead of referring the dispute to the TRC. This enabled parties to engage experts familiar with the sector rather than the TRC, which may not have the same speed of response or confidentiality, or judges in the courts, who may be less familiar with technical and other sector-specific issues. The process, moreover, did not prevent the licensees from eventually pursuing remedies in court. There was likely to be scope for clarifying potential conflicts between outcomes arising out of arbitration or judicial proceedings and the prerogatives and policies of the TRC.

While parties disputing a commercial agreement generally would have the right to go to arbitration, the TRC's emphasis on arbitration as an alternative mechanism raised interesting questions about the relationship of an arbitrator's jurisdiction and the TRC's regulatory jurisdiction. The arbitration legislation in Jordan made make arbitrators' decisions enforceable in Jordanian courts and, where parties adopt the arbitration route, it remained to be seen how TRC regulatory policy would be treated by arbitrators in reaching awards and by courts in reviewing such arbitration awards. The option of arbitration, and a consequent demand for arbitrators with expertise in the telecommunications sector, could lead to developing resources – i.e., panels of experts – that could become more widely available on a regional basis.

Where the parties chose to have the TRC adjudicate the dispute, the TRC could hire experts and charge the costs to the parties. With the costs covered by the parties, the TRC was able to engage the level of expertise necessary to ensure high-quality decision-making, further improving its overall level of regulation. The ability to engage and rely on experts, together with an efficient (15 working days) internal review process, wwas likely to reduce the scope of judicial review should the TRC's final decision be challenged in court.

Box 2-8 - Arbitrating Interconnection Disputes in Jordan *(cont'd)*

Since the parties could cover TRC's expenses, dispute resolution was not a "free public good". The charging regime thus reduced operators' incentives to make frivolous use of regulatory dispute resolution as a strategic tool. Although the interconnection dispute process did not establish how such costs would be allocated among disputants, the TRC could follow the approach of courts in allocating costs to the losing party, or otherwise reflecting the TRC's view of the merits.

With the disputants free to choose their process and bear the costs, the TRC effectively created the conditions for a market in dispute resolution. This would create enough flexibility to suit various conditions, giving parties control over optimal processes while ensuring that enforceable regulatory adjudication would remain available.

Source: ITU Jordan Mini Case Study 2003: Dispute Resolution and Consensus Building in Interconnection at http://www.itu.int/ITU-D/treg/Case_Studies/Disp-Resolution/Jordan.pdf

In addition, some private ADR bodies have developed specific arbitration programs for the wireless industry (see Box 2-9).

Box 2-9 – The AAA's Wireless Industry Arbitration Rules

The American Arbitration Association (AAA) has developed an arbitration program in conjunction with the U.S. Cellular Telecommunications and Internet Association (CTIA) for the wireless industry and its customers. AAA includes, as members of its Telecommunications Panel, individuals that are competent to hear and adjudicate disputes administered under the Wireless Industry Arbitration Rules. These individuals are neutral parties, and many have direct experience in the telecommunications industry.

The rules contain three tracks: Regular Track Procedures; Fast Track Procedures for cases involving claims of less than USD 2,000; and Large/Complex Case Track Procedures for cases involving claims of at least USD 500,000.

Regular Track: The Regular Track Procedures apply to cases involving claims between USD 2,000 and 500,000. They also apply in Fast Track and Large/Complex cases where they do not conflict with any portion of the Fast Track Procedures or the Large/Complex Case Procedures. Features of the Regular Track Procedures include:

- Optional pre-arbitration mediation and/or early neutral evaluation;
- Express arbitrator authority to control the discovery process;
- Broad arbitrator authority to control the hearing; and
- Written breakdowns of the award and, if requested in a timely manner by all parties or at the discretion of the arbitrator, a written explanation of the award.

Fast Track: The Fast Track Procedures apply to cases involving claims of less than USD 2,000. Features of these procedures include:

- A 45-day "time standard" for case completion;
- An expedited arbitrator appointment process, with a single arbitrator appointed directly by the AAA from the Telecommunications Panel; and
- A presumption that cases involving less than USD 2,000 will be heard based on documents only, with an option of an oral hearing for an additional fee.

Large/Complex Case Track: Large/Complex Case Procedures, which supplement Regular Track Procedures, are for use in cases involving claims of at least USD 500,000. Key features of the Large/Complex Case Track Procedures include:

- Mandatory pre-arbitration mediation and/or early neutral evaluation;

Box 2-9 – The AAA's Wireless Industry Arbitration Rules *(cont'd)*

- A presumption of multiple arbitrators;
- A mandatory preliminary hearing with the arbitrators, which may be conducted by telephone;
- Broad arbitrator authority to order discovery, including depositions; and
- A presumption that there will be multiple hearing days scheduled consecutively or in blocks of hearing days.[22]

A number of issues arise with respect to the role and relationship of a telecommunications regulatory agency in the arbitration process. One is the question of whether the arbitrator(s) will actually be regulatory officials or independent persons approved or appointed by the agency. In some cases, regulatory officials have functioned as arbitrators but more frequently the regulatory agency has only overseen the process of appointing independent arbitrators.

In the United States, state regulatory agencies have had considerable experience with arbitration. Some tend to rely on rather formal, evidentiary proceedings and see arbitration as a way to streamline agency deliberations. Evidentiary records are developed on a more informal basis, and the scope for discovery is limited. Factual issues are developed on the basis of a written record without cross-examination. Some regulatory agencies limit the arbitrator's role to choosing between the rival parties' negotiating positions in order to encourage the parties to narrow their views as they "bid" for the arbitrator's decision.

Among the issues facing U.S. state regulators is whether to permit the consolidation of related proceedings before a single arbitrator or to deal with each dispute on an *ad hoc* basis. More importantly, many regulators have taken the position that the results of any arbitration should be subject to public comment and ultimately approved by the regulatory agency. In this respect, the arbitration process is often approached as an extension, on a more informal basis, of current regulatory deliberative procedures rather than a free-standing dispute resolution process. To this extent, it involves a wider definition or scope of dispute than the definition offered by the disputants, enabling related issues and parties to be considered.

Arbitration can enhance the independence of the regulatory decision-making process from political pressures. On the other hand, a private alternative to regulatory adjudication can change the dynamics of handling disputes even in countries whose traditions of regulatory independence appear strong. New approaches to dispute resolution must become an important element of future policies designed to break with the past and result in a more cooperative approach to handling commercial and competitive relationships in the telecommunications sector.

The use of arbitration techniques and tools in the telecommunications sector will require addressing several important public policy concerns:

- Potential limitations in the scope of proceedings, i.e., dealing with the precedent-related aspects of a dispute or with implications for related issues;
- Potential concerns about the enforceability of proceedings and about initiatives of the regulator to protect the integrity of its own jurisdiction at the expense of the credibility of the arbitration process;
- Concerns about the expertise and experience of the arbitrator(s);
- Concerns about the potential for conducting protracted proceedings in a quasi-judicial context without taking full advantage of opportunities for procedural streamlining;

22 Wireless Industry Arbitration Rules, American Arbitration Association, effective July 1, 2003. A summary of the Wireless Industry Arbitration Rules can be found at:http://www.adr.org

- Concerns about confidentiality-related considerations versus the interest in transparency that is usually characteristic of public decision-making;
- Concerns about the legitimacy of a private dispute resolution process as a venue for resolution of issues affecting public policy and government interests;
- Concerns about costs (which can be similar to concerns about litigation); and
- Concerns with respect to a party's limited rights of appeal.

Chapter 5 explores in more detail how these issues can be addressed and balanced in appropriate ways for suitable situations. Where they are successfully addressed, it may well be possible to structure credible, efficient, and effective alternatives to regulatory agency adjudication, through arbitration, that improve the overall quality of dispute resolution in the telecommunications sector.

2.6 Dispute Resolution Bodies

There are a number of international public and private entities that provide ADR services to various parties. The most widely known public and private ADR entities are outlined in Annex C.

2.7 Other Methods of Dispute Resolution

There are numerous classifications of dispute resolution methods, and this chapter has only outlined a few of them. Most other approaches to dispute resolution are merely variations or hybrids of regulatory adjudication, arbitration, mediation or negotiation.

Evaluative mediation, for example, is a combination of adjudication and mediation. The mediator will perform the mediation role by assisting negotiations, but if they fail then the mediator will provide his or her view on the case. This view may be required at the request of one party, or it may require both parties to request it. The evaluation may merely show the parties how a neutral third party views the dispute. In such a case, the evaluation is not binding but provides a reality check to parties holding unrealistic positions. In other cases, the parties may agree in advance to accept the mediator's proposed decision, in which case, like arbitration, it becomes binding.

Mediation by regulators can become a form of evaluative mediation. Regulators may be responsible for issuing a binding decision if negotiations fail and the case goes to regulatory adjudication. The involvement of regulators in the mediation can result in one or both parties' using the process as a preliminary part of an adjudication process rather than a true exploration of potential settlement.

Ombudsmen schemes are another example of a hybrid technique that is increasingly used in the telecommunications sector, particularly for consumer disputes. In a typical ombudsmen scheme, policy-makers, regulators, or even industry bodies will nominate an individual to investigate and resolve disputes. Ombudsmen may have a variety of powers, ranging from the ability to issue binding decisions (an adjudicatory role) to assisting in clarifying facts, assisting in negotiations, and recommending solutions (a mediation or evaluative mediation role). Their available resources depend on the extent of their mandate and powers.

Some other methods of dispute resolution are mentioned in examples discussed in Chapter 3. There are still other methods that are not discussed in this report, which focuses more on underlying issues and challenges facing policy-makers and regulators in dealing with dispute resolution.

3 CURRENT DISPUTES AND RESOLUTION APPROACHES

This chapter describes some of the main types of disputes currently seen in the telecommunications sector, as well as the dispute resolution techniques applied to attempt to resolve them. The purpose of this chapter is largely illustrative. It describes a wide range of current disputes and resolution techniques to provide an empirical basis for the analyses provided in subsequent chapters.

The description of current disputes in this chapter also provides some illustrations of how disputes have been resolved in some countries. These may be useful in other countries, as well. More importantly, this chapter provides a good basis for considering the alternative approaches outlined in Chapter 2 and discussed in subsequent chapters.

3.1 Disputes Related to Liberalization

The process of opening a country's telecommunications markets to competition frequently gives rise to disputes, which commonly involve stakeholders that have significant and conflicting economic interests at risk. For example, incumbent service providers often have incentives to protect their dominance in as many markets as possible, for as long as possible. The government may share an interest in protecting the incumbent's monopoly, or at least its dominance, particularly where the incumbent is wholly or partially state-owned.

On the other hand, governments and regulators also have a strong interest in promoting healthy competition in telecommunications markets. This interest stems not only from a desire to promote economic growth and social development, but also from imperatives of the government's international trade obligations, such as those under the World Trade Organization (WTO) General Agreement on Trade in Services (GATS). Finally, potential competitors have an interest in profitably entering various telecommunications markets, particularly the more lucrative ones.

In some cases, the incumbent has legal rights that pose an obstacle to liberalization. For example, some incumbents have been granted licenses or concessions to operate as monopolies for a lengthy period of time, rights that are inconsistent with national and global trends toward liberalization. In such cases, policy-makers and regulators may decide not to wait for such exclusive rights to expire before introducing market reforms.

The process of terminating monopoly rights early can be very challenging, particularly where the incumbent has private-sector investors. In theory, a government could issue a law or regulation that simply terminates the incumbent's monopoly rights. In reality, such a course of action could signal a fundamental disregard for the legal rights of telecommunications operators and service providers. This course of action might actually discourage investment in the sector by creating uncertainty about the legal rights of service providers and raising concerns about the predictability of government regulation and policy.

Regulators are sometimes left with the challenge of either finding a legal means of terminating the incumbent's monopoly rights or reaching a compromise with the incumbent to end the monopoly. In most cases, it is preferable for the government or regulators to resolve disputes about early termination of exclusive rights in a mutually agreeable manner.

This is not always possible, of course. In some cases, governments, regulators, new entrants, and incumbents have taken their disputes over exclusive rights to the courts. In other cases, supporters of expeditious liberalization have tried to terminate the incumbent's monopoly rights by initiating court proceedings to invalidate the original grant of those rights. In some countries this case can be made on the grounds that the original grant of monopoly rights violated a law, a legal or constitutional requirement that has precedence over the telecommunications legislation or the exclusive rights in the license.

In a case arising in Dominica, and ultimately appealed to the Privy Council of the United Kingdom, it was argued that the grant of a monopoly over local services constituted a violation of the

constitutionally-protected right to freedom of expression and, for that reason, the monopoly itself was invalid (see Box 3-1).

Box 3-1 – Dominica: Was Granting Monopoly Rights Unconstitutional?

Cable & Wireless West Indies (CWWI) began to provide international telecommunications services to Dominica on a monopoly basis in about 1929, and it added domestic service there in 1967. In September 1985, CWWI won an exclusive, 20-year license to provide both national and international services. The government of Dominica held no interest in CWWI. A new company, Cable & Wireless Dominica (CWD), was formed in 1995 to take over the provision of services. This time the Dominican government held 20 percent of the shares in CWD. The government was also entitled to royalties, and the capital invested for its shares was in the form of a cash advance to be paid out of future royalties. CWD was granted an exclusive 25-year license to provide national and international telecommunications services, pursuant to the *Telecommunications Act* 1995 (the Act).

Marpin Telecoms and Broadcasting Limited (Marpin), a new market entrant, sought to compete with CWD in the provision of public telecommunications services, particularly in the areas of mobile telephony and e-mail and Internet services. Marpin had entered into an ISP agreement with CWD in 1996, using toll-free access numbers allotted by CWD. In 1997 Marpin cancelled the ISP agreement and attempted to bypass the CWD system by using VSAT technology. CWD responded by withdrawing Marpin's 1-800 numbers, so Marpin clients could no longer connect to Marpin's network.

Marpin sought relief in the courts, citing Section 16 of the Dominican Constitution and challenging the validity of the Act for authorizing the exclusive license. Marpin also challenged the validity of the license itself for granting exclusivity to CWD. The case was heard in the High Court of Justice of Dominica, which held that the CWD monopoly did violate freedom of expression and was therefore unconstitutional. The Dominican Court of Appeal upheld the decision. The case was appealed to the United Kingdom Privy Council, the highest court of appeal for Dominica.

In October 2000, the Privy Council held that Marpin's freedom to communicate ideas and information through telecommunications under Section 10(1) of the Constitution was hindered by CWD's monopoly. In their Lordships' view, "some significant hindrance to freedom of communication is normal and in this instance inevitable if there exists a statutory monopoly to control means of communication as important in the world of today as the telephone".[23]

Subsection 10(2)(b) of the Dominican Constitution limits freedom of expression if it is in the public interest. Here, the issue was whether, in authorizing and granting exclusivity, exclusivity provisions in the Act and the license were reasonably required for the purpose of protecting the freedoms and rights of other persons. An important question in making this determination was whether, on balance, allowing Marpin to compete with CWD would or would not be conducive to providing Dominica with telecommunications services giving best effect to the rights of users to freedom of communications.

The Court did raise the possibility that a developing country with a small population might be able to justify a monopoly on the grounds that the cross-subsidization of telecommunications services would be reasonably required for the purpose of protecting the rights and freedoms of the people to communicate freely. In this case, the Judicial Council held that a resolution of these issues required a balancing of interests and a local evaluation of the evidence. The Court therefore remitted the case back to the trial judge for further factual determinations.

It should be noted that the Constitution of Dominica had rather unique provisions governing the freedom of expression, making it possible to argue that the grant of monopoly rights was

23 *Cable and Wireless (Dominica) Ltd. v. Marpin Telecoms and Broadcasting Co. Ltd.*, [2001] 1 W.L.R. 1123.

unconstitutional.[24] Constitutional challenges to the grant of monopoly rights would be more difficult to sustain in countries with a more conservative approach to the concept of freedom.

Dominica also serves as an example of a country in which the dispute over the early termination of an incumbent's monopoly ultimately was resolved through negotiated agreement. Dominica is a member of the OECS, which has established the Eastern Caribbean Telecommunications Authority (ECTEL) as a regional telecommunications authority. In April 2001, ECTEL concluded negotiations with Cable & Wireless (C&W) for the early termination of C&W's monopoly in Dominica, St. Lucia, St. Vincent and the Grenadines, Grenada, and St. Kitts and Nevis. Some of the key terms of the agreement between C&W and the ECTEL members are highlighted in Box 3-1.

The transition to competitive markets in these Caribbean countries has also given rise to disputes concerning the imposition of an interconnection agreement on C&W and the timetable for the implementation of a price cap regime – including the process of rate rebalancing. The latter issue was the subject of a second agreement between Dominica, St. Lucia, St. Vincent and the Grenadines, Grenada, St. Kitts and Nevis and C&W in May 2002. These two successful agreements have not, however, enabled the parties to avoid litigation on a range of related issues.[25]

The early termination of a grant of exclusivity in Jamaica was also reached through negotiated compromise. In 1999, Cable & Wireless Jamaica (CWJ) successfully negotiated an agreement with the Jamaican government that called for phasing out, over a three-year period, CWJ's monopoly on provision of a wide range of telecommunications services. The Jamaican government also introduced new telecommunications legislation in 2000 that reflected its incremental move to a liberalized sector and introduced other regulatory reforms. Both the agreement to phase in competition and the new telecommunications legislation were then challenged in the Jamaican Constitutional Court as being unconstitutional violations of the freedom of expression. An Internet Service Provider (ISP), Infochannel, filed the court challenge to the agreement and the legislation (see Box 3-2).

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24 The Constitution of the Commonwealth of Dominica of 1978, section 10 Protection of Freedom of Expression:

10 (1) Except with his own consent, a person shall not be hindered in the enjoyment of his freedom of expression, including freedom to hold opinions without interference, freedom to receive ideas and information without interference, freedom to communicate ideas and information without interference (whether the communication be to the public generally or to any person or class of persons) and freedom from interference with his correspondence. (2) Nothing contained in or done under the authority of any law shall be held to be inconsistent with or in contravention of this section to the extent that the law in question makes provision: (a) that is reasonably required in the interests of defense, public safety, public order, public morality or public health; (b) that is reasonably required for the purpose of protecting the reputations, rights and freedoms of other persons or the private lives of persons concerned in legal proceedings, preventing the disclosure of information received in confidence, maintaining the authority and independence of the courts or regulating the technical administration or the technical operation of telephony, telegraphy, posts, wireless broadcasting or television; or (c) that imposes restrictions upon public officers that are reasonably required for the proper performance of their functions, and except so far as that provision or, as the case may be, the thing done under the authority thereof is shown not to be reasonably justifiable in a democratic society.

25 C&W has taken a number of unresolved and contentious issues to court in a number of the five OECS contracting states. C&W has, for example, applied to the High Court of St. Vincent and the Grenadines for a judicial review of a decision by the National Telecommunications Regulatory Commission of St. Vincent and the Grenadines to impose, among other things, an interim interconnection agreement on C&W and Digicel. C&W also sought a stay in St. Lucia, Grenada, and St. Kitts and Nevis of decisions taken by the telecom regulators of those countries to impose price cap regimes in those countries. C&W argued that, pursuant to the terms of the May 2002 agreement, it was entitled to one month's time to rebalance its rates prior to the implementation of the price cap regime. The courts in St. Lucia granted the stay.

Box 3-2 – The Infochannel Challenge

Infochannel, a Jamaican telecommunications service provider, had been providing long distance telecommunications services over the Internet, using Voice over Internet Protocol (VoIP) technology, since approximately 1995. It received a VSAT license from the Government of Jamaica in 1998 that allowed it to directly access the Internet via satellite to provide a full range of Internet services. This was part of the government's attempt to liberalize the telecommunications sector.

At that time, Cable & Wireless Jamaica (CWJ) still enjoyed exclusivity over international calling, pursuant to the terms of its own license. In 1999, CWJ brought a legal action to have Infochannel's license invalidated, arguing that the Infochannel license breached CWJ's monopoly rights. The action initiated by CWJ was discontinued after the Jamaican Minister of Industry, Commerce and Technology reached a settlement with CWJ and Infochannel.

After the Jamaican *Telecommunications Act* was enacted in 2000, the government refused to grant Infochannel a new license to provide VoIP services. Infochannel brought another legal action to challenge the constitutionality of the agreement reached between CWJ and the Government of Jamaica, and of the 2000 *Telecommunications Act* – both of which prohibited Infochannel from providing VoIP services. Infochannel argued that the agreement and the Act violated its right to protection under the law, its right to property, its right to fair treatment, and its right to freedom of expression.

In December 2002, the Court of Appeal in Jamaica ruled that the freedom of expression of both Infochannel and of one of its private customers (who had joined in the litigation) had been violated. The Court also quashed the provisions of the *Telecommunications Act* that provided for the phased transition to liberalization on the grounds that these provisions violated the freedom of expression.

The process of liberalization in the OECS contracting states and in Jamaica illustrates several disputes concerning the termination of the incumbent's monopoly. The Caribbean cases also illustrate different approaches to dispute resolution used to protect stakeholders' interests, including negotiations and court actions. The litigation initiated through the courts included constitutional challenges and petitions for judicial review of a regulator's decision.

Resorting to the courts to address disputes that arise in the process of liberalization represents a challenge for regulators, who may find that their regulatory authority is compromised by legal challenges and unfavourable judicial decisions. This may be particularly troublesome for a newly established regulator, since ongoing legal battles over liberalization may impair the regulator's ability to establish its authority at an early stage. This is not a challenge that can be easily remedied.

Creating a liberalized and investment-friendly telecommunications sector generally requires that the regulator's decisions endure some form of review. How regulatory decisions may be appealed is an important component of regulatory reform and liberalization. We will return to the issue of reviewing and appealing decisions of regulators and other dispute adjudicators later in this report.

Another source of dispute in the process of liberalization arises as new technologies offer competitive alternatives to traditional services. A key example can be found in mobile telephony. As mobile technology has improved, mobile phone services are increasingly being viewed as a substitute for fixed line services.

The dispute between the Jamaican regulator, Infochannel, and CWJ provides another example of how technological change can spark disputes as a country moves toward liberalization. As described above, the regulator issued Infochannel a license to provide Internet services using VSAT technology. This allowed Infochannel to take advantage of a new technology to bypass CWJ's network, undermining CWJ's exclusivity rights. Infochannel was able to use this new technology to offer VoIP, a substitute for the traditional international telecommunications services offered by CWJ on an exclusive basis. The constitutional challenge to C&W's monopoly in Dominica also began as a dispute about whether the provision of innovative new services violated the C&W monopoly.

Disputes also have arisen over whether new market entrants must use the facilities of the incumbent when the incumbent continues to enjoy a monopoly over some telecommunications services. For example, there have been disputes over whether a license to provide mobile services includes the right of the licensee to use its own international gateway or that of a competitor, rather than the incumbent international service provider's gateway. In some cases, these disputes result from ambiguity in the governing telecommunications legislation or the license.

Policy-makers and regulators can take a proactive approach to these disputes by seeking to avoid ambiguity in the licensing regime. Legislation and licenses that are clearly drafted and specifically avoid any ambiguity in what is being licensed are an example of a proactive approach. Nevertheless, even the clearest language may not be able to prevent disputes arising from unforeseen technological developments that change which services are available and how services are delivered.

3.2 Investment Disputes

The process of liberalization may give rise to disputes between the investors in telecommunications operating companies and the regulatory agency or ministry that has introduced regulatory reform. Disputes typically arise when the regulatory reform diminishes the value of the investor's stake in the sector. The early termination of the incumbent's monopoly, rate rebalancing, mandatory interconnection, the introduction of a new rate-setting structure, and changes to the terms and conditions of licenses are all examples of regulatory changes that could diminish investor value.

For example, Spanish-based Telefonica, an investor in Telefonica de Argentina SA, sued the Government of Argentina over a freeze in service tariffs that, along with the 70 percent currency devaluation, cost the company € 3.3 billion (USD 3.8 billion). The legal basis on which investors may initiate a claim against the government varies from jurisdiction to jurisdiction. In some countries it may be possible to argue that the government's actions constitute an unlawful seizure of property or a diminishment of the property rights of the investor.

An investor also may build a claim on the grounds that the government has not complied with existing legislation or its statutory obligations. For example, in a rate-setting case, an investor may take the position that the regulator's decision did not properly take into account certain statutorily required criteria. In some cases, there may be a contract between the investor and the government that provides the investor with certain "regulatory guarantees" – contractual commitments that the government will regulate the telecommunications sector in a particular way. The failure to abide by those commitments can then serve as the basis for a compensation claim for breach of contract.

The existence of an agreement between an investor and the government is not uncommon in countries where a publicly-owned telecommunications company has been privatized. The contract governing the sale of the government's stake in the company may contain, for example, provisions guaranteeing that the company will enjoy an exclusive license for certain services. Or, it may guarantee a minimum rate of return or an increase in service rates for a certain period.

In such a case, the government's subsequent attempts to introduce regulatory reform, such as competition or rate rebalancing, may spark a breach-of-contract action. The resolution of this type of dispute is challenging for the regulator, who is caught between the objective of introducing regulatory reform and honoring contractual commitments to telecommunications investors. The challenges of resolving such an investment dispute are illustrated by developments in Guyana (see Box 3-3).

Box 3-3 – GOG and the Reluctant Investor

In 1990, Atlantic Tele-Network Inc. (ATN) purchased an 80 percent share of the state-owned incumbent telecommunications service provider in Guyana, Guyana Telephone and Telegraph (GT&T). The Government of Guyana (GOG) retained the remaining 20 percent stake in the company. The privatization contract or "purchase agreement" between ATN and the government stipulated that GT&T would be granted a 20-year monopoly in domestic and international telecommunications markets in Guyana, renewable for an additional 20 years.

Approximately 10 years after entering into the purchase agreement, GOG announced its intention to liberalize the telecommunications sector and invited ATN to negotiate contract changes consistent with GOG's program of regulatory reform. In addition, GOG publicly called upon GT&T and ATN to enter into negotiations for ending the GT&T monopoly. GT&T and ATN, however, refused to negotiate until the Public Utilities Commission (PUC) granted an interim increase in GT&T's rates, thereby increasing rates to a level ATN alleged was required by the 1990 purchase agreement. ATN argued that some increases in local rates (i.e., rate rebalancing) were required for it to earn returns prescribed by the agreement.

Tensions between the parties grew when ATN lobbied the Inter-American Development Bank (IDB) to withhold approval of a USD 18 million loan for an ICT project in Guyana. ATN argued that the ICT project would infringe on its monopoly rights, since these rights extended to transmission of information over the Internet. The GOG countered by arguing that GT&T's monopoly rights did not extend to the Internet since the Internet had not even been commercialized when GT&T received its license.

According to published newspaper reports, ATN and the GOG met in Trinidad in the spring of 2002 to try to negotiate a resolution of the ongoing dispute. ATN publicly stated that it was willing to agree to the early termination of its monopoly rights. The negotiating teams reportedly reached a tentative agreement on key issues, and this tentative agreement was referred to the principals of both parties, which apparently declined to endorse it.

ATN then initiated court action in the United States, seeking a court order to block the IDB loan to Guyana pursuant to the U.S. *Foreign Assistance Act* of 1961 and the *Helms Amendment* to that Act. ATN also sought a *writ of mandamus* directing Jose Fourquet, the Executive Director of IDB, to veto the loan approval process. Although ATN's legal action was dismissed, the parties have since then failed to negotiate an agreement on how to proceed with liberalization of the sector, rate rebalancing, and other outstanding issues.

Under the terms of the purchase agreement, disputes between the GOG and ATN could be referred to the International Centre for Settlement of Investment Disputes (ICSID) for arbitration, with the written consent of the GOG. However, the dispute has not been referred to ICSID for arbitration.

As can be seen in the ATN-Guyana case, investment disputes can become intertwined with disputes over economic regulation of the operator. As the Guyanese government and ATN negotiated the early termination of GT&T's monopoly, their negotiations expanded to include talks about a number of other issues, some of which were related to disputes between GT&T and the government that transcended the narrower issues between the GOG and ATN.

The Guyana dispute also illustrates an important dimension of some investment disputes: issues related to foreign direct investment in the telecommunications sector. An increasing number of countries have dropped foreign investment restrictions, sometimes in conjunction with commitments to open market access under the WTO GATS. Consequently, it is increasingly common for local operators, including incumbents, to be owned in whole or in part by foreign investors. Investment disputes become more complicated in this context because they often raise issues of international law, the application of bilateral and multilateral treaties, conflicts between laws in different jurisdictions, and whether the laws of the parent company's home jurisdiction apply to the dispute. These gnarly issues may complicate the already contentious telecommunications issues that kicked off the dispute.

Investment disputes between nationals of different countries may be referred to the International Centre for Settlement of Investment Disputes (ICSID) for resolution by one of two routes. The first is

through provisions in contracts between governments of member countries and investors from other member countries. The second is through the operation of local investment laws and bilateral investment treaties ("BITs"). Some investment laws, and many BITs, contain requirements for advance consent by governments to submit investment disputes to the ICSID for arbitration. ICSID was established in 1966 under the *Convention on the Settlement of Investment Disputes between States and Nationals of Other States.* As described in Annex C, ICSID is an autonomous international organization, part of the World Bank Group.[26]

Such investment disputes may also be referred to the UN Commission on International Trade Law (UNCITRAL) and eventually spill over into the courts of different jurisdictions. such as The 1974 U.S. *Trade Act* and the U.S. *Foreign Assistance Act* of 1961 (including the *Helms Amendment)* contain provisions with important implications in investment disputes that involve American investors. Many other countries have similar kinds of legislation.

To date, only one telecommunications investment dispute has been referred to ICSID for resolution. In July 2002, the dispute between Telefonica and the Argentine government was referred to ICSID. As noted above, Telefonica claimed € 3.3 billion (USD 3.8 billion) in damages from the Argentine government for compensation for a freeze in service tariffs and a massive currency devaluation. As of 1 January 2004, no decision had been issued in this dispute.

3.3 Interconnection Disputes

Interconnection-related disputes are the most common type of dispute between service providers. New technology has given rise to a myriad of alternatives through which consumers can obtain basic telecommunications services. Consumers in the same service area may use fixed or mobile networks – wireline or wireless – to reach the public switched telephone network (PSTN). Mobile services, in particular, are increasingly becoming a viable substitute for fixed local access services. Operators of all different access networks must be able to interconnect with one another's networks.

Interconnection is particularly important in newly liberalized markets that were previously dominated by a single incumbent operator. In such cases, new entrants require interconnection to the incumbent's network in order to provide services that are both affordable and of a sufficient quality to be a competitive alternative to the services of the incumbent. The incumbent, however, has an economic incentive to make interconnection more difficult and costly in order to maintain its competitive advantage over new market entrants. A dominant incumbent operator also can generally exercise significant bargaining power and, therefore, can frustrate the efforts of competitors to secure interconnection on favorable terms. This inequality in bargaining power has been a key factor in many interconnection disputes.

3.3.1 Issues Arising in Interconnection Disputes

Disputes over interconnection may involve a wide variety of technical, operational, and financial issues. Some of the main types of interconnection disputes have involved:

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26 ICSID website at www.worldbank.org/icsid/about/main.htm. The web site indicates that ICSID provides facilities for the conciliation and arbitration of disputes between member countries and investors who qualify as nationals of other member countries. Recourse to ICSID conciliation and arbitration is entirely voluntary. However, once the parties have consented to arbitration under the ICSID Convention, neither can unilaterally withdraw its consent. Moreover, all ICSID contracting states, whether or not parties to the dispute, are required by the Convention to recognise and enforce ICSID arbitral awards.

Besides providing facilities for conciliation and arbitration under the ICSID Convention, the Centre has since 1978 had a set of Additional Facility Rules authorizing the ICSID Secretariat to administer certain types of proceedings between States and foreign nationals which fall outside the scope of the Convention. These include conciliation and arbitration proceedings where either the State party or the home State of the foreign national is not a member of ICSID. Additional Facility conciliation and arbitration are also available for cases where the dispute is not an investment dispute, provided it relates to a transaction which has "features that distinguishes it from an ordinary commercial transaction". The Additional Facility Rules further allow ICSID to administer certain proceedings not provided for in the Convention, namely fact-finding proceedings to which any State and foreign national may have recourse if they wish to institute an inquiry "to examine and report on facts".

- Failure by a dominant operator to develop a Reference Interconnection Offer (RIO) or standard interconnection arrangements;
- Failure to conclude negotiations on a timely basis;
- Disagreement on interconnection charges;
- Disputes over quality of interconnection services;
- Failure to comply with the terms of a negotiated interconnection agreement;
- Poaching of customers by new entrants through improper customer transfers ("slamming");
- Improper use of competitively sensitive customer information by incumbent operators.

Interconnection disputes may develop during the negotiation phase or during the implementation and life of interconnection agreements. Many service providers, particularly new entrants, often wield little weight in disputes with incumbents. Third-party intervention is necessary to ensure that a fair and pro-competitive resolution is attained in such disputes.

Many aspects of the interconnection relationship engage important policy considerations that are vital to the general health of the telecommunications sector as a whole. Most regulators consider it important to maintain some form of regulatory oversight of the negotiation and implementation of interconnection arrangements. But regulators must balance the need for continued oversight with the need to reach agreements and resolve disputes quickly and efficiently. Most regulators also recognize that operators generally have a better understanding of their networks and the operational requirements for interconnection than regulators do. Moreover, operators have the technical information necessary to implement efficient interconnection arrangements. There is also a general sense that, at least in a competitive market where parties have equal bargaining power, the negotiation of commercial arrangements should be left to the parties themselves.

The challenge for the regulator is to provide room for the operators to work out their own arrangements while maintaining sufficient control over the process to keep negotiations moving in the right direction and in a pro-competitive way.

It should be noted that the *Reference Paper* of the *WTO Agreement on Basic Telecommunications Services* commits adherents to establish an independent dispute resolution mechanism. More specifically, it requires that parties to an interconnection dispute have recourse to an independent, domestic body that can resolve the dispute within a reasonable period of time.

Regulators have taken different approaches to fostering an interconnection environment that protects the interests of new entrants while also leaving room for parties to negotiate agreements on their own. These approaches include prescribing interconnection arrangements on an *ex ante* basis, establishing interconnection guidelines, approving reference interconnection offers (RIOs) or model interconnection agreements, policing operators with significant market power, and generally overseeing the interconnection process. Often, this involves assisting dispute resolution, either through mediation or arbitration. We will discuss these approaches in more detail below.

3.3.2 Preventing or Narrowing the Scope of Interconnection Disputes

3.3.2.1 Interconnection Guidelines and Default Interconnection Arrangements

There is growing consensus that it is necessary to have *ex ante* interconnection rules and guidelines for negotiating interconnection agreements and resolving disputes. Many regulators have adopted principles to govern the basic framework for interconnection in their country without stipulating the specific terms and conditions for agreements. These principles may be set out as regulatory prescriptions or general guidelines, and they may be contained in licenses, regulatory decisions, orders, or policy statements. Operators are then free to take the lead in negotiating specific interconnection agreements, but they must do so within the prescribed framework. The adoption of interconnection principles or guidelines may pre-empt many interconnection disputes. For example, stating that interconnection should occur at any technically feasible point, or that the requesting

operator should pay any additional costs of non-standard interconnection, makes clear that network operators cannot arbitrarily dictate the Point(s) of Interconnection (POI).

Adherence to the interconnection guidelines may be a license condition or it may be set out as a general requirement in telecommunications legislation – or even in the order setting the interconnection guidelines themselves. Refusing to comply with such guidelines could attract sanctions, an approach that acts as a deterrent. Although regulatory guidelines establish the framework for interconnection agreements, they tend to be fairly general in nature. Thus, disputes sometimes arise over how the general principles should be applied in particular interconnection arrangements.

Some regulators have opted to prescribe detailed interconnection conditions in order to head off potentially controversial issues. Examples of this approach are interconnection orders for local network operators, enacted in 1996 in the United States and in 1997 in Canada. In both countries, regulators held lengthy regulatory proceedings before the rulings were issued. Incumbents, new entrants, and other interested members of the public provided input. Detailed regulatory decisions emerged from these processes, specifying the approaches and many of the specific terms, rates and conditions for interconnection.

Nevertheless, these decisions did not resolve all issues, and there have been lengthy follow-up proceedings. In Canada, an industry committee was established to help resolve these ongoing issues (see Box 4-1). Moreover, the interconnection rules were revisited as technology evolved and the competitive telecommunications sector developed.

In Jordan, the regulator has taken an innovative step to provide greater clarity and transparency on interconnection requirements. The Telecommunications Regulatory Commission issued an "explanatory memorandum" explaining and supporting its June 2003 decisions on interconnection rate charges and related retail charges. This explanation provides insight on how the regulator is likely to approach other interconnection issues should disputes arise in the future. Another approach that several regulators have employed is to publish default interconnection arrangements, together with the guidelines for their implementation. If negotiations fail, the default arrangements will apply. The U.S. Federal Communications Commission used such an approach for certain interconnection issues when issuing the landmark 1996 interconnection order. Similarly, the Nepal Telecommunications Authority has issued default interconnection arrangements and interconnection prices.

Regulators have frequently addressed the difficulty of establishing interconnection arrangements with the incumbent by requiring incumbent operators to publish standard interconnection agreements or reference interconnection offers (RIOs). RIOs generally serve the same purpose as default arrangements prescribed by a regulator, but they typically provide a much greater level of detail for interconnection arrangements with the incumbent. Since RIOs are often prepared by the incumbent, they can provide more company-specific information on points of interconnection, types of equipment, and other technical specifications. RIOs are generally implemented only after regulatory approval. Once an RIO has been approved by the regulator, the incumbent is generally required to provide interconnection to any competitor on the terms and conditions specified in the RIO. In some countries, competitors have a choice between negotiating their own arrangements or relying on the RIO. In other countries, there is a general rule that interconnection with the incumbent will occur on the basis of the terms and conditions set out in the RIO.

The existence of an RIO significantly reduces the range of issues that may be disputed since many of the terms and conditions of interconnection are standardized in the RIO. In the past, incumbent operators sometimes criticized as unfair the requirement to establish an RIO. They argued that this approach amounted to regulatory "handicapping" and construction of "non-level playing fields". Some argued that mandating the same interconnection obligations on all operators would provide more interconnection opportunities.

This is, however, the minority view. There is a general consensus that the universal imposition of interconnection obligations on all operators, large and small, would amount to over-regulation. Only dominant operators are considered to have sufficient market power to impose unfair and anti-competitive interconnection terms. Thus, there is a general trend to require RIOs in the case of dominant operators, but to allow non-dominant operators to negotiate their own arrangements in the

context of a set of general regulatory interconnection principles (and sometimes default interconnection arrangements).

This "asymmetrical regulation" of dominant operators is consistent with the *WTO Reference Paper on Regulatory Principles for Basic Telecommunications*, which imposes interconnection obligations only on telecommunications "major suppliers".

Several resources are available to regulators in developing such interconnection guidelines and approving RIOs. Many countries have published interconnection agreements and established interconnection charges that can serve as "benchmarks" or models for others. Benchmarking has been used extensively within the EU and at the international level, such as in the United States-Japan bilateral telecommunications negotiations.

3.3.2.2 Publication of Interconnection Agreements

Most regulators require interconnection agreements to be published. This allows the regulator to maintain a general oversight of interconnection arrangements between operators. It also plays a role in preventing future interconnection disputes by providing all parties with information about existing interconnection arrangements. A registry of interconnection agreements is a valuable regulatory resource for the industry.[27] Some countries, such as Nigeria, have adopted "partial publication" approaches that are aimed at balancing the need for public access to information about interconnection arrangements with the need to protect commercially sensitive information.[28]

3.3.2.3 Industry Technical Committees

Operators are often best placed to determine the specific conditions of interconnection arrangements since they have the necessary technical, operational, and financial information. A common way to take advantage of this knowledge is to establish industry committees to work out the details of interconnection arrangements. If interconnection negotiations are proceeding smoothly, incumbents and new entrants may choose to delegate the resolution of technical details of interconnection arrangements to such panels or working groups. In some cases, though, the regulator may need to take the initiative to ensure that appropriate technical committees are established. In either case, it is generally a good practice to set deadlines for reports.

Depending on the degree of cooperation between operators, representatives of the regulator may be able to play a useful role on such committees, facilitating agreement on interconnection arrangements, suggesting alternative approaches when there is an impasse, and otherwise mediating the discussions. Some regulators have appointed expert consultants to act as facilitators or mediators, and sometimes experts have been used to assess the merits of conflicting positions and to assist the regulator in resolving the dispute.[29]

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27 In Bolivia, for example, the Superintendent of Telecommunications maintains a registry of interconnection agreements between licensees that provide services on the public switched network. In El Salvador, interconnecting operators must file interconnection agreements and all modifications to such agreements with the telecommunications regulators. Similarly, in Chile, all carriers are required to file their interconnection agreements with the regulator, SUBTEL. Although the entirety of the agreements are not available to the public, the technical conditions, time tables, procedures, and maximum tariffs allowed generally are available. This arrangement allows for the protection of commercially sensitive information.

28 Pursuant to the Nigerian Interconnection Regulations, the regulator must ensure that up-to-date information about interconnection arrangements between operators in the country is published from time to time in a way that facilitates easy access for the users of this information. In order to ensure that the regulator has access to the information necessary to meet this obligation, operators are required to file with the regulator all technical, operational and accounting information that the regulator deems necessary. All interconnection agreements must be filed with the regulator within 30 days of the execution of the agreement. The regulator has a duty to maintain the confidentiality of information filed with it. By using the regulator as the conduit for information, the Regulations control the access to commercially sensitive information without compromising the general availability of information about interconnection arrangements.

29 This approach has been taken, for example, in Sri Lanka and Botswana.

The industry technical committees established by the regulator in Canada are generally regarded as successful models to resolve and avoid interconnection disputes.[30] The CRTC Industry Steering Committee (CISC) includes participation from interested companies in the industry, as well as regulators. It took about two years for the CISC to reach an agreement on major issues relating to interconnection, and regulatory intervention has been necessary from time to time. However, CISC managed to achieve industry consensus on many important interconnection issues. CISC subcommittees continue to deal with ongoing issues that arise, such as those relating to the interconnection of networks incorporating new technologies.

Jordan has recently established a consultative body similar to the Canadian CISC. After issuing interconnection guidelines, the Jordanian regulator established an Interconnection Steering Committee (ISC) to oversee the implementation of the guidelines. The chairperson and CEO of the Jordanian regulatory commission chairs the ISC, which includes participants from the Jordanian incumbent service provider, mobile service licensees, and other licensed operators, in addition to staff members of the commission. The ISC has established a number of working groups to address key interconnection issues.

There are also less formal approaches to establishing industry technical committees. In Nigeria, for example, the regulator hosted a consultative forum for operators on interconnection pricing. Negotiations between operators on interconnection costs had been stalled for some time, and the regulator saw the forum as a way to obtain input from operators on acceptable ways of determining those costs. Participants in the forum included the two national carriers, the digital mobile licensees and the fixed wireless operators.

3.3.2.4 Incentives to Conclude Interconnection Arrangements

Some regulators have offered incentives for operators to work toward successful conclusion of interconnection agreements. The Canadian regulator used such incentives in 1984 when it first licensed mobile cellular operators. Licenses were issued simultaneously to the incumbent wireline operators and to a competitive national cellular operator. The licensing conditions prohibited the incumbents from starting up their cellular services until they had completed interconnection agreements with the new entrant on the same terms and conditions as those that would apply to their own cellular operations. The incentives proved to be effective: incumbent operators did not want to delay introduction of their own cellular services, so they quickly concluded mutually acceptable agreements.

3.3.3 Regulatory Intervention in Interconnection Disputes

3.3.3.1 Forms of Regulatory Intervention

Interconnection disputes are probably the most common and difficult types of disputes in the telecommunications sector. Interconnection negotiations between operators are frequently derailed by disputes, and disputes often arise even after initial interconnection arrangements have been concluded. It's no surprise, therefore, that most telecommunications legislation and regulations authorize regulatory intervention to resolve disputes.

In some cases, there may be an obligation under international trade law to provide access to an independent dispute resolution mechanism. As previously noted, the *WTO Regulation Reference Paper* requires countries to ensure access to an independent domestic body to resolve interconnection disputes within a reasonable period of time.

3.3.3.2 The Timing of Regulatory Intervention

One challenge facing regulators is to know when to intervene in interconnection disputes and when to leave the parties to negotiate a solution by themselves. Some laws, regulations, and guidelines call for regulators to get involved in an interconnection dispute after the passage of a prescribed amount of

[30] The CRTC Industry Steering Committee (CISC) and its subcommittees are described in Box 4-1.

time. Some countries have established timetables for the process of negotiating interconnection arrangements. Deadlines for the completion of various steps or deliverables may be set at the outset of negotiations, although sometimes these deadlines take effect only when it appears that negotiations are being delayed. The consequences of failing to meet the deadlines can include regulatory intervention, regulatory adjudication, or referral to mediation or arbitration.

The timelines and procedures for regulatory intervention in interconnection disputes in a range of different countries are described in Annexes A and B.

3.3.3.3 Asymmetrical Regulatory Intervention

In many cases, the decision on whether a regulator will intervene in an interconnection dispute during the negotiation phase depends on whether one of the parties to the dispute is a dominant operator in the market. In Nigeria, for example, when the regulator receives an appeal from an operator involved in interconnection negotiations, the regulator must intervene in the negotiations if no agreement has been reached within 90 days of the commencement of negotiations. This requirement only applies, however, when at least one of the negotiating parties is a dominant operator. Where none of the parties are dominant operators, the regulator may decline to intervene, even if a party requests it.

Nevertheless, some regulators will intervene in interconnection negotiation disputes between non-dominant suppliers. In Peru, for example, any dispute over an interconnection contract – or the interpretation of the contract – can be submitted (by either party) to the regulator, the Organismo Supervisor de Inversion Privada en Telecomunicaciones (OSIPTEL), for arbitration. Similarly, in Bolivia, either party in an interconnection negotiation may submit a dispute to the regulator. The parties are then required to execute an agreement within 15 days' of the issuance of a resolution by the regulator.

Sometimes whether regulators will intervene in disputes involving only non-dominant operators depends on the consent of both parties. In Singapore, for example, the Info-communications Development Authority (IDA) will "conciliate" between non-dominant operators in interconnection negotiation disputes only if both parties seek IDA's assistance. IDA normally does not become involved in such disputes.

3.3.3.4 Procedures for Regulator-Sponsored Mediation or Arbitration

The procedures governing the intervention of regulators in interconnection disputes vary from country to country. In Brazil, disputes pertaining to the application and interpretation of the regulations during interconnection contract negotiations must be resolved by the Agência Nacional de Telecomunicações (ANATEL) through arbitration, which is conducted by an Arbitration Council composed of three members appointed by the President of ANATEL. The arbitration process begins when a party submits a petition to the President of the Council. The petitioning party then must submit all relevant information and documentation within the next 10 days. The Council is required to arbitrate the interconnection conditions within 15 days.

The Guatemalan Superintendencia de Telecomunicaciones hires an expert to advise the regulator on resolving the dispute. Although the regulator ultimately makes the final call on how the dispute ought to be handled, it is expected to decide based on the expert's analysis.

The Nigerian interconnection regulations provide for a two-stage inquiry into interconnection disputes. During a preliminary inquiry stage, the Nigerians Communications Commission (NCC) gathers information in order to determine whether there is cause for a full investigation – the second stage – during which more detailed information and analysis can be gathered.

All parties have the right to state their case when an appeal for intervention has been made. The NCC must make a decision on the appeal within six months, but an interim decision may be issued, depending on the urgency of the case. The determination of the NCC may be made retroactive to the date when the dispute was brought to the regulator. The NCC's decision on interconnection disputes may be appealed to the Federal High Court, although the decision of the regulator is binding until the final determination is made on the appeal. The provisions of the Nigerian interconnection regulations that outline the dispute resolution process are set out in Box 3-4.

Box 3-4 – Nigeria's Interconnection Dispute Resolution Provisions

TELECOMMUNICATIONS NETWORKS INTERCONNECTION REGULATIONS

(Nigeria, SI 2003)

PART V – INTERCONNECTION DISPUTES RESOLUTION

17. (1) Where in interconnection negotiations no agreement is reached between the negotiating telecommunications operators within 90 days of the commencement of the negotiations, either party may appeal to the Commission and the Commission shall decide on the case, taking into due consideration the interests of both parties.

(2) An appeal shall be made in writing, setting out the reasons on which it is based, in particular the areas of agreement and dispute, including but not limited to when interconnection was requested, what telecommunications network or service offerings were requested and on what issues agreement failed to be reached.

(3) An appeal may be withdrawn.

(4) The Commission may refuse to resolve the dispute in a case where none of the telecommunications operators involved is dominant in the relevant market.

(5) Upon any of the interconnecting parties filing an appeal:

(a) The Commission shall give the parties concerned the opportunity to state their case;

(b) A preliminary enquiry phase shall be introduced when initial consideration is given, so that the Commission can decide if there is a case to answer or to proceed to a detailed investigation;

(c) The Commission shall inform the complainant of the outcome of the preliminary enquiry phase within four weeks;

(d) The preliminary enquiry phase shall be followed by an investigation phase involving the gathering of analysis and assessment of more detailed information;

(e) The Commission may require written argument with supporting facts and research, if necessary, to assist in clarifying the issues in dispute;

(f) Where appropriate, the Commission may give representatives of business circles affected by the dispute the opportunity to state their case; and

(g) The Commission may also consider inviting other interested parties to comment on the issues.

(6) The Commission shall decide on the dispute based on oral or written submissions and public proceedings and subject to the agreement of the parties concerned, a decision can be reached without oral submission.

(7) When the presence of the public may pose a threat to public order, specifically to national security or to an important business or operating secret, the public may, at the request of one of the parties concerned or by a determination of the Commission, be excluded from the proceedings or from any part thereof.

(8) The Commission shall take into due consideration the interests of the users and the entrepreneurial freedom of each telecommunications operator in its decision.

(9) The Commission:

(a) May, given the urgency of the case, issue an interim order before arriving at a decision;

(b) Shall decide the case within six months, beginning from the date of the appeal.

Box 3-4 – Nigeria's Interconnection Dispute Resolution Provisions *(cont'd)*

(10) The parties to the dispute shall be:

(a) Notified of the Commission's decision and the decision shall be published;

(b) Given the statement of the reasons on which the decision is based.

(11) The Commission shall have the power to set the effective date of any determination retroactively to the date at which the dispute was referred to the Commission.

(12) The Commission is without prejudice to the rights of the parties to appeal to the Federal High Court, provided that the Commission's decision shall remain binding until the final determination of the appeal.

(13) A copy of the notice of appeal shall be lodged with the Commission within 30 days from the date of the decision.

In some countries, the regulatory framework allows disputants to select the type of dispute resolution method. For example, in Jordan, after a dispute has continued for 20 working days after the parties have begun negotiating a solution, the parties may ask the regulator to intervene or seek the assistance of an arbitrator. The consent of both parties is necessary to send a dispute to arbitration, while a dispute may be referred to the regulator for resolution on the request of only one party. The Jordanian interconnection dispute resolution process also explicitly provides that referring a dispute to arbitration, or to the regulator for resolution, does not prejudice the rights of the parties to seek remedies through the courts.

As illustrated in Annexes A and B, procedures governing regulatory intervention often specify a time frame for the issuance of the regulator's decision in the dispute.

3.3.3.5 Appealing Regulatory Decisions on Interconnection Disputes

Dispute resolution procedures sometimes provide specific direction on appealing regulatory decisions on interconnection disputes. Although the legislation and regulations of many countries contain general provisions for reviewing regulatory decisions, there appears to be a trend toward establishing special provisions for the appeal of interconnection dispute decisions.

Appeal provisions often deal with the status of the regulatory decision pending resolution of an appeal. In most cases, the decision is deemed to be binding until the appeal is addressed.

Appeals may be made to different types of bodies. In Nigeria, the regulator's decision in an interconnection dispute may be appealed to the Federal High Court. In Jordan, "objections" to the regulator's decision in an interconnection dispute may be made to the Board of Commissioners of the regulator. If no objections are received within 30 days, the decision of the regulator is considered final. However, if an objection is received, the Board must issue a decision on the objection within 15 days of receiving the objection. The Board may take more time to issue its decision if it provides notice to the parties. The parties also can appeal the decision of the Board of Commissioners to a court of competent jurisdiction.

3.3.3.6 Paying for the Costs of Dispute Resolution

There are different approaches to the question of who should pay the costs involved in regulatory dispute resolution. Only a few countries provide directions in their legislation or regulations as to who should pay. The process adopted by the Jordanian regulator specifically states that the regulator will charge the disputants for the costs of actual resources consumed, in terms of both costs per person hour and per class of professional involved in resolving the dispute.

In Guatemala, the disputants are not required to pay for the regulator's costs of resolving disputes. But they are made to pay for the cost of retaining the required interconnection expert, and the dispute resolution process will not proceed until the disputants have arranged the payments.

3.3.4 Interconnection Pricing

Interconnection charges are a common source of dispute. Disagreements may involve important policy considerations, particularly where the incumbent operators are involved. So regulators and policy-makers often take proactive roles in setting interconnection rates.

The *WTO Reference Paper* requires countries to develop cost-oriented interconnection rates. This requires the development of cost information, particularly for incumbent wireline operators. In many countries, however, operators and regulators have not developed reliable cost information. The most common approach to dealing with the absence of cost data is to use comparative rates or "benchmarks" from other countries. For example, Botswana recently used benchmarking to resolve a major interconnection dispute (see Box 2-3).

3.3.5 Enforcement of Compliance with Interconnection Agreements

The potential for interconnection-related disputes does not end once an interconnection agreement has been reached. Disputes over implementation or compliance are common.

As with all legal agreements, interconnection agreements may sometimes be referred to the courts for adjudication. But there are often significant public policy issues at stake in interconnection-related disputes, and these issues may be best handled by, or under the supervision of, the telecommunications regulatory authorities. Many countries give regulators the power to adjudicate disputes about compliance with interconnection agreements and to enforce such compliance. Regulators in some, but not all, countries also have the power to directly sanction operators that are non-compliant.

In Brazil, for example, the regulator ANATEL has authority to impose sanctions on providers that do not comply with the obligations they have undertaken in interconnection agreements. Once ANATEL has approved an interconnection agreement, the parties are required to implement it within 90 days.

The regulatory frameworks of many countries – including Peru, Bolivia, Guatemala, Chile, the United States, and El Salvador – grant regulators the authority to fine operators that do not comply with their interconnection obligations. In Peru, OSIPTEL has the authority to revoke a carrier's license for repeated infractions.

Some interconnection disputes arise when an operator illegally interconnects with the network of another operator. In such cases, the regulator may have authority to issue sanctions against the party that has illegally interconnected. In Bolivia, for example, the sanctions for illegal interconnection include fines, the confiscation of equipment and materials, or a prohibition on providing services for one year.

3.4 Other Disputes between Service Providers

Although interconnection is a primary source of disputes between service providers, there are many other types of disputes, as well. As with interconnection disputes, regulators tend to focus their attention on other disputes that involve dominant operators. Because of the incentives for dominant operators to engage in anti-competitive practices, such operators are frequently subject to regulatory constraints and obligations that are not imposed on their non-dominant competitors.

Many types of competition-related disputes are brought to the attention of regulators. For example, disputes have frequently arisen over service packages or "bundles" that dominant operators offer to customers. In some cases, competitors have complained that incumbents do not offer such service packages to current subscribers, but only to potential new customers. They allege that this kind of bundling is a strategy to target customers of competitors, using preferential and even predatory pricing and terms. In other cases, competitors have complained that dominant wireline operators have bundled highly competitive services with near-monopoly services, precluding competitors from matching such service offerings.

Where there are no significant policy implications, regulators generally avoid involvement in disputes between service providers. The disputants often rely on the courts and alternative dispute resolution organizations (see discussion of these organizations in Annex C). While the courts in many countries

provide the most final and enforceable form of dispute resolution, it is often a costly alternative. Indeed, the cost of lawyers' fees and court costs can be more than the amount at stake in the dispute. New Zealand recently has amended legislation to provide certain cost sanctions to the parties (see Box 3-5).

Box 3-5 – "Formal" Consensus (With a Twist) in New Zealand

In December 2001, New Zealand adopted a new Telecommunications Law that created the position of telecommunications commissioner as a member of its Commerce Commission. This new legislation provided incentives for parties in a dispute to amicably resolve issues.

The new law also enabled the telecommunications commissioner to make final and binding decisions, which are enforceable and subject to appeal only to a superior court – making the position of the telecommunications commissioner in New Zealand unique.

The commissioner also has the power to consult widely on any given issue, inviting persons who have an interest in the dispute (other than the parties) to give opinions on the issues.

As distinct from the other members of the Commerce Commission, the telecommunications commissioner acts alone with regard to his telecommunications-related duties. The commissioner does, however, participate in the general work of the Commerce Commission.

If a dispute is brought before the commissioner, the law provides that the parties to the dispute must pay the Commission's full costs. The commissioner also may require that one party pay another party's costs if that party materially has contributed to those costs or to unreasonable delay. This provides another incentive for the parties to resolve their differences amicably and rapidly.

Most importantly, and perhaps most interestingly, the commissioner can meet informally with parties to a dispute to help resolve it without resorting to a hearing. However, given the weight and seriousness of the commissioner's decisions (they carry the sanction of a court judgment), parties to such informal meetings have sometimes asked the commissioner to "codify" any negotiated agreement by issuing a "decision" on the matter, thereby giving it additional legal force and creating valuable precedent at the same time.

3.5 Disputes between Regulators and Service Providers

Regulators do not participate in disputes solely as intermediaries. In some cases, the regulator itself is one of the disputants. A case brought by IsTim, Telecom Italia's Turkish mobile operator, against the Turkish regulator illustrates an action brought against the regulator itself for an alleged failure to exercise its regulatory duties (see Box 3-6).

The IsTim case illustrates the benefits of alternative dispute resolution mechanisms in dealing with complaints against regulators. Mediation, for example, can offer parties an opportunity to resolve a dispute in a timely manner without the risk of receiving an unpredictable ruling and running up extensive legal fees. It was not in the interests of either IsTim or the regulator to pursue a lengthy, complex case.

It may be that a mediated resolution would have enabled a package of measures designed to provide IsTim with a result closer to its original expectations without undermining the reputation of the regulator or exposing it to the risk of liability for a substantial monetary award. Indeed, because mediation focuses on identifying parties' genuine interests and finding a mutually acceptable solution that meets those interests it is precisely the sort of process that can help avoid confrontations that benefit neither party.

Examples of less dramatic disputes include claims that regulators have exceeded their powers, challenges to new regulations or terms of competitive licenses, and disputes over due process in enforcement. Such disputes are most commonly dealt with in the courts. But as the IsTim case reveals, alternative dispute resolution mechanisms may have significant advantages in terms of speed, costs and preservation of the long-term regulator-service provider relationship.

Box 3-6 – The IsTim Dispute in Turkey

The Turkish competitive mobile operator, IsTim, alleged that the Turkish Telecommunications Authority failed to enforce IsTim's roaming rights against Turkey's dominant operators and failed to control pricing for interconnection with Turk Telecom's fixed network. IsTim claimed USD 2.5 billion in damages as a result of the alleged failings of the regulator, arguing that had the Authority fulfilled its duties, IsTim would have rolled out its network sooner, offered wider market coverage, and enjoyed higher market share.

The IsTim case was addressed through arbitration rules of International Chamber of Commerce (ICC) in Paris. While the case was brought on the narrow and highly technical issues of roaming agreements and interconnection pricing, the real issues in dispute were broader. IsTim made a large investment in its license in boom economic times (the largest single foreign direct investment made in Turkey up to that time) and this investment produced disappointing results. The claim against the regulator appeared to be part of a wider strategy to deal with these commercial problems. Resolution of this claim has involved a variety of intertwined issues related to roaming, pricing and sector consolidation.

Since the parties reached an amicable settlement through negotiations, IsTim irrevocably waived finally and conclusively all of its claims and rights which it alleged in the Arbitration proceedings. This waiver covered all facts, claims, rights, entitlements and legal grounds upon which the arbitration was based. This waiver was accepted by the respondent as well. Thus the Arbitral Tribunal rendered an award that the judicial process with respect to the dispute was finally settled within the framework of the settlement agreement and the proceedings finalized.

Turkcell and Telsim, two competitive mobile operators, alleged that the treasury share that they have paid from their interconnection revenues were illegal and they would not pay that money. They brought the case before arbitration in accordance with arbitration rules of International Chamber of Commerce (ICC) in Paris. The Arbitral Tribunals finalized all the relevant arbitral proceedings and rendered the award that the payment of the above said treasury shares were not illegal. Thus those operators are still obliged to pay the relevant payment.

Turkcell and Telsim, two competitive mobile operators, claimed that the decisions of the Telecommunications Board enforcing Turkcell and Telsim to engage in roaming agreements with IsTim were unfair. They brought the case before arbitration in accordance with arbitration rules of International Chamber of Commerce (ICC) in Paris. The Arbitral Tribunal finalized all the relevant arbitral proceedings and rendered the award that the disputes were not arising out of the license contracts, so the Arbitral Tribunals were not authorized to resolve those disputes.

As with interconnection, disputes with regulators often involve pricing issues, and they sometimes involve parties other than service providers. For example, in June 2003 local consumer rights groups appealed an ANATEL decision in Brazil allowing fixed-line operators to raise their rates. Courts in the states of Rio de Janeiro, Santa Catarina, Rio Grande do Sul, Parana and Minas Gerais issued injunctions prohibiting the rate increases. Meanwhile, a federal court judge also issued an injunction in the case.

The rate-increase case in Brazil was greatly complicated by the number of courts that apparently had jurisdiction to hear the injunction requests. This complexity was heightened by the decisions of a number of judges to substitute their rate increases for those given by ANATEL. The applications filed in various state courts eventually were consolidated and appealed through at least three levels of the court system in Brazil. The development of the multiple challenges to ANATEL's rate decision illustrates the complexities that may arise in the course of appealing a regulator's decision. Another concern in this particular dispute was the impact of the court decisions on ANATEL's regulatory authority and its ability to supervise the telecommunications sector in an effective manner.

Issues related to reviewing the decisions of the regulator and the implications of such reviews are discussed in subsequent chapters of the report.

3.6 Consumer Disputes

Disputes between telecommunications consumers and service providers occur in every jurisdiction. Issues frequently disputed between consumers and service providers include:

- **Service Charges:** Disputes may arise over the types and amounts of charges that are levied on consumers for services.
- **Billing**: Disputes may arise over the charges billed to a consumer for various services or for calls that have been made. Consumers may dispute the fact that they made the calls at all. In other cases, a consumer may be billed for services that he or she did not request. The practice of billing a consumer for services that the consumer has not requested is sometimes called "cramming", and several jurisdictions specifically prohibit service providers from engaging in it. Billing disputes also may involve failure to provide adequate information about charges billed to the consumer. Many jurisdictions recognize the consumer's right to an accurate reporting of billed charges, including a written itemization of them, but disputes may still occur.
- **Payment of Charges:** The terms of payment for telecommunications services – and the time frame for disconnection after the non-payment – frequently result in disputes. Many telecommunications regulators have set standards to govern the terms of payment and disconnection, but these may not cover all potential areas of dispute.
- **Slamming:** Slamming is the practice of changing a consumer's service provider without the consumer's authorization. In other words, slamming is when one service provider "steals" a customer from another service provider, without asking the customer. This is a common source of disputes between consumers and service providers. Many jurisdictions have specifically banned slamming and have implemented measures to protect consumers from this practice, thereby reducing disputes.
- **Quality and Terms of Service:** Poor quality of service is a frequent cause of disputes, as are terms for connection and disconnection of service. Many jurisdictions have set quality of service standards and mandate certain terms of service in their regulatory frameworks, particularly for services provided by dominant operators.
- **Privacy:** Disputes over privacy frequently involve issues of use of personal consumer information, such as home addresses, credit information and calling patterns. Many countries have recognized consumers' right to privacy, including, for example, the right to have one's name removed from the telephone directory. However, disputes over application of these rights are common.
- **Advertising:** Disputes may arise over misleading advertising. Many jurisdictions protect consumers from misleading information through competition laws or consumer-protection legislation. Questions about the application of such legislation are a frequent cause of disputes.

Regulatory approaches to dealing with disputes between consumers and service providers may be proactive or reactive. Most countries have adopted a combination of the two. Proactive approaches include setting guidelines for consumer-service provider relations, establishing the obligations of each party. Such guidelines remove or reduce uncertainty in the relationship between consumers and service providers that would otherwise engender conflict. An example of this is the creation of guidelines to specify when a customer's services may be discontinued.

Different types of regulatory or legislative instruments governing relationships, and disputes, between consumers and telecommunications service providers have been applied. Some jurisdictions, such as Australia, have enacted consumer-protection legislation specifically for the telecommunications sector. In many jurisdictions, regulators are required to protect consumers, particularly when there are monopoly or near-monopoly services. Other government agencies often have supplementary or overlapping responsibility for consumer protection; these may include consumer protection bureaus or competition authorities.

Some regulators have enacted a "consumers' bills of rights". Issues that may be addressed in such a document include, for example, prohibitions on slamming and cramming, guidelines on the publication of directory information, and requirements about what information must be provided on customers' bills. Whether as part of a "consumer bill of rights" or otherwise, major service providers – particularly local telephone service providers – are often required to publish their procedures for addressing consumer complaints.

In some countries, the telecommunications regulator will become involved with a dispute as soon as it receives a complaint. For example, in the United States, the FCC has established an "informal complaint" process designed to head off the escalation of disputes when they first surface. When a person initiates an informal complaint with the FCC, the agency notifies the company named in the complaint and the company is given an opportunity to respond. The FCC then reviews both the complaint and the response to determine if any infringement of the law has occurred and determines what actions, if any, are necessary to resolve the complaint.

This FCC practice illustrates a common approach taken by regulators, which is to put the onus on the consumer and the service provider to resolve their disputes before turning to the regulator for assistance. In this regard, many regulators require service providers to establish procedures to address consumer complaints and to prepare reports on the resolution of such complaints.

In South Africa, for example, the licenses issued to Vodacom Group (Pty) Ltd and Mobile Telephone Networks (Pty) include a requirement for the companies to publish and enforce guidelines for their personnel to handle consumer complaints. The licensees must make these guidelines available to consumers at the commencement of service. In addition, the licensees also must file statistics on consumer complaints with the Postmaster General every six months.

While service providers are generally free to establish their own procedures for addressing consumer complaints, the regulator may prescribe certain minimum requirements. These may include: allowing consumers to file a complaint in person or by telephone; providing consumers with a tracking number so that they can follow the progress of their complaint; or setting a maximum time limit for processing and responding to complaints.

In cases where a dispute between a consumer and a service provider remains unresolved, consumers often can ask the regulator to intervene. Many regulators, however, require that parties first exhaust all avenues of pressing their complaint with the service provider. For example, in Botswana, when the incumbent operator installed billing software in 2000 that generated large numbers of erroneous bills, Botswana's regulator required consumers to seek all possible remedies from the incumbent before the regulator agreed to intervene.

Regulators often have specific powers or procedures to investigate consumer complaints, particularly since many consumer – service provider disputes stem from actions that are either mandated, restricted, or prohibited by regulation. Regulators often can seek written submissions about the dispute or conduct a full hearing on the matter. Some regulators also have the power to issue binding decisions concerning the dispute and to levy sanctions, such as ordering compensation by the service provider.

Non-government agencies also are involved in consumer dispute resolution services. Such agencies may act as conciliators between the parties or provide arbitration services in consumer disputes. This provides consumers with cheaper and timelier alternatives to the court actions. Other examples include the use of the broadcast or print media. Nigeria's televised "consumer Parliament", described in Box 3-7, provides an interesting example of such an approach.

Certain disputes may trigger the intervention of government agencies other than the telecommunications regulator. When a dispute pertains to a matter that is regulated under competition or consumer protection legislation, the agency responsible for the enforcement of such legislation may become directly involved at an early stage in the dispute. For example, the Canadian competition authority recently initiated an investigation into the marketing practices of prepaid long distance phone card providers after it received complaints that consumers had been misled by the information included with the phone cards.

Box 3-7 – Nigeria's Televised Consumer Parliament

The Nigerian Communications Commission (NCC) has introduced an interesting initiative to deal with consumer disputes. The NCC has collaborated with the television broadcast media to establish a televised "consumer Parliament". Unsatisfied consumers gather in the old Parliament building in Lagos with representatives from Nigerian service providers. One of the consumers is appointed speaker. Consumers are then invited to ask questions and make complaints to the service providers.

The Parliament process is broadcast on the Nigerian national television channel. As "reality TV" with real relevance to ordinary Nigerians, the show has high viewing ratings. National TV exposure brings pressure to bear on the service providers to reduce the causes for consumer complaints. The broadcasts also have an educational function. The regulator, who is present during sessions of the "consumer Parliament", can take the opportunity to explain to viewers the role of regulation in relation to the consumers' complaints.

Similarly, the federal Privacy Commissioner of Canada held a number of hearings in 2002 on complaints he received about the misuse of personal information by telecommunications service providers. In a number of cases, the Privacy Commissioner held that consumer complaints were well-founded, and he recommended measures that service providers should take to come into compliance with the Canadian *Personal Information Protection and Electronic Disclosure Act* ("PIPEDA").[31]

3.7 Disputes Related to International Trade

International trade law sometimes applies to disputes within a country's telecommunications sector. The WTO's GATS is the most important multilateral trade agreement affecting the provision of telecommunications services. Specific commitments relating to the opening and regulation of telecommunications markets are set out in related documents, including particularly the *Fourth Protocol to the GATS Agreement*, which came into effect on 1 January 1998, the *Schedules of Specific Commitments* of individual GATS signatories, and the *WTO Reference Paper,* which was included in the commitments of most signatories.

Some of the obligations set out in the *WTO Reference Paper* relate to:

- Prevention of anti-competitive practices in telecommunications;
- Requirements governing the interconnection to major suppliers;
- Requirements related to interconnection dispute resolution mechanisms;
- Universal service obligations;
- Public availability of licensing criteria; and
- The establishment of independent regulators.

Many of these obligations are applicable to telecommunications disputes in the telecommunications sector in GATS signatory countries. If a GATS signatory does not comply with its obligations, a dispute may arise between it and another signatory whose citizens or nationals are affected by a breach of obligation. Such disputes may be addressed through the GATS dispute resolution procedures.

Individual service providers do not have "standing" to seek remedies through the GATS dispute resolution procedures. However, the home country of the service provider may put pressure on another country's government to comply with its GATS obligations. Thus, a domestic dispute about licensing or interconnection, for example, can develop into an international trade law dispute. An ongoing dispute in Mexico between service providers with U.S. investors and the Mexican regulator took this course after theU.S.government sought recourse for alleged trade violations. Box 3-8 describes the development of this dispute.

[31] The Privacy Commissioner, however, does not have the authority to impose a sanction on companies that violate PIPEDA. Rather, the Privacy Commissioner must make an application to the Federal Court to enforce the law or the consumer can bring an action in court for damages.

Box 3-8 – United States vs. Mexico

The United States was the first country to use the Dispute Settlement Body (DSB) of the WTO in the area of telecommunications. On 17 August 2000, the U.S. government requested consultations with the government of Mexico pursuant to Article 4 of the Dispute Settlement Understanding (DSU) and Article XXIII of the General Agreement on Trade in Services (GATS).

This U.S. government action followed years of complaints and pressure by American operators AT&T and MCI WorldCom, Inc., who had invested in Mexican affiliates and sought to improve the conditions for competition in Mexico's USD 12 billion telecommunications market. Both companies claimed that the Mexican government's refusal to force the dominant telecommunications carrier, Teléfonos de México, S.A. de C.V. (Telmex), to reduce its rates for long-distance competitors to interconnect with its local network undermined their efforts to compete in the Mexican market.

The consultations provided clarifications but did not resolve the dispute. On 10 November 2000, the United States requested the establishment of a panel pursuant to Article 6 of the DSU and also requested additional consultations with the Government of Mexico. The United States alleged that Mexico had failed to: (1) ensure timely and non-discriminatory local, long-distance and international connection with Telmex and had failed to resolve interconnection disputes within a reasonable period of time; (2) ensure cost-oriented interconnection for all calls to and within Mexico; (3) permit the cross-border supply of basic telecommunications services over leased lines; and (4) permit the provision of long-distance services through cross-border arrangements. Finally, the United States alleged that Mexico had discriminated against U.S. service suppliers over concessions related to the installation and operation of interstate public telecommunication networks. Mexico objected to the establishment of a panel, but consultations were held on 16 January 2001. Again, the consultations did not resolve the dispute.

If the United States had chosen to renew its request to establish a panel at the DSB meeting on 1 February 2001, it would have been accepted automatically. The United States chose not to do so, but it retained the right to request establishment of a panel at a future date. The U.S. decision not to renew its request appears to have been influenced by an agreement reached in January 2001 among Telmex, Alestra, and Avantel (the Mexican affiliates of AT&T and MCI WorldCom, respectively). Telmex agreed to reduce interconnection rates and the companies agreed to resolve all remaining issues, including resale, local interconnection, usage of certain assets, quality standards and international traffic.

The arrangements between carriers did not resolve all issues. On 18 February 2002, the United States requested that a panel be established to examine allegations that some of the measures taken by Mexico as a result of consultations did not fulfill its commitments and obligations under GATS. Specifically, the United States was concerned that Mexico's measures failed to: (1) ensure that Telmex provides interconnection to U.S. cross-border basic telecommunications suppliers on reasonable rates, terms and conditions; (2) ensure reasonable and non-discriminatory access to, and use of, public telecommunications networks and services for U.S. basic telecommunications suppliers; and (3) provide national treatment to U.S.-owned commercial agencies.

The DSB established a panel on 17 April 2002, and the panel was composed on 16 August 2002. Due to the time needed to translate all relevant documents into Spanish and English and the complexity of the issues, the DSB panel issued a notice on 17 March 2003, stating that it would not be possible for the panel to complete its work within six months. The panel expected to complete its work by August 2003. However, the panel issued another notice on 8 August 2003, further postponing completion of its work.

On 1 June 2004, the WTO Dispute Settlement Body adopted the panel report on "Mexico – Measures Affecting Telecommunications Services". Following adoption of the report, the United States and Mexico notified the WTO Dispute Settlement Body that they had arrived at a mutually agreed solution regarding compliance with the panel recommendations.

Box 3-8 – United States vs. Mexico *(cont'd)*

The Parties agreed that 13 months constitutes a reasonable period of time to comply with the recommendations of the Report, as set forth in the following paragraphs:

1. Within two months of adoption of the Report, Mexico shall have in force revised International Long Distance Rules (the "ILD Rules"). Mexico shall completely eliminate those aspects of the current ILD Rules that implement the "uniform settlement rate" system, the "proportional return" system, and the requirement that the carrier with the greatest proportion of outgoing traffic to a country negotiate the settlement rate on behalf of all Mexican carriers for that country. Thus, the new ILD Rules shall allow the competitive commercial negotiation of international settlement rates.
2. Within thirteen (13) months of adoption of the report, Mexico shall have in force regulations (Reglamentos) authorizing the issuance of permits (permisos) for the resale of international long distance public switched telecommunications services. Such Reglamentos will regulate commercial agencies (comercializadoras) established in Mexico and permit them to purchase and resell these telecommunications services through the use of capacity of concessionaires, within the limits established in Articles 52 and 61 of Mexico's Federal Telecommunications Law.
3. The Parties anticipate that the competitive commercial negotiation of international settlement rates resulting from the revisions of the ILD Rules will result in reasonable and cost-oriented rates.
4. The United States recognizes that Mexico will continue to prohibit International Simple Resale.
5. Once Mexico has complied with the obligations set out in the previous paragraphs, and provided that international settlement rates offered do not increase above the rates established by commercial negotiations concluded in May 2004 between United States carriers and the Mexican carrier authorized under the current ILD Rules, the Parties will file a notice with the Dispute Settlement Body stating that a mutually agreed solution to this dispute has been achieved. Provided that Mexico has complied with this agreement, the United States shall not seek recourse to Article 21.5 of the DSU, concerning any finding or recommendation of the panel report.

3.8 Radio Frequency Disputes

Disputes over frequency allocations and assignments may, in some cases, be settled through the ITU, and particularly the Radiocommunication Bureau (ITU-R).

The mission of ITU-R is found within Article 1 of the ITU Constitution, which states that the ITU is to "maintain and extend international cooperation among all of the member states of the union for the improvement and rational use of telecommunications of all kinds". ITU-R's primary purpose is to allocate bands of the radio frequency spectrum, register satellite orbital locations and generally provide a means to coordinate the use of the radio frequencies.

ITU-R coordinates the work of the sector. It also provides advice to member states on the equitable, effective, and economic use of spectrum, as well as investigating and assisting in resolving cases of harmful interference.

In order to address frequency allocation matters, ITU-R organizes World Radiocommunication Conferences (WRCs), which are held every two to three years. WRCs review and revise the Radio Regulations, which form the international treaty governing the use of the radio frequency spectrum. Member states of the ITU attend the WRC in order to vote on and approve the proposed changes to the Radio Regulations, but in practice, any actual changes to the Radio Regulations are made through negotiation and consensus building. The agenda for a WRC is set years in advance and takes into account recommendations made by previous WRCs and input from various ITU Study Groups (SGs) and Working Groups (WGs). The Radiocommunication Advisory Group (RAG) is given the task of reviewing the priorities and strategies of ITU-R and monitoring the progress and work of the SGs.

The Radiocommunication Assembly (RA) is normally convened at the same time as a WRC. The RA assigns conference preparatory work and other questions to the SGs and approves and issues ITU-R recommendations developed by the SGs. One or more Conference Preparatory Meetings (CPMs) are held to develop the regulatory, technical, operational, and procedural issues that will be considered at the next WRC. The CPM prepares a consolidated report to be used in support of the work of the WRCs. It is this report that consists of the recommendations by the various SGs.

The SGs are composed of more than 1500 specialists from telecommunications organizations and administrations throughout the world. These SGs are responsible for drafting the technical bases for radio communication conferences, developing draft recommendations, and compiling handbooks.[32] Within each SG there may be several WGs reviewing specific issues. The WGs develop positions, which are then considered by the relevant SGs. The SGs prepare various recommendations for ITU-R.

The SGs attempt to arrive at the recommendations on a conciliatory basis. The entire process used by ITU-R in arriving at agreements for the use of the radio frequency spectrum is an example of compromise through negotiation. While there is no formal dispute resolution body within the ITU, the work of the SGs, the WGs, and the RAG are instrumental in determining how disputes and disagreements will be settled. Negotiations often continue throughout each WRC with the parties holding lengthy sessions on particular issues.

The ITU does not take any steps in the field of dispute resolution unless its Members vote for such an action. This is rarely, if ever, done. The ITU seeks to create consensus rather than act as a dispute resolution body.

32 SG1 (Spectrum Management), SG3 (Radio Wave Propagation), SG4 (Fixed Satellite Service), SG6 (Broadcasting Services), SG7 (Science Services), SG8 (Mobile, Radio Determination, Amateur and Related Satellite Services), SG9 (Fixed Service), CCV (Coordination Committee for Vocabulary), CPM (Conference Preparatory Meeting) and SC (Special Committee on Regulatory/Procedural Matters).

4 KEY PERSPECTIVES ON DISPUTE RESOLUTION

This chapter discusses some of the underlying issues to be considered in constructing and assessing different regulatory models and dispute resolution strategies. It offers five perspectives that are relevant in designing dispute resolution systems and approaches for specific disputes.

4.1 Changing Patterns and Assumptions

Unlike the electricity and water utility sectors, the telecommunications sector is characterized by fast-changing technologies and business models. Globally, there is a transition from a single utility-oriented model for the industry to a model featuring multiple information service and technology providers.

The convergence of different technologies and industries is resulting in entirely novel combinations of business models and value chains. This also means that the definition of relevant markets, the structure of those markets, the location of competitive pressures in the value chain, and the distribution of market power increasingly are shifting.

An example of this shift is visible in emerging VoIP markets, and the resulting impacts on traditional telecommunications pricing models. The advent of competition in long distance service markets is undermining historic cross-subsidies between international and local services. The speed of this transition has been accelerated by VoIP-based international services. In markets where broadband services are beginning to gain a significant market foothold, the traditional model for telephone service provision and pricing may be eroded by reliance on broadband connections, which are increasingly used to provide a full range of voice, data and video services. These changes are quite dramatic in the Japanese market, where major ISPs such as Yahoo have begun to challenge the traditional pricing and service packages of the dominant market player, NTT.

The crisis in the Indian telecommunications sector over the use of roaming for limited mobility CDMA (see Box 4-6) is an example of how markets that are changing rapidly in unforeseen ways give rise to a need for robust dispute resolution systems.

Given the rapid technological change in the telecommunications sector, the regulatory approaches traditionally used may warrant re-examination. Regulators' agendas are increasingly complex, requiring them to better understand sector dynamics – including the new business practices and economics of an Internet-driven telecommunications market. Regulators need to be agile in their regulatory approaches, and to be constantly prepared to rethink assumptions about the market they are regulating.

Some U.S. commentators on emerging Internet trends have contrasted the styles of "East Coast" and "West Coast" regulation, speaking narrowly in the language of the American market. This distinction in styles is also relevant to other countries. East Coast regulation is a caricature of the more traditional forms of regulatory control exercised by the FCC and state regulatory bodies, under the oversight of the U.S. Congress, state legislators, and federal and state courts. This type of regulation is influenced by politics and the give-and-take of established interests, mediated through administrative, legislative, and judicial processes. In its caricature, East Coast regulation tends to rely more upon institutional and hierarchical authority structures.

Supposedly, the West Coast style of regulation is embedded in the drafting of codes and protocols for Internet-related services. These decisions are often highly complex from a technical standpoint, and are made, often consensually, in technical and industry forums.

These two models have traditionally been segmented, with each viewed as appropriate in its respective domain. East Coast approaches are thought to be for large-scale infrastructure regulation, with West Coast regulation more appropriate for "high-tech" information technologies. But there may be some convergence of the two approaches. Innovations in some countries, such as Australia and Malaysia for example, suggest that some regulators are increasingly interested in the benefits of involving sector participants more in regulatory activities.

4.1.1 Industry Leadership in Regulatory Initiatives

Regulators are often not in the best position to keep current with industry innovations in new technologies. Regulators are not expected or intended to be technicians or business pioneers – if they were, they would be working for the new enterprises that develop technologies and new business models. In many instances, it may be more appropriate for regulators to allow these entrepreneurs and market players to have input in determining how to solve complex sector problems.

Telecommunications regulators are responding to the rapidly changing technological environment by relying more on industry input and on industry-based dispute resolution. This approach can reduce or eliminate future disputes.

The Canadian telecommunications regulator has recognized the advantages of industry-led standards and procedures in relation to interconnection. The CRTC's CISC process has been widely recognized as a model of industry-cooperation in the development of regulatory rules (see Box 4-1).[33]

Box 4-1 – The CRTC Interconnection Steering Committee (CISC)

In 1987, the Canadian regulator established the CRTC Interconnection Steering Committee (CISC) to develop technical, legal, and administrative methods for implementing the CRTC's interconnection decisions.

The mandate of CISC is to undertake tasks related to technological, administrative, and operational issues on matters assigned by the CRTC or arising from the industry. The CISC is composed of a Steering Committee (SC), Working Groups (WG) and *ad hoc* committees. The SC provides oversight while the WGs prioritize and handle specific issues, with the objective of reaching consensus.

The difference between the CISC process and many regulatory decision-making processes is that industry experts do the bulk of the work, albeit under the guidance of CRTC staff. At its height, CISC included 20 working committees totalling about 200 people, initially dealing with 165 issues. The overwhelming majority of these issues were resolved within the committees.

Issues that could not be resolved by the committees were sent to the Steering Committee, and if not settled at that level, would be submitted for regulatory adjudication by the CRTC. As of 2002, CISC had forwarded over 173 consensus items to the Commission for approval.

Through CISC, industry players have had a hands-on role in developing regulatory instruments to implement Commission policy, enabling competition in local telephone services to unfold in a more seamless fashion than would have been possible under traditional methods. By using industry experts, guided by government policy experts, the time and expense of implementing policy has been cut and the level of cooperation among industry players has improved.

Other issues that call for industry-led solutions include those relating to Internet peering. These issues have a significant impact on telecommunications markets in many countries. It is not clear, however, that these issues should be subject to regulatory intervention at the national level. As is the case with many issues arising in the Internet sector, the best forum for resolution of peering policies and disputes may well be industry forums in the largely self-regulatory Internet domain.

33 30 August 2000. CRTC won the Institute of Public Administration's gold award for its forward thinking and innovation in regulation. The Institute of Public Administration of Canada (IPAC), presented the CRTC with the IPAC Award for Innovation Management. http://www.crtc.gc.ca/ENG/NEWS/RELEASES/2000/R000830.HTM

4.1.2 Changes in Dispute Resolution

Not only is the telecommunications sector undergoing rapid change, but the field of dispute resolution is also changing in many significant ways.[34] Generally speaking, the use of mediation is increasing in civil and commercial disputes. This has led to an increasing number of dispute resolution institutions offering mediation and other forms of ADR as part of their services, both domestically and internationally. In the more developed legal jurisdictions, both civil and common law, there is no shortage of experienced ADR institutions and practitioners.

Some governments, such as those in the United States and Australia, have expressly incorporated ADR procedures as part of public administration. The United States enacted the *Alternative Dispute Resolution Act of 1998,* which requires each federal district court to authorize the use of ADR in all civil cases and to establish its own ADR program. Similar rules are in place in several Canadian provinces. In India, Australia, Hong Kong (China) and Singapore, arbitration legislation also calls for the use of conciliation. It has long been standard practice in the courts of many civil law countries – Germany and Switzerland, for example – for judges to take an active role in trying to bring the parties to settlement, often by proposing terms that the judge considers appropriate. Similarly, there is a long tradition in China of combining litigation (or arbitration) with the mediation of a settlement.

In commercial dispute resolution generally, practitioners must be prepared to embrace new ideas of procedure and practice in order to satisfy the proper objectives of the commercial community, both domestically and internationally.

4.1.3 Regulatory Adjudication and ADR

Two trends are at work: the rapid changes in both the telecommunications sector and in the realm of dispute resolution. The expansion of the global telecommunications market with its emphasis on innovative and fast-changing technology may need to be accompanied by dispute resolution procedures which are fast and flexible – and suited to the types of disputes which the global telecommunications industry will produce. In turn, the dispute resolution field is increasingly offering new models that may be useful to the telecommunications sector's new needs.

The telecommunications sector offers an opportunity to re-evaluate the relationship of traditional regulatory adjudication, on the one hand, and arbitration and mediation, on the other. Arbitration normally depends on contractual commitments or other agreements by parties to arbitrate. It has focused traditionally on *ad hoc,* specific disputes. Regulatory adjudication has tended to address strands of ongoing and inter-related controversies, generally where there is a perceived public interest in ensuring consistent outcomes.

These different domains of dispute resolution generally have been separate and compartmentalized. Conventional wisdom has held that arbitration and mediation are best for private and commercial disputes and that regulatory adjudication is best suited for public policy issues. This compartmentalization (and the public/private distinction) between the disciplines of regulatory adjudication, on the one hand, and arbitration/mediation, on the other, may be too strict. For example, regulators increasingly are using the tools of arbitration, either informally or formally. The U.S. Telecommunications Act of 1996 authorized the use of ADR procedures in resolving interconnection-related controversies, as did the new Jordanian interconnection dispute procedures and the Saudi Arabian Telecommunications Bylaws. Mediation also is being used increasingly and incorporated into regulatory regimes.

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34 The commercial pressures which have promoted international commercial arbitration are as powerful now as at any time since the New York Convention in 1958; indeed, perhaps more so. The growth of trade in the single unified market of the European Union already outstrips the capacity of the court systems within the European Union to cope with commercial disputes, both domestic and international, and serves to emphasize the weakness of those jurisdictions which lack efficient and experienced commercial court arbitration systems. The developments in Eastern Europe, as countries seek to transfer from planned economies to market economies, also increase the need for efficient resolution of domestic and international commercial disputes. Investment in emerging markets and the growth of bilateral investment treaties and trading blocs such as the North American Free Trade Agreement, are making it imperative to devise efficient and inexpensive dispute resolution systems for commercial disputes.

Given the rapid pace of change in the contemporary telecommunications sector, the challenge for regulators is to keep an open mind about the choice of process in particular situations. It is necessary continually to re-examine the assumptions behind regulatory approaches and choices of dispute resolution techniques. As illustrated throughout this report, regulators can choose in advance the kinds of dispute processes they wish to use for specific types of problems. However, it is important for regulators also to institute flexibility so that they can adapt initial structures for new situations that arise. This could involve regulators providing a role in the selection of mechanisms in consultation with parties, for example, as contemplated in Saudi Arabia's Telecommunications Law (see Box 4-2.)

Box 4-2 – Flexibility in Choosing DR Mechanisms in Saudi Arabia

Chapter 6 of the Saudi Telecommunications Bylaws sets forth a flexible dispute resolution mechanism compared with other national models. The procedures for resolving disputes are clear and straightforward. A period of negotiation is required between the parties before bringing a case. This reduces the burden on the Saudi Communications and Information Technology Commission (Bylaw, Article 45.1). The Commission is not constrained to follow an inappropriate dispute resolution procedure but has discretion to determine the best mechanism to adopt for each dispute. It may choose from a selection of mechanisms that include mediation, final offer arbitration, and regulatory adjudication (Bylaw, Article 44).

In deciding whether to accept a request for consensual resolution or to proceed by way of a rule-making proceeding, the Commission must take into account:

- Whether the dispute will have regulatory or precedent-setting value, and whether a consensual proceeding likely will be accepted as an adequately authoritative precedent;
- Whether the dispute raises policy issues that extend beyond the interests of the parties involved and that may require additional comment from other concerned parties before a final resolution may be made; and
- Whether the dispute might have a material effect on persons who are not parties (Bylaw, Article 45.8).

This is significant from a regulatory point of view since resolution by the parties themselves – by mediation or by an independent arbitrator – can preclude the Commission from implementing regulatory policy through dispute rulings. This is frequently a sensitive issue in constructing dispute resolution mechanisms in a regulatory context. For example, where the dispute concerns interconnection, policy is upheld by requiring the Commission's resolution of disputes to be in accordance with its Interconnection Guidelines (Bylaw, Article, 46.1).

The Commission retains considerable influence over the process to be followed in a consensual proceeding. It may override the parties' chosen dispute resolution approach and timetable and appoint an inquiry officer to propose an approach and timetable in consultation with the parties. If there is disagreement, the Commission may resort to a rule-making proceeding (Bylaw, Article 45.9).

4.2 The Economics of Dispute Resolution

The utility of dispute resolution procedures should be assessed in economic terms. An economic assessment should include identifying overt and hidden costs, as well as who bears them. By making costs transparent, the costs can be "priced in" and key players can make economically rational decisions that best meet their mutual needs and improve efficiency. Those responsible for establishing dispute resolution systems can design them in a way that allocates such costs efficiently among the players.

Where the design of the dispute resolution system does not allocate costs efficiently, the transaction costs of resolving disputes may be unnecessarily high. Higher transaction costs can reduce the likelihood of effective resolution. This can act as a drag on investment and hinder growth – a wider social cost to the sector and economy as a whole.

An economic analysis of dispute resolution should assess:

- The underlying incentives and behavior of the various players; and
- The overall costs to the sector in terms of market performance – that is, the level of competition, pricing, and quality of services.

This section provides some economic perspectives that may offer important clues to improving dispute resolution methods.

4.3 The "Market" in Dispute Resolution

The general commercial dispute resolution industry continues to develop according to the laws of supply, demand, and competition. The various services are continually revised and improved to accommodate their market. Disputing parties are able to choose the most effective means, given their type of dispute, power disparities between the parties, timing issues, cost restraints, and the need for certainty.

Promotion of a more developed market specifically aimed at telecommunications sector dispute resolution could improve the fairness of cost-allocation in dispute resolution and reduce transaction costs to parties and to the sector as a whole. By encouraging alternative means of resolving disputes, some regulators and policy-makers are essentially promoting the development of a commercial market for specialized telecommunications dispute resolution services.

The Jordanian TRC's new interconnection dispute procedure allows parties to choose between a regulatory determination by the TRC or arbitration. That potential litigants will have choices of process, especially between public and private procedural mechanisms, will set these procedures off against one another. Control of the process, level of policy input, enforcement, timing and cost will all be factors disputants can weigh in choosing between them. The parties will be able to choose processes that meet their mutual interests.

In some cases, the parties' needs may not be "mutual" enough to allow efficient outcomes without regulatory intervention. Disputes may revolve around structural inequalities that are so entrenched that they undermine the process itself. This can often happen in interconnection disputes involving an incumbent and a new entrant. Such cases may call for swift and effective regulatory intervention. This means that the market for the supply of dispute resolution services cannot be entirely free and left solely to parties' voluntary agreed choices. But it is not necessary to resort to regulatory intervention in all cases.

A range of incentives and penalties are available to policy-makers and regulators that are interested in properly structuring the "market" for dispute resolution. Seeking efficiency does not mean undermining the commitment to core precepts of justice, the rule of law, and due process. The challenge facing regulators is to employ approaches to encourage the development of an efficient market in dispute resolution services while ensuring that basic access to effective dispute resolution is also available.

4.4 Efficient Allocation of Direct Costs

The development of a dispute resolution market may help to increase efficiency, reduce companies' transaction costs, and make the market more attractive to investment and growth. One aspect of this is the proper allocation of transaction costs. Some costs are more obvious than others, and a key question is who bears them. Direct costs include:

- The time and resources of the regulator;
- The cost of technical, legal, or economic advice or other out-sourced expertise; and
- The fees of arbitrators and mediators.

The impact of how such costs are allocated among players has significant effects on access to dispute resolution and the incentives of disputants. There are advantages and disadvantages of the regulator or

parties bearing the costs of dispute resolution proceedings. The advantages of *regulators'* bearing costs include:

- Reduction in the cost to market participants of obtaining justice; and
- Greater justification for the regulator having more influence over the dispute.

The advantages of *parties* bearing costs include:

- The parties may be better placed to choose the best use of resources to resolve a dispute;
- If dispute resolution is not considered a "free good", it will reduce the likelihood that parties will unreasonably initiate disputes, complicate the process or delay resolution; and
- Relief of the financial burden on the regulator may free resources for more pressing needs.

Regulators are taking various approaches to allocation of the direct costs of dispute resolution. Some examples are listed in Box 4-3.

Box 4-3 – Allocating Direct Costs

Ireland – ComReg	ComReg pays the expenses of mediation but passes those costs on to the market through the levy.[35]
Jordan – TRC	The TRC's new interconnection dispute procedure permits it to require that parties pay for expenses of the TRC (i.e., the cost of engaging technical experts).[36]
Botswana – BTA	In its decision in the 2003 interconnection dispute, the BTA bore the costs of hiring consultants to conduct a benchmarking study on interconnection rates, considering this to be part of its responsibility financed by license fees.[37]
U.K. – Ofcom	The new Communications Act permits Ofcom to seek to recover its costs from operators who abuse the right to bring a dispute by making frivolous or vexatious references.[38]
	Since radio spectrum disputes are likely to be costly (they may involve monitoring and technical compatibility tests), Ofcom may charge a fee for the resources consumed and work done resolving such disputes.[39]

4.5 Uncovering Hidden Costs

Taking an economic approach to dispute resolution does not mean focusing on efficiency at the expense of undermining the commitment to core precepts of justice, the rule of law, and due process. Indeed, undermining such principles may in itself result in costs that are not as obvious as the expenses of experts and decision-makers. Individual parties and the market as a whole may suffer costs resulting from delay, uncertainty, and abuse of procedures. Delay and uncertainty resulting from ineffective dispute resolution can have a paralyzing impact on a sector restructuring process and basic economic development as a whole.

35 See Commission for Communications Regulation, Consultation Study on Dispute Resolution Procedures, Document 03/69, 20 June 2003, at 4.4. http://www.comreg.ie/_fileupload/publications/comreg0369.pdf

36 TRC Dispute Resolution Procedure, section 4. http://www.trc.jo/static_english/new%20stuff/interconnection%20disputes%20process.pdf

37 Discussion with officials from the Botswana Telecommunication Authority, November 2003.

38 *Communications Act*, section 190. http://www.legislation.hmsagov.uk/acts/acts2003/20030021.htm

39 U.K. *Communications Act*, section 190. http://www.legislation.hmsagov.uk/acts/acts2003/20030021.htm

The misuse of regulatory adjudication processes also can distort the functioning of competitive telecommunications markets in significant ways. The ability of operators to abuse dispute procedures is highly relevant to countries whose markets are in the process of liberalization.

Each dispute resolution mechanism has advantages and disadvantages relating to delay, uncertainty, and vulnerability to abuse. In a successful mediation, compromising parties "buy" certainty sooner than they might receive it in other types of proceedings, and the parties may have control over the outcome. On the other hand, if abused, it may simply delay a fair result. Regulatory adjudication can provide greater certainty because it has the backing of the official sector, although it may have costs in terms of delays and appeals. Parties in regulatory adjudication and arbitration proceedings also can experience considerable uncertainty. They may be unable to predict how the decision-makers will interpret the evidence and the rules, and how they will apply regulatory policy.

One way for regulators to improve dispute resolution procedures is to employ control systems, such as appeals and oversight procedures. These are discussed in Chapter 5, but they merit mention here in relation to the economics of dispute resolution.

Control systems involve costs. While employing more hierarchical layers of review may have the effect of refining the decision-making process to get it right, this brings considerable costs, not only financially but also in terms of time and human capital. Such costs may or may not be well spent, but certainly it is incumbent on those responsible for the system to ensure they are justified.

Raising the costs of justice can undermine the ability of the system to provide meaningful justice at all. As the old adage has it, "Justice delayed is justice denied". This would certainly apply to overpriced justice, as well. This can paralyze an otherwise dynamic sector and hinder investment and growth. There are plenty of experiences of disputants using, or even abusing, dispute resolution systems with repeated challenges to decisions and awards, appealing against them and claiming nullity.

An economic assessment of dispute resolution seeks to uncover the indirect and hidden costs imposed by such factors in order to identify the underlying dynamics, causes, and incentives that raise such costs. It is not easy, for example, to identify the cost to a mobile company of a delay in a spectrum dispute proceeding, or to a country's economy of a delay caused by a dispute with a foreign investor. Nevertheless, there are ways of accounting for such costs on individual companies and assessing their impact on the economy.

In ordinary commercial disputes, for example, companies regularly claim loss of profit resulting from an inability to provide a service because of a breach of contract. Similarly, interconnection disputes may perpetuate high interconnection rates, which are passed on to customers in the form of high retail prices. Such prices may be benchmarked against other countries, so that the cost to service providers and customers is more transparent.

As discussed in Box 4-4, the extensive use of appeals procedures in the German telecommunications market has resulted in considerable delays in the development of a competitive market in leased lines.

Box 4-4 – Procedural Delays in the German Leased Line Market

The leased line market in Germany illustrates the potential for delays, resulting from extensive review procedures and use of interim measures to suspend regulatory decisions.

In 2000 it became apparent that Deutsche Telekom was discriminating materially against new entrants in the provision of leased lines. For example, the waiting period for new entrants to obtain service was greater than the waiting period for Deutsche Telekom's own retail service.

The first complaint by a new entrant was brought to the regulator, the Regulatory Authority for Telecommunications and Posts (RegTP), in October 2000, and British Telecom, another new entrant, followed with its own complaint in September 2001. British Telecom's complaint was forwarded to Deutsche Telekom in November of that year. In February 2002, the regulator opened an investigation. At the end of May, RegTP issued a decision, finding that Deutsche Telekom was discriminating against new entrants, and requiring DT to stop the practice.

Box 4-4 – Procedural Delays in the German Leased Line Market *(cont'd)*

Deutsche Telekom sought judicial review of RegTP's decision in the administrative courts. The lower courts suspended RegTP's decision in October 2002. On appeal to the higher administrative court, the suspension was upheld in February 2003. A final decision by the federal administrative court is not expected until 2005.

Germany currently faces about 2500 appeals from RegTP decisions to the administrative courts and 150 appeals from the lower administrative courts to the higher administrative courts.[40] Germany's draft Telecommunications Act is expected to amend these procedures to increase the use of mediation and streamline judicial review.

As a result of concerns over delays and uncertainties, several European countries are in the process of streamlining their dispute resolution processes to reflect the imperatives of the market. The proposed Telecommunications Act in the Netherlands, for example, will exclude the procedure for objections to decisions by the Independent Posts and Telecommunications Authority (OPTA) if required by time pressure. Under the proposed legislation, appeals to the courts also will be bypassed in such cases, with appeals going directly to the highest judicial authority, the Court of Appeal (the CBB). The President of the CBB will have the power to impose interim measures pending the appeal (see Box 4-5).

Box 4-5 – Appeals in the Netherlands

OPTA's experience with review and appeal processes illustrates the use of legal remedies by interested operators, particularly KPN, the Dutch incumbent operator:

- Of the 43 OPTA decisions appealed to the court of first instance (the Court of Rotterdam), 13 have been annulled.
- Of 20 cases seeking interim measures, 11 of OPTA's decisions have been suspended.
- Of seven cases brought to the higher appeal court (the CBB), four decisions have found in favour of OPTA.

Once hidden costs are made transparent, regulators can assess the economic impact of the problems in the dispute resolution system and seek ways to improve it. Regulators and policy-makers should always consider the economic impacts of disputes and dispute resolution, understanding how the various resolution structures may impact incentives, decisions, and ultimately the costs to market participants and the sector as a whole.

4.6 Market Power Asymmetries

The new EU Framework Directive, which entered into force in April 2002, set more rigid timeframes for dispute resolution and encouraged national regulatory authorities to use arbitration, mediation, and other ADR techniques. In implementing the directives, Oftel (later merged into Ofcom) engaged in a consultation process on the use of ADR techniques. In a February 2003 statement on dispute resolution, Oftel considered how to use ADR mechanisms and when it would be appropriate to reduce or even eliminate its role in resolving disputes.

Market dominance traditionally has been the prime motivator for regulators to oversee markets and to crack down on abusive behavior. Oftel noted, however, that where both parties to a dispute are

40 Presentation of RegTP official at British Institute for Comparative and International Law, October 30, 2003.

dominant in the market involving the dispute, their positions may be sufficiently balanced in terms of market power to voluntarily negotiate a solution. In such cases, there would be less need – or possibly no need at all – for the regulator to take an active role. Mediation or another form of ADR might suffice. Oftel went so far as to signal that it will likely decline to resolve these types of disputes.

Oftel also noted that where there is equal market power, the disputants are more likely to negotiate their way to a mutually acceptable agreement. These cases, Oftel suggested, would be more suitable for ADR mechanisms. Where there are inequalities of power, however, there may be a greater need for regulatory involvement in order to prevent abuse of process. Such cases would, Oftel suggested, be less suitable for ADR and should be left for Oftel to resolve. Other types of disputes in which Oftel signalled it would not interfere included those where:

- Neither party is dominant in its market;
- Similar disputes are resolved in other industries without the intervention of the regulator; and
- There is insufficient evidence that attempts have been made to enter into commercial negotiation.

In explaining its approach to disparities between operators with or without significant market power (SMP) Oftel summarized its thinking by use of the following simple diagram:

		COMPLAINANT	
		SMP[41]	No SMP
TARGET	SMP	Likely to be suitable for resolution by ADR	Likely to be suitable for resolution by Oftel
	No SMP	Likely to be suitable for resolution by Oftel	Likely to be suitable for resolution by ADR

In essence, there is greater need for regulatory involvement in the dispute resolution process where there is an imbalance of market power. The picture may be more complex than this, however. The concern may be less about *whether* regulators are involved, and more about *how* regulators are involved.

It is often assumed that where there is an unequal situation, the regulatory body will have to hear the parties, manage the process, and issue the decision on the basis of policy – i.e., imposing reasonable interconnection terms on an operator. Not all of these elements need to be performed by the regulators. In some situations it is sufficient to ensure that there is a procedure for reaching resolution, and to focus regulatory resources on policing that procedure to ensure that it is carried out. Regulators do not have to hear the parties and issue the decisions themselves. It may be sufficient for arbitrators to perform that role, or for mediators to assist the parties in negotiating within a framework of principles and procedures set by the regulator. Nevertheless, as discussed in Chapter 5, it may still be appropriate for the official sector to be involved in establishing the dispute resolution mechanisms and supervising their use.

Under the new EU Framework Directive, all service providers – regardless of their market power – must provide residential and small business customers with access to an ADR mechanism. The procedure must be independent, transparent, simple, inexpensive, fair, and prompt, but the actual types of dispute procedures are not specified. Oftel has concluded that there may be advantages of ombudsmen schemes (rather than arbitration and mediation) in disputes with residential and small

41 SMP stands for "significant market power", which denotes dominance.

business customers (see Box 2-7).[42] The telecommunications ombudsman scheme that was established in June 2002 currently has nine major service providers as members. Their customers may refer complaints to the ombudsman, who investigates and reaches a decision.

4.7 Confidentiality versus Transparency

Designing consensus-building mechanisms requires addressing the competing priorities of confidentiality and transparency. Significant matters in dispute frequently involve confidential strategic, technical, and marketing information of concern only to the immediate parties to a dispute. In this respect, confidentiality concerns must be fully respected to ensure credibility for the dispute resolution forum. At the same time, many issues in dispute, or of concern to a number of key industry players or an industry sector, will be subjects of intense public interest. Transparency of process is crucial to building confidence in the dispute resolution processes.

The tension between these priorities is not new. Many governments have developed confidentiality rules and exceptions for public interest cases as part of their adjudications, as well as arbitration laws and practice. In mediation, on the other hand, it is generally accepted that the process must be confidential in order to be successful.

The transparency of a national regulatory framework often can have a significant bearing on the ability of telecommunications operators and service providers to access domestic and international capital markets. For example, how quickly interconnection disputes can be resolved is likely to be very important to investors. They want to see whether new entrants can gain a market foothold and not be hurt by an incumbent's abuse of dominant market position.

Regulators' procedural rules often capture the tension between the competing priorities of confidentiality and transparency by requiring regulators' decisions to be published but permitting parties to request confidentiality for specific market-sensitive information. Transparency is essentially a means of holding the regulatory agency accountable so that its behavior is visible to market participants and potential investors. Informal proceedings such as mediation and arbitration offer an advantage with respect to the parties' confidentiality because the regulator is not reaching a decision that it must publish and for which it must be accountable.

Regulators are taking different approaches to confidentiality and transparency. Botswana's 2003 interconnection ruling, for example, was relatively transparent in setting out the parties' arguments and its decision. The Jordanian TRC, on the other hand, has been much more discreet about discussing even the existence of a dispute between the incumbent operator and the leading mobile operator. The challenge facing regulators is to find a suitable balance in each given situation.

4.8 Dealing with Complexity

As noted at the outset, this report has approached dispute resolution and the very notion of disputes in a broad fashion. Disputes may be viewed as complex situations or problems involving two or more parties with differing interests, with a focus on issues that concern regulatory policy. In addition to straightforward disputes between two parties, there are some systemically complex issues that create a situation or climate of disagreement and potential stagnation. This can threaten the development of the sector. This section explores some disputes that reflect such complex problems.

4.8.1 Inter-Related Issues in Transition

In many countries undergoing regulatory transition, incumbent telecom operators have enjoyed exclusive rights conferred by longstanding concessions or laws. There have been, however, increasing pressures to open markets, in keeping with international obligations stemming from WTO membership or, in the case of some European countries, relating to EU membership.

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42 See also Review of dispute procedure schemes, Draft Guidelines issued by the Director General of Telecommunications, 4 April 2003. Available at www.ofcom.org.uk

A decision to shorten the duration of exclusive rights can have a wide range of regulatory repercussions. Liberalization can lead to rate rebalancing or rules permitting more flexibility with respect to the regulation of local exchange prices.

An incumbent operator, which may be required to face competition more quickly than anticipated, also may seek relief from other existing regulatory obligations and arrangements. These might include, for example, clarification of the government's rights and obligations as a shareholder and its interests in the revenues of the company. Such arrangements are not easy to resolve. Saudi Telecom, although partly privatized, is still required to pay a very large revenue-sharing amount to the government. Yet two thirds of the company's revenue base – its revenues from mobile services – will soon be exposed to competition.

Many aspects of necessary changes in an overall legal and regulatory framework have a very politically sensitive dimension. Problems requiring an integrated approach to dispute resolution are often made more difficult because of bureaucratic or jurisdictional divisions of responsibilities within a government.

4.8.1.1 Disputes Over Market Structure and Licensing

As discussed in Box 4-6, India's dispute over licensing and roaming terms of its limited mobility wireless local loop (WLL(M)) service illustrates how complex disputes can arise from a combination of:

- Disparities in licensing fees;
- Innovative use of technology;
- Rapid sector transformation;
- The involvement of state interests;
- Substitutability of comparable services; and
- Regulatory policy on roaming.

Box 4-6 – India's Limited Mobility Wireless Dispute

India has been liberalizing its market over the last decade, licensing a series of new entrants and privatizing fixed-line services. In the GSM cellular market segment, there are four operators in most of the 25 licensing areas. As the fourth GSM cellular license was being finalized, the government announced a new policy allowing open competition in the fixed-line market. It allowed fixed operators to provide wireless local loop (WLL(M)) services using the 800 megahertz (MHz) band. In addition, the policy allowed a limited form of mobility, although such mobility would be restricted to an average radial coverage of 25 kilometers. Using CDMA2000 technology, however, the WLL(M) operators offer their customers roaming across different coverage areas.

India's mobile sector is growing exponentially. By the end of September 2003, the number of mobile subscribers had nearly tripled over the previous year, to more than 23 million. Of these, 18.3 million were GSM subscribers. The number of WLL(M) customers has reached 4.8 million and is continuing to grow extremely quickly.

The GSM cellular operators have argued that such roaming has permitted the fixed-line operators to enter the mobile market through the back door without having to pay the high license fees that GSM operators paid for their 900 MHz frequencies. The GSM cellular operators fought a series of protracted regulatory and court battles aimed at declaring WLL(M) operators illegal – a war they appeared to have lost in August 2003.

The Telecommunications Regulatory Authority of India (TRAI) has been asked to address various issues relating to entry fees and spectrum charges, and its consultation paper on the subject was open for public debate.[43] One solution has been to propose a unified licensing regime for both fixed and mobile services.

43 For more information on the Indian situation, see http://www.itu.int/osg/spu/ni/fmi/casestudies/index.html

Box 4-6 – India's Limited Mobility Wireless Dispute *(cont'd)*

Now, the GSM operators appear to have shifted their strategy. Rather than challenging the decision to permit WLL(M) services, it appears that they are seeking compensation to provide them with a "sustainable business operation".

Thus, the WLL(M) case illustrates the complex web of licensing, technological, and financial issues that can arise in disputes where sectors are in rapid transition and defy simple categorization.

Developing markets are not the only ones to experience disparities in terms of licensing. The Connect Austria case, described in Box 4-7, is a specific example in Europe of an interesting parallel to the Indian situation.

Box 4-7 – Licensing Anomalies in Austria

Having licensed GSM 900 operators, Austria's Telekom-Control-Kommission (the TKK) allocated additional spectrum to the country's DCS 1800 operators, including Mobilkom Austria, the incumbent operator's mobile network operation. The TKK did not impose a separate, additional licensing fee on the DCS 1800 operators. As a result, they paid less for their frequencies than did the GSM 900 operators. The case has yet to be finally determined, despite winding its way through the Austrian Constitutional Court, the European Court of Justice and the Austrian Federal Administrative Court.

More generally, the disparities across Europe in the licensing of 3G spectrum have, some argue, created two sorts of anomalies and distortions in the European market:

- European countries followed different approaches, generating extraordinarily different levels of license fees. Most notable were the United Kingdom and Germany, which raised over €100 billion in 3G license auctions between them. Other countries merely sought to recover administrative costs of the licensing process. The distortions across the European market have yet to be tested as illegal barriers to trade under EU law.
- Operators paying large sums for spectrum may find that their services will compete to some extent with other services that do not require licensing, such as Wi-Fi services using 802.11(b) and 802.11(g) technologies in airports, hotels, and other "hotspots".

The anomalies and distortions arising in India, Austria, and the EU all have occurred where the markets were developing rapidly and new technologies were being introduced and used in unanticipated ways. These cases underline the need, as a matter of dispute prevention, for careful attention in the licensing process to the possibility of unfair treatment that could give rise to claims at a later stage.

4.8.1.2 Transformation of Licensing Regimes

Regulatory reform often involves introducing a new licensing regime. Existing operators typically have to migrate from the previous regime to the new one. Where private companies were permitted to operate under the previous regime, they often have done so under Build-Operate-Transfer (BOT) contracts and similar concession-type agreements.

Transition from BOT and similar contracts into new licensing regimes can be a thorny process. This is particularly difficult when complex revenue-sharing and interconnection relationships among operators and with governments add complexity. Governments frequently have revenue-sharing interests in such contracts, which indeed can generate considerable revenue for the national treasury, not least the ministry responsible for sector reform.

Government interests in operators can introduce a complicating factor, making it harder to find an appropriate venue for dispute resolution that can address all of the inter-related issues. In Lebanon, for

example, a lengthy dispute between the Ministry of Telecommunications and the two mobile operators threatened to affect investment, competition, and growth in the mobile sector (see Box 4-8). The range of inter-related policy issues included the conversion of BOT concession contracts to licenses, the pricing of assets reverting to the state, the terms of revenue-sharing with the state, and the use of microwave frequencies. These issues were compartmentalized into various different arbitration proceedings as well as an entirely separate regulatory reform process.

Box 4-8 – Lebanon's Mobile Disputes

The Republic of Lebanon's mobile sector has undergone regulatory uncertainty since 1999. A long, complicated transition from a BOT concessions regime to a licensing regime has resulted in numerous disputes involving its two mobile operators, Libancell and FTML, in a complex web of issues. These included:

- Claims by the government for fees for use of microwave frequencies;
- Claims by the government that offerings to the mobile companies' customers exceeded the contractual limits;
- Claims by the operators relating to the early termination of their BOT contracts; and
- The valuation of the assets on termination of the BOT contracts to be paid for by the government.

The disputes represent a cluster of closely related issues, all fundamentally linked with the status of sector reform in transition. The issues included the government's revenue-sharing interest in the mobile operators and difficult negotiations over conversion of the BOT contracts into licenses under a new regulatory regime. The disputes have been dealt with in a relatively compartmentalized fashion:

- Each of the two operators has been dealt with separately, although their issues are similar if not identical.
- Arbitration processes under the ICC forum have been used for the microwave frequency and customer numbers dispute.
- Arbitration processes under ICSID have been used for foreign investment claims.
- Consulting services have been used for asset value determinations.
- Meanwhile, the regulatory reform process has been conducted in parallel, resulting in long-term management contracts to manage the mobile businesses upon transfer of the assets to government ownership.

This compartmentalization of the issues into different dispute forums has made it more difficult to address the entire problem as a whole. This kind of complex dispute involving inter-related issues offers an example of disputes that might benefit from a mediation and consensus-building process, as discussed in Chapter 6.

Dispute prevention is as important as dispute resolution. Transitions involving complex structures can make stability more precarious and disputes more likely. Thailand's concession structures raise particularly challenging issues for transition to a licensing regime (see Box 4-9).[44] While not reaching the level of dispute proceedings experienced in Lebanon, the issues are so complex that sector-wide consensus-building measures might also be particularly useful as a dispute prevention measure.

44 *Telecommunications in Crisis: Perspectives of the Financial Sector on Regulatory Impediments to Sustainable Investment*, Robert Bruce and Rory Macmillan, presented to the International Telecommunication Union (ITU) Global Symposium for Regulators in Hong Kong, China, December, 2002, and published in the ITU's regulatory site at http://www.itu.int/ITU-D/treg/Events/Seminars/2002/GSR/Documents/11-Investor_casestudy.pdf

Box 4-9 – From Concessions to Licenses in Thailand

Thailand's concession case illustrates the complexities in transitioning from a system of interrelated concession agreements, established at different stages in the sector's development, to a licensing regime. Following the Telecom Law of 2001, holders of concessions granted by state-owned telecommunications operators, the Telephone Organization of Thailand (TOT), the domestic telecommunications operator, and the Communications Authority of Thailand (CAT) – the international operator – were to be converted into licensed private operators.

Previously, only government-owned entities were permitted to own telecommunications networks. Instead, TOT granted revenue-sharing concessions to fixed-line companies and CAT granted revenue-sharing concessions to mobile companies. TOT and CAT received differing percentages of the concession holders' revenues. Mobile concessionaires also paid TOT an access fee. All concession-holders were required to transfer the assets they installed to the concession-granting entity, TOT or CAT.

Several inter-related issues made the introduction of a licensing regime particularly difficult:

- The new telecommunications law limited foreign investment in licensed operators to 25 percent. The foreign investment in most of the concession holders exceeded this amount.
- There were few guidelines for valuing the conversion of concessions to licenses, especially concerning the valuation of assets acquired by concession holders and transferred to either TOT or CAT.
- Revenue-sharing and access-fee agreements had to be replaced by conventional interconnection agreements. This included revising arrangements between the mobile and fixed-line operators. These agreements employed a sender-keeps-all/caller pays arrangement, resulting in mobile concession holders not being compensated for calls terminating on their networks.

Given the historically complex arrangements, an integrated approach was required to deal with the inter-related issues of pricing of new licenses, valuation of assets and the economics of the new interconnection agreements. Such an integrated approach would be an important dispute prevention measure.

4.8.2 The Cost of Complex Disputes

Most countries lack a strong tradition of identifying, assembling, and expeditiously resolving clusters of issues that are central to a major sector transition process. Regulatory uncertainty can, however, impose a particularly heavy penalty on efforts to raise significant amounts of capital that may be required to implement a restructuring process successfully.

How disputes are defined – and who has responsibility for resolving them – determines the effectiveness of their resolution. Compartmentalizing issues rather than viewing them as inter-related can raise the costs for parties and the sector as a whole. For example, interconnection issues are often not considered directly in relation to price reform and re-balancing issues. But for incumbent carriers, the pricing of local access (unbundled network elements, for example) may be uneconomic if local retail prices are subject to tight regulatory control. If an incumbent carrier's local exchange services will be priced on a wholesale or unbundled basis below its costs, it may be reluctant to enter into interconnection agreements quickly, or even to help establish new interconnection frameworks. This may result in higher prices of services and less competition in the sector (see Box 4-10).

In its July 2003 decision on interconnection rates, the Jordanian TRC approached interconnection by taking into account the interrelation of such factors. The TRC had been engaged in a consultative process to develop cost-based interconnection rates involving the fixed and mobile companies. The TRC decided to leave Jordan Telecom's international interconnection rates relatively high – well above costs. It did so in order to allow for the inherent subsidies provided to local and Internet access services and other costs of historical policy-driven investment.

Some disputes, then, challenge regulators to be able to "de-compartmentalize" their view of proceedings and bundle together issues that may have important inter-relationships. Most traditional remedies are not designed to do this. One way to address the conceptual or institutional

compartmentalization of inter-related issues is through innovative consultative and consensus-building forums. Chapter 6 discusses the shape such forums might take.

4.8.3 Institutional and Jurisdictional Complexities

The costs of compartmentalizing issues can be aggravated if the compartmentalization is embedded in institutional and jurisdictional structures. Thus, not only do the issues in dispute sometimes cross definitional boundaries, there can also be overlap and conflict among the very dispute resolution procedures and forums themselves.

4.8.3.1 Overlapping agencies and responsibilities

Telecommunications regulators are not necessarily always the sole or even the primary actors in various areas of telecommunications-related regulation. Where agencies' responsibilities overlap, there is increasing complexity in how the agencies, their respective regulations, and their responsibilities for dispute resolution interact.

The remit of consumer protection agencies, for example, can extend to price-related decisions that conflict with telecommunications sector policies of price rebalancing. Unaligned policies by different institutions or ministries can result in a lack of regulatory transparency and stability for investors and operators. With respect to interconnection, the problem of compartmentalization can be exacerbated where a sector ministry or agency has responsibility for interconnection policy but a consumer protection ministry or agency has responsibility for retail pricing. This may not only introduce uncertainty, it also may introduce financial pressures in one area that are not compensated for in another. Pressure on retail rates from a consumer protection agency, together with pressure to bring interconnection rates into line with costs, can result in an unsustainable squeeze on revenues.

The increasing overlap between generic competition policy and sector regulation is opening new jurisdictional complexities in relations between telecommunications agencies and authorities responsible for competition or "antitrust" matters. Applied competition policy has long been a key driver of telecommunications sector reform in many countries. Indeed, competition law is expanding into telecommunications sector regulatory issues, and sector regulation is increasingly aligning with competition law. For example, in the EU the focus is increasingly on the definition of relevant markets, analysis of those markets for the presence of market power, and the enforcement of competition policy.

Telecommunications sector regulation and competition law are not always consistent. Where they differ, it may be unclear which agency is primarily responsible for addressing a dispute. The institutional overlap between competition law and sector regulation is exemplified by the Deutsche Telekom price-squeeze case described in Box 4-10. As a result, coordination among agencies is more and more important.

Box 4-10 – Policy and Jurisdictional Complexity in Germany

After liberalization, new market entrants challenged Deutsche Telekom's wholesale rates, alleging that they were actually higher than DT's retail rates. The European Commission's Competition Directorate General, applying competition policy, said that Deutsche Telekom was profiting from its market power and was effectively breaching anti-dumping provisions applying to retail rates.

Deutsche Telekom's basic defense was that both rates were within the price caps that had been approved by the telecommunications regulator, RegTP. The Competition Commission rejected this defense, saying that that Deutsche Telekom was autonomous enough to be able to lower its wholesale prices. Indeed, it could even have petitioned RegTP to raise its price caps on retail rates.

The underlying problem in the case was a lack of price rebalancing. It was difficult for policy-makers and regulators in Germany to take the decision to raise Deutsche Telekom's retail rates. Thus, it was left to competition policy to be used as a lever to open markets where national sector policy failed to overcome the obstacles in its way.

4.8.3.2 Public and Civil Law Dimensions

Different approaches to public administrative law and private law result in particular jurisdictional complexities. Civil law countries, for example, frequently distinguish between public law, administrative law, and private commercial law. The distinction in some countries is carried into institutional structures. For example, like many countries, France has administrative courts that have responsibility specifically for dealing with reviews of administrative actions.

In Spain, the telecommunications regulator, known as the Telecommunications Market Commission (CMT), has power to resolve disputes where the conflict results from the application or interpretation of the relevant telecommunications regulations. In matters of private law, for example, the interpretation and enforcement of contracts are dealt with in private law courts. Contracts among telecommunications companies, however, may involve both public law and private law issues. For example, an interconnection agreement may require cost-oriented charging. Since the determination of costs may be a matter regulated by telecommunications regulations, the CMT may have jurisdiction to resolve such matters. Thereafter, however, interpretation and enforcement of the contract becomes a matter for the normal private law courts. Similarly, in the Netherlands, OPTA does not have enforcement powers over agreements that have been subject to its dispute resolution procedures. Payments required from a party, for example, must be enforced by a civil court action, resulting in a two-stage process.

In France, disputes involving contractual agreements are viewed as private disputes over private agreements to be brought before the French civil courts. As the telecommunications regulator, however, the Authorité de Régulation de Télécommunications (ART) may submit its observations on the dispute to the appeals court.

The experience of OPTA in the Netherlands further illustrates the challenges presented by the distinction between civil law and public law. The Dutch legal system maintains a clear distinction between the two systems. OPTA is formally considered to be an administrative body. OPTA is authorized, however, to influence relationships between civil parties. It cannot prescribe generally binding rules, but does offer guidelines for clarity among parties. OPTA is, then, traversing the boundaries of public and civil law and institutions.

4.8.3.3 International dimensions

The availability of judicial review of decisions is generating increasing complexities between state and federal levels, as well as between national, regional, and international levels. The WTO GATS regime has put international telecommunications sector disputes on the international agenda. In the EU, the Connect Austria case, described in Box 4-11, highlights the increasing complexity in the national implementation of EU policy.

Box 4-11 – Jurisdictional Complexity in the European Union

Connect Austria appealed the terms of a competitor's spectrum license[45] to the Austrian Constitutional Court. The Constitutional Court was clearly the sole competent authority to deal with such appeals under the Austrian constitution. However, Article 5a of the then-relevant European Directive[46] effectively required the appeal to be brought in an administrative court, despite the wording of the national constitution.

In keeping with the EU directive, the Constitutional Court dismissed the appeal and referred it to Austria's Administrative Court. The Administrative Court then referred to the European Court of Justice (ECJ) the question of whether the European directive had direct effect "so as to override a contrary domestic rule of jurisdiction and establish the jurisdiction of a particular independent body at national level to implement a suitable mechanism for dealing with an appeal brought by an aggrieved party against a decision taken by the national regulatory authority". The ECJ found that it may indeed be necessary to disregard national law if doing so would give effect to European Community law.

All of these areas of increasing complexity arise for good reason, but they introduce a fundamental challenge to the integrity of regulation. There is an increasing risk that decision-making – including decisions that resolve disputes – may be caught between different jurisdictions. As discussed in Chapter 6, regulators may find it useful to supplement official procedures with informal approaches for dealing with disputes. Such approaches may offer the advantage of combining issues in a manner that transcends institutional and jurisdictional boundaries.

45 Further detail on the licensing issue at stake in the Connect Austria case is discussed in Box 4-11.

46 Article 5a paragraph 3 of Directive 90/387: Council Directive of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision.

5 THE ROLES OF "OFFICIAL" AND "NON-OFFICIAL" SECTORS IN DISPUTE RESOLUTION

In this chapter we consider the different roles that the "official" and "non-official" sectors may play in telecommunications dispute resolution. We use the term *official sector* to refer to government authorities, regulators, and courts, which are established by law to play a role in resolving disputes. The term *non-official sector* refers to other participants in dispute resolution processes, such as arbitrators, mediators, and negotiators, who do not hold permanent government or judicial appointments.

Representatives of the official sector receive their mandates to develop or implement sector policies from constitutional, legislative, and regulatory frameworks. Part of the official sector, particularly members of the judiciary and legal counsel, also act as guardians of the rule of law and due process.

The way telecommunications disputes are resolved can clearly impact the implementation of telecommunications sector policies and the future of the telecommunications sector generally. Accordingly, the official sector traditionally has played a direct role in many telecommunications sector disputes by managing dispute resolution processes and adjudicating the results. If officials have the resources and time, they may be able to resolve disputes in a manner that supports their roles as guardians of national telecommunications policy, the rule of law, and due process.

As discussed throughout this report, however, there are various means of resolving disputes that involve non-official participants and processes that are not directly controlled by the official sector. These include arbitration, mediation and negotiation processes.

Given their legislative and regulatory mandates, and their responsibility for the rule of law and due process, government officials may rightly have concerns about relinquishing direct control over telecommunications dispute resolution. International experience demonstrates many ways, however, in which officials and non-official actors can play complementary roles in resolving telecommunications sector disputes. In many cases, for example, official sector participants delegate, oversee, and monitor the roles of non-official dispute resolution professionals without ceding complete control.

This chapter considers issues relating to the roles of official and non-official sector participants, and the relationship between them. The sections of this chapter are organized as follows:

- Section 5.1 discusses the distinctions between official and non-official sectors. As will be seen, the type of dispute resolution process generally determines the appropriate role of the official sector.
- Section 5.2 considers the differences between the two basic types of dispute resolution proceedings – adjudications and negotiated proceedings – to set the stage for considering the role of official and non-official sector players in each.
- Section 5.3 discusses the threshold question of whether and when non-official processes are suitable for dealing with public law disputes.
- Section 5.4 discusses appeal and oversight functions in relation to adjudication procedures.
- Section 5.5 discusses ways in which the official sector may permit extensive non-official processes while protecting against abuse of process.
- Section 5.6 discusses issues relating to enforcement and interim measures.
- Section 5.7 explores various "confidence factors" related to non-official processes.

5.1 Official versus Non-Official Roles

There is not always a sharp distinction between official and non-official dispute resolution. Box 5-1 illustrates how official and non-official factors are intertwined in dispute resolution participants and processes.

Box 5-1 – Overlap of Official and Non-Official Dispute Resolution

The distinction between official and non-official participants and processes is not always clearly demarcated. For example:

- Arbitrators usually are not employees of the state, but when their awards are enforceable by law in the courts, they have a partly official role.
- Mediators may or may not be officials, but when regulators perform mediation roles, their presence introduces a dynamic that is shaped by their official powers.
- Telecommunications operators may not be purely non-official parties where they are partly owned by the state. Less directly, the state may have an indirect financial or "property" interest in operators through license fees or revenue-sharing arrangements.
- Regulators can be actual parties to the dispute rather than purely adjudicators.
- There may be oversight functions that are managed not by official courts and regulatory bodies but by internal private dispute resolution bodies like the ICC's own court.
- Official proceedings may have considerable policy input from the non-official sector, such as at the Malaysian Access Forum, discussed in Chapter 6 of this report.

Nevertheless, the basic distinction between official and non-official participants is usually quite clear. What varies is the roles these participants play in different types of dispute resolution proceedings. Before considering the possible allocation of roles between official and non-official participants, it is useful to identify what those different roles are. The various roles include:

- Adversaries in a dispute, including but not limited to service providers and customers;
- Adversaries' professional advisors, representatives, and lawyers;
- Adjudicators (whether arbitrators or regulators) who establish fact and apply rules with the backing of state enforcement mechanisms;
- Mediators and other ADR professionals who facilitate improved negotiation processes without state enforcement mechanisms;
- Appeals bodies that review decisions for their correctness from a policy perspective;
- Oversight bodies that review decisions to ensure they are legally authorized and procedurally correct;
- Bodies that enforce agreements, rules, awards, and decisions;
- Participants – normally telecommunications regulators that are concerned with implementing regulatory and sector policy; and
- Policy-makers (often ministries) concerned with developing and implementing sector policy.

Different approaches to dispute resolution involve different combinations of official and non-official involvement in these various roles. Indeed, the regulator can itself play different roles, even in regulatory processes, as illustrated by Box 5-2.

Box 5-2 – The Many Faces of a Regulator

In the Netherlands, OPTA illustrates the various roles that a regulatory body can take in dispute resolution. OPTA may settle disputes as an independent adjudicator. Or, in response to an objection, OPTA may reconsider its decisions through internal administrative appeal, thereby taking an executive role. In appeals of OPTA decisions to the courts and to the appeal commission, meanwhile, OPTA may become a defending party. Where OPTA appeals an adverse decision, it may become the plaintiff. OPTA also sometimes plays the role of a mediator.

In designing and evaluating the role of the official sector in dispute resolution processes, the concern should be:

- *Less* about rigid lines between official and non-official sectors, and
- *More* about seeking the roles in which the official sector can best use its efforts and presence to assist in the speedy resolution of disputes – and in a manner consistent with regulatory policy, the rule of law, and due process.

5.2 Adjudicated and Negotiated Proceedings

As discussed in more detail in Chapter 2, the various dispute resolution processes may be divided into two broad types, adjudications and negotiations:

- Adjudicated proceedings are those where a third party, and not the disputing parties, has power to decide the result. The third party may be an official (a regulator or judge) or a non-official (an arbitrator). In such cases, the disputing parties may influence the adjudicator with facts and arguments, but the adjudicator ultimately determines the result.
- Negotiated processes, such as mediation and conciliation, are those where the resolution of the dispute is, in the end, a matter of choice for the parties. The decision is their mutual, negotiated voluntary act – despite the influence of others such as the mediator or the conciliation service.

Different concerns arise in relation to adjudications and negotiated proceedings. Because the decision of the adjudicator is not within the control of the disputing parties, it is more important in adjudication proceedings to ensure the quality of the ultimate decision and protect against abuse of process.

The approach to ensuring the quality of decision-making, however, depends also on whether a dispute resolution mechanism is more official or non-official in nature. More official procedures, such as regulatory adjudication, can be appealed to higher review bodies, also within the official sector. These might review a decision for its findings of fact, applications of rules, and the procedures followed. The effectiveness of regulatory adjudication depends upon a balance between reviewing and refraining from reviewing various matters. Review is important to ensure correct decisions, but if a regulatory agency's decisions are always appealed, the regulator will lose legitimacy and the power to resolve disputes. Administrative law in many countries therefore restricts review, even of official regulatory decisions, to the application of rules and procedures.

The very existence and effectiveness of a non-official mechanism such as arbitration depends on its results not being appealed. If arbitration results can be appealed, arbitration loses its basic value and parties can simply revert directly to official dispute resolution procedures. As noted above, however, arbitration is an adjudication, in which the parties have relinquished their control over the result. It is necessary therefore to provide for some measure of control over the quality of adjudication by arbitrators, without undermining the institution of arbitration itself.

Similarly, if regulators encourage or require disputing parties to resort to negotiated processes such as mediation and conciliation rather than regulatory adjudication, it may be necessary to ensure that such processes are effective. If parties cannot resort to regulatory adjudication, they will require protection from any abuse of negotiated processes by other parties. However, negotiated processes tend to work successfully when the parties themselves drive them, and when there is no review of the results.

5.3 Public Policy in Private Hands?

Before exploring the details of the relationship between the official sector and the non-official sector in dispute resolution, a threshold question needs to be considered. Should public policy matters be

addressed through private, non-official mechanisms? This question is at its sharpest where there could be a conflict between public policy and the resolution of a privately negotiated or arbitrated dispute.[47]

5.3.1 Ensuring Public Policy Implementation

Government officials wish to ensure that public policy is given due emphasis in privately resolved processes. But they generally should not be concerned about the resolution of management, technical, financial, or commercial issues that have no bearing on public policy. One key question is, "What national policy objective is the regulator trying to implement by becoming involved in a dispute?"[48]

The central issue for policy-makers is what role the official sector should play in structuring, conducting, or overseeing dispute resolution. Where public policy issues are involved, such as in regulated industries like the telecommunications sector, policy-makers are interested in ensuring that government policies are followed, that consumers are protected, and that safeguards are in place to ensure against arbitrary and wrongful decision-making.

5.3.2 Existing Experience with Non-Official Approaches

The issues related to official oversight of non-official dispute resolution are not new. They have often arisen where private-sector dispute processes have been allowed to function independently of the courts or as an adjunct to them. Different jurisdictions have adopted various solutions in general commercial contexts. Some have embraced self-regulation, leaving it to professional organizations to educate, control, and discipline their members, which offer dispute resolution services. Other jurisdictions have vested ultimate supervisory power in the courts. While questions of jurisdiction, competence, experience, and ethical standards have to be addressed, there is ample experience upon which to base workable solutions outside of courts and court-like forums.[49]

When a key policy issue is at stake, or the power asymmetry between parties requires it, regulators may insist on conducting an official adjudication process, in which the parties may present their cases and the regulator will make the decision. Where a matter is particularly sensitive, a regulator may refuse to defer to results determined through unofficial methods of dispute resolution. In such cases, the regulator will be willing to take into account public policy considerations or arguments of interested parties, regardless of whether disputes have already been – or are in the process of being – resolved in arbitration or mediation.

Regulators will have to consider those areas or situations for which they will guarantee the availability of an official process.[50] The history of general commercial arbitration offers lessons about how the official sector has approached non-official processes in such situations. Many countries' courts have

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47 To take an obvious and relatively simple example, the regulator may have chosen long run incremental cost models over historical cost models as appropriate for determining interconnection pricing because it believes LRIC models produce more efficient outcomes. In the absence of an interconnection contract specifying an LRIC model, must an arbitrator insist on following the regulator's choice? What would be the consequences of a failure to uphold the regulator's choice?

48 Meeting with regulators, Geneva, October 15, 2003.

49 The same issues have also arisen in the context of investment in emerging countries, particularly in the context of developing major economic sectors and extracting natural resources. Regimes for regulation and protection of foreign investment, such as ICSID, have of necessity involved striking the balance between the private and public interest, and delineating the powers and functions of regulators, the courts and private consensual dispute resolution.

50 It is not only key policy areas that may need to be reserved for the control of the official sector. Certain technical issues may also need to be managed by regulators rather than being left to parties to resolve. For example, in its February 2003 statement on dispute resolution, Oftel noted that the Radiocommunications Agency believed that "Due to the fact that radio spectrum disputes are likely to be complex issues about interference or spectrum use compatibility, […] disputes about radio spectrum, failure to comply with license conditions or interface with services are not suited to ADR and therefore are more appropriately dealt with by [the regulator]". Oftel, Dispute resolution under the new EU Directives, February 28, 2003, at 3.18.

struggled with whether and how non-official mechanisms can be used to resolve disputes where important public policy issues are at stake. Various concerns have been identified, including concerns that:

- Society at large will suffer from private arbitration of public law-related claims.[51] Since representatives of the public are not present, the public interest is not represented.[52] At a policy level, operators resolving interconnection pricing disputes might do so in a manner privately determined by them, such as through arbitration or mediation. Regulators may be concerned about how to ensure that interconnection pricing determined by such processes would reflect regulatory policy – whether it is cost-oriented, for example.
- Third parties that have an interest in a dispute may not be involved, and thus will be prejudiced.[53] To continue the interconnection example, pricing that does not reflect costs may introduce or perpetuate distortions in retail and wholesale pricing. This may have an impact on the pricing of services to customers, whose interests are not represented in a private dispute resolution process.
- Arbitrators may not uphold key tenets of public policy. Arbitrators are private parties with duties to the disputing parties, not to the public sector.[54]
- Dispute processes will not develop a body of precedent that will lead to clear expectations about the results of disputes.[55] Confidentially resolved disputes using ADR mechanisms would offer little or no precedent.
- The development of precedent in privately resolved disputes might infect or corrupt the public policy implemented by regulators or courts.[56]

5.3.3 "Arbitrability" – Reserving Matters for Official Control

To address concerns in the context of general commercial arbitration, the courts in most countries have developed the concept of "arbitrability". Thus, for the courts to accept parties' agreements to arbitrate a matter, there is a threshold question of whether a matter may or may not be submitted to arbitration

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51 Reluctance to permit matters to go to arbitration becomes an issue in arguments that the cases are too complex factually or legally, that arbitration proceedings are too informal, that arbitrators may have a business-orientation and may neglect the public interest. Here the contrast between arbitrators privately chosen by parties and public adjudicators (whether regulators or courts) is thrown into sharp relief. Arbitrators in ordinary commercial arbitration are only paid to do justice between the parties presenting before them. They are not guardians of the public interest. Furthermore, society at large has never signed the agreement to arbitrate and it is not a party to the arbitration.

52 In the telecom context, for example, the new Jordanian Interconnection Dispute Procedure allows the parties to choose between regulatory adjudication and arbitration. However, it is not yet clear whether the TRC will have a right to participate in an arbitration proceeding where the parties have elected arbitration.

53 This has arisen, for example, in anti-competitive practices cases where a third party may have the right to penalties.

54 This concern may be overblown. Arbitrators are likely to understand quickly the importance of upholding in their judgments the core areas of regulatory policy. As one commentator remarked with respect to commercial arbitration, "Although arbitrators are neither guardians of the public order nor invested by the State with a mission of applying its mandatory rules, they ought nevertheless have an incentive to do so out of a sense of duty to the survival of international arbitration as an institution". Pierre Mayer, Mandatory rules of law in international arbitration, 2 *Arbitration International* 274 (1986).

55 See W.W. Park, *Private Adjudicators and the Public Interest: The Expanding Scope of International Arbitration*, 12 Brooklyn J. In'tl L. 629 (1986).

56 Ibid.

in the first place.[57] If a matter is too sensitive, the courts reserve control over adjudicating such matters.

Widely accepted arbitration rules tend to recognize that there may be broader public policy concerns that limit the scope of arbitration, particularly non-official arbitration. Thus, courts also may refuse to force parties to arbitrate, or to recognize and enforce their arbitral awards, where doing so would be contrary to public policy.[58]

The concept of arbitrability is a valuable one for telecommunications sector regulators as well. Much of the reasoning of courts in using this concept in commercial arbitration is pertinent to telecommunications sector disputes.

Arbitration offers well-established ways of approaching key concerns about areas of policy that should be reserved for the official sector to resolve.[59] In the telecommunications sector, certain types of policy-related issues can be designated as remaining within the exclusive decision-making control of the official sector, or at least subject to its review and final determination.

5.3.4 ADR as a Form of Self-Regulation

As discussed throughout this report, regulators in various countries seem increasingly inclined to require market participants to resolve disputes themselves. This may simply be part of a wider trend to involve regulated companies in the regulatory process.[60]

The concern about maintaining the influence of regulatory policy in dispute resolution may be applied more broadly. There may be a general concern that industry participants and self-regulatory initiatives may arrive at far-reaching proposals for the sector that are not envisioned by the regulator.

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57 Thus, just as the freedom to contract generally in many countries is not absolute, since it is subject to various laws of contract, consumer protection and public policy restrictions, so also the freedom to arbitrate is not absolute. It is generally very extensive and varies from country to country. The United Kingdom, for example, has traditionally been relatively permissive in allowing arbitration, having little or no developed concept of subject matter non-arbitrability beyond areas of fraud and the United Kingdom's obligations under European law. Swiss law is similar, and the United States has a well-developed body of case law which explores the issues yet limits the scope of non-arbitrable matters. French law has historically been much more restrictive, prohibiting arbitration of public policy matters.

There may be limits on parties' abilities to waive recourse to the courts – the public dispute resolution system – in favour of private arbitration procedure when courts perceive that the private disputes implicate very sensitive public policy questions. Where these issues are so sensitive that they feel they should be reserved for decision by officials of the community, they may be treated as "non-negotiable" public interests so significant that the role of the public adjudicatory branch is a matter of public concern. These are termed "non-arbitral" matters. In the arbitration field, these may include disputes concerning employment laws, anti-corruption laws, competition laws, securities regulations, patents and punitive damages. In such cases, courts have refused to compel parties to arbitrate – i.e., the courts have not recognized the validity of the choice of arbitration as opposed to the court system. Their reasons are that private adjudicators may under-enforce or wrongly enforce laws designed to protect the whole society. For an example of a discussion of this issue, see W.W. Park, *Private Adjudicators and the Public Interest: The Expanding Scope of International Arbitration*, 12 Brooklyn J. In'tl L. 629.

58 Thus the New York Convention permitted the refusal of recognition and enforcement of awards where the subject matter "is not capable of settlement by arbitration under the law of that country" or if recognition and enforcement "would be contrary to the public policy of that country". New York Convention, Article V(2). See footnote 13.

59 Examples of seminal decisions of the official sector–in these cases, courts–which discussed whether, and the extent to which, private parties may arbitrate over public law matters include: with respect to antitrust matters, *Mitsubishi Motors Corp. v. Soler-Chrysler-Plymouth Inc*., 473 U.S. 614 (1985); with respect to securities law matters, *Scherk v. Alberto-Culver*, 417 U.S. 506 (1974) *and Rodrigues de Quijas v. Shearson/American Express*, 490 U.S. 477 (1989); with respect to bankruptcy law matters, *Sonatrach v. Distrigas*, 80 B.R. 606 (1987).

60 Initiatives for self-regulation of interconnection in Malaysia are discussed in Chapter 6, Box 6-3, for example. In the United Kingdom, Professor Martin Cave's independent 2002 "Review of Spectrum Management" recommended that "The [Radiocommunications Agency] should explore fully the scope for, and means of, transferring more responsibility to operators for interference management". It is significant that this has been proposed given the public policy importance of a scarce resource such as radio frequency – probably not the strongest candidate for alternative dispute resolution since not only must radiofrequency spectrum be coordinated with military usage, but it is essential to the market that it is managed in an orderly manner. The report is available at: http://www.spectrumreview.radio.gov.uk/

Regulators are well-positioned to mitigate this concern by setting guidelines within which public consultation and other processes can occur.[61] Some countries, such as Australia, have taken extensive steps, and accumulated valuable experience, in allowing the industry to take responsibility for areas of regulation (see Box 5-3). These initiatives are also instructive for regulators in working out what level of influence they are required to retain and how to exercise it.

Box 5-3 – The Australian Communications Industry Forum

The Australian Communications Industry Forum (ACIF) is a model for establishing industry consensus-building and dispute resolution procedures. The ACIF is a grouping of Australian industry representatives headed by an independent chairman. The ACIF provides input and advice to the Australian Communications Agency (ACA), the Australian telecommunications regulator, on matters of industry codes, standards, and practices.

The ACIF has issued documentation relating to issues ranging from interconnection, number portability, and implementation of Internet services to more technical matters relating to codes and standards. The ACIF has entered into a Memorandum of Understanding with the ACA setting out the basic roles of both institutions. More recently, the ACIF has been examining various ways that the work of consumer groups can be taken into account in its activities.

The ACIF functions in a developed institutional environment, which includes an independent regulatory body as well as the Australian Communications Competition Authority. In this respect, the role of the ACIF can easily be focused on issues of policy implementation. It also has a highly "corporatist" orientation and has generated significant detailed documentation. In addition, the ACIF has established procedures through which industry participants can seek dispute resolution services under its auspices.

While regulators are unlikely to refuse to deal with disputes in areas important to public policy, there may be advantages to permitting disputants to take full advantage of efficient and cheaper alternatives before resorting to the regulator. Even in matters of regulatory interest, there may be significant commercial incentives to resolve disputes quickly through mediation or another ADR process.

Concerns that regulatory policy might lose its influence can be mitigated by providing certain key procedural safeguards. These will preserve basic parameters of regulatory policy and quality of decision-making. Where asymmetries of market power are a factor, a key issue will be to ensure that parties with greater power cannot use that power to abuse the procedure. Appeals and oversight of adjudications and voluntarily negotiated proceedings are discussed in the following sections.

5.4 Review of Adjudications

Both official and non-official adjudication decisions are generally subject to appeal or oversight procedures, which are often part of a system of checks and balances designed to prevent arbitrary, incorrect, or procedurally flawed decisions. These procedures are often considered essential, since regulatory adjudicators ultimately are exercising the authority and power of the state to make decisions and enforce them through judicial or other means. Similarly, where parties have the right to enforce arbitration awards in the courts, arbitrators are making decisions that, indirectly, will rely upon the authority and power of the state for their implementation.

As mentioned in Section 5.2, the adjudicator – not the parties – has the last word on the result of the dispute resolution process. In such cases, it is important to provide certain safeguards as to the quality

61 For example, the Malaysian Access Forum, discussed in Box 6-3, is constrained in developing an Access Code by the guidelines laid down by the regulatory authority. It is possible, however, that imposing overly directive guidelines could have the effect of hampering industry initiatives. There is a balance to be struck to ensure a necessary level of regulatory policy input while capitalizing on the resources and initiatives of the private sector. http://europa.eu.int/ispo/infosoc/legreg/docs/90387eec.html

of decision-making on substantive and procedural matters. There are two potential types of review over adjudicators' decisions:

- Judicial-type review for defects in the case's procedural integrity and, where necessary, public policy concerns (termed here as "procedural oversight"); and
- Review by a higher body of the actual substance of the decision on the facts and the law (termed here as "substantive appeals").

To these might be added a third: no review at all.

The different activities and concerns involved in procedural oversight and substantive appeals imply that different types of expertise may be required for each. In the judicial context, courts tend to perform both functions. Judges of higher courts deal with claims from lower courts appealing decisions on the legal merits, as well as matters of due process and public policy. But the situation is usually different in the context of regulating industries such as telecommunications.

5.4.1 Procedural Oversight

Procedural oversight is less concerned with substantive decisions and more with the overall functioning of the adjudication system in question. The purpose of such oversight is to establish and maintain good conditions for the effectiveness of the adjudication process itself. Both regulatory adjudication and arbitration are appropriately the subject of procedural oversight.

The experience of general commercial arbitration illustrates clearly the difference between substantive appeals and procedural oversight.

5.4.1.1 Procedural Oversight in Arbitration

Arbitration awards are generally not subject to judicial appeal to review the correctness of the arbitrators' decision or interpretation, or the application of the law.[62] In countries where arbitration is well-developed, courts tend to meddle with arbitration awards only where there are fundamental problems that, if allowed to persist, would threaten the overall quality of the arbitration system.

The effectiveness of arbitration depends upon this approach, since losing parties could otherwise simply appeal all arbitration awards to the courts. This would leave no benefit to parties in pursuing arbitration, which would be less effective as a dispute resolution mechanism.[63]

Although different countries have different approaches to oversight of arbitration awards,[64] courts have tended to pay attention to:

- Whether the process followed in the arbitration was the "due process" that the parties contracted for; and
- Whether the decision affects key public policy issues.

In commercial arbitration, the fundamental basis for the courts' oversight role is the parties' own contract to arbitrate.[65] Arbitration normally is a voluntary process that the parties have agreed to pursue. The courts' oversight focus is on protecting the parties to be sure they get the process to which they agreed. Since parties have agreed to follow a procedure that is an alternative to the courts, one

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62 Thus, to take a typical U.S. court judgment reviewing an arbitral award, courts must enforce an arbitral award "even in the face of 'erroneous findings of fact or misinterpretations of law'". *French v. Merrill Lynch, Pierce, Fenner & Smith Inc.*, 784 F.2d 902, 906 (9th Cir. 1986).

63 Courts do not subject such cases to *de novo* review since that "would destroy the finality for which the parties contracted and render the exhaustive arbitration process merely a prelude to the judicial litigation which the parties sought to avoid". *Northrop Corporation v. Triad International Marketing*, S.A. 811 F.2d 1265, 1268 (9th Cir. 1987).

64 For example, Swiss federal law provides for judicial review of arbitration awards only in order to insure the procedural integrity of the process, even permitting parties voluntarily to exclude judicial review altogether. Belgian courts decline to set aside arbitral awards made in Belgium for any reason, including an arbitrator's fraud or excess of authority.

65 See the New York Convention, Article V(1), referenced at note 15.

can assume that they have agreed to a minimum level of due process. Courts have therefore reviewed arbitration awards on the basis of issues relating to due process.[66]

Countries vary in their approaches to due process. Factors generally seen to undermine due process include: lack of proper notice of the commencement of proceedings, improper conduct of hearings, and inadequate time to prepare pleadings.[67] Some countries identify other due process factors. The U.S. *Arbitration Act*, for example, permits courts to vacate arbitration awards where there was corruption, fraud or undue means, or partiality or misconduct of the arbitrators. This is particularly common when arbitrators have compromised parties' fair treatment – such as by refusing to postpone hearings or to hear pertinent evidence – or have exceeded their powers.[68]

Thus, courts tend not to reject arbitration awards if the arbitrators were fully briefed, the parties had an opportunity to argue before them, and the arbitrators considered all relevant issues and reached reasoned written decisions. The courts will simply enforce such arbitration awards even if the arbitrators reached decisions that may be wrong on the interpretation and application of the law.[69]

5.4.1.2 Procedural Oversight in Regulatory Adjudication

In the case of regulatory adjudication, procedural oversight is also concerned with preserving the viability and integrity of the adjudication mechanism itself. There are, therefore, advantages to having external oversight mechanisms. A key concern is to ensure that due process was followed in the initial decision-making.

In most cases, procedural oversight of regulatory adjudication remains within the domain of the court system. Most countries have some form of judicial review of ordinary administrative actions, including regulatory adjudication. In traditional administrative law, courts review the decisions of regulators not only for the correctness of procedure but also for the legal basis of the decision-making itself. Thus, courts will want to ensure that legislation has given the regulator the necessary powers to adjudicate a dispute and that it is acting within its powers.

Where reviewing courts lack expertise in complex sector issues and regulation, their review process can result in restrictions on the regulator that may impact the sector. In the Netherlands, for example, the administrative courts have taken a particularly restrictive approach to OPTA's powers. The courts view the "national regulatory authority" as comprising both OPTA and the Minister for Economic Affairs. OPTA is viewed as having defined powers. With a strict interpretation of the Telecommunications Act, the administrative courts generally have tended not to take into account underlying policy objectives in reviewing OPTA's decisions. This has curtailed OPTA's use of discretion. As a result, the Court of First Instance (the Court of Rotterdam) has annulled OPTA's decisions, or suspended them by interim measure, on many occasions, citing lack of authority or infringement of general administrative law principles (see Box 5-4).

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66 For example, recognition and enforcement of awards may be refused if the parties did not have the capacity to contract to arbitrate in the first place. Awards may also not be recognized or enforced if the agreement to arbitrate was not valid contractually under its governing law.

67 Further, if the award dealt with a dispute that was not the subject of an agreement to arbitrate, or went beyond the scope of the arbitration agreement, or if the procedure was not in accordance with the agreement of the parties, then the award need not be recognized or enforced.

68 *Federal Arbitration Act*, Title 9, U.S. Code, Section 1-14, Section 10. http://www.chamber.se/arbitration/shared_files/laws/arbitract_us_cont.html

69 There are limits, of course, in deference to the permissible defects of arbitrators' decisions. "Manifest disregard" of issues and similar types of problems inherent in the awards may subject awards to judicial scrutiny.

Box 5-4 – Restrictive Judicial Review in the Netherlands

The restrictive view of OPTA's powers taken by the Dutch administrative courts is illustrated in the case of OPTA's decision on mobile termination rates. The courts have taken the view that OPTA has no competence to resolve a dispute on *indirect* interconnection, since there is no explicit authority given in the Telecommunications Act. OPTA may, however, give exemptions to *direct* interconnection. Even OPTA's general authority to set rules to settle disputes could not be relied upon, since this authority had to be applied in the specific circumstances of the case in question.

As a result, OPTA cannot effectively regulate mobile termination tariffs, whether by rule-making or dispute resolution. The interpretation of the definition of interconnection and dispute resolution powers are examples of the real obstacles regulators often face in regulating and resolving disputes effectively.

In some countries however, a quasi-judicial or non-judicial body may carry out procedural oversight. India's Telecommunications Disputes Settlement and Appellate Tribunal (TDSAT), which is discussed below, provides an interesting example of a body entrusted with both procedural oversight and substantive appeal roles (see Box 5-5).

5.4.2 Substantive Appeals of Regulatory Adjudication

Unlike procedural oversight, substantive appeals may permit decisions to be broadly reconsidered. Errors can be rectified and overall policy can be reaffirmed and implemented correctly.

There are different approaches to substantive appeals. In some countries, including a number of parliamentary democracies, government ministries are considered ultimately responsible to the public, through parliament, for major decisions of government authorities. So even where regulators operate in a generally independent manner, their decisions may be subject to appeal to Ministers or generally to the executive branch of government.[70] In such cases, the professional staff of the ministries responsible for telecommunications may add input on more complex policy matters.

Appeals of decisions to the political level are inherently controversial, particularly when they involve adjudication of the rights of parties to a dispute. There frequently are allegations of political favoritism or, in the case of state-owned operators, genuine conflicts of interest. In addition, political appeals obviously can undermine the integrity and credibility of the regulatory process. Consequently, there are good reasons to discourage or limit political appeals. Sometimes this is done as a matter of precedent, in countries where government ministers decline to consider or overturn virtually all appeals. In addition, some of the problems inherent in political appeals can be minimized through transparent processes. These may include requiring public disclosure of appeal documents, conducting public comment processes, and disclosing orders that require regulators to reconsider decisions.[71]

In cases where a non-official arbitrator undertakes a regulatory adjudication, substantive appeals may sometimes be made to a telecommunications regulator. However, in such cases, it is important that the rules of the process limit appeals to significant matters of telecommunications policy. Absent such a limitation, unsuccessful parties may have an incentive to appeal arbitration awards to regulators, thereby undermining the purpose and effectiveness of non-official arbitration.

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70 An example can be found in Canada, where decisions of the CRTC may be appealed to the federal government Cabinet pursuant to section 12 of the *Telecommunications Act*. http://laws.justice.gc.ca/en/t-3.4/101829.html

71 See, for example, the process set out in section 12 of the Canadian Telecommunications Act, which requires circulation to other parties of petitions to reconsider CRTC decisions as well as a public notice process that increases transparency of the appeal process. http://laws.justice.gc.ca/en/t-3.4/101829.html

Box 5-5 – Regulatory Oversight Tribunals: India's TDSAT

A novel approach to dispute resolution can be found in India's Telecommunications Disputes Settlement and Appellate Tribunal (TDSAT). The Tribunal consists of a panel of three members, all of whom have served at the highest levels of the Indian judicial or civil service systems. TDSAT is a traditional governmental structure that has been devised to facilitate the resolution of disputes in the complex Indian telecommunications sector. Unique among official institutional arrangements worldwide, it exists in juxtaposition to TRAI, which had been previously established as the sector-specific regulator. TDSAT has two major roles: as a specialized appellate body and as a dispute resolution forum of first instance.

At the time of writing, the regulatory environment in India was undergoing an overhaul with the expected imminent enactment of the long-awaited 'Convergence Act'. While the Convergence Act will bring about many changes in the regulatory environment in India, it essentially retains a bifurcated institutional structure with TRAI as the "regulator" and TDSAT as the separate institution for settling disputes.

One of the major reasons for the creation of TDSAT was to rationalize the process of judicial review in the sector, including the review of TRAI decisions. Decisions from a diverse range of courts might lack the consistency and uniformity necessary to provide coherence to an important national scheme of regulation.

TDSAT's role as a forum of first instance for telecommunications sector disputes introduced particular challenges. It is TDSAT, not TRAI, that has ultimate responsibility for making certain final administrative determinations in India.

The Indian approach to dispute resolution in the telecommunications sector is more complex than in countries that have not vested final administrative authority in a specialized tribunal like TDSAT. Nevertheless, the WLL(M) controversy (see Box 4-6) suggests that TRAI and TDSAT are carrying out their responsibilities effectively. Complex and inter-related issues raised by new WLL(M) services in India – including concerns about interconnection, new license fees and terms and conditions for fixed and wireless operators – are now in the process of being resolved.

5.4.3 Lessons for the Telecommunications Sector

Telecommunications regulators are increasingly considering when and how to encourage or permit parties to resolve their disputes through arbitration rather than regulatory adjudication. The difference between substantive appeal and procedural oversight of official and non-official dispute resolution mechanisms is important for telecommunications regulators because:

- The viability of arbitration depends upon the finality of arbitration awards without endless appeals, subject to procedural impropriety and public policy concerns;
- The availability of procedural oversight mechanisms permits regulatory officials to use less-official mechanisms, such as arbitration, while being assured of proper procedures; and
- It is possible to establish substantive review mechanisms to ensure that where public officials have a pressing concern, that concern may override the non-official dispute process.

The arbitration industry has developed its principles through experience, over many years. The principles and approaches it relies on are useful for telecommunications regulators in designing dispute processes that draw upon the resources, rely upon the initiative, and give more responsibility to private parties. Telecommunications regulators also can use these ways of incorporating safeguards into non-official dispute systems such as arbitration to ensure that their benefits are available to the sector without relinquishing a basic level of control that remains the responsibility of regulators for the sector as a whole.

5.5 Procedural Oversight of Negotiated Dispute Resolution Mechanisms

Mediation is traditionally subject to fewer controls by the official sector than arbitration or regulatory adjudication, for the following reasons:

- Mediation is a consensual process;
- Mediation has generally developed at the initiative of the parties and not the official sector;
- The central benefits and effectiveness of the mediation technique lie in its informality, the flexibility of the process, and its availability to spontaneity and reframing of perspectives; and
- Mediation generally is not prejudicial to parties' rights to pursue other legal remedies if they fail to reach settlement;

Nevertheless, procedural oversight is becoming an increasingly important element in mediation, primarily because more powerful parties may abuse the procedure, in order to deny its benefits to less powerful parties. Indeed, they may use it to stall negotiations and the overall resolution of the dispute.

Experiences of general commercial mediation offer insights to regulators who are seeking to capitalize on the benefits of voluntary informal mechanisms and reduce the burden on their resources – yet not abandon the sector to chaotic dispute resolution systems that may not be effective.

5.5.1 Emerging oversight of negotiated processes

The codes of civil judicial procedure in several jurisdictions in Australia, Canada, the United States, and the United Kingdom increasingly require parties to attempt mediation prior to using official resources in the courts. This is strengthening the importance of oversight measures as an aspect of the system. These measures tend to involve reporting, and they are focused on whether the parties have acted in good faith.

Mediation is almost fruitless – and, indeed, can be harmful – when parties do not negotiate in good faith to resolve the dispute. Parties may use mediation as a "fishing expedition" to ascertain whether the other party's case is well-developed. They also may use it to buy time or give the appearance of cooperation, while not being willing to adjust their position.

It is notoriously difficult to ensure that parties act in good faith, particularly in the context of a dispute. As explored in this section, however, there are some ways of doing so. It should be emphasized that these are generally the exception to the rule. Mediation in most countries tends to be unregulated – for good reason, since excessive regulation of mediation is likely to destroy the process.

5.5.1.1 Reporting Requirements

Requiring reporting of mediation processes provides incentives for parties to act in good faith.[72] Practices vary from jurisdiction to jurisdiction. Countries like the United Kingdom emphasize the informal nature of mediation. They consider the lack of reporting to be central to the confidentiality that is so essential to the success of the process itself. In such countries, reporting is only required where there has been a crime or fraud committed, or if there has been misleading conduct.

Some jurisdictions require mediators to report simply on whether the mediation occurred, whether the parties attended, and whether they reached agreement.[73] Although brief, such oversight is nevertheless valuable. It introduces an effective requirement that parties commit to enter into the process itself. Such minimal commitment can result in parties' uncovering the potential benefits of the process and going forward to find consensual resolution to their disputes.

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72 This discussion draws in part on a most useful presentation made by Miryana Nesic to a gathering of CEDR mediators in 2003, attended by one of the authors of this report.

73 See the rules of the courts in Queensland, Australia, and section 7 of the U.S. Uniform Mediation Act 2001. http/www.legislation.qld.gov.au/LEGISLTN/CURRENT/J/JusticeRuC67_001.pdf http://www.mediate.com/articles/umafinalstyled.cfm

Where statutes and court procedures require parties to enter into mediation before coming to court, they sometimes require mediators to summarize for the court the conduct of the parties and the results of the mediation. This is particularly useful where there is a severe power inequality between the parties.[74] Reporting requirements may be enforced simply by withdrawing the accreditation of mediators if they fail to report as required.

Some jurisdictions even require detailed mediation summaries from mediators.[75] These may be intended to address the procedural issues in a manner that ensures that mediation actually has occurred. For example, reporting requirements may cover what seem like obvious questions, such as:

- Did parties make opening statements?
- Were the issues at conflict identified and isolated?
- Was there sufficient face-to-face contact to enable each party to understand the other's perspective?
- What settlement options were proposed, if any?

Official sector dispute resolution bodies may require the parties to satisfy such questions before resorting to the resources of the state.[76] This increases the likelihood that the parties will engage each other and seek, in good faith, to resolve their disputes voluntarily.

5.5.1.2 Presence of Officials as a Means of Oversight

The presence of officials during mediation can increase the likelihood that parties will not abuse the process or take unrealistic positions. In the United States, for example, the FCC offers customers the opportunity to contact the Market Disputes Resolution Division of the FCC's Enforcement Bureau before filing an official complaint. Parties must accept the FCC's mediation process before the staff will accept streamlined "mini-trial" complaint cases. The FCC encourages the use of its mediation services generally before filing complaints regarding violations of local competition rules.[77] The FCC has said that it believes that the presence of regulatory staff reduces stonewalling and use of unsupportable arguments. This, in turn, produces efficient dispute resolution that fits the disputants' interests and needs.

It should be noted, however, that there are also drawbacks to the presence of regulatory officials in mediation processes. As mentioned above, a key aspect of mediation is that it is voluntary and confidential, and does not prejudice parties' rights to legal remedies. If the parties fail to reach a settlement, the case may end up before the regulator. If the regulator has been present in the mediation, parties may fear that facts, positions, and compromises discussed in the mediation may prejudice the later regulatory proceeding and influence the regulatory adjudicator. Thus, if regulators are involved, parties may be less willing to engage in mediation, or they may do so more cautiously.

5.5.1.3 Measuring "Good Faith"

The difficulty of ensuring that parties engage in good faith negotiations is partly due to the difficulty of defining good faith. Actually, courts are increasingly trying to identify and define indications of good faith. Parties in the United States and Australia, for example, have succeeded in bringing actions against parties that were not engaging in mediation in good faith.

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74 See, for example, the *Farm Debt Mediation Act* in New South Wales, Australia. http://www.austlii.edu.au/au/legis/nsw/consol_act/fdma1994163/

75 See the New South Wales Rules of Court (Supreme Court).

76 Less formal ways of permitting reporting than requiring mediators to report include the UK Construction and Engineering Pre-Action Protocol, which permits parties to hold pre-action meetings (which would cover mediations); to disclose to the court whether a meeting took place (and if not, why not), who attended, who refused to attend (and why) and any agreement reached. http://www.dca.gov.uk/civil/procrules_fin/contents/protocols/prot_ced.htm

77 Known as Section 208 complaints. Section 208 of the *Communications Act* of 1996. http://www.fcc.gov/reports/1934new.pdf

Good faith does not have to be evidenced by a failure to reach a reasonable settlement as interpreted by regulators. There are other, more procedurally oriented ways of identifying a lack of good faith, such as the indicators developed by the Australian courts (see Box 5-6).[78]

Box 5-6 – Indicators of "Bad" Faith Negotiation

Unreasonable delay	Unnecessary postponement of meetings	Failure to contact the other parties
Failure to make proposals	Failure to make counter proposals	Adopting a rigid non-negotiable position
Failure to attempt to organize a meeting	Unexplained failure to communicate with other parties within reasonable time frames	Failure to follow up on a lack of response from other parties
Failure to take reasonable steps to engage in discussions	Failure to respond to reasonable requests for information within a reasonable time	Stalling negotiations
Sending negotiators without authority	Refusing to agree to trivial matters	Shifting position just as agreement seems in sight
Refusing to sign an agreement in respect of the process	Unilateral conduct that harms the negotiation process, such as issuing press releases	Failure to do what a reasonable person would do in the circumstances

Identifying the presence of some – perhaps all – of such features will depend, at some level, upon what appears to be "reasonable". The notion of reasonableness may be subjective, and ultimately may reach into the substance of a dispute. It is helpful, however, that the features above focus on procedural behavior. This is more likely to get parties to engage with each other. This, in turn, increases the likelihood that they may find areas of mutual interest that reduce the scope of the dispute, or even resolve it.

Regulators often will be aware of whether parties have sought to engage in good faith negotiation or mediation, because they are the mediators. In France, disputing parties must furnish evidence to the ART to show that they have sought and failed to negotiate the issue in dispute. At the outset of a proceeding, therefore, the ART is provided with the documentary history of communications between the parties. This often shows where one party has resisted constructive engagement with the other. It is useful for regulators to be informed of, and take into account, the negotiating behavior of parties as they seek to resolve disputes. This is also valuable, moreover, in influencing the behavior of parties in the negotiated dispute resolution process itself.

5.5.1.4 Sanctions for Misbehavior

Other than refusing to hear a dispute, what can a telecommunications regulator do if it is evident that parties are refusing to negotiate in good faith? Indeed, refusing to hear a dispute may be counter-

[78] *State of Western Australia v Thomas and Ors* [1998] NNTTA 8.

productive, since it might actually help a recalcitrant party that does not want to see the dispute resolved. In this and similar circumstances, various sanctions are available in policing mediation processes:

- The United Kingdom's civil courts sometimes require the party that refused to mediate to pay the other's costs, even if the refusing party wins the court case on the merits.[79]
- Fines may be imposed on parties for refusing to engage in mediation, as has occurred in the United States.[80]
- More radically, regulatory adjudicators may even refuse to address issues or arguments presented by a disputing party that could have been dealt with in a consensual mediation process.

5.5.2 Lessons for the Telecommunications Sector

As this section has illustrated, there is a wealth of existing resources for regulators to use in setting the conditions for voluntary negotiated dispute resolution processes. These include established (and some still developing) institutions and bodies of judicial precedent in several countries, including Australia, the United States and the United Kingdom. There is considerable scope for regulators to encourage telecommunications sector participants to resolve their own disputes in ways that are optimal for the sector. The concern that parties may abuse voluntary negotiated processes to resist resolving disputes is very appropriate. Nevertheless, there are various ways available to regulators to police parties' behavior and increase the possibility of negotiated settlements.

5.6 Official Enforcement and Non-Official Decisions

All dispute resolution processes ultimately require some level of support from the official sector in the area of enforcement. Decisions of regulatory adjudicators rely upon the enforcement powers of the regulator, and ultimately the courts, depending upon how the sector regulatory regime has allocated enforcement powers. Arbitration requires courts to enforce the awards of arbitrators, subject to the oversight review discussed in the previous sections.[81] Even consensual, negotiated processes such as mediation and negotiation rely upon courts to enforce settlement agreements entered into by the parties. Courts tend to view such agreements as ordinary contracts, without reviewing the dispute resolution process the parties used to negotiate.

In considering how to improve dispute resolution, then, it is necessary to consider how resolutions of disputes will be enforced. This includes evaluating:

- How to ensure that available official enforcement mechanisms are best employed; and
- Enforcement-related concerns that are particular to non-official processes, such as the availability of interim measures.

Where countries' civil justice systems – courts, justice, and police systems – are effective and efficient, they may suffice for enforcement of the results of dispute resolution processes. In many

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79 See *Dunnet* v *Railtrack*, [2002] 2 All EK 850, D*yson and Field* (Executors of Lawrence Twohey deceased) v. *Leeds City Council* unrep. 22 November 1999; *Leicester Circuits Ltd.* v. *Coates Broters* p/c [2003] EWCA Civ 333; *SITA* v. *Watson Wyatt* [2002] EWHC 2401; *Cowl* v. *Plymouth City Council* [2001] EWCA Civ 1935X. http://www.cedr.co.uk

80 See *Roberts* v. *Rose,* 37 S.W. 3d 31, 33 (Tex. App.-San Antonio 2000, no pet. h.); *Universal Co-operatives Inc.* v. *Tribal Cooperative Marketing Federation India*, 45 F. 3d 1194, 1196 (8th Cir. 1995); and *Dvorak* v. *Shibata*, 123 F.R.D. 608 (D. Neb. 1988).

81 The valuable and indeed potentially essential role of the public sector in helping to broaden the options for alternative methods of resolving disputes is illustrated by the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, 10 June 1958. The "New York Convention", as it is referred to, (see Footnote 13) ensures that international agreements to arbitrate are respected and that resulting arbitral awards are enforced. The agreement to the convention – and its predecessor conventions – by the government signatories was an important stage in boosting confidence in arbitration as a process and giving it the enforceability required to make it an effective means of resolving disputes. There may, then, be important steps that regulators can take in introducing arbitration-type dispute processes for the telecommunications sector.

developing countries, however, civil justice systems lack expertise, impartiality or the resources to provide necessary enforcement.

Telecommunications sector legislation and regulation is often at the cutting edge in such countries' overall efforts to improve the quality of regulation and governance. Many countries' telecommunications statutes give regulators the power to enforce the law and regulations, including regulatory decisions resolving disputes.

Regulators may be able to offer their enforcement powers as an alternative to ordinary civil enforcement mechanisms to support non-official dispute resolution initiatives. By employing the powers and resources of the regulator, enforcement may be accelerated and improved. In this way, regulators may be able to perform a function similar to that provided by courts in developing arbitration regimes.

Such enforcement issues are relevant for consensual negotiated processes as well as adjudication processes like arbitration. In many civil court procedures, after parties have started court proceedings and reached a negotiated settlement, the court will stamp the settlement agreement. This gives the settlement agreement the force of a court order. It is possible for regulators to perform a similar role, giving settlement agreements the force of a regulatory order. This would make the regulator's enforcement powers available to ensure the implementation of the agreement.

Similarly, non-official consensus-building processes that resolve sector problems may benefit from the endorsement of regulators. Ultimately, the viability and enforceability of dispute resolution outcomes may depend partly on the willingness of government officials and/or courts to assist in establishing alternative approaches and implementing privately reached agreements or settlements.

5.7 Building Confidence in Non-Official Dispute Resolution

The full benefits of non-official approaches to dispute resolution can only be secured if the official and non-official sectors work together to develop their capabilities. Once such capabilities are demonstrated, both the government and the industry gain confidence in non-official dispute resolution.

Various factors are important in considering the capability of the non-official sector in resolving disputes. They include:

- The development of institutions, experts, and professional dispute resolution roles;
- The utilization of procedures, codes, and review procedures by dispute resolution institutions;
- The voluntary nature of non-official dispute resolution mechanisms and the operation of the "market" in dispute resolution; and
- The availability of ways for officials to be involved in non-official dispute resolution procedures other than through oversight and review.

To the extent that the official sector recognizes advantages in developing non-official dispute resolution approaches, it can take affirmative steps to strengthen such factors. Such support is discussed in Chapter 6 on ways forward in dispute resolution.

5.7.1 Institutions and Professionalism

Systems of ensuring quality control are often relatively invisible in traditional dispute resolution systems such as national courts. This may be because they are so obvious. They include the ways in which judges are appointed and limitations on their terms imposed. Personal relationships within the small community of judges strengthen the courts as adjudicative institutions. Judges are accountable among themselves, partly due to their network of relationships.

These are confidence factors that can make the judicial branch more or less successful. Similar factors can be evaluated in the context of non-official dispute resolution systems.

Some non-official dispute resolution institutions consolidate their expertise, draw professionals together, and provide forums for the development of capable dispute resolution.[82] The development of institutions has been important in gaining the confidence of both officials and private users. Similar trends are already evident in the telecommunications sector. Oftel's February 2003 statement on dispute resolution indicated that it had greater confidence in ADR because it was "aware" of a number of organizations, including the following, all of which provide dispute resolution services:

- The International Chamber of Commerce's International Court of Arbitration;
- The London Court of International Arbitration (LCIA); and
- The Centre for Effective Dispute Resolution (CEDR).[83]

General commercial arbitration gained the confidence of the official sector as it became evident that highly responsible decision-makers were being appointed as arbitrators. Further, the arbitration community developed institutions that promulgated their own procedures and principles, including ways of reviewing arbitration awards internally. The high standard of institutions such as the ICC, the American Arbitration Association (AAA), ICSID and others was a highly influential factor in strengthening the place of arbitration in the dispute resolution world.[84]

Similarly, the emergence of mediation institutions, such as in the CEDR and the ADR Group in the United Kingdom, has given the British courts and legislators confidence to persuade disputing parties to attempt mediation before resorting to official dispute resolution in the courts.[85]

Widely recognized arbitration and mediation training courses establish a notion of professionalism through accreditation. Many arbitration institutions provide a roster of qualified arbitrators from which parties may choose their arbitrators – lending further professionalism. Indeed, in many cases, the failure of parties to agree on appointing an arbitrator may result in the arbitration institution itself making the appointment. Requiring registered arbitrators and mediators to follow professional development seminars and courses further develops their roles. Professionalism promotes high standards and puts reputations at stake within recognizable structures.

The development of institutions is also valuable in informal ways. Simple informal gatherings, held under the auspices of dispute resolution institutions, further the sense of a community of professionals. These gatherings increase the sharing of experiences and methodologies, enhancing the development of a lore and institutional memory. While not necessarily constituting binding precedent, this certainly contributes to developing a normative environment.

5.7.2 Internal Procedures, Codes, and Review Processes

Another key factor in the success of traditional court systems concerns the agreed ways of conducting judicial functions:

- Adherence to pre-agreed procedure ensures fairness of process and establishes common expectations of parties.

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82 See Chapter 2 for detailed descriptions of some of the major international dispute resolution institutions.

83 Oftel, Dispute resolution under the new EU Directives, 28 February 2003, at 3.15. See Box 2-4 and http://www.ofcom.org.uk

84 These factors made the courts more willing to entrust dispute resolution increasingly to the private sector. A landmark case in the United States expressed this progression, saying that "we are well past the time when judicial suspicion of the desirability of arbitration and of the competence of arbitral tribunals inhibited the development of arbitration as an alternative means of dispute resolution". See *Mitsubishi Motors Corporation v. Soler Chrysler-Plymouth Inc.*, 473 U.S. 614 (1985).

85 The U.K. courts are increasingly comfortable in influencing parties to pursue mediation and establishing basic incentives for them to do so, including making payment of expenses conditional upon parties having attempted good faith mediation. This trend has occurred amid a growing confidence in the quality of mediators and institutions which provide training, guidance on procedure and ongoing professional development. In the context of the telecom sector, there may be ways to go further in strengthening the confidence of public policy-makers and regulators in private dispute resolution techniques. To the extent that regulators can ensure that basic procedures are recognized, they may be more comfortable with private dispute resolution.

- Appeal and oversight functions in higher courts enhance overall quality control of decision-making.
- Requirements that decisions refer to legal authority (statute or precedent, depending on the tradition and situation) enhance consistency and diminish arbitrariness.
- Requirements that judgments be published contribute to accountability.
- The very tradition of legal reasoning itself helps maintain a common philosophical core within the community, even where different judges employ different modes of legal reasoning.

Likewise, a crucial confidence factor in the success of non-official dispute resolution has been institutions' development of their own internal procedures, codes, and review mechanisms. They are "internal" in that they are implemented and managed by the key players within the institutions rather than by external review of the official sector. The presence of such internal mechanisms is a valuable indicator to regulators of the maturity of non-official dispute resolution and its suitability as an alternative to regulatory adjudication.

5.7.2.1 Internal Procedures and Review in Arbitration

As general commercial arbitration developed, it became obvious that the arbitration industry had to invent its own system of controls to build confidence in its services. Lack of confidence would have resulted in increased court interference in arbitration processes and a lack of demand by users.

Most arbitration institutions have established sound basic procedural requirements.[86] The plan for conducting arbitrations may be adapted by parties' mutual agreement. But unless the arbitration agreement sets the issues out in detail, the institution's rules commonly will cover the commencement of disputes, selection of arbitrators, choice of venue, conduct of proceedings, discovery processes, and issuance of awards (see Annex). Some arbitration institutions also provide for internal control processes by which an institutional committee reviews the awards – in some cases, before issuance of the award by the arbitrator (see Box 5-7).

Box 5-7 – Internal Review of ICC Arbitration Awards

At the "high" end of the review spectrum, ICC arbitration requires the arbitrator to submit the award in draft form for scrutiny by the ICC Court of Arbitration, an ICC-appointed body composed of eminent leaders in the field.[87] The ICC Court may modify the award and draw the arbitrator's attention to points of substance. The Court must approve the award before the arbitrator signs it.

The ICC Court is directed to pay "particular attention to the formal requirements laid down by the law applicable to the proceedings and, where relevant, the mandatory rules of the place of arbitration, notably with regard to the reasons for awards, their signature, and the admissibility of dissenting opinions".[88] The ICC Court has the power to draw the arbitrator's attention to substantive issues. Its focus, however, is more on "oversight" than "appeal" – that is, on the preservation of the overall acceptability, and thereby viability, of the process in countries where it is required to be effective in law.

Less-intensive forms of control include requirements that arbitrators provide their reasoning in written decisions. Also, requiring records to be kept of proceedings is a way to ensure higher standards of process. The rules of the Japan Commercial Arbitration Association, for example, require taking a summary record of each hearing. If a party requests it – or the tribunal orders it – a stenographic

86 Basic procedures for major arbitration institutions are summarized in Chapter 2 and Annex C.

87 International Chamber of Commerce, International Court of Arbitration – Rules of Arbitration, Article 26. http://www.iccwbo.org/court/english/arbitration/rules.asp

88 International Chamber of Commerce, International Court of Arbitration – Rules of Arbitration, Article 17. http://www.iccwbo.org/court/english/arbitration/rules.asp

recording of the proceeding must be produced. And a statement of reasons for the award must be drafted, unless the parties agree otherwise.

5.7.2.2 Internal Codes and Procedures in Mediation

Like arbitration, mediation is increasingly exposed to influences on procedure. For example, mediation institutions often insist on a formal mediation agreement being signed by the parties that employ their services. Such agreements cover, for example, the basic agreement to mediate, the role of the mediator, the authority of parties to enter into a settlement, and the confidentiality of the process.

Some mediation institutions have their own ethical codes, to which their registered mediators are required to adhere. These codes cover matters such as conflicts of interest and confidentiality, as well as certain reporting obligations. The mediation agreement and codes of ethics address key areas that are essential in preserving the field of mediation itself as an effective functioning means of resolving disputes.

While not normally mandated, there are now clear expectations about the structure of mediation processes, as described in more detail in Chapter 2. They tend to include pre-mediation exchanges of case statements; pre-mediation communication between the mediator and parties separately; initial joint sessions with parties and the mediator; and caucus meetings with separate parties. Just as in arbitration, where parties can adapt the procedures, mediators retain the flexibility to adapt and depart from these expectations. However, the "normal" mediation is well enough established to provide a level of predictability to the process.

5.7.3 The "Market" in Voluntary Dispute Resolution

In addition to the quality of the institutions and their procedures, the operation of a voluntary "market" in dispute resolution is in itself a confidence factor. Non-judicial forms of dispute resolution generally rely upon the willingness of the parties, whether by an agreement to arbitrate or mediate, or otherwise. This willingness is an important factor in developing effective dispute resolution. Parties will only pursue such approaches if they meet their needs.

Consequently, arbitration and mediation institutions are constantly improving their services because they are under competitive pressure. There are three main areas of competitive pressure on a dispute resolution institution:

- Other institutions in the same field (i.e., in arbitration, the ICC competes with the LCIA; in mediation, CEDR competes with ADR Group);
- Other forms of non-official dispute resolution (i.e., arbitration, mediation, and conciliation all compete with one another); and
- The official dispute resolution mechanism of the courts.

The success or failure of using non-official methodologies will be proven by the operation of the "market" in dispute resolution and the imposition of such competitive pressures. If non-official processes do not succeed, parties quickly will turn to regulators to solve their problems. Indeed, the trial-and-error evolution of various approaches will constitute an important learning process.

5.7.4 Official Influence over Non-Official Procedures

The official sector can, in some cases, be more confident in non-official approaches to dispute resolution where it has had an opportunity to influence the development of such approaches. There are a variety of ways in which officials can encourage the development of non-official processes. One is to clearly define areas for official decision-making and, conversely, define areas that must be dealt with through non-official means. There are other ways to strengthen regulators' confidence in non-official processes. These include, for example:

- Involvement in the choice of who resolves the dispute;
- Involvement in the dispute itself; and
- Setting clear policy guidelines.

5.7.4.1 Choosing Who Resolves a Dispute

When regulators are concerned about the quality of arbitrators or mediators, or whether those individuals will defer to established public policy, regulators can assume a role in their selection. Regulators might establish registers of arbitrators and mediators, and they might ensure that such registered individuals be suitably trained and experienced.

Dispute resolution professionals could be required to have particular qualifications, as lawyers, economists, or regulatory experts. This may be necessary for the credibility of the institution or process. Dispute resolution practitioners could also be required to have sufficient awareness of the key issues of regulatory policy. Alternatively, the regulator could take direct control of the appointment of arbitrators in specific disputes, as in the case of the Nigerian NCC's consumer disputes (see Box 3-7).

Influencing the choice of dispute resolution professionals should be approached cautiously. In many respects, regulating the choice of arbitrators and mediators may be inconsistent with the voluntary nature of non-official dispute resolution methods. Indeed, excessive regulation might go against the very grain of flexible informal dispute resolution mechanisms and could stunt their growth. There is, then, a necessary balancing act in determining the appropriate level of influence over the choice of who will help resolve a dispute.

5.7.4.2 The Official Sector as a Third Party

Regulators could require telecommunications operators that enter into arbitration or mediation to notify the regulator that the dispute process is occurring and which issues are in dispute. Such notification should include sufficient information to permit the regulator to determine whether to insist on being heard.

Regulators could require that they be included as observers or parties in proceedings addressing sensitive policy issues. Regulators also may require that parties or the decision-makers consult them and seek their comments. For example, they might have the right to provide their views, which would be taken into consideration.

5.7.4.3 Establishing Clear Policy Guidelines

Even where there are important matters of public policy at stake, it is not always necessary for regulators to be directly involved in dispute proceedings to ensure that substantive policy is implemented. Regulators can set clear and detailed policies for the sector before disputes occur. They can develop clear and detailed guidelines, rules, and methods for implementing such policies. The more clearly they establish such measures, the more likely parties and arbitrators will follow such measures. Setting guidelines in advance can establish expectations in a way that ensures policy implementation.

5.8 Timelines and Procedures

An increasingly widespread concern of regulators in designing dispute resolution processes, it appears, is setting timetables for disputes. Comparing these timetables can provide insights into the various approaches regulators are taking, creating opportunities to benchmark procedures against each other (see Annexes A and B for some representative timetables for dispute resolution of various regulators and other bodies).

Disputes can take a considerable amount of time to resolve, (see Box 5-8).

Box 5-8 – Dispute Resolution Timing in Spain[89]

The Spanish regulator, the Telecommunications Market Commission or CMT in Spanish, has power to resolve the following types of disputes:

- Access and interconnection disputes;
- Access to and use of spectrum;
- Disputes over shared infrastructure; and
- Internal appeals (*Recurso de Reposición*).

CMT is supposed to issue its decisions within six months, a period that will be reduced to four months pursuant to the new EU Framework Directive and recent telecommunications legislation. The CMT's decisions may be appealed within the CMT's internal appeal process, which allows parties a month after a decision to bring the appeal, and a month for the CMT to reach its decision and notify the parties.

The CMT's decisions also may be contested before the national courts under the procedures for judicial review of administrative actions. This can take roughly two years. Within 10 days of the decision of the national court, some cases (including cases involving claims exceeding a relatively low amount) may be appealed to the Supreme Court. Resolution of the case before the Supreme Court may take up to four years.

In total, six or seven years may elapse between commencing the dispute and reaching final resolution.

The fact that regulators are focusing on timetables for disputes is significant in itself, particularly where there are serious attempts – as in the EU – to ensure that a dispute is totally resolved within a certain time limit (as opposed to time requirements for various stages). This attempt to focus on an end-point suggests that regulators increasingly are concerned about the detrimental impact on the market of delays through over-use of process. It may also suggest that regulators are increasingly taking a transactional, ends-oriented approach, in which moving forward may be deemed more valuable than achieving the perfect due process. Finally, regulators may recognize concerns about the potential abuse of regulatory process by parties with incentives to resist the airing of issues or adjustment of the *status quo*.

Prescribed timelines are particularly valuable where disputes are approached through consensual methods such as mediation, since such timelines guarantee that recalcitrance and lack of good faith cannot be used endlessly to perpetuate the dispute. With more regulatory policing of processes and timelines, there may be greater scope for use of informal dispute resolution approaches.

In designing timetables it is important to take three broad concerns into account:

- The process must be kept moving toward a solution in a manner that will not cause disruption or stagnation in the market;
- The process should ensure that sufficient time is available for relevant issues to be raised as early as possible, and then properly reasoned through; and
- The process should ensure that errors in fact, law, or policy can be minimized in the first instance or remedied efficiently in the second.

While total time limits may appear to be a relatively blunt approach, regulators may contribute procedures to the sector, offering them to parties as standard or default approaches until parties adopt their own alternative procedures. Such procedures might cover the appointment of arbitrators or mediators; the holding of meetings and hearings; the setting of basic criteria for decisions; determinations of whether or not proceedings should be recorded; the benchmarking of information;

89 Presentation of Clifford Chance at British Institute for Comparative and International Law, 30 October 2003.

requirements relating to good faith participation in the process; and, ultimately, enforcement arrangements.

The government's establishment of standard or default procedures would provide parties to a dispute with a focal point for beginning their non-official dispute processes, reducing the burden of establishing their own procedures themselves. Where parties are in a dispute, there is already a loss of trust. Using up the "social capital" of existing trust on creating procedures may not be the best expenditure of such capital, which may be better focused on actual negotiations within a pre-established structure. Nevertheless, there may be considerable advantages in allowing parties the flexibility to depart from regulator-proposed procedures.

Regulators are faced with complex issues in using aggregate time limits for disputes, particularly regarding when the clock starts and stops, as well as any interruptions that temporarily "stop the clock". For example, the new EU requirement to resolve disputes within four months could be interpreted and implemented differently in different EU member states. It is not clear whether this time period should be interrupted, for example, when the regulator requests further information from the parties.

In the United Kingdom, Ofcom must treat the four-month period as the total time required for resolving disputes, except in exceptional circumstances. When Ofcom requests information from the parties, it must take into account the four-month outer limit in setting a deadline for compliance.[90] However, regulators in other EU countries have indicated that they believe the four-month period is interrupted whenever the regulator asks for information that will take parties time to provide.[91]

There are arguments both for and against the different approaches to timetables and deadlines. The most important concern is that regulators provide as much transparent guidance to parties as possible on how they will impose timelines. If regulators cannot always provide detailed rules on how they will apply timetables and deadlines in advance of disputes, they could at least publish their approaches afterwards and maintain consistent approaches to implementing the procedures.[92]

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90 See Box 2-4.

91 Meeting with regulators at British Institute for Comparative and International Law, October 30, 2003.

92 See Chapter 6 with respect to the development of procedural histories.

6 IMPROVING TELECOMMUNICATIONS DISPUTE RESOLUTION

This chapter focuses on ways to improve dispute resolution in the telecommunications sector. Section 6.1 discusses how the available dispute resolution techniques outlined in Chapter 2 could be improved and better tailored to the sector. Section 6.2 explores opportunities for telecommunications-related technology to improve sector dispute resolution. Section 6.3 then offers some ideas about how to devise new procedures to build consensus and agreement on new commercial or business arrangements. This section considers the underlying theme of how to reduce the destructiveness of a highly competitive and contentious culture and to enhance constructive collaborative solutions to problems.

6.1 Improving Existing Dispute Resolution Mechanisms

6.1.1 Improving Access to International Precedents

Telecommunications regulation and telecommunications dispute resolution are relatively new disciplines in most of the world. As a result, many regulators have not developed a body of domestic precedents to assist in resolving disputes or making future decisions. The result, in some cases, is that regulators and dispute resolution practitioners constantly have to "re-invent the wheel" when they could be relying more on the experience and approaches developed in other jurisdictions.

Countries with a longer tradition of regulatory decision-making (as well as many with newer ones) normally publish decisions in paper format, and increasingly in electronic versions on their websites. These decisions provide important precedents for the domestic telecommunications sector.

In the age of the Internet, the problem of finding good precedents is as much one of information overload as of scarcity. Any good search engine can find thousands of documents on interconnection and tariff disputes within 10 seconds. The problem is finding relevant precedents to assist in resolving specific disputes. The reality is that many precedents are less than optimal, and are simply inappropriate to the circumstances of other countries.

An example in the realm of interconnection disputes can be found in the revenue-sharing approaches for resolving interconnection rate disputes with state-owned incumbent telephone companies. Some incumbents have agreed to permit new entrants to interconnect, but they have required the new entrants to pay what amounts to a "tax" to the incumbents, or to pay them "compensation for loss of market share". This method of resolving interconnection disputes has not resulted in efficient interconnection arrangements. In fact, it provides a poor precedent for other countries.

How can one find good precedents for regulatory adjudication and other dispute resolution cases? Several international organizations have taken initiatives to provide this information. The ITU has developed the Global Regulators Exchange (G-REX) as an online medium for the exchange of information and opinions among regulators on issues they face. Regulators can use G-REX to establish precedents and gain from the experience of other regulators.[93]

The ***info*Dev** program of the World Bank commissioned the preparation of a *Telecommunications Regulation Handbook*,[94] with the aim of distributing information on approaches and "best practices" used to resolve major regulatory issues in various countries. It has been distributed as a book in six languages by the ITU and ***info*Dev**, and is available on both the ITU's and World Bank's websites.[95] Websites of ITU, the World Bank, the European Commission, and leading regulators also provide a

93 More details on G-REX are provided later in this chapter.

94 InfoDev, *Telecommunications Regulation Handbook*, Toronto, McCarthy Tétrault, Hank Intven, editor (2000).

95 http://www.infodev.org/projects/314regulationhandbook and see also http://www.itu.int/ITU-D/treg/index.html

source of good precedents and opinions on how to deal with major telecommunications issues, as have several sites run by telecommunications institutes and consulting organizations.[96]

However, more effort and resources clearly could result in improved access to precedents by regulators and other dispute resolution practitioners. These efforts could be taken by national or international organizations. Each regulator, professional, or dispute resolution organization could play a role by simply documenting and publishing information on their proceedings. As in legal jurisprudence, good precedents will be recognized by dispute resolution professionals and become international benchmarks.

There are two levels at which developing such bodies of precedent may be helpful:

- Substantive decisions, and
- Dispute resolution procedures.

6.1.1.1 Publishing Substantive Decisions

Greater dissemination of information would provide useful benchmarks arbitrators and mediators, as well as regulatory adjudicators and disputants themselves. For example, the publication of pricing information from various markets (such as mobile termination rates and roaming charges) would make it harder for operators to take untenable positions on their costs in the face of contradictory evidence from other markets. The accumulation and organization of relevant information would frame issues for disputants, provide reality checks, and reduce potential abuses even before disputes commence.

6.1.1.2 Procedural Precedents

Regulators and international bodies could contribute to dispute resolution practice by developing better records of approaches to the dispute process itself. "Networks" of process-oriented precedents for future dispute resolution would be a resource for regulators, arbitrators, mediators, and others involved in dispute resolution. Good procedural precedents would record, for example:

- The procedures followed;
- Modes of case presentation used (oral hearings, written submissions, responses);
- Timelines followed and deadlines set;
- The levels of disclosure required by parties;
- Sanctions imposed on recalcitrant parties; and
- Other procedural issues.

As the body of procedural precedent grows, it is likely to generate expectations and internal standards in the telecommunications sector and the dispute resolution community. This will enable regulators to shift their focus from making substantive decisions in disputes toward oversight of the dispute processes managed by non-official sector participants. Section 6.1.2 below discusses how technological solutions may be used to support such precedent networks and information banks.

Regulators also can encourage the dispute resolution professionals in their jurisdictions to develop their own institutions, internal procedures, codes, and review procedures. Many models already exist worldwide. Access to these procedures and precedents will provide confidence to regulators as well as potential disputants in trusting non-official dispute resolution techniques.

6.1.2 Strengthening Non-Official Dispute Resolution Mechanisms

Regulatory adjudication is currently the standard mode of dispute resolution in liberalized telecommunications markets. In some cases regulatory adjudication works well, but in many others there are concerns about problems such as regulatory delays, excessive workload burdens for

[96] http://www.itu.int/ITU-D/treg/, http://www.oftel.gov.uk, http://worldbank.org, http://www.fcc.gov, http://europa.eu.int, http://www.crtc.gc.ca

regulators and industry staff, high costs of regulatory proceedings, and lack of resources or skills to deal effectively with complex and controversial disputes.

As discussed throughout this report, non-official dispute resolution mechanisms, including arbitration, mediation, and conciliation, increasingly are being used to help solve these problems. Used properly, these mechanisms complement regulatory adjudication, while maintaining the regulator's role as prime decision-maker on the major substantive and procedural issues of regulation. Such mechanisms also address the perennial staffing and budget constraints of regulators by freeing up regulatory resources. Regulators can focus on disputes and regulatory initiatives that require their attention for policy reasons, while steering less critical disputes toward alternative mechanisms.

Regulators can take a number of steps to support and encourage the appropriate use of alternative dispute resolution techniques.

6.1.2.1 Endorsing Non-official Techniques

Parties do not always feel able to turn to mediation and arbitration. Some regulatory statutes clearly empower regulators alone to make key decisions affecting the telecommunications sector. However, most regulators encourage consensus and would be delighted to consider regulatory approaches that reflect general agreement of the key players in the sector. Non-official dispute resolution techniques often can be used to create such an agreement.

Regulators can encourage disputants to consider non-official dispute resolution mechanisms by endorsing them officially. They may do so by adopting procedures that explicitly provide for the use of such processes.

In Japan, a special dispute resolution commission with powers to use mediation and arbitration has been established with the Japanese Ministry of Public Management, Home Affairs, Post and Telecommunications (MPHPT) through new legislation. This commission is an integral part of a new policy framework that has been designed to cope with what Japanese policy-makers characterize as a shift from a "telephone-age" to an "IP-age" regulatory framework (see Box 6-1).

Box 6-1 – Japan's Dispute Settlement Commission

In Japan, the Telecommunication Business Law was revised in 2001 to establish the Telecommunications Business Dispute Settlement Commission. The Commission is a special body for settling disputes over issues, such as interconnection, between telecommunications carriers. The Commission operates within the MPHPT but is independent of the MPHPT department in charge of issuing permits and approvals. It consists of a secretariat and five commissioners appointed by the Minister with the consent of both the Japanese House of Representatives and Councillors.

When one telecommunications carrier requests the conclusion of an interconnection agreement, and the other carrier declines to negotiate, the first carrier can ask the Commission to mediate the matter. Both mediation and arbitration are expected to be useful in settling disputes between telecommunications carriers on a fair, simple, and prompt basis.

The Minister of the MPHPT is required to seek the views of the Commission before making administrative dispositions, such as orders or arbitration rulings concerning interconnection. The Commission deliberates on cases before it, then submits a report to the Minister. The Commission is able to make recommendations on new competition rules to the Minister of MPHPT based on knowledge gained in dealing with actual disputes.[97]

97 Presentation, International Co-operation Division, MPHPT.

Australia and Canada have developed excellent examples of "formal" industry-based consensus-building organizations.[98] However, it is also useful to develop support for informal dispute resolution mechanisms. For example, the interconnection dispute procedures established by the TRC in Jordan explicitly give parties the option of arbitration. This demonstrates an official endorsement of a key non-official dispute resolution alternative. The TRC effectively has indicated that it does not have a monopoly over legitimate dispute resolution. Such endorsement is particularly important in countries with long traditions of state-run and centrally planned economies.

To support effective arbitration in Jordan's telecommunications sector, it will be important for the TRC not to unduly interfere with the enforcement of arbitration awards when they are issued. It remains to be seen how the TRC will deal with cases where arbitrators do not follow TRC policy. In this respect, the courts' interpretation of Jordan's new arbitration law will be important – particularly the extent to which the law permits the Jordanian courts to refuse to recognize or enforce arbitration awards on the grounds of public policy. Perhaps the courts will take into account the spirit of the TRC's interconnection dispute procedures and support awards in most cases.

6.1.2.2 Understanding and Strengthening the Local ADR Framework

The Jordanian situation illustrates the importance of reviewing the national arbitration law and assessing the maturation of the local arbitration community.[99] Doing so will help evaluate whether there are the capabilities and legal framework to enable arbitration to be an effective means of dispute resolution. A strong understanding of arbitration law and practice also will make it possible to consider the relationships involved between regulation, dispute resolution, and arbitration processes.

In some cases – particularly those involving significant direct foreign investment in countries with relatively weak dispute resolution traditions and laws – it may be necessary to provide access to international arbitration. This can be achieved, however, in a manner that supports rather than undermines the development of domestic dispute resolution procedures.

An interesting example can be found in the case of the Indonesian "KSO" projects,[100] which were established to encourage foreign investment in the development of the local telecommunications sector in the mid 1990s. The project agreements to implement the KSOs provided that disputes should, in the first instance, be resolved in accordance with the practices and procedures of the Indonesian arbitration rules. However, any party dissatisfied with that approach was entitled to have the dispute referred to international arbitration under the ICC rules. This approach encouraged greater reliance on domestic arbitration in order to avoid the expense and delay involved in international arbitration.

If local legislative frameworks are inadequate for an effective means of dispute resolution, regulators may be able to improve them. The information and communication technology sector has already contributed to the improvement of overall conditions in many countries' economies. For example, the sector has driven improvements in intellectual property laws, investment laws, and corporate governance laws. Improvements to the arbitration scheme would be another welcome example.

6.1.2.3 Improving Enforcement

As indicated in Chapter 5, regulators in many countries have enforcement powers through telecommunications sector legislation. These powers may include the authority to levy sanctions, such as fines or license suspensions, where market participants do not comply with their rules, regulations, and orders.

Use of such official enforcement powers can be a necessary step to providing legitimacy for unofficial dispute resolution, particularly where the civil justice system is inadequate. This step should be taken cautiously. If not, the involvement of the regulator in overseeing or approving arbitration awards and

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98 Canada: See Box 4-2, Australia: See Box 5-3.

99 The TRC did just this in Jordan before issuing its new procedure.

100 "Kerjasami Operasi" joint operations schemes.

unofficial agreements prior to enforcement can undermine the voluntary nature that is so central to non-official means of dispute resolution.

6.1.3 Tapping into Human Resources

Much can be done to improve the capabilities of human resources available to assist in dispute resolution. In many countries, particularly those with relatively new regulatory regimes, new types of disputes are arising for which there is no accumulated dispute resolution experience. In many cases, however, the required human resources – experience and expertise – do exist. As this report demonstrates, extensive lessons can be drawn from existing practices in non-official dispute resolution activities outside the telecommunications sector. Moreover, other regulators who have dealt with similar types of issues can also be an invaluable resource. The issue is often not so much one of creating human resources that do not exist, but rather more of tapping efficiently into those that already exist in most countries.

6.1.3.1 Establishing Panels of Arbitrators and Mediators

The official sector can help build a credible bank of dispute resolution practitioners to whom disputes can responsibly be entrusted. Establishing new panels of arbitrators and mediators who are acknowledged experts in telecommunications sector dispute resolution would provide an identifiable resource. Once appointed, panel members would have professional and economic incentives to improve their capability and credibility.

An example can be found in Hungary, where the telecommunications regulator is establishing a panel of arbitrators to deal with disputes. Such initiatives can extend beyond national boundaries. International and regional organizations can also establish, train, and endorse such panels.

In some cases, such as those involving complex or sector-specific issues, it may be better to rely on panels of experienced international professionals rather than engaging in "on-the-job training" of domestic practitioners whose decisions may undermine development of the domestic sector. A good compromise can be to appoint a dispute resolution board or committee that combines domestic and international members. For example, in the case of the classic three-party arbitration board, domestic representatives could be selected by each of the two disputants, and these representatives could select an international arbitrator with good telecommunications sector experience as the neutral third arbitrator.

6.1.3.2 Collaborating with Existing Arbitration and Mediation Institutions

Existing arbitration and mediation institutions have a direct interest in the use of their services in organizing telecommunications dispute resolution. These institutions already have administrative resources from which regulators could benefit. Moreover, they have an incentive to improve their capabilities, since telecommunications sector disputes will be a new source of business for arbitrators and mediators registered with such institutions.

Regulators and international and regional bodies can work with institutions to develop registers of telecommunications dispute resolution specialists from within those institutions' registered memberships. Combining the resources of telecommunications sector regulators and regional and international telecommunications organizations with those of existing dispute resolution institutions would create opportunities for arbitrators and mediators to develop expertise through conference meetings, discussion forums, dispute resolution congresses, training sessions and other events.

6.1.3.3 Improving Regulatory Networking

In meetings held during the preparation of this study, some regulators commented that they were more familiar with the issues they face than outside experts would be. This is clearly the case where issues are complex and sector-specific. Where countries are facing similar challenges, discussions among regulators can add useful insights and experience. But regulators currently have limited resources to draw on. Regulators would benefit from more accessible, and perhaps less formal, means of drawing upon each other's experience. The Mexican regulator, the the Federal Telecommunications

Commission (Comisión Federal de Telecomunicaciones or Cofetel), is networking with other regulatory agencies, with which it can share relevant experience. Such informal networks will make it easier to pick up the telephone and obtain assistance. The Mexican initiative suggests that there may be a role for additional regulatory collaboration that current structures are leaving untapped.

Regional and international bodies could assist in building such networking relationships by receiving the questions of the day, matching regulators facing current problems with colleagues who have already resolved them, and organizing live virtual conferences to discuss the issues. As indicated, ITU's G-REX is an example of an initiative to build such relationships.

6.1.3.4 Creating Regulator Task Forces

It may be possible for regional and international bodies to assist in the creation of task forces of experienced regulators. These teams could be available to consult with regulators or dispute resolution specialists when specific needs arise. They would be able to direct their colleagues to useful resources, such as potential solutions, benchmarking information, and dispute rulings.

As a practical matter, however, most regulators have a heavy domestic workload, with little time or resources available to help other regulators do their jobs. Indeed, during research related to this report, some regulators reported that they experienced recent cuts in budgets for interaction with foreign regulators or regulatory organizations. Where travel budgets are limited, virtual conferences offer a viable alternative (see Section 6.2 below). Moreover, it takes little time for regulators to simply identify good dispute resolution organizations or domestic precedents, and resources should remain available for such assistance.

6.1.3.5 Cross-Fertilization of the Telecommunications and ADR Communities

Significant efforts could be made in "cross-fertilization" of experiences in the fields of telecommunications sector regulation and dispute resolution. Both fields are in the process of rapid transformation. Many of the new needs of the telecommunications sector can be met with the new resources of the dispute resolution industry. This enables natural synergies to take over and assist in allocating supply and demand of dispute resolution expertise to the sector.

Increasing the dialogue between organizations active in these two fields will improve the design of effective dispute resolution techniques and provide needed resources. New possibilities can arise from:

- Alerting experts in dispute resolution to the potential scope for their services in the telecommunications sector;
- Seeking their input in designing procedures;
- Obtaining their advice on specific cases; and
- Having ADR specialists train regulators in dispute resolution.

6.1.3.6 Encouraging Collegial Sharing of Experiences

One of the most beneficial aspects of dispute resolution communities is the sharing of experiences and problems. Telecommunications regulators responsible for regulatory adjudication may find their role somewhat isolating. They are likely to be the sole experts responsible for sector disputes in their jurisdictions. Increased use of regional and international forums to share experiences and approaches would be valuable in strengthening the institution of regulatory adjudication. Section 6.2, below, discusses ways in which the geographical space that separates regulators and the sharing of experiences can be reduced through information technology.

6.1.4 Providing the Right Economic Incentives

It is important to analyze and properly structure the economic incentives of various approaches to dispute resolution. Section 4.2 of Chapter 4 has identified some of the issues to be considered in this regard.

It is important for official sector participants to consider the economic incentives created by each type of dispute resolution approach. One interesting precedent can be found in the approach of Ireland's regulator, the Commission for Communications Regulation (ComReg), to funding the cost of mediation. While ComReg underwrites the parties' costs of resolving their dispute, dispute resolution is nevertheless not a "free good", since it is borne by the telecommunications community at large through regulatory fees. Time will tell whether this approach provides good incentives for efficient dispute resolution. Industry pressures to reduce costs should encourage efficient resolution. On the other hand, some disputants could abuse the system by imposing more than their share of costs on the industry.

Subsidies for unofficial dispute resolution may be more economically efficient for regulators than the cost of resources expended on regulatory adjudication. Economic studies of court systems could be employed to evaluate the likely cost reductions of targeted subsidies. Once a culture of mediation develops in the sector, there may be scope for passing some of the costs back to individual disputants.

6.2 Technological Solutions for a Technological Industry

Information technology and expanding telecommunications infrastructure clearly can assist in dispute management and resolution. This section discusses several ways that new and existing technologies can be used to develop and improve dispute resolution techniques and consensus-building measures.

6.2.1 Virtual Conferencing

The Internet has extraordinary capabilities for organizing and sharing information, as well as for consultation and the conduct of interactive processes. The simplest applications involve sharing documented materials. Telecommunications regulators already use websites extensively to disseminate information and publish consultative materials. International organizations such as the ITU also offer online consultation services, such as G-REX, through which regulators can ask each other questions and share experiences.

Written communications still fall behind live contact, however, when it comes to sharing experience. Virtual conferencing – creating virtual "consultative networks" – can enhance the capabilities of international development organizations like the ITU and the World Bank to encourage institutional and sector reform. However, the use of such networks at these institutions is still very underdeveloped.

One example of such capabilities is the use by the ITU's Telecommunication Development Bureau (BDT) of an Internet-based network for online conferences and exchanges, the first such virtual conference held among Wi-Fi experts and potential users. Subsequently, G-REX virtual conferences have been held on interconnection dispute resolution and international efforts to counter spam. These virtual conferences use an online, live conferencing service that allows a geographically dispersed group to participate in an audio conference call (which could be VoIP but often involves a conventional conference call) and simultaneously receive a video stream of the speaker's image and Power Point presentation. Online, live conferencing software and facilities are still quite rudimentary but may ultimately permit concurrent video streaming of all participants in a "roundtable setting".

These kinds of capabilities can enhance industry consensus-building and private dispute resolution in the telecommunications sector by using "virtual forums" to present and discuss the availability of international benchmarking data.

A seminar in 2002, organized by the Oxford Internet Institute, focused on using the Internet to enhance public participation in the functioning of public institutions and representative bodies. Such consultative networks can be used for consensus building and dispute management and resolution, as well as a vehicle for encouraging "bottom up" efforts to reform public institutions.

Internet-based "virtual forums" can ensure the widest possible accessibility of information about agendas, timetables, participants, and background information relating to the activities of the forum. A virtual forum also can involve observers and participants from geographically dispersed locations.

6.2.2 Collaboration with Institutions and 'E-Businesses'

There is a strong case for having educational institutions, including major business schools and public policy institutes, take a leading role in developing new "consultative networks" and capabilities, in collaboration with international development institutions. Many educational institutions already have continuing education programs for business executives and public officials. Universities often have access to Internet bandwidth that other participants may not. So regulators can use this broadband access to increase live communication among regulators around the world.

"Consultative networks" can be increasingly critical to overall corporate governance and could play an increasingly important role in the management of public institutions, as well. It might be, for example, very promising to develop projects focusing on "consultative networking" as a basis for exploring a range of collaborative arrangements with "peer" educational institutions around the world.

There is considerable talk these days by senior executives of Internet-oriented firms about the next generation of the Internet and the creation of a new "computing grid". The original Internet infrastructure was built through a collaborative undertaking among universities and research institutes. It may be possible, then, to develop a new Internet grid to address not only priorities relating to pure information processing and exchange but also to enhance the opportunities for real interactive exchanges of information. Such a grid would focus new attention on the importance of interactive activities to develop consensus on telecommunications issues. Such a project could be of interest to ICT equipment and service companies, as well as software firms that are developing "'Net meeting" capabilities.

6.3 From 'Dispute Resolution' to 'Problem Solving'

According to the conventional wisdom, a key to success in opening telecommunications markets is to establish independent regulatory bodies. This approach often follows the models of the FCC in the United States, Ofcom in the United Kingdom, the CRTC in Canada, and ART in France. Efforts by international agencies like the ITU, the World Bank, and more recently the WTO, have encouraged development of new independent administrative mechanisms to regulate telecommunications markets.

Regulatory bodies established for the telecommunications sector are slowly evolving to try to catch up with market developments. Institutional mandates are widening and refocusing to deal with the convergence of the telecommunications, media, and information service sectors. They are also addressing significant changes in competitive conditions in the industry. These trends may lead toward more emphasis on competition law and policy and a general focus on dispute resolution.

Increased attention also is focused on how regulation can create favourable conditions for investment, which is essential for the development of national telecommunications and information industries. Policy-makers' attention is directed with renewed vigour at how regulatory mechanisms and policy might contribute toward economic development of a sector that suffered financial setbacks in recent years.

Traditional independent regulator models have drawbacks. These are visible in developed economic and institutional settings, such as the United States, where there is extensive use of litigation and formal administrative proceedings, often resulting in significant delays and, at worst, "regulatory gridlock". These problems are becoming evident in some parts of the European market where regulatory initiatives are tied up increasingly in extended administrative proceedings and court reviews.

Furthermore, traditional approaches to dispute resolution often fail to take into account the broader structural problems underlying such disputes. The definition of the subject matter of a dispute is typically initiated by the party bringing it to the attention of the regulator. Typically, the other party disagrees and poses its alternative perspective by defense or counterclaim. As a result, every issue is structured in polar terms along the axis set by the two parties in question. Adjudicators are asked to choose which perspective best fits applicable regulation or, if neither does, to impose a third view.

Disputes in the telecommunications sector are often more complex than this, however, and they commonly involve the interests of a range of parties, including some not involved in the specific

dispute. Approaching dispute resolution necessitates going further than treating such disputes individually.

There is a need to increase focus on consensus-building measures that will lead to solutions that take into account other issues, other parties, and broader structural changes that may help re-frame the sector's problems. This would involve exploring not only ways of resolving individual disputes, but seeking consensus in solving underlying dispute-generating problems.

This section identifies various steps and situations where new approaches to consensus-building initiatives would be useful. The discussion is relevant to policy-makers and regulators in both developed and developing countries, and in countries of markedly different sizes. In fact, it may be easier to introduce new and innovative administrative mechanisms where regulatory institutions are only at an early stage of development. The regulatory frameworks and the rules of engagement among industry participants and government authorities in such countries are less established, and vested interests are less powerful. Since such countries often have weak official mechanisms, they may benefit particularly from consensus building and consultative forums.

6.3.1 New Approaches to Consensus Building

To increase reliance on consensus-building mechanisms, policy-makers and other official sector participants must experiment with approaches to regulatory process that including greater involvement, initiative, and even leadership by market participants.

6.3.1.1 Sector Reviews

Regulators and other "official" participants in the telecommunications sector frequently review their approaches to sector performance and governance. Such broad sectoral reviews can be designed to help resolve long-term disputes or the issues underlying them. Sectoral reviews can be structured to decrease the adversarial polarization inherent in traditional regulatory adjudication and to increase consensus-building.

In some cases, sectoral reviews have focused on the potential to improve sector performance through use of non-traditional regulatory approaches. A good example can be found in the review of the Danish telecommunications sector by the Danish regulator, NITA (see Box 6-2).

Box 6-2 – Reviewing the State of the Sector in Denmark

The National IT and Telecom Agency (NITA), the Danish regulatory agency, has been at the forefront of efforts in Europe to develop consensus-building and private dispute resolution among telecommunications operators. NITA has undertaken an overview of key issues facing the Danish telecommunications sector, exploring obstacles to the smooth evolution of competition in the sector. It conducted hearings involving all key participants in the sector and published a comprehensive report identifying a range of issues that participants in the sector believe need to be addressed, based on a view of the Danish telecommunications sector as a whole.

As a result, NITA has decided to establish new consultative procedures among key industry players. In order to resolve nagging, ongoing disputes and avoid future areas of potential conflicts, the NITA has decided to "take stock" and look at issues on an integrated and comprehensive basis – not merely in isolation. This is an effort to change the overall climate among competitors into one that is more cooperative in spirit. What is interesting and important is the overall effort to "clear the decks" and focus not merely on handling individual disputes but on changing the overall environment within the sector.

In many business and government circles, outside facilitators are used to conduct reviews of current approaches. This is occurring in corporate strategy, local government, and environmental planning, to cite only a few examples. Facilitators employ consensus-building techniques to bring together parties to share perspectives and explore and negotiate how differing interests may be combined to produce mutually beneficial results. Such techniques are available to regulators to tease out and identify

structural problems in the sector and identify ways of solving them, including by facilitated negotiations among market participants.

Facilitated reviews would not necessarily involve a formal "governmental proceeding", although their results could be endorsed officially if necessary. Results of such consensus building measures might include:

- ***Enabling paradigm shifts:*** At the "macro" level, well-designed processes could enable participants to take a step back and review the big picture issues confronting the sector. This could produce improved conceptual ways of understanding and defining sector problems, as well as proposals for addressing them.
- ***Integrated solutions in complex cases:*** Existing complex disputes can be strong candidates for consensus-building measures during broad sector reviews. Governmental authorities could draw together interested parties, such as relevant ministries, operators, foreign investors, licensing authorities and consumers to explore various perspectives and potential value generating solutions.
- ***Revising existing regulation:*** Consensus-building measures could be used to rethink and revise existing regulations and rules, or to devise new ones.
- ***Identifying converging interests and commercial opportunities:*** Agreements governing commercial relationships among key industry players might emerge from consensus-building measures.
- ***Industry codes and protocols:*** Further development of industry codes and protocols could result from consensus-building measures.
- ***Dispute prevention:*** As mentioned elsewhere in this report, the prevention of disputes is as important as resolving disputes after they have arisen. Processes that encourage players to exchange perspectives about their respective interests are generally more likely to reduce the overall contentiousness of an otherwise competitive sector.

The results of consensus-building processes, if they are straightforward contractual agreements, would be enforceable privately and may not need further regulatory involvement. Where important issues of policy are concerned, however, they could be subject to review, adoption, and ultimately enforcement by governmental authorities. The Malaysian Access Forum is an example of a consensus-led body whose initiatives on infrastructure are within the bounds set in the regulator's policy guidelines and will require approval by the regulator (see Box 6-3).

Box 6-3 – "Consensus" in the Malaysian Access Forum

The Malaysian Multimedia and Communications Act recognises the potential for using industry bodies to play a central role in the industry's regulatory activities. For example, in the realm of interconnection issues, market participants have established the Malaysian Access Forum (MAF). The MAF, which is intended to develop the codes and guidelines for access issues, is independent of the Malaysian Communications and Multimedia Commission (MCMC) and is structured through a membership corporation separate from the Commission.

The MAF's Board of Directors represents four categories of service providers under the Act. Although the forum is guided by a chief executive officer and secretariat, based on a work plan approved by the membership, its activities are based around working committees operating on the basis of a principle of consensus, as defined in the articles of association of the forum.

According to the articles, "Consensus is established when those participating in the consideration of the subject at hand have reached substantial agreement, and it requires that all views and objections be considered, and that a concerted effort be made toward their resolution". The articles go on to provide that "[u]nder some circumstances, consensus is achieved when the minority no longer wishes to articulate its objection and no major interest maintains a negative standard".

Box 6-3 – "Consensus" in the Malaysian Access Forum *(cont'd)*

The MCMC expects that the MAF can operate relatively autonomously, although the MCMC's approval is required for the regulatory instruments adopted by the forum. As a general matter, regulators will need to decide on the relationship between the roles and responsibilities of the regulatory body and the industry consultative body. Importantly, the Malaysian regulator does not view the informal forum as a part of its own consultative mechanisms but as an independent industry-driven forum. This important conceptual distinction should have an effect on the operation of the MAF.

The forum will have to address how to encourage involvement in the industry forum by consumer groups or even other governmental entities, for example, those with responsibilities for competition policy. Competition authorities do not currently have a significant involvement in the Malaysian telecommunications environment. In other countries, where there is likely to be a more significant role for such officials, it will be important to decide how the activities of an industry-oriented forum can accommodate potential concerns about collaborative discussions among key industry participants.

6.3.1.2 Industry Committees and Steering Groups

As previously discussed,[101] countries such as Canada and Australia have developed successful forms of industry committees and steering groups to resolve key issues in telecommunications regulation. In seeking structures for consensus-building measures in the telecommunications sector, there are also resources to draw from in other sectors. One example of the problem-solving approach to negotiation is the concept of "partnering", which has developed in the construction industry.

Partnering is a voluntary, non-binding collaborative process that focuses on solving common problems between different groups working on the same project or sharing a common purpose. This can be done by developing teams with common goals, establishing and implementing project action plans, and establishing conflict resolution machinery. It is primarily a means of dispute prevention rather than dispute resolution. The results, where partnering has been adopted within the construction industry, have been quite dramatic, with a significant improvement in the implementation of major infrastructure projects and a marked reduction in the number of disputes.

6.3.1.3 "Refereeing" Consensus-Building Processes

The role of public authorities in new institutional arrangements can take many different forms. In some situations, they might be direct participants in consultative discussions or dispute resolution processes. At other times, the role may be as an occasional onlooker or monitor of the process. Section 5.5 of Chapter 5 explored oversight methods by which regulators and courts could ensure that a mediation occurs and could review indicators demonstrating whether parties have acted in good faith. These types of indicators could be used in connection with self-regulatory mechanisms organized to develop consensus. This could result in regulators not even having to be directly involved in many areas of regulation. Intervention may be needed only where there are clear signs of bad faith or lack of attention to problems that are being raised by less powerful parties.

Regulators could then shift their focus from generating authoritative rules for the sector toward regulating the process by which sector participants themselves identify problems and ways of addressing them. Regulatory intervention would be needed more to police the process of discussions and decision making than the substantive decisions themselves.

Intervention might take the form of penalties or incentives for actions or inaction that indicated a lack of good faith. Participants falling short of the standards of the process could be made to forfeit positions. For example, a regulator might establish a consensus- building mechanism for interconnection issues, but an operator might refuse to participate and engage in exploring and

101 Canada: See Box 4-2, Australia: See Box 5-3.

evaluating all of the options. The regulator could penalize this refusal by removing the opportunity for the operator to argue its case and by imposing pricing models proposed by other operators.

The difference in such approaches from ordinary dispute resolution is in the greater focus on process and participants' behavior. The regulator would not determine the choice of an interconnection pricing model, for example. Rather, the penalty would relate to participants' failure to engage in good faith negotiations and the foreclosure of their involvement in the process. This would ensure that participants have incentives to engage in the process in good faith, exploring various ideas from each other's perspectives. The regulator would be acting more as a referee, issuing "yellow cards" and "red cards", and removing market participants from influencing the process that will define the regulatory regime going forward.

6.3.1.4 Consensus-Building Venues

The basic location or "venue" for private dispute resolution does not necessarily have to be an official public sector institution. Dispute-resolution discussions can occur under the auspices of arbitration institutions and international organizations (such as the WIPO or WTO) or the private sector (such as CEDR or the ICC). A number of experienced organizations offer dispute resolution services, particularly in jurisdictions with a long tradition and history of private sector dispute resolution.

6.3.1.5 Developing Procedural Histories

It is valuable for regulators that use consensus-building techniques to document and publish the approaches they have taken and the reasons for their apparent successes and failures. This will enable the development of procedural lore and allow regulators to identify techniques that will emerge as tried and tested approaches.

Sharing such procedural histories, or case studies, with other regulators internationally would greatly enhance expertise in conducting such processes. Regulators from other countries could become involved directly as observers or facilitators themselves, bringing their experience to bear on problems they have already dealt with at home.

6.3.2 Opportunities for Consensus-Building Mechanisms

As discussed throughout this report, a number of factors support the use of, or at least experimentation with, alternative consensus-building and dispute resolution approaches over traditional regulatory adjudication. Some of these factors are more relevant in well-developed industrial markets. Some key reasons for experimenting with alternative approaches are summarized below.

6.3.2.1 Traversing Legal, Institutional, and Jurisdictional Complexities

The telecommunications sector operates in the context of an increasingly complex institutional environment. There are often overlapping laws, jurisdictions, and authorities, including:

- Domestic, regional, and international legal systems;
- Telecommunications, competition, and foreign investment laws; and
- Telecommunications sector regulators, competition authorities, and consumer protection agencies.[102]

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102 In some jurisdictions, the roles and responsibilities of regulatory bodies and competition authorities are tightly compartmentalized. Industry players may face a need to choose a regulatory as opposed to a competition law forum, or their choice of forum may be governed by relevant principles or procedures determining which forum must be accessed initially. These principles may determine whether relief must be sought first from a sector specific regulator or whether the jurisdiction of competition authorities is pre-empted altogether. Some regulatory bodies such as Ofcom have only recently been granted authority to apply or consider the principles or criteria of competition law. Other agencies, such as the FCC, have long had a mandate to take into account relevant antitrust law principles and precedent even though such jurisdiction has seldom foreclosed an independent role and responsibilities for competition authorities. Nevertheless, jurisdictional disputes or concerns over overlapping jurisdiction have remained commonplace in the United States in cases involving mergers or acquisitions where the FCC and either the Federal Trade Commission or the Department of Justice have parallel jurisdictional claims.

Informal consensus-building procedures permit participants and decision-makers to take into account a diverse range of applicable legal standards and jurisdictions. Regulators and other officials with differing mandates can often adopt a broad industry and stakeholder consensus.

6.3.2.2 Dealing with Converging Industry Sectors

The rapid development of Internet-related services has resulted in the diversification of telecommunications sector firms into broadcasting, information services, entertainment, and electronic commerce activities. Issues in dispute may be beyond the ordinary jurisdictional reach of telecommunications regulatory frameworks and may involve areas that other laws or regulations do not address. Informal consensus-building mechanisms can enable market participants to cover areas such as intellectual property, broadcast standards, obscenity laws, security laws, data protection policies, and commercial practices for new electronic services in a combined forum. This can strengthen public confidence in the accountability of business or commercial practices, relieving government agencies of burdens that leave them limited time and resources to set the codes and protocols for important new Internet-based services.

6.3.2.3 Managing Technical Complexity

The regulatory issues raised by interconnected telecommunications networks can become very complex. Increasingly, seamless interconnection depends on the inter-operability of software-driven systems and embedded "intelligence" in networks, rather than merely physical interconnection of cables.[103] Associated regulatory issues can defy the capabilities of traditional regulatory institutions and may be better handled in industry consensus-building processes.

[103] For example, the unbundling of local loops requires very sophisticated intervention by regulators with respect to the operational architectures of complex telecom networks. This is also the case with the intermeshing of complex logistical systems for billing and ordering facilities that are maintained by large telecom operators today.

7 CONCLUSION

The development of effective and efficient dispute resolution is an important policy goal in the telecommunications sector in most countries. But there are numerous challenges in reaching this goal.

7.1 Increasing Complexity

In recent years, the challenges of sectoral dispute resolution have become increasingly complex. The causes include:

- Liberalization and rapid transformation of an increasingly wide range of telecommunications markets;
- Emergence of a multiplicity of new players in existing and new telecommunications markets, as well as the financial failure of many new players;
- Rapid technological change, particularly in wireless and Internet-related markets, including VoIP-related services;
- Increasing technical complexity of telecommunications services, particularly spectrum and interconnection-based services;
- A sector-wide financial crisis that has undermined operators' abilities to roll out new services, sometimes resulting in increasingly aggressive commercial behavior;
- Asymmetry of market power, sometimes complicated by government ownership in dominant service providers and potentially conflicted regulatory authorities;
- "Gaming" (i.e. strategic abuse) of regulatory processes to gain market advantage, by both new entrants and incumbents; and
- Inadequate or insufficiently detailed regulations or license conditions on major issues such as interconnection charges, the scope of licensed services, and spectrum use.

7.2 Rapid Change from New Technologies

In addition to complexity, the sector is experiencing rapid change. New technologies and services are changing business models and value chains radically, affecting financing and market structures. The impact of IP and computer-related technologies, as well as the increasing dissemination of broadband services, are challenging competitive relationships and the financial dynamics of today's telecommunications sector. The Japanese market illustrates how new ISP-based competitors leasing broadband capacity from incumbent operators can make inroads in the traditional telephone service markets of incumbents. It will become increasingly important for regulators around the world to understand the new dynamics of what Japanese policy-makers refer to as "IP age" telecommunications regulatory challenges. As the impact of IP technology on industry structures increases, approaches to regulation also will have to become more flexible and better modelled on industry and consensus-driven approaches to regulation.

7.3 The Increasing Importance of Dispute Resolution

In addition to increased complexity and the rapidity of market change, there is more at stake in telecommunications sector dispute resolution than ever before. Policy-makers and regulators are increasingly realizing that dispute resolution procedures are not merely an arcane concern of legal specialists but have a central strategic significance for sector development. It is widely recognized that failure to resolve disputes quickly and optimally can:

- Block or reduce the flow of capital from the financial community into the telecommunications sector;
- Delay the introduction of new services and infrastructure;
- Result in a lack of competition, higher pricing, and lower quality of service; and

- Retard sectoral liberalization, as well as the general economic and technical development of the sector.

The importance of these issues is as relevant for developing markets as for developed ones. Indeed, making infrastructure and services available to massive unserved segments of the world's population depends on attracting and deploying capital without the hindrances of prolonged, unpredictable sector disputes.

7.4 Areas for Improvement

With more at stake in an increasingly complex sector, there is a greater focus today on concerns about the transparency, predictability, and speed of decision-making. The intensified speed of technological and market change is requiring faster-paced decision-making in disputes. Some consequences of this trend are:

- Existing decision-making procedures, and the timing and scope of review procedures, have to be reconsidered so that an emphasis on due process does not result in losing sight of the imperative of quick and effective decision-making that allows the sector to progress.
- Regulators must operate on the basis of more overt timetables for resolving disputes, such as those in the EU framework for dispute resolution.
- Regulators have to draw increasingly on relevant experience of other regulators through better access to precedent, procedural timetables, and other operational and financial benchmarks.

7.5 Improvements Under Way and Available Resources

Many regulators are rising to the challenge of expediting and improving the quality of dispute resolution. Good models and precedents for regulatory dispute resolution are illustrated throughout this report. While regulatory processes in developed markets are often held out as models for developing countries, it is evident from this study that they have considerable needs for improvements in their approaches to dispute resolution. Excessive delays, through extensive use of review procedures and interim measures in some countries, for example, have delayed significantly the implementation of regulatory policy in local loop unbundling and leased lines.

In some countries, one may want to consider recourse to the courts, which in some cases may be another avenue for dispute resolution. In a few jurisdictions, the courts can encourage ADR or develop their own process to "fast track" disputes (such as court supervised mediation) or resolve issues without resorting to traditional means.

Substantial efforts are under way in most EU countries to remedy delays in dispute resolution. This report also has illustrated how several developing markets are taking innovative approaches and drawing upon non-official or traditional resources, such as in Botswana, Jordan, Malaysia, and Nigeria.

Many regulators simply do not have enough resources to address all disputes efficiently and optimally. There are many reasons for this. Some include:

- An excessive workload volume;
- Insufficient budgets, staff and other human and technical resources;
- Inadequate economic, legal, or technical expertise;
- Dysfunctional or abusive regulatory actions taken by some stakeholders;
- Poorly functioning formal regulatory dispute resolution processes; and
- Lack of experience in telecommunications dispute resolution.

There are both long- and short-term solutions to many of these problems. In the longer run, improved regulatory frameworks and better formal dispute-resolution procedures can solve some of the problems.

7.6 Tapping into Non-official Sector Resources

Some problems, however, will remain difficult for regulators to resolve in either the long run or the short run, due to budget constraints and the other problems listed above. Given these problems, regulators are increasingly looking beyond the "official sector" for solutions to telecommunications sector disputes. The major "non-official" or alternative approaches being taken by regulators have been discussed in this report. They include:

- ADR techniques such as arbitration, mediation, conciliation, and negotiation;
- Industry steering groups and other self-regulatory mechanisms (i.e., for access and interconnection issues) and ombudsmen schemes (i.e., for consumer disputes); and
- Use of outside consultants to supplement official staff where regulators lack expertise in reaching a decision.

Much of this report has focused on ways to move forward in utilizing such non-official resources and alternative approaches to dispute resolution. As the report has indicated, regulators should have strong incentives to use alternative approaches, given the cost to the sector of delays in resolving disputes swiftly and effectively.

Alternative approaches represent a considerable available resource for regulators. The non-official sector and alternative approaches to dispute resolution are rich in techniques, professional experience, and human capital that can help meet some of the demands being imposed on the official sector. Alternative dispute resolution, if well designed, can be less adversarial than traditional regulatory adjudication. Most good unofficial dispute resolution mechanisms focus on the long-term interests of stakeholders in the sector rather than their positions in a current dispute.

Policy-makers and regulatory officials in many countries have expressed concerns about the utility of ADR in the regulatory context. They are concerned, appropriately, about permitting the non-official sector to take a more prominent role in dispute resolution. In many cases, these concerns reflect problems in enforcing regulatory policy through voluntary rather than coercive mechanisms. In some cases, efficient regulatory adjudication will be the only means of ensuring the desired outcomes. In others, officials may be able to draw upon non-official approaches and resources, subject to sufficient oversight for implementation of such approaches.

Providing sufficient oversight will involve determining the appropriate levels of substantive appeal and procedural review over adjudication decisions of arbitrators and other non-official dispute resolution practitioners. Regulators must develop mechanisms to ensure that official policy will be implemented in non-official procedures.

To build useful and credible alternative dispute resolution approaches, regulators will rely upon, and can help develop, the confidence factors that demonstrate the non-official sector's capacity to address disputes effectively.

Cross-Fertilization and Sharing of Experiences and Information

In addition to developing and supporting alternative dispute resolution mechanisms, the report has discussed a number of benefits of increased cross-fertilization between the non-official dispute resolution field and telecommunications sector regulators. Exchanges of experience and information between the arbitration and mediation fields and telecommunications sector policy-makers and regulators would generate resources to assist in resolving disputes – formally or informally. Such cross-fertilization would introduce new techniques to stimulate efficient dispute resolution. It also would make the experience of non-telecommunications dispute resolution professionals available to telecommunications regulators. Experimenting with new approaches and encouraging a "market" in dispute resolution will likely improve the quality of competing dispute resolution mechanisms.

Sharing experiences among policy-makers and regulatory officials will be important to consolidate the benefits and lessons learned from such innovative approaches. Greater reliance on "networking" and consultative exchanges in real time among regulators can greatly enhance this process. The ITU's G-REX may be only a first step toward developing online capabilities for regulators to meet and

discuss common problems and challenges, as well as exchange strategically relevant information. The broadband revolution – and the emergence of a new generation of Internet services – offers great potential to facilitate the work of key policy-makers and regulators. Officials should incorporate the technologies they regulate into their dispute resolution practices.

7.7 Consensus-Building Measures

Dispute prevention is as important as dispute resolution. Sectoral consensus-building measures can help to reduce the antagonisms generated in competitive markets and identify converging interests among market participants. Industry steering groups, stakeholder committees, and other non-official forums can identify fault lines in the sector and anticipate disputes. By participating in such forums, regulators or their staffs can obtain useful input to improve overall sector policy and regulation.

The efficacy of dispute resolution depends fundamentally upon the behavior of disputing parties. A key issue for policy-makers and regulators, then, is to understand and work with the incentives of market players. This report has discussed ways of structuring economic and procedural incentives to reduce capricious abuse of dispute processes and to increase the scope for consensus. The telecommunications sector will see significant long-term benefits if parties can move away from their disputed and entrenched positions in official disputes, and move toward alternative mechanisms where they can share in developing mutually acceptable approaches for the sector to move forward. The purpose of this report has been to provide ideas, precedents, analysis, and suggestions for ways to achieve that objective.

ANNEX A INTERNATIONAL DISPUTE RESOLUTION TIMELINES

A.1 Timelines within EU Framework Directive

Policy-makers in the sector are becoming increasingly concerned about the time involved to resolve disputes and the related uncertainty that an extended dispute resolution process creates. For example, Article 20 of the Framework Directive of the EU provides:

> *In the event of a dispute arising in connection with the obligations arising under this Directive between undertakings providing electronic communications networks or services in a Member State, the national regulatory authority concerned, shall, at the request of either party, issue a binding decision to resolve the dispute in the shortest possible time frame and in any case within four months except in exceptional circumstances. The Member State concerned shall require that all parties cooperate fully with the national regulatory authority.*

A.2 Timetables for Adjudication in EU Member States

The following table provides examples of timeframes for dispute resolution in various EU Member States.

Austria: Article 41(3) of the Austrian Telecommunications Act requires the Telekom-Control-Kommission to decide within 6 weeks with a possible 4 weeks for delay.

Finland: Disputes are generally handled in 2-5 months with some issues relating to costing extending for two years.

France: The ART, the French national regulator, is to act within 3 months with the possibility of an extension for up to 6 months.

Germany: Section 37(1) of the Telecom Act provides for 6 weeks to resolve a dispute, with an extension of 4 weeks with Section 28(2) establishing this as a maximum period.

Luxembourg: Disputes are generally resolved within 3 months.

Portugal: Decree-Law No. 415/98 provides a 6-month period for handling complaints.

Spain: Article 25 of the Spanish Telecommunications Law provides 6 months for the CMT to resolve interconnection disputes.

Sweden: The Swedish Telecommunications Act provides 6 months for the national regulatory agency to deliver a decision; however, no timetable is established for mediation.

Switzerland: Some disputes involving the Swiss regulatory agency have been extended, requiring up to 2 years to resolve though 6 months is viewed as a reasonable period for resolving disputes.

Greece: A Presidential Decree issued 31 December 2002, provides for arbitration for disputes between operators, operators and the state or users. Legislation in force is applied. The National Telecommunications and Post Commission (EETT) Plenary names arbitrators who establish the schedule to be followed except where the schedule is deemed to be contrary to the national interest. Decisions are to be rendered within 3-6 months of the last discussion of the case.

A.3 Timeline – Adjudication by the ART in France

Another useful way to assess representative timetables for dispute resolution in the EU is to look at typical timetables for the various steps of a dispute. The following is an example of a typical timetable for the ART in France for handling disputes:

Commencement:	After the claimant documents its position, the Chief Legal Officer of the ART convenes the parties to establish a provisional timetable.
One month thereafter:	The defending party documents its position in the proceeding.
Two weeks later:	The complainant submits a memorandum in reply.
Two weeks later:	The defending party provides a response to this memorandum.
One week later:	The complainant has a final opportunity to present its position.
One week later:	The defending party makes its final submission.

A.4 Timeline – Mediation by the Swedish Telecommunications Regulator

An illustrative sequencing of mediation in Sweden may offer additional insights about the timetable for dispute resolution, though Swedish authorities do not generally impose any time limitations on the mediation process:

- Request for mediation from a party;
- Opportunities for both parties to outline their positions in the proceeding;
- Mediation meetings, one at a time or concurrently as appropriate;
- National Regulatory Authority, if requested, can deliver a non-binding statement providing the parties with the NRA's interpretation of the relevant legal issues involved;
- Parties reach agreement or one or both parties decide that a decision by the NRA is preferable.

A.5 Timeline – Adjudication by Swiss Communications Commission

The Swiss authorities have experienced some extended proceedings. The following is illustrative of some of the time intervals involved in the telecommunications sector proceedings in Switzerland:

Negotiations among the parties:	**Three months**
Request for intervention by the Communications Commission/Possible actions to preserve the status quo/ Exchange of documents	**Periods ranging between 3 to 18 months**
Consultation with the Competition Commission:	**Period of 1 to 2 months during the investigation**
Decision by the Communications Commission:	**Period ranging from 1 to 2 years**
Appeal to the federal high court:	**Period ranging from 1 to 2 years**
Final decision by the Federal Court:	**Period ranging from 18 to 48 months**

A.6 Timeline – New Zealand Commerce Commission's Key Determinations

The New Zealand Commerce Commission followed the timetable below in making determinations relating to Telecom New Zealand's cost of complying with its telecommunications service obligation (TSO):

23 April 2003:	Release of models to be used by the Commission in estimating net TSO costs. Concurrent release of analysis of Telecom's TSO cost model.
8 May 2003:	Submissions on materials released on April 23.
15-16 May 2003:	Conference on Commission's modelling and input.
30 May 2003:	Release of TSO draft determination.
30 June 2003:	Submissions due on TSO draft determination.
8-10 July 2003:	Conference on TSO draft determination.
As soon as practicable thereafter:	Final TSO determination.

The current timetable for the Commerce Commission's determination relating to a review of unbundling and network element costs:

2 May 2003:	Release of Request for Proposals for cost-benefit analysis (CBA).
14 May 2003:	Date for written submissions on issues under study.
16 May 2003:	Closing data for proposals to conduct CBA.
30 May 2003:	Selection of consultancy to conduct CBA.
11 July 2003:	Submission of final report on CBA.
31 July 2003:	Publication of Commerce Commission's draft report.
31 August 2003:	Written submissions on Commission's draft report.
10-12 September 2003:	Public conference on draft report and written submissions.
1 October 2003:	Submission of final report to the Minister.

A.7 Timeline – Jordanian Interconnection Decision

The following timeline shows the process followed by the Telecommunications Regulatory Commission (TRC) to reach an interim determination of interconnection rates. With interconnection rates the subject of a dispute between Jordan Telecom, the incumbent fixed line operator, and Fastlink, the leading mobile operator, the process illustrates the relationship of consultation and dispute resolution – dealing with complex situations involving conflicting interests of parties. Thus, the consultative process has been used as the backdrop to and key component of the on-going dispute.

25 November 2002	Interconnection Guidelines approved by the TRC after a six- month review process. TRC establishes policy with key operators to implement the guidelines, including establishing cost-based interconnection rates.
December 2002	Due to requests from Jordan Telecom, Fastlink and MobileCom (Jordan Telecom's mobile operator), the CEO of TRC requests the ISC to establish interim rates pending the establishment of cost-based interconnection methodology and charges.
18 December 2002	First ISC meeting, and ISC decides to determine cost-based interconnection charging by June 2003.

6 March 2003	With cost-based charging not proceeding on schedule, the ISC agrees that if a cost-based methodology is not ready by June 2003, the TRC may use international benchmarks. TRC announces designation of public telecommunications operators to be subject to the Interconnection Guidelines.
June 2003	The operators provide their cost-based models to the TRC but the TRC is not satisfied with the assumptions and allocations in the models.
30 June 2003	TRC issues its decisions on interconnection rates to apply from 1 July 2003 based on international benchmarks pending the development of cost-based methodologies.
September 2003	Rescheduled determination on cost-based rates for mobile termination charges.
1 January 2004	Rescheduled implementation of cost-based rates for mobile termination charges.

ANNEX B AGENCY AND APPELLATE REVIEW OF FEDERAL COMMUNICATION COMMISSIONS (FCC) ORDERS

FCC Internal Processes

B.1 Orders Pursuant to Delegated Authority

1. Final decisions of a commissioner, or panel of commissioners, following review of an initial decision shall be effective **40 days** after public release of the full text of such final decision. All other actions taken by delegated Authority shall be effected upon release or public notice.
2. Within **30 days** after public notice has been given of any action taken pursuant to delegated authority, the person, panel, or board taking the action may modify or set it aside on its own motion. Within **60 days** after notice of any sanction imposed under delegated authority has been served on the person affected, the person, panel, or board that imposed the sanction may modify or set it aside on its own motion.
3. Any party seeking review of a final action taken pursuant to delegated authority may file either 1) a **petition for reconsideration** (with the person, panel or board that rendered the decision) or 2) an **application for review** (but not both) within **30 days** from the date of public notice of such action. If one party files a petition for reconsideration and a second party files an application for review, the Commission will withhold action on the application for review until final action has been taken on the petition for reconsideration.

    a. The **petition for reconsideration** will be acted on by the designated authority (a bureau or office) or referred to the Commission by such authority. If a petition for reconsideration of a final decision made pursuant to delegated authority (by a commissioner or a panel of commissioners) is filed, the effect of the decision is **stayed until 40 days after** release of the final order disposing of the petition. see below for the pleading deadlines concerning petitions for reconsideration.

    b. The **application for review** will be acted on by the FCC. The Commission may also, on its own motion, order the record of the proceeding before it for review within **40 days** after public notice is given of any action taken pursuant to delegated authority. In either case the **effect of the decision is stayed** until the FCC's review of the proceeding is completed.

        i. The **application for review** must be filed within **30 days** of public notice of such action.

        ii. Any opposition to the application must be filed within **15 days** after the application for review is filed.

        iii. Replies to oppositions must be filed within **10 days** after the opposition is filed.

    c. If the FCC denies the application for review, the aggrieved party may still file a petition for reconsideration with the FCC, but it will be entertained only if: (i) The petition relies on facts which relate to events which have occurred or circumstances which have changed since the last opportunity to present such matters; or (ii) The petition relies on facts unknown to petitioner until after his last opportunity to present such matters which could not, through the exercise of ordinary diligence, have been learned prior to such opportunity. The petition must still be filed within **30 days** from the date on which the decision became final, and the deadlines for oppositions, replies, and briefs are the same as those discussed below for petitions for reconsideration of decisions not made pursuant to delegated authority.

B.2 FCC Decisions

1. Decisions made by the FCC as a whole (i.e., not made pursuant to delegated authority), including decisions made on application for review of a decision made by delegated authority, are deemed final, for purposes of seeking reconsideration at the FCC or judicial review, on the date of public notice.
2. A party may file a **petition for reconsideration** with the FCC asking the Commission to reconsider its decision. For actions of the Commission *en banc*, the filing of a petition for reconsideration does not excuse any person from complying with or obeying any FCC decision, order, or requirement, or operating in any manner to stay or postpone the enforcement thereof, absent special order of the Commission. However, upon good cause shown, the FCC will stay the effectiveness of its order or requirement pending a decision on the petition for reconsideration.
    a. The petition for reconsideration must be filed within **30 days** from the date upon which public notice is given of the order.
    b. **Oppositions** to a petition for reconsideration must be filed within **10 days** after the petition is filed.
    c. The petitioner may **reply** to the opposition within **7 days** after the last day for filing oppositions.
3. The Commission may, on its own motion, set aside any action made or taken by it within **30 days** from the date of public notice of such action.

B.3 Appellate Review

A party may appeal any FCC final order (including an order issued on petition for reconsideration) to a United States Court of Appeal authorized to hear such appeals. This timeline discusses rules and procedures pertinent to the District of Columbia Circuit , the court of appeals in which appeals of FCC decisions are most frequently heard. Alternatively, a party may bypass the petition for reconsideration altogether and:

1. File a **notice of appeal** directly with the D.C. Circuit within **30 days** from the date upon which public notice is given of the order.
    a. Any party filing a petition for review with a federal court of appeals must also file a copy of the petition with the Office of the General Counsel of the FCC within **10 days** after the issuance of the order.
    b. After filing the notice of appeal, the appellant has **5 days** to notify each interested party.
    c. Appellant may file a **motion for a stay** to the D.C. Circuit if it 1) can show that moving first before the FCC would be impractical, or 2) states that the FCC already denied the motion in whole or in part. The moving party must give reasonable notice of the motion to all parties.
    d. **Responses** to any motion must be filed within **8 days** after service of the motion unless the court shortens or extends the time.
    e. Replies to responses must be filed within **5 days** after service of the response.
        i. When a response includes a motion for affirmative relief, the reply may be joined in the same pleading with a response to the motion for affirmative relief. That combined pleading must be filed within **8 days** of service of the motion for affirmative relief.
    f. Any motion which, if granted, would dispose of the appeal or petition for review in its entirety, or transfer the case to another court, must be filed within **45 days** of the docketing of the case in the D.C. Circuit.

2. The appellant must serve and file a **brief** within **40 days** after the record is filed. The appellee must serve and file a brief within **30 days** after the appellant's brief is served.
   a. The appellant may serve and file a **reply brief** within **14 days** after service of the appellee's brief but a reply brief must be filed at least **3 days** before argument, unless the court, for good cause, allows a later filing.
3. The clerk must advise all parties whether **oral argument** will be scheduled, and, if so, the date, time, and place for it, and the time allowed for each side.
   a. The parties must provide the court with the names of counsel who will argue no less than **5 days** before the date of scheduled argument.

B.4 Timeline – Practical Experience with Appellate Review of FCC Orders

A substantial number of the FCC's orders are subject to judicial review in the Federal Appellate Courts in the United States. The analysis below is based on a review by the Litigation Division of the Office of General Counsel of the FCC and is indicative of timetables for appellate review with respect to a selected number of representative FCC orders.

In the D.C. Circuit, a petition for review in a typical case was filed in June 2000. Petitioner's brief was filed in January 2001; argument was held in April 2001 and a decision was published in July 2001 (13 months from start to finish).

In another typical case, a petition for review was filed in January 1999 but the case was held in abeyance pending FCC action on a petition for reconsideration. Following a decision on reconsideration, the case was reactivated in December 1999, petitioner's brief was filed in October 2000, argument was held in March 2001, and a decision was published in July 2001.

The Second Circuit Court of Appeals, covering Connecticut, New York and Vermont, is a bit slower. A petition for review was filed in November 1999 and the petitioner's brief was filed in late January 2000. Argument was held in January 2001 and a decision was handed down in September 2001 (22 months from start to finish).

The Eighth Circuit Court of Appeals (Arkansas, Iowa, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota), in a highly complex case, proceeded quickly. The petition was filed in September 1996, the opening brief was filed in November 1996, argument was held in January 1997, and decision was released in July 1997 (10 months from start to finish).

In the Tenth Circuit (Colorado, Kansas, New Mexico, Oklahoma, Utah, and Wyoming), one petition was filed in April 1997 but held in abeyance. After the case was reactivated in October 1999, the opening brief was filed in December 1999, argument was held in November 2000, and a decision was issued in February 2001 (16 months after reactivation).

Finally, in the Eleventh Circuit (Alabama, Florida, and Georgia), the petition for review was filed in September 2000; the petitioner's brief was filed in March 2001; argument was held in October 2001 and a decision was rendered in November 2002 (22 months from start to finish).

B.5 Timeline – ICC Arbitration

Experience indicates that it would be fairly exceptional to complete a standard ICC arbitration in less than 270 days. The time taken for an international arbitration can greatly exceed this, especially if there are jurisdictional hearings and/or challenges. The real challenge for an arbitration tribunal is to effectively manage and maintain momentum so that the process is not endless and subject to delay tactics.

ANNEX C PUBLIC AND PRIVATE BODIES OFFERING ADR SERVICES

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
World Intellectual Property Organization (WIPO) Arbitration and Mediation Centre (AMC) • WIPO has organized a separate arbitration and mediation centre (WIPO AMC) which provides a procedure for expedited arbitration, online dispute resolution facilities, training for arbitrators and mediators and a resource centre for intellectual property dispute resolution.[104, 105] • WIPO AMC is an independent non-profit entity established by and within the WIPO. The WIPO AMC is managed by a director, assisted by a team of lawyers together with administrative staff. The WIPO AMC is guided by the WIPO A&M council consisting of external dispute resolution experts. On certain issues, individual members of the WIPO Arbitration Consultative Commission provide opinions and advice to the Center.	• The basis of WIPO AMC's authority to invoke the dispute resolution services is the voluntary adherence of various IP-related associations and industries that have adopted WIPO dispute resolution in their standard agreements, private parties that adopt WIPO rules, and through cooperative agreements with other dispute resolution institutions.[106]	• Appointing arbitrators and mediators • Administering arbitration and mediations and • Drafting tailor-made procedures. • Creating institutional procedure rules for mediators, arbitrations and expedited arbitration • Furnishing online dispute resolution facilities • Training arbitrators and mediators • Counselling on Intellectual Property Rights dispute resolution and • Providing free of charge meeting rooms for procedures.[107]	• WIPO AMC administers dispute resolution procedures under WIPO rules,[108] and at request, also under UNCITRAL Rules.[109] • Private and confidential unless otherwise agreed by the parties	• Mediation: from 2 weeks to 2 months • Arbitration: from 6 months to 11 months	• Binding on the parties • Appeals are not possible unless waivers are prohibited under applicable law

104 Inventory of Dispute Resolution Mechanisms, What are the Choices for the Telecommunications Sector? (The European Telecommunications Platform, ETP (98) 107) ("The ETP Inventory"), p. 61. http://www.etp-online.org/

105 J. Paulsson, "The WIPO Arbitration Rules", B. Barin, *Carswell's Handbook of International Dispute Resolution Rules* (Toronto: Carswell, 1999).at p. 169.

106 http://www.arbiter.wipo.int

107 http://www.wipo.int/center/index.html

108 http://www.wipo.int/center/index.htm/

109 http://www.uncitral.org/or-index.htm

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
The American Arbitration Association (AAA) • AAA is a non-profit organization that offers dispute resolution services internationally to private and government parties. While it is principally known as a domestic arbitration body for U.S. parties, it has a separate international division with its own international arbitration rules. One advantage to AAA is that it is able to create tailor-made arbitration rules for specific sectors.[110, 111]	• Under the international arbitration rules, the parties are free to agree to their own arbitrators or the AAA can appoint their own panel of arbitrators, which include some telecommunications experts.[112] • The AAA has authority to administer those disputes where the parties have agreed that the arbitration rules of the AAA will apply to resolve their dispute.[113]	• Appointing arbitrators and mediators • Administering arbitrators and mediators • Applying institutional arbitration rules for international disputes • Drafting tailor-made arbitration procedures • Training arbitrators and mediators and • Conducting educational programs.	• Confidential in accordance with express provisions in the AAA rules.	• The AAA has established and maintains as members of its Telecommunication Panel individuals competent to hear and determine disputes administered under the Wireless Industry Arbitration Rules. • Under the AAA international arbitration rules the parties are free to agree to their own arbitrators. The AAA will appoint from their own panel of authorities, which includes some telecommunication experts.	• International arbitration rules, but the enforceability of the waiver depends upon the applicable law.

110 In 1997, the AAA in conjunction with the Cellular Telecommunications and Internet Association (CTIA) created a series of special arbitration rules to deal with the disputes between CTIA members and customers.

111 J.H. Carter, "International Arbitration Rules of the American Arbitration Association", B. Barin, *Carswell's Handbook of International Dispute Resolution Rules* (Toronto: Carswell, 1999) at p. 97.

112 The ETP Inventory, see note 107, p. 65.

113 http://www.adr.org

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
London Court of International Arbitration (LCIA) • The LCIA is a major international arbitration institution based in London. The LCIA operates as an administrating body which oversees arbitrations. The LCIA has authority where the parties have agreed to adopt LCIA rules or the parties have agreed to appoint the LCIA to administer an arbitration.[114, 115] • The LCIA is a three-tier organization consisting of the Arbitration Court, the Board of Directors and a Secretariat.	• LCIA has authority where the parties have agreed (before or after a dispute arises) to adopt LCIA rules or where the parties have agreed to appoint the LCIA as administering or appointing authority in relation to arbitrations conducted under other rules.[116]	• LCIA offers to appoint arbitrators and to administer arbitrations. • LCIA also appoints mediators and conciliators and administers mediations and conciliations, but mediations also may be passed on to CEDR.[117] The LCIA provides: • institutional rules for arbitration • advice service for dispute resolution for users, counsel and arbitrators (this is extensively used) • facilities (meeting rooms are charged separately) and • full arbitration service for the London Chamber of Commerce under the by-laws of that organization.	• LCIA administers arbitrations under its own rules and under UNCITRAL Rules. • Parties may, by agreement, depart from standard rules (procedural timetable, nationality of arbitrators, fee scale and others). • Private and confidential except with express consent by the parties to publish.	• Arbitrators are appointed by the LCIA Court, either at its own selection or at parties' nomination. • Arbitrator and mediator information is maintained through a database based on CVs. The database is regularly updated. • The LCIA monitors standards through detailed database criteria which is up-dated during and after appointment. • Average time is six to twelve months	• Binding on the parties. • Under Article 26.9 of the LCIA Rules, the parties "waive irrevocably their right to any form of appeal, review or recourse to any state court or other judicial authority, insofar as such waiver may be validly made".

114 The ETP Inventory, see note 107, p. 68.

115 M. Lalonde, "The New LCIA Arbitration Rules", B, Barin, *Carswell's Handbook of International Dispute Resolution Rules* (Toronto: Carswell, 1999) at p. 70.

116 http://www.lcia-arbitration.com

117 http://www.lcia-arbitration.com

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
International Chamber of Commerce (ICC) The ICC is perhaps the best-known private dispute resolution body. Its mandate is to promote an open international trade and investment system in the market economy worldwide. The ICC is unique in having consultant status at the U.N. and its specialized agencies. It provides arbitration services through the ICC International Court of Arbitration.[118, 119] Business dispute resolution by arbitration, conciliation and mediation is handled exclusively by an autonomous body attached to the ICC, the International Court of Arbitration.	The ICC International Court of Arbitration is an autonomous body operated by the ICC. The court does not settle disputes itself but acts as an administrating body and has the function of ensuring the correct application of arbitration rules.[120]	The ICC Court provides the following services: • Appointing arbitrators and administering arbitration procedures • Appointing conciliators and administering conciliation procedures • Appointing mediators and administering mediation procedures • Providing institutional procedural rules for conciliation/mediation and • Providing institutional procedural rules for arbitration. • Within the context of the Rules of Arbitration, the Court and its secretariat administer a wide variety of procedures as agreed upon by the parties or fixed by arbitral tribunals. The Court has administered and will administer arbitrations on an accelerated basis if the parties so agree. • The ICC International Centre for Expertise, which is independent from the court, provides services to parties or arbitral tribunals wishing to appoint experts either in aid of finding solutions to a dispute, or for establishing facts in the court of arbitration or litigation.	ICC Arbitrations are all administered in accordance with the ICC Rules of Arbitration. However, in addition to the Rules of Arbitration, the ICC has developed special rules and mechanisms for dispute resolution in specific areas.[121]	• Mediation and conciliation take between one and three months. • Arbitration takes between twelve and twenty four months.	• Awards are binding on the parties according to Article 28.6 of the rules.

118 http:/www.iccwbo.org

119 S.R. Bond, "The Rules of Arbitration of the International Chamber of Commerce", B. Barin, *Carswell's Handbook of International Dispute Resolution Rules* (Toronto: Carswell, 1999) at p. 36.

120 The ETP Inventory, see note 107, p. 71.

121 http://www.iccwbo.org

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
European Commission DG Competition • DG Competition is a directorate in charge of the European competition policy.[122]	• Article 20 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).[123] • Notice on the Application of Competition Rules to Access Agreements of 31st March 1998.	• It acts at the first instance regarding infringement of the competition rules of the treaty. • The directorate plays the role of a de facto mediator and conciliator. • The Commission also has the power to institute its own procedures, which are applicable to any area and service in the telecommunication sector.	• Article 85, 86, etc. seq. EC and Regulation 17/62.[124] • Process is partly private. • Parties have to disclose all information to the Commission. • Commission is bound to protect professional secrets.	• Directorate acts as *de facto* mediator. • A list of national and/or international telecommunication experts is available. • Parties may be assisted individually by an independent expert • Average time depends on the complexity of the dispute.	• Binding in accordance to Art. 85, 86 and Regulation 17/62. • Decision is enforceable under national law. • Appeals against the decisions of DG Competition can be brought to the Court of First Instance and European Court of Justice.
World Trade Organization (WTO) Dispute Settlement Body • WTO dispute resolution procedure is available to its members, which means that only states can refer cases for dispute resolution before a WTO panel. • Private parties will have no direct role in the WTO procedure, but may be able to persuade national governments to initiate a WTO dispute settlement procedure which is of interest to them. • WTO prefers for the countries concerned to discuss issues and settle disputes between themselves prior to resorting to the dispute resolution process.[125]	• Agreement establishing the World Trade Organization.[126]	• WTO may adjudicate on a case-by-case basis under public international law.	• Procedure is mandatory if one party files a complaint and invokes the procedure. • Procedure is only available to members. • Reports are published on the Internet, in publicly available documents and in the WTO Dispute Settlement Report.	• WTO panel may consult experts or appoint an expert review group to prepare an advisory report in relation to the procedure. • Average time is one to one and a half years	• Either side can appeal a panel's ruling. • Appeals have to be based on points of law, such as legal interpretation – they cannot re-examine existing evidence or examine new evidence. • Each appeal is heard by three members of a permanent seven-member appellate body set up by the

122 The ETP Inventory, see note 107, p. 40.
123 http://europa.eu.int/information - society/topics/telecoms/regulatory/maindocs/comgreen/index-en.htm
124 www.europa.eu.int/comm./dg4/
125 The ETP Inventory, see note 107, p. 45.
126 http://www.wto.org

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
WTO *(cont'd)* • General Council of the WTO meeting under different chairmen and different rules of procedure, also performs the functions of the Dispute Settlement Body (DSB), and the Trade Policy Review Body. • DSB oversees the operation of the WTO dispute settlement system. It establishes panels to consider specific cases and appoints the members of the Appellate Body, which hear appeals of panel decisions. • WTO Secretariat provides support to panels; the Appellate Body Secretariat provides support to the Appellate Body. • WTO Secretariat also provides legal assistance to developing countries in dispute settlement matters.					DSB and broadly representing the range of WTO membership. • The appeal can uphold, modify or reverse the panel's legal findings and conclusions. • Appeals should not last more than 60 days, with a maximum of 90 days. • The DSB has to accept or reject the appeals report within 30 days, and rejections are only possible by consensus.
International Centre for Settlement of Investment Disputes (ICSID) • ICSID is part of the World Bank Group which promotes international investment. • ICSID provides a neutral forum for the settlement of investment disputes. It seeks to achieve an ideal balance between the interests of foreign investors and those of the host states. • In exchange for the governments of foreign investors renouncing their ability to exercise "diplomatic protection", developing countries agree to submit investment disputes to ICSID arbitration.	• ICSID is a public international organization created under a treaty, the Convention for Settlement of Investment Disputes between States and Nationals of Other States (the ICSID Convention).[127]	• Arbitrators or conciliators are appointed by the parties, with ICSID simply providing rules of procedure for arbitration and conciliation proceedings together with various administrative functions. • Resolution of investment disputes arising from either treaties or arrangements are provided for under the ICSID convention.[128]	• Decisions rendered in certain ICSID proceedings, as well as several national court decisions relating to ICSID, are widely published with the consent of the parties.	• Majority of the members of a tribunal are required to be nationals of impartial countries unless each member of the tribunal has been appointed by agreement of the parties. • Chairman of the Centre's Administrative Council is the residual appointing authority if the parties fail to appoint an arbitrator.	• No Contracting State or national of such a State is obliged to resort to such conciliation or arbitration without having consented to do so. • Once the parties have consented, in the case of arbitration, to abide by the award.

127 www.worldbank.org/icsid/basicdoc/

128 The ETP Inventory, see note 107, p. 45.

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
ICSID *(cont'd)* • Benefit is that the process mandated by ICSID assures that any lack of cooperation on the part of the host state will not result in a failure of the arbitrarial process. • ICSID provides a neutral forum which shields it from diplomatic protection.[129]		• ICSID provides facilities for the conciliation and arbitration of investment disputes between Contracting States and nationals of other Contracting states. • ICSID does not itself engage in such conciliation and arbitration. • The Centre assists in the initiation and conduct of conciliation and arbitration proceedings, performing a range of administrative functions in this respect.[130]		• Chairman is not restricted in his choice to a Panel of Arbitrators. Arbitrators are explicitly to disclose any past and present professional business and other relevant relationship with the parties. • Average time is two years.	
ICSID Additional Facility • Disputes between States and Nationals of other States that fall outside the scope of the Convention on the Settlement of Investment Disputes.[131] • Administered by the Secretariat at the request of the parties on matters that fall outside the scope of the ICSID Convention.	• Terms on which the secretariat may administer the proceedings are set out in the ICSID Additional Facility Rules.	• Conciliation and arbitration proceedings for the settlement of investment disputes arising between parties in which one party is not a Contracting State or a national of a Contracting State. • Conciliation and arbitration proceedings for the settlement of disputes that do not directly arise out of an investment, and in which at least one of the parties is a Contracting State or a national of a Contracting State; and • Fact-finding proceedings.[132]	• Additional Facility Rules.[133] • The deliberations of the tribunal take place in private and remain secret.	• Administered by the Secretariat. Average time varies.	• Any award is final and binding on the parties. • The awards are not subject to any appeal.

129 The ETP Inventory, see note 107, p. 45.
130 http://www.worldbank.org/icsid/basicdoc/
131 The ETP Inventory, see note 107, p. 55.
132 The ETP Inventory, see note 107, p. 55.
133 http://www.worldbank.org/icsid/facility-archive/1.htm

Name (Contact information for these bodies can be found at ANNEX D)	Basis for Authority	Services Offered	Law, Rules and Confidentiality	Appointment of Arbitrators and/or Mediators	Enforcement and Appeals
Centre for Effective Dispute Resolution (CEDR) • CEDR is an independent non-profit organization supported by multinational business and leading professional bodies and public-sector organizations. CEDR works in partnership with business, governments and the judiciary, both in the United Kingdom and internationally, to develop effective dispute resolution practice. CEDR has been instrumental in helping to bring mediation into the heart of business practice and into the judicial system in England and Wales. • CEDR's mediation accreditation is internationally recognised as a standard of excellence and CEDR's continuing professional development scheme for mediators aims to ensure that the high standards set in the CEDR Mediator Training continue beyond accreditation. • Through CEDR's dispute resolution and prevention service (CEDR Solve), CEDR enables business to cut the cost of conflict by providing a world-class mediation service and a range of professional dispute resolution, training and consultancy solutions using the foremost practitioners in the field.	• For mediation, CEDR has authority where the parties have agreed to use CEDR as their dispute resolution service. • For adjudication, CEDR is a recognised Adjudicator Nominating Body (ANB) and has also produced its own Rule for Adjudication, which is are compliant with The Housing Grants, Construction and Regeneration Act 1996 (Part II, Section 108), which provides a statutory right to adjudication.	• CEDR offers a full range of solutions to enable parties to manage conflict including: • Mediation, early neutral evaluation and expert determination. • Training: CEDR trains business people and professionals for the practical skills they need to get the best from dispute resolution processes and to apply proactive and positive approaches to conflict management throughout their work. • Consulting Service: CEDR offers a consultancy service for companies, governments and public-sector organizations to devise schemes and procedures to manage all kinds of conflict, both internally and with customers, partners and other stakeholders.	• CEDR works from a model mediation agreement that provides flexibility for the parties to decide on the specifics of the mediation, including the process and the outcome. All persons involved in the Mediation must keep all the information arising out of the Mediation confidential.	• Most mediations can be arranged within 3 weeks or even sooner and the formal mediation usually lasts for one or two days.	• Mediation is not binding until it is reduced to writing and signed by the parties. • Adjudication is binding unless or until the dispute is finally determined by agreement, court proceedings or by reference to arbitration in accordance with the contract. The Parties shall implement the Adjudicator's decision without delay and shall be entitled to such relief or remedies as are set out in the decision. [134]

134 http://www.cedrsolve.com

ANNEX D ADR CONTACT INFORMATION

(i) European Commission

European Commission
Directorate General Competition
Rue de la Loi 200
B-1049 Brussels, Belgium

Telephone: +32 2 299 1111
Telefax: +32 2 296 98 19
Internet: europa.eu.int/comm./dg4/

(ii) World Trade Organization (WTO) Dispute Settlement Body

World Trade Organization
Rue de Lausanne 154
CH-1211 Geneva 21, Switzerland

(iii) International Centre for Settlement of Investment Disputes (ICSID)

International Centre for Settlement of Investment Disputes (ICSID)
1818 H Street, N.W.
Washington, D.C. 20433, United States

Telephone: +1 202 458 1534
Telefax: +1 202 522 2615
Internet: worldbank.org/icsid/

(iv) World Intellectual Property Organization Arbitration and Mediation Center

World Intellectual Property Organization
Arbitration and Mediation Center
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Internet: http://www.arbiter.wipo.int
E-mail: wipo.mail@wipe.int
Telephone: +41 22 338 9111
Telefax: +41 22 740 37 00

(v) American Arbitration Association

Amercian Arbitration Association
140 West 51st
New York, New York 10020, United States

Telephone: +1 212 484 4000
Telefax: +1 212 765 4874

(vi) London Court of International Arbitration

London Court of International Arbitration
Hulton House
161 – 166 Fleet Street
London, EC4A 2DY, United Kingdom

Telephone: +44 171 936 3530
Telefax: +44 171 936 3533
Internet: http://www.lcia-arbitration.com
E-mail: lcia@lcia-arbitration.com

(vii) International Chamber of Commerce

International Chamber of Commerce
38, Cours Albert l[er]
75008 Paris, France

Telephone: +33 1 49 53 28 28
Telefax: +33 1 49 53 29 42
Internet: http:/www.iccwbo.org
E-mail: icc@iccwbo.org

(viii) Centre for Effective Dispute Resolution

Centre for Effective Dispute Resolution
Exchange Tower
1 Harbour Exchange Square
London E14 9GB, United Kingdom

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Telefax: +44 20 7536 6001
Internet: www.cedr.co.uk
E-mail: info@cedr.co.uk

ANNEX E LIST OF TEXT BOXES

Box 2-1	Morocco's Approach to Interconnection Dispute Resolution
Box 2-2	CRTC Guidelines to Review Decisions
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GLOSSARY AND ABBREVIATIONS

AAA	American Arbitration Association, USA
ACIF	Australian Communications Industry Forum, Australia
ADR	Alternative dispute resolution, a family of dispute resolution techniques that may include arbitration, mediation and negotiated settlement of disputes.
ALJ	Administrative Law Judge
ANATEL	Agência Nacional de Telecomunicações, Brazil
ANB	Adjudicator Nominating Body, CEDR
ANRT	Agence Nationale de Réglementation des Télécommunications, Morocco
ART	Autorité de Régulation des Télécommunications, France
ATN	Atlantic Tele-Network Inc.
BDT	Telecommunication Development Bureau, ITU
BIT	Bilateral Investment Treaty
BOT contracts	Build-Operate-Transfer contracts
BTA	Botswana Telecommunications Authority
BTC	Botswana Telecommunications Corporation
CAT	Communications Authority of Thailand
CBA	Cost-Benefit Analysis
CBB	Court of Appeal, Netherlands
CEDR	Centre for Effective Dispute Resolution
CISC	CRTC Interconnection Steering Committee
CMT	Comisión del Mercado de las Telecomunicaciones, Spain
ComReg	Commission for Communications Regulation, Ireland
CPM	Conference Preparatory Meeting
CRTC	Canadian Radio-Television Commission, Canada
CTIA	Cellular Telecommunications and Internet Association, USA
CWD	Cable and Wireless Dominica
CWJ	Cable and Wireless Jamaica
CWWI	Cable and Wireless West Indies
C&W	Cable and Wireless Plc
DSB	Dispute Settlement Body (of WTO)
DSU	Dispute Settlement Understanding (in GATS)
DT	Deutsche Telekom, Germany
ECJ	European Court of Justice
ECTEL	Eastern Caribbean Telecommunications Authority

EETT	National Telecommunications and Post Commission, Greece
FCC	Federal Communications Commission, USA
GATS	General Agreement on Trade in Services
GOG	Government of Guyana
GSM	Global System for Mobile communications, a mobile cellular standard first codified in Europe and now used widely around the world.
GT&T	Guyana Telephone and Telegraph, Guyana
G-REX	Global Regulators Exchange, ITU
GSR	Global Symposium of Regulators, ITU
IBD	Inter-American Development Bank
ICANN	Internet Corporation for Assigned Names and Numbers. It is responsible for managing and coordinating the domain name system for the Internet.
ICC	International Chamber of Commerce, promotes the global interests of business and international commerce.
ICSID	The International Centre for Settlement of Investment Disputes, a member of the World Bank, promotes settlement and arbitration of disputes between member countries and investors from other member countries.
ICT	Information and Communications Technology
IDA	Info-communications Development Authority
ILD Rules	International Long Distance Rules (of a national telecommunications carrier)
IP	Internet Protocol
ISC	Interconnection Steering Committee, Jordan
ISP	Internet Service Provider
ITU	International Telecommunication Union
ITU-D	Sector of the International Telecommunication Union devoted to promoting the development of global telecommunications infrastructure and information and communications technologies.
ITU-R	Sector of the International Telecommunication Union responsible for coordinating global use of radio-frequency spectrum and other radiocommunication resources.
KSO projects	Kerja Sama Operasi (Joint Operation Projects), Indonesia
LCIA	London Court of International Arbitration
MAF	Malaysian Access Forum, Malaysia
MCMC	Malaysian Communications and Multimedia Commission
MPHPT	Ministry of Public Management, Home Affairs, Post & Telecommunication, Japan
NAFTA	North American Free Trade Agreement
NCC	Nigerian Communications Commission, Nigeria
NITA	National IT and Telecom Agency, Denmark
OECS	Organization of Eastern Caribbean States
Ofcom	Office of Communications, UK

Oftel	Office of Telecommunications, UK
ONPT	Office National des Postes et Télécommunications, Morocco
OPTA	Onafhankelijke Post en Telecommunicatie Autoriteit, Netherlands
OSIPTEL	Organismo Supervisor de Inversión Privada en Telecomunicaciones, Peru
OTELO	Office of Telecommunications Ombudsman, UK
PIPEDA	Personal Information Protection and Electronic Disclosure Act, Canada
POIs	Points of Interconnection
PSTN	Public Switched Telephone Network
PUC	Public Utilities Commission
RA	Radiocommunication Assembly
RAG	Radiocommunication Advisory Group
RegTP	Regulatory Authority for Telecommunications and Posts, Germany
RIO	Reference Interconnection Offer, a standardized offering of interconnection terms and conditions, usually mandated by national regulators and offered by the incumbent, dominant telecommunications service provider.
SC	Steering Committee
SG	Study Group
SMP	Significant Market Power
TDSAT	Telecommunications Dispute Settlement and Appellate Tribunal, India
TKK	Telekom Control Komission, Austria
TOT	Telephone Organization of Thailand
TRAI	Telecommunications Regulatory Authority of India
TRC	Telecommunication Regulatory Commission, Jordan
TSO	Telecommunication Service Obligation
VoIP	Voice over Internet Protocol
VSAT	Very Small Aperture Terminal
WG	Working Group
Wi-Fi	A radio network protocol for wireless local area networks (WLANs), which refers specifically to the IEEE 802.11(b) protocol, but which is commonly used to refer to all types of WLAN technologies.
Wi-Max	A radio network protocol, formally known as the IEEE 802.16 protocol, for wireless metropolitan area (WMAN) networks, which have larger coverage areas than WLANs.
WLL(M)	Wireless Local Loop (Mobility), a variation on a group of technologies that allow wireless access network connections for "last mile" telecommunications, in this case, with an allowance for restricted mobility of customer premises equipment.
WIPO	World Intellectual Property Organization. Based in Geneva, WIPO is a United Nations-sponsored international organization responsible for promoting and protecting the use of intellectual property.
WRC	World Radiocommunication Conference

WSIS	World Summit on the Information Society
WTO	World Trade Organization, the global organization that administers international trade agreements and provides a forum for resolution of trade disputes between nations.
UNCITRAL	United Nations Commission on International Trade Law

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GLOBAL SYMPOSIUM FOR REGULATORS
Geneva, Switzerland, 8-9 December 2003

DISPUTE RESOLUTION IN THE TELECOMMUNICATIONS SECTOR: CURRENT PRACTICES AND FUTURE DIRECTIONS

WORK-IN-PROGRESS, FOR DISCUSSION PURPOSES

EXECUTIVE SUMMARY

PREPARED FOR THE INTERNATIONAL TELECOMMUNICATION UNION (ITU) AND THE WORLD BANK

THE WORLD BANK

The ITU and The World Bank have commissioned two legal firms Debevoise & Plimpton and McCarthy Tétrault to undertake a study on dispute resolution in the telecommunications sector as a contribution to the Global Symposium for Regulators (GSR) and the World Summit on the Information Society (WSIS), December 2003.

This study does not pretend to exhaust the range of issues and experiences that are relevant in discussing telecommunications sector dispute resolution. The study does however provide descriptions of how a wide range of disputes have been dealt with and of key issues facing policy makers and regulators. We, the authors hope that the experience and analyses we have assembled will contribute to the understanding of telecom dispute resolution and to the dialogue on how to improve it.

In communicating with regulators, industry and other sector representatives around the world, we discovered that there is a remarkable range of experience and expertise available to assist in resolving telecom disputes. Yet they also realized that the art of telecom dispute resolution is still in its very early stages. Much can be done in most countries to improve the speed, efficiency and effectiveness of dispute resolution. Too often, telecom disputes have caused unnecessary disruption and delay in the development of telecom markets. Improvement is clearly required.

Despite our efforts, we, the authors, are sure that some errors may have crept into the report; for these we remain responsible and apologize.

Our team was composed of Robert R. Bruce, partner in the London office of Debevoise & Plimpton, Rory Macmillan, mediator and lawyer, Debevoise & Plimpton, Timothy St. J. Ellam, partner with the Calgary office of McCarthy Tétrault LLP, Hank Intven , partner in the Toronto office of McCarthy Tétrault, Theresa Miedema, consulting lawyer with McCarthy Tétrault LLP.

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Finally, we wish to acknowledge the invaluable assistance of regulators and other officials in a wide range of countries who provided input to the study. We benefited enormously from their insights, though we were constrained by time and resources to do full justice to the wealth of information and experience made available to us.

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1. Introduction

The global telecom sector is in the midst of a transformation caused by privatization, liberalization and technological change. These trends have dramatically changed the way the sector functions. The number of service providers has increased substantially, as has the range of services they offer. Old business models and commercial arrangements are being abandoned or bypassed while new ones emerge. An era characterized by regional monopolies providing plain old telephone service is colliding with one that has multiple ICT service providers using IP, wireless and broadband technologies. Disputes are inevitable by-products of these changes, as new interests clash with traditional ones.

Policy makers and regulators are recognising that effective dispute resolution is an increasingly important objective of telecom policy and regulation. Failure to resolve disputes quickly and effectively can:

- delay the introduction of new services and infrastructure,
- block or reduce the flow of capital from investors in the telecom sector,
- limit competition, leading to higher pricing and lower quality of service, and
- retard sectoral liberalization an with it general economic and technical development.

Ultimately the test of successful dispute resolution – as with regulation generally – is its impact on investment, growth and development in the sector. Successful dispute resolution is important for all countries that seek to facilitate the rapid diffusion of new communications infrastructure and ICT services. It is particularly crucial for countries that have historically experienced a lack of investment and growth. Rapid and effective resolution of disputes is a key component in bridging the "digital divide".

The experience documented in this report indicates that existing regulatory and legal institutions are not always best equipped to resolve disputes efficiently and effectively. Lack of resources, expertise and time often lead to delays or less than optimal dispute resolution. Therefore policy makers, regulators and courts are adopting a range of alternative approaches to dispute resolution.

This report documents a wide range of global experience with telecom dispute resolution. It describes and analyses the major existing and alternative approaches to dispute resolution, with a view to providing policy makers and regulators with a better information base on make decision on how to resolve different types of sector disputes.

2. Overview of Dispute Resolution Techniques

There are various common official and non-official ways of resolving disputes:

Regulatory adjudication: Regulatory adjudication is used by most regulatory bodies. Regulators decide between positions of disputing parties, typically after a formal process. Adjudicatory decisions are often subject to review internally within a regulatory agency and externally by the courts or by politicians. Regulatory adjudication can have the following advantages:

- well-structured channels of decision-making,
- accountability of official decision-makers,
- established mechanisms for coordinating decisions among agencies with related responsibilities, and
- availability of the state's enforcement mechanisms.

Regulatory adjudication can have the disadvantages of delays, being subject to abuse by competitors, and lack of necessary economic, legal and financial expertise to resolve disputes efficiently and with adequate finality.

Court adjudication: While this report focuses on regulatory and alternative dispute resolution methods, court adjudication remains an important final recourse for many types of disputes, particularly those that are less policy related. It has the advantage of finality and official enforcement mechanisms, but, also has a number of disadvantages. These include high costs and delays in some jurisdictions and a perceived lack of telecom-specific expertise to deal with many complex industry disputes.

ADR: Alternative dispute resolution (ADR) involves less official means of dispute resolution, such as negotiation, mediation and arbitration. Parties have traditionally pursued ADR processes voluntarily, sometimes by contractual commitment. Regulators are increasingly turning to ADR approaches to assist them to deal with excessive pressures on official resources available for dispute resolution.

Negotiation and mediation: Negotiation and mediation are flexible consensual approaches that have the advantage of encouraging parties to identify common interests to find win-win solutions. Negotiation and mediation processes can, however, be subject to abuse by disputing parties that seek to delay adverse resolution of disputes or to obtain information about the other party's case.

Regulators often require parties to try negotiation or mediation before bringing their dispute before the regulator. Some regulators or their staff perform the role of mediator. Some parties prefer to use independent mediators instead. The involvement of regulators can help improve the reasonableness of parties' behaviour. However, it can also reduce parties' incentive to negotiate in a candid constructive manner since parties may see it as a precursor of a formal regulatory proceeding and so take a more adversarial strategic approach.

Arbitration: Arbitration is an adjudicatory process in which the disputing parties appoint arbitrators and retain control over the design of the process. Arbitration awards made by the arbitrators usually are enforceable in courts. Awards tend to be subject to limited review by courts on procedural grounds, such as those related to the scope of the authority to resolve the dispute conferred on the arbitrators by the parties. The advantages of arbitration include:

- confidentiality,
- parties' control over the design of the process,
- speed compared with most regulatory or judicial procedures and,
- in international arbitration, the neutrality of the forum (compared with the national courts of either of the parties).

Telecom regulators are increasingly encouraging parties to use arbitration as a means of resolving disputes. There are numerous well-established arbitration institutions internationally which have developed their own procedures and trained arbitrators. Where individual countries lack such resources domestically, they are often available regionally.

3. Current Practice: Disputes and Techniques

Disputes arise in various circumstances. Those which have the greatest impact on sector investment and growth include:

Disputes related to liberalization: Introducing competition often undermines established financial and business interests of incumbent operators. Many disputes arise from the incumbent's desire to protect its dominant position in the market. Reduction or termination of exclusive rights has frequently led to legal and regulatory disputes.

Investment and trade disputes: Disputes often arise where regulatory reforms diminish the value of private sector interests. These include complaints by investors, operators and service providers about early termination of exclusive rights, licensing of new competitors, new rate-setting structures and changes to licenses. Among other grounds, claims have been contractual or based on alleged breaches of legal or policy commitments.

Interconnection disputes: These are the most common type of dispute between service providers. New technologies have given rise to a myriad of different network alternatives for providing services, including fixed, mobile, wireless local loop, limited mobility variations and WiFi. Preventing and resolving technical, operational and pricing disputes are key to the development of competitive markets. Asymmetric market power on the part of dominant operators often makes regulatory intervention necessary. Regulators are increasingly providing advance guidelines for the negotiation of interconnection arrangements. They are also developing

specialized adjudicatory procedures to resolve interconnection disputes. Where regulators lack information and expertise, they are turning to international benchmarking and outside expert consultants for assistance.

Consumer disputes: Disputes between service providers and consumers are common, particularly in basic telephone markets. Consumers can be disadvantaged due to their lack of bargaining power or competitive options. Regulators are using a variety of mechanisms to ensure effective resolution of consumer disputes, normally by the service providers in the first instance, with appropriate supervision and appeal provisions. Informal mechanisms are sometimes used, such as ombudsmen schemes. Consumer disputes are often dealt with by consumer protection agencies as well as regulators.

Radio frequency disputes: Radio frequency allocation and assignment disputes are dealt with internationally through mechanisms available through the ITU. Domestically, disputes arise relating to interference with frequencies and disputes over license conditions and pricing.

4. Key Perspectives on Dispute Resolution

Dispute resolution in the telecom sector is at a relatively early stage. While there are many complex issues and perspectives, some key ones are most relevant in designing dispute resolution processes:

Changing patterns and assumptions: The telecom sector is changing rapidly due to new technologies and convergence among technologies and services. The dispute resolution field is also changing and introducing alternative methods for resolving disputes. These trends provide opportunities for telecom regulators to use alternative dispute resolution methods. Both trends suggest regulators should re-evaluate assumptions about the roles of regulators and market participants in resolving disputes.

Economics of dispute resolution: In evaluating the success of dispute resolution processes it is important to consider economic costs to the sector as a whole. Costs may result from delays and lack of transparency and predictability. At a more 'micro' level, the emergence of a 'market' for dispute resolution techniques and professionals is likely to improve them. Some regulators are providing parties with a choice of alternative dispute resolution procedures. In managing dispute resolution processes, it is important to design appropriate economic incentives for the parties to disputes. The allocation of responsibility for the costs of disputes, for example, can affect the manner in which parties behave.

Market power asymmetries: The appropriate choice of dispute resolution technique in any situation depends partly on the comparative levels of parties' market power. Some regulators take the view that they can encourage the employment of ADR techniques where disputing parties have similar levels of market power, where parties are more likely to negotiate solutions that meet their mutual on-going commercial interests. Regulatory intervention is more often considered necessary where disparities of market power mean that one party effectively requires the protection of the official sector from abuse of process by the other.

Confidentiality and transparency: Balancing the competing priorities of protecting confidential business information and publishing reasoned decision-making is as relevant to dispute resolution as to any other aspect of regulation.

Dealing with complexity: Many disputes involve complex webs of interrelated issues that defy simple categorization. Pricing, technical, operational, licensing and policy issues must all be

considered when regulatory regimes are in transition. Jurisdictional overlaps among telecom sector, competition and consumer authorities, as well as between national, regional and international authorities are making disputes more complicated. A co-ordinated or integrated view is often required to prevent delays and fragmented resolution of disputes. Consensus building measures are particularly well suited to traversing categorical and jurisdictional boundaries to resolve underlying problems affecting sector development.

5. The Role of Official and Non-Official Sectors in Dispute Resolution

A well-resourced official sector – utilizing regulatory adjudication and the courts – is crucial to a successful dispute resolution environment. However, alternative approaches are often useful to deal with the lack of available regulatory or judicial resources, or where less formal techniques offer particular advantages.

Drawing on non-official resources: The commercial world's extensive experience with arbitration and other ADR techniques can help policy makers and regulators in considering whether and how to encourage the use of non-official dispute resolution approaches in a regulated industry. Commercial arbitration illustrates how the official sector can retain control over important policy issues – as well as ensuring the efficacy of the dispute resolution system – while lifting workload burdens on the official sector.

Quality control over official and non-official processes: The type of dispute resolution process chosen influences the appropriate role of the official sector. Regulatory adjudication and arbitration require procedural oversight by courts because the parties have relinquished control over the outcome to the adjudicator or arbitrator. Regulatory adjudication may also appropriately be subject to various levels of 'internal' agency and 'external' court review for substantive appeal. It is important, however, not to undermine the credibility or timeliness of regulatory adjudication through over-use of review procedures.

Voluntary negotiated processes, including mediation, depend for their success on abstinence from official review. Even where there are doubts about the efficacy of voluntary negotiations, regulators may be able to provide incentives for good faith engagement in negotiations instead of imposing substantive decisions.

Confidence factors in relying on non-official approaches: A range of factors are important in gauging the maturity and suitability of non-official dispute resolution approaches compared to official regulatory adjudication and the courts. These factors include the professionalisation of the arbitration and mediation communities, the development of arbitration and mediation institutions, and effective oversight procedures.

6. Improving telecom dispute resolution

At this early stage of development of global telecom sector dispute resolution, it is not appropriate to provide uniform recommendations as to how to design and conduct dispute resolution procedures. Countries vary in their stage of market development, regulatory approaches, dispute resolution and general business cultures, as well as in the types of disputes that commonly arise. These factors will result in different experiences with regulatory adjudication, arbitration, mediation, negotiation, ombudsmen schemes and other approaches described in the report.

However, the following steps can be taken by policy makers and regulators and related organizations to improve approaches to dispute resolution

- Publish adjudicatory decisions and facilitate access to them through the Internet and other means to provide resources for regulators and other adjudicators as well as disputing parties and their advisors. Creation of a well-organized international database would be invaluable to promote adoption of best practices in resolving disputes.

- Publish and organize precedents of innovative dispute resolution procedures, including less formal approaches, in order to promote their adoption.

- Strengthen non-official ADR approaches by endorsing their usage, improving understanding of the legal frameworks in which they operate and supporting them with official enforcement of their results.

- Tap into the human resources available to dispute resolution by establishing panels of arbitrators and mediators and collaborating with existing arbitration and mediation institutions.

- Improve networking among regulators internationally to exchange dispute resolution experience.

- Increase cross-pollination of ideas and collegial sharing of experiences between the telecom sector and the dispute resolution communities, in order to improve in greater application of effective techniques in resolving disputes.

- Harness new on-line resources and services can be harnessed to assist policy makers and regulators to improve dispute resolution techniques. Several are already being used to garner experience and perspectives in dispute resolution, such as the ITU's on-line Global Regulators Exchange and live virtual conferencing facilities. Collaboration with educational and other institutions and the e-business community offers the opportunity to build consultative networks where ideas, precedent and information can be shared.

- Recognize that dispute prevention is as important as dispute resolution. Reduce the contentiousness of the sector and reliance on destructive dispute processes would enhance its prospects for investment and growth. Use of consensus building measures by policy makers and regulators can engage sectoral parties and identify converging interests and mutual commercial opportunities.

7. Conclusion

Successful dispute resolution is increasingly important for attracting investment, competition and development. Dispute resolution mechanisms in the telecom sector need to be as speedy as the networks and technologies they serve. Official dispute resolution mechanisms are important as a basic guarantee that sector policy will be implemented.

This report examines the current state of dispute resolution, explores key issues and offers suggestions aimed at assisting policy makers and regulators in evaluating, designing and managing dispute resolution processes.

It is important for policy makers and regulators to use minimal but well focused regulatory intervention to create an enabling environment where industry players' incentives influence them to resolve disputes constructively. This can often involve the use of appropriate alternative dispute

resolution mechanisms. Disputes can be enormously destructive to the sector and effective dispute resolution is increasingly central to successful deployment of modern information infrastructure. This is particularly so where it is necessary to encourage investment and competition to reach the underserved billions of people of global citizens on the wrong side of the digital divide.

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INTERCONNECTION DISPUTE RESOLUTION MINI CASE STUDY 2003:

BOTSWANA

Recent Experience in Interconnection Disputes

International Telecommunication Union (ITU)

Botswana Mini-Case Study 2003

Recent Experience in Interconnection Disputes

International Telecommunication Union

This mini case study was conducted by Robert Bruce and Rory Macmillan of Debevoise & Plimpton, London U.K. with the active participation of country collaborators Cuthbert Lekaukau, Martin Mokgware and M. O. Tamasiga. The views expressed in this paper are those of the authors, and do not necessarily reflect the views of ITU, its members or the government of Botswana.

The authors wish to express their sincere appreciation to the Botswana Telecommunications Authority for its support in the preparation of this mini case study.

This is one of five mini case studies on interconnection dispute resolution undertaken by ITU. Further information can be found on the web site at http://www.itu.int/ITU-D/treq.

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I. Introduction

With a population of about 1.7 million, Botswana has a GDP of about 32 billion Pula (BWP 1.00 = US$ 0.20). Botswana's telecommunication sector is served by one fixed line operator with about 140,000 fixed lines, a teledensity of about 8.2%, and two mobile operators with a total of about 460,000 mobile subscribers, a penetration rate of about 27.3%.

The Botswana Telecommunications Authority (BTA) enjoys a well-deserved reputation as one of the first countries in the African region to establish an independent regulatory agency. For example, the agency establishes and finances its operational budget as well as exercises licensing authority. In 1999, the agency resolved its first interconnection dispute between the Botswana Telecommunications Corporation (BTC) and the two major cellular operators in Botswana, Mascom Wireless and Vista Cellular in BTA Ruling No. 1 of 1999.

The resulting interconnection agreement between BTC and Mascom and Vista established charges on a revenue sharing basis that were valid for a 24 month period extending from February 17, 1998. Prior to the expiration of the agreement, the parties decided to extend its validity; and in March 2001 they commenced negotiations to review it. However, BTC and Mascom reached deadlock in their discussions, and on July 5, 2002 both parties filed with BTA an interconnection dispute for determination. On February 26, 2003, BTA issued through its Chairman, C.M. Lekaukau, its ruling in the dispute, BTA Ruling No. 1 of 2003 (see annex 1 ("the Ruling")), which breaks new ground by setting forth in substantial detail its rationale for setting new interconnection charges through reliance on international benchmarks.

The Ruling, which is attached as annex 1, warrants careful review by other regulatory agencies and is discussed in detail in the following section. It is particularly notable since it is the first time an African regulator has adopted European Union (EU) benchmarks (Morocco's Agence Nationale de Réglementation des Télécommunications (ANRT)) has used them before but not exclusively). Although the Ruling settled a dispute between Mascom and BTC only and did not involve other operators, the extensiveness and quality of the reasoning in the written decision offers an indication of how BTA may approach such matters in the future. The Ruling, then, is effectively a precedent for disputes that may arise in relation to interconnection agreements more generally.

II. BTA Ruling No. 1 of 2003

(a) Background to the Dispute over Termination Charges

The controversy between BTC and Mascom centered around proposed changes to termination charges to apply to each party for termination on the other's network. Mascom essentially sought the extension of charges established in BTA Ruling No. 1 of 1999 whereas BTC advocated significant changes in monthly mobile and fixed termination rates as follows:

Table 1: Call Termination Rates (BW Pula)

	Rates in effect at time of dispute (Mascom Proposal)	Rates proposed by BTC
Termination on BTC Network:		
- Peak	24.0	35.0
- Off Peak	19.1	25.0
Termination on Mascom Network:		
- Peak	96.0	75.0
- Off Peak	76.9	58.0

Note: BWP 1.00 = US$ 0.20

(b) Rationale for BTA Ruling No.1 of 2003

The Ruling outlines the various legal and policy factors underlying the decision reached in February 2003 and warrants a careful analysis of the various considerations and factors weighed by BTA.

Legal Basis and Framework for Addressing Interconnection Disputes

The Ruling first considered the legal basis and framework for dealing with interconnection disputes in Botswana, including Article 47 of the Telecommunications Act of 1996 (hereinafter the "Act"), the licenses of the two parties, the interconnection agreement reached as a result of the 1999 Ruling, and the Telecommunications Policy of Botswana adopted in 1995. The Act provides that BTA has the power to decide interconnection controversies and to set such terms and conditions as seem to be "fair and reasonable" to it. BTA has wide discretion to decide what is fair and reasonable and can weigh a variety of considerations including significant market power, the possibility of revenue sharing, benchmarking, the promotion of universal access, the subscriber base, transparency, cost orientation, reasonable rate of investment, non-discrimination, market structure as well as other factors. The Ruling notes as well that BTC and Mascom licenses include requirements consistent with Article 47 of the Act.

Cost Analysis

The interconnection agreement between the parties acknowledged that interconnection charges will be based on cost but that costing figures may not be available in the short term, and that another method should be used. While intended to be based on costs, the agreement stipulated that interconnection should produce a reasonable return on assets and resources involved, encourage network usage, and not inhibit the growth of cellular services. (Ruling at 18.) The Ruling confirms that charges should satisfy what are described as the "triad of interconnection", i.e. charges fair to operators, fair to end-users and consistent with the mandate of BTA.

The Ruling considered three major models for dealing with interconnection: revenue sharing, sender keeps all, and interconnection usage charges. Although it acknowledged that the initial 1999 Ruling had been based on a revenue sharing model, it concluded that such arrangements are based on negotiations reflecting the relative market power of the parties and that the model tended to give rise to discrimination, disputes among operators and not to be conducive of vibrant competition for consumer tariffs. Noting that there were three types of interconnection charges for origination, termination, and transit, the Ruling concluded that interconnection usage charges should be the basis for a new interconnection arrangement which should largely center around termination charges independent of charges to consumers.

Reliance on Benchmarking

The Ruling rejected an attempt by Mascom to urge BTA to rely on the ratio of fixed to mobile termination charges in neighboring African countries. It concluded that these ratios and the underlying termination charges were based on revenue sharing and not on efficient interconnection arrangements. The Ruling focused on various costing methodologies and benchmarking as two broad approaches to set interconnection charges. The Ruling concluded that historical or backward looking costs did not reflect current technological trends and would not result in efficient pricing. Instead, Long Run Incremental Costs (LRIC) or Long Run Average Incremental Costs (LRAIC) were surrogates reflective of costs in competitive markets. In turn, the Ruling reasoned that benchmarking could be a useful regulatory tool to the extent it was based on outcomes in countries with markets subject to substantial competition or where LRIC or LRAIC costing methodologies had been applied. The Ruling reviewed the European Union (EU) approach to developing benchmarks for interconnection charges at various tiers of the network.

BTC had introduced into the record of the proceeding an historical cost study. Mascom had, in turn, offered data from the EU as well as developing countries noting trends toward the reduction of termination charges. BTA concluded that it was not feasible in the context of the pending proceeding to develop a cost model for termination charges and any such model for BTC would require a comparable model for Mascom.

Botswana Mini-Case Study:
Recent Experience in Interconnection Disputes

I. Introduction

With a population of about 1.7 million, Botswana has a GDP of about 32 billion Pula (BWP 1.00 = US$ 0.20). Botswana's telecommunication sector is served by one fixed line operator with about 140,000 fixed lines, a teledensity of about 8.2%, and two mobile operators with a total of about 460,000 mobile subscribers, a penetration rate of about 27.3%.

The Botswana Telecommunications Authority (BTA) enjoys a well-deserved reputation as one of the first countries in the African region to establish an independent regulatory agency. For example, the agency establishes and finances its operational budget as well as exercises licensing authority. In 1999, the agency resolved its first interconnection dispute between the Botswana Telecommunications Corporation (BTC) and the two major cellular operators in Botswana, Mascom Wireless and Vista Cellular in BTA Ruling No. 1 of 1999.

The resulting interconnection agreement between BTC and Mascom and Vista established charges on a revenue sharing basis that were valid for a 24 month period extending from February 17, 1998. Prior to the expiration of the agreement, the parties decided to extend its validity; and in March 2001 they commenced negotiations to review it. However, BTC and Mascom reached deadlock in their discussions, and on July 5, 2002 both parties filed with BTA an interconnection dispute for determination. On February 26, 2003, BTA issued through its Chairman, C.M. Lekaukau, its ruling in the dispute, BTA Ruling No. 1 of 2003 (see annex 1 ("the Ruling")), which breaks new ground by setting forth in substantial detail its rationale for setting new interconnection charges through reliance on international benchmarks.

The Ruling, which is attached as annex 1, warrants careful review by other regulatory agencies and is discussed in detail in the following section. It is particularly notable since it is the first time an African regulator has adopted European Union (EU) benchmarks (Morocco's Agence Nationale de Réglementation des Télécommunications (ANRT)) has used them before but not exclusively). Although the Ruling settled a dispute between Mascom and BTC only and did not involve other operators, the extensiveness and quality of the reasoning in the written decision offers an indication of how BTA may approach such matters in the future. The Ruling, then, is effectively a precedent for disputes that may arise in relation to interconnection agreements more generally.

II. BTA Ruling No. 1 of 2003

(a) Background to the Dispute over Termination Charges

The controversy between BTC and Mascom centered around proposed changes to termination charges to apply to each party for termination on the other's network. Mascom essentially sought the extension of charges established in BTA Ruling No. 1 of 1999 whereas BTC advocated significant changes in monthly mobile and fixed termination rates as follows:

Table 1: Call Termination Rates (BW Pula)

	Rates in effect at time of dispute (Mascom Proposal)	Rates proposed by BTC
Termination on BTC Network:		
- Peak	24.0	35.0
- Off Peak	19.1	25.0
Termination on Mascom Network:		
- Peak	96.0	75.0
- Off Peak	76.9	58.0

Note: BWP 1.00 = US$ 0.20

(b) Rationale for BTA Ruling No.1 of 2003

The Ruling outlines the various legal and policy factors underlying the decision reached in February 2003 and warrants a careful analysis of the various considerations and factors weighed by BTA.

Legal Basis and Framework for Addressing Interconnection Disputes

The Ruling first considered the legal basis and framework for dealing with interconnection disputes in Botswana, including Article 47 of the Telecommunications Act of 1996 (hereinafter the "Act"), the licenses of the two parties, the interconnection agreement reached as a result of the 1999 Ruling, and the Telecommunications Policy of Botswana adopted in 1995. The Act provides that BTA has the power to decide interconnection controversies and to set such terms and conditions as seem to be "fair and reasonable" to it. BTA has wide discretion to decide what is fair and reasonable and can weigh a variety of considerations including significant market power, the possibility of revenue sharing, benchmarking, the promotion of universal access, the subscriber base, transparency, cost orientation, reasonable rate of investment, non-discrimination, market structure as well as other factors. The Ruling notes as well that BTC and Mascom licenses include requirements consistent with Article 47 of the Act.

Cost Analysis

The interconnection agreement between the parties acknowledged that interconnection charges will be based on cost but that costing figures may not be available in the short term, and that another method should be used. While intended to be based on costs, the agreement stipulated that interconnection should produce a reasonable return on assets and resources involved, encourage network usage, and not inhibit the growth of cellular services. (Ruling at 18.) The Ruling confirms that charges should satisfy what are described as the "triad of interconnection", i.e. charges fair to operators, fair to end-users and consistent with the mandate of BTA.

The Ruling considered three major models for dealing with interconnection: revenue sharing, sender keeps all, and interconnection usage charges. Although it acknowledged that the initial 1999 Ruling had been based on a revenue sharing model, it concluded that such arrangements are based on negotiations reflecting the relative market power of the parties and that the model tended to give rise to discrimination, disputes among operators and not to be conducive of vibrant competition for consumer tariffs. Noting that there were three types of interconnection charges for origination, termination, and transit, the Ruling concluded that interconnection usage charges should be the basis for a new interconnection arrangement which should largely center around termination charges independent of charges to consumers.

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The Ruling rejected an attempt by Mascom to urge BTA to rely on the ratio of fixed to mobile termination charges in neighboring African countries. It concluded that these ratios and the underlying termination charges were based on revenue sharing and not on efficient interconnection arrangements. The Ruling focused on various costing methodologies and benchmarking as two broad approaches to set interconnection charges. The Ruling concluded that historical or backward looking costs did not reflect current technological trends and would not result in efficient pricing. Instead, Long Run Incremental Costs (LRIC) or Long Run Average Incremental Costs (LRAIC) were surrogates reflective of costs in competitive markets. In turn, the Ruling reasoned that benchmarking could be a useful regulatory tool to the extent it was based on outcomes in countries with markets subject to substantial competition or where LRIC or LRAIC costing methodologies had been applied. The Ruling reviewed the European Union (EU) approach to developing benchmarks for interconnection charges at various tiers of the network.

BTC had introduced into the record of the proceeding an historical cost study. Mascom had, in turn, offered data from the EU as well as developing countries noting trends toward the reduction of termination charges. BTA concluded that it was not feasible in the context of the pending proceeding to develop a cost model for termination charges and any such model for BTC would require a comparable model for Mascom.

Selecting Benchmark Data

BTA considered with care the potential uses of benchmark data and, in particular, the countries to be used in the benchmark study. It considered a number of different factors in weighing potential sources of benchmark data. First, it rejected the use of benchmark data from countries that did not rely on the calling party pays principle that is used in Botswana. Second, it rejected use of benchmarking precedent from neighboring African countries on the ground that there was no substantial competition in termination charges in any of the neighboring countries nor did they utilize LRIC principles in setting interconnection charges. (Ruling at 35.) Third, it concluded that, as a result of the framework of EU directives, EU countries represented a "relatively homogeneous regulatory framework in each country that facilitates intra and extra-EU comparisons". The Ruling noted as well that the EU benchmarking methodology has been "tried and tested" and that many regulatory authorities in the EU had developed and actually implemented cost methodologies such as LRAIC. Hence EU countries were viewed as representing a "good sample of countries that have reached or are in the process of reaching efficient cost-oriented termination charges for fixed networks . . . .". (Ruling at 37.)

Regulating Mobile Termination Charges

Likewise, the Ruling noted that "there is an increasing trend amongst regulators in favor of regulation of mobile termination charges", in the UK and Austria in particular. Other EU regulators, including Sweden, France and Belgium, were viewed as using efficient benchmarking to mandate significant decreases in mobile termination charges.

Significantly, the Ruling recognized as well that given the different economic and sector development conditions in the EU, the selection of benchmark termination charges for BTC and Mascom might result in charges below their efficient forward looking costs. However, the Ruling acknowledged this risk in a forthright fashion in tailoring transition periods for the effectiveness of new charges.

Fixed Termination Rates: Use of Mid-Range EU National Rates

The Ruling followed the EU's structure of analyzing the various levels of interconnection, depending on where in the network hierarchy the call is terminated and the distance the call has to be carried: "Local" represents interconnection at the local exchange; "Single Transit" represents interconnection at the "Metropolitan" level, including the use of one tandem switch; "Double Transit" or "National" allows access to all customers on the network and includes tandem links of at least 200 km. The Ruling concluded that Botswana should use the "national" level of interconnection—as opposed to local or single tandem interconnection charges—as the basis for termination charges. In addition, the Ruling found that an average or mid-range of all fifteen EU countries would provide a "fair and reasonable basis" on which to determine BTC's fixed network termination charges.

Mobile Termination Rates: Use of EU Best Practice Rates

Interestingly, the Ruling concludes that the average or mid-range of all EU countries does not constitute an efficient benchmarking methodology for mobile network termination charges because many EU countries are still only in the process of introducing cost-based regulation of mobile termination. Instead, the Ruling opted for the average or mid-point in the EU's "current best practice" range, although it did not identify its source for this. Given the higher level of costs of charges, the Ruling concluded that it would not be unreasonable to use such charges on a transitional basis for efficient benchmark termination charges for Mascom.

Transition Period

The Ruling then considered how to deal with the transition period given the fact that the proposed levels of charges were significantly below current charges. It recognized explicitly the trade-off between the rapid implementation of its regulatory policy objectives and the potential adverse impact with respect to operators' financial imperatives. It declared succinctly that "regulatory objectives require a short implementation timeframe while the financial imperatives suggest a longer implementation timeframe." (Ruling at 41.)

The Ruling then summarized its mandatory approach to BTC fixed termination charges and Mascom mobile termination charges.

Table 2: Rates imposed by the February 2003 BTA Ruling (BW Pula)

Operator		Effective date until 29/2/04	From 1/3/04
BTC			
	Peak	15.0	11.0
	Off peak	12.0	8.8
Mascom			
	Peak	85.0	75.0
	Off Peak	68.0	60.0

Note: BWP 1.00 = US$ 0.20

The Ruling will remain valid for 24 months effective from the date of the ruling. The parties are free to reach an agreement that does not breach the fundamental tenets of the Ruling during the period of the agreement subject to the approval of BTA. The parties have the option to appeal to the High Court under Section 56 of the Act to seek judicial review.

(c) Observations Concerning Ruling No. 1 of 2003

The Ruling is indicative of a national regulator that views its role in a pragmatic and facilitative way. BTA engaged itself in the dispute only after the parties to an earlier interconnection proceeding had been unable to agree to modifications to that agreement. During the proceeding it appears that BTA was actively engaged in guiding the parties to agree to a new approach to interconnection based on interconnection usage charges rather the revenue sharing agreement that had been the basis for the original interconnection agreement. It also sought to use the resources of at least one of the parties, Mascom, to generate relevant benchmarking data to be used in the proceeding although ultimately BTA relied for principled reasons on different sources of benchmarked data.

Second, although there are obvious elements of "rough justice" in the use of benchmarked data, it is clear that BTA sought to utilize such data to achieve its objectives in a focused way. It chose EU reference data because of the relatively disciplined and homogenous framework in which such data was developed, and rejected the use of benchmarking data for neighboring African countries because it was concerned that their reference interconnection agreements were based on negotiation-driven revenue sharing agreements and not LRAIC principles.

Third, having utilized EU reference data to move toward more efficient pricing arrangements, BTA applied sensitivity and judgment to the process of implementing new reference standards. For example, as illustrated in the table above, it provided for a two stage phase-in of recommended new levels of termination charges, with the first stage commencing on the effective date of the ruling and the second stage in March 2004. In this respect, BTA sought to balance its institutional priorities in favour of a rapid introduction of new regulatory initiatives against concerns about the financial imperatives facing BTC and Mascom.

It also tempered the use of EU benchmarking by utilizing termination charges at the national rather than local level as a better reflection of the competitive and overall state of the market in Botswana compared to more developed economies.

(d) Additional Issues Raised by the Ruling

There are at least two areas where the broader implications of the novel approach chosen by the BTA might warrant further analysis and assessment.

Encouraging Information Sharing Among Regulators, EU and Regional Organizations

The first concerns the process by which national regulators obtain access to the latest and most reliable data on current interconnection agreements. The BTA illustrates how useful, for example, data from the EU may be to national regulators dealing with telecommunications sectors in transition and with the implementation of new regulatory mandates. It may thus be worthwhile to encourage more focused discussions between the European Commission, which collects enormous amounts of sector-specific data in connection with its reports on the implementation of the EU framework on an annual basis, and regulators in emerging markets, who might find some or all of this data highly relevant in carrying out their responsibilities. The European Commission, for example, publishes national interconnection rates, including fixed to fixed and fixed to mobile, unbundled local loop prices, retail tariffs, and a host of other data from its Member States. EU interconnection rates published in December 2002 are included in Annex 2 of this report. Other data can be found on the EU's Information Society website (see annex 2).

In addition, various national regulators in the EU such as the National IT and Telecom Agency (NITA) in Denmark have had significant experience using benchmarked data and often provide useful support to regulators in developing markets. Such experiences might be further developed and expanded to increase partnering relationships with peer regulators interested in both benchmarking data collected as well as benchmarking know-how. In addition, there may be more to be done in conditioning regulated entities to provide such data to national regulators. Regional regulatory organizations might also consider collecting and publishing relevant data for their respective regions. Often operators in emerging markets will have ownership or other affiliations with operators with experience in many international markets. Such operators could be expected to provide useful reference data as well as analysis and information that would assist in applying external benchmarks in a local context.

Developing LRIC/LRAIC Models

Second, it may also be useful in tandem with the collection of relevant benchmark information to encourage through consultative discussions the development of LRAIC or LRIC models for BTC. The experience of other national regulators such as NITA in Denmark[1] illustrates how such models can be developed through the engagement of incumbent and other competitive operators. Whether such an exercise could make a significant contribution to BTA's overall framework may depend, of course, on the degree to which operators other than BTC have an incentive, as well as access to the relevant information, to assist BTA. Such long run costing models may offer another tool to BTA to evaluate and use effectively relevant external data as an "internally generated" costing yardstick.

III. Other Interesting Developments

(a) Development of Mobile-to-Mobile Interconnection agreements

One of the current issues facing BTA is the development of mobile-to-mobile interconnection rates between Mascom and Vista Cellular, the second and smaller mobile operator in Botswana. Currently, there is no agreement between the two operators with the de facto interconnection arrangement being a sender keeps all modus operandi. BTA is encouraging commercial discussions between the two operators; however, there are numerous impediments to the discussions including the issue raised by one of the operators arguing that both operators should pay each other for services rendered. In addition, there is not shared confidence between the operators with respect to the traffic figures used in settlement.

While BTA is limited in what it can do to develop trust in the commercial relationship between the operators, there may be scope for BTA to begin a dialogue between the operators on the

[1] See ITU Denmark Mini Case Study: Beyond Disputes and Towards Consensus Building on TREG at http://www.itu.int/ITU-D/treg/Case_Studies/Index.html, including references to a series of international LRIC/LRAIC cost models.

basis of current commercial arrangements between mobile operators in other markets. In this practical respect, relevant agreements that might be used as background for the BTA's involvement concerning mobile-to-mobile interconnection issues could be useful. Thus the same "networks" for the flow of information relating to fixed-to-mobile and mobile-to-fixed termination, including those that could be activated by the two operators themselves, might serve as the backbone for the next phase of BTA's involvement with interconnection issues.

(b) Industry Consultative Processes

BTA is currently involved in an ongoing consultative process with the key stakeholders in Botswana with respect to interconnection and other related policy concerns. BTA is currently involved in the drafting of interconnection guidelines, which at this stage have been distributed to industry stakeholders for comment. BTA considers the process of consultation to be a priority as it seeks to involve stakeholders prior to finalizing policies, regulations and taking other actions that may affect the operations of telecommunications service providers.

ANNEX 1

BTA Ruling No. 1 of 2003, Ruling on Interconnection charges Dispute between Botswana Telecommunications Corporation and Mascom Wireless (PTY) Limited, 26 February 2003.

http://www.bta.org.bw/pubs/Ruling%20no%203-%20Interconnection%20Disputes%20BTC-Mascom%20%2025%20FEB%202003.pdf

(Date: 26 February 2003)

BOTSWANA TELECOMMUNICATIONS AUTHORITY (BTA)

BTA RULING NO. 1 OF 2003

[Pursuant to Section 19 as read with Section 47 of the Telecommunications Act, 1996 (No. 15 of 1996)]

RULING ON INTERCONNECTION CHARGES DISPUTE

BETWEEN:

BOTSWANA TELECOMMUNICATIONS CORPORATION

AND

MASCOM WIRELESS (PTY) LIMITED

C. M. LEKAUKAU, EXECUTIVE CHAIRMAN

The parties herein, namely, Mascom Wireless (Pty) Limited and Botswana Telecommunications Corporation (hereinafter referred to as Mascom and BTC respectively) entered into and concluded an Interconnection Agreement (hereinafter referred to as the Agreement) on the 13 day of August 1999. The essence of such an Agreement was to facilitate interoperability and access into each other's network, and its concomitant compensation, one being a fixed line network operator (BTC) and the other being a mobile cellular operator (Mascom). The said Agreement provided inter alia for the review and termination of the same. I must point out from the onset that the interconnection charges that were incorporated into the Agreement were set by the Botswana Telecommunications Authority (herein after referred to as BTA and/or the Authority) following a dispute settlement process (see in this regard BTA Ruling No. 1 of 1999). The interconnection charges that the Authority set in 1999 were to be valid for a period of 24 months effective 17 February 1998. The parties however decided to extend the interconnection charges' validity period in terms of the Agreement, which is the subject of these proceedings.

2. In March 2001, the parties commenced negotiations with a view to review the Agreement. A series of meetings were held as evinced by several correspondences between the parties on this subject matter. In the final analysis, the negotiations reached a deadlock. Pursuant to a jointly signed declaration of dispute dated

5 July 2002, the parties filed with the Authority, an interconnection dispute for determination, the gravamen thereof being national interconnection charges.

3. It is now apposite for me to spell out the prevailing charges, which Mascom is desirous of having them retained, and the proposed charges, which BTC is advocating for as follows (all in Thebe per minute):

(a) Call Termination on BTC network (not taking into account corresponding volume discounts)

	Current	Proposed by BTC
Peak	24.0	35.0
Off-Peak	19.1	25.0

(b) Call Termination on Mascom network

	Current	Proposed by BTC
Peak	96.0	75.0
Off-Peak	76.9	58.0

4. It is worth mentioning that after the parties declared a dispute, BTC on the 8 July 2002 served a notice of termination of the Agreement on Mascom and thereby gave a 24 months notice pursuant to Article 17.1 of the Agreement. The notice of termination spurred Mascom to raise two points in limine namely, that there was no longer a dispute between the parties as a result of the notice of termination and furthermore that BTC had waived

its rights under the Agreement to seek review of the Agreement by serving the said notice of termination.

5. The two points in limine are crucial in that once I uphold them jointly or severally, they shall render consideration of the variation and/or review of the Agreement unnecessary and that would be the end of the matter. Before I discuss the said points in limine, it is appropriate for me to outline the procedure, which the parties were advised by the Authority to follow and which the parties complied therewith.

6. In brief, BTC and Mascom were advised to submit in a case–stated format their written submissions and arguments (hereinafter referred to as the Initial Submissions), which they did on 4 October 2002. The said written submissions were exchanged between the parties to enable them to know each other's cases. Following the exchange of Initial Submissions, the parties were given an opportunity to respond to each other's submissions in writing (hereinafter referred to as the Reply Submissions). Mascom and BTC submitted their Reply Submission to the BTA on 22 November 2002. The said Reply Submissions were also exchanged between the parties. After the Reply Submissions, the parties were further afforded an opportunity to make oral submissions (hereinafter referred to as the Oral Hearings). The first of these were in the absence of each other (Mascom individual Oral Hearing in the morning of 21 January 2003 and BTC individual Oral Hearing in the morning of 22 January 2003)

and then a final one in each others' presence for purposes of making oral rebuttals (the joint Oral Hearing in the afternoon of 23 January 2003).

7. In the morning of the day of the joint Oral Hearing Mascom wrote BTA a letter in which it raised two points touching on the propriety or otherwise of the procedure and the possible violation of the rules of natural justice by the Authority. When amplifying those points during the joint Oral Hearing, Mascom also sought postponement of the joint Oral Hearing so as to be afforded ample time to respond. In reply during the joint Oral Hearing, BTC wanted the matter to proceed as scheduled. In my corresponding ruling read out during the beginning of the joint Oral Hearing, I held that the procedure adopted by the Authority as detailed in the preceding paragraph more than substantially complied with the rules of natural justice. The parties were afforded ample time to prepare their cases. They were also given reasonable time to make Initial and Reply Submissions and also afforded individual and joint Oral Hearings and thus the request for postponement was properly refused.

8. Before addressing the preliminary and substantive issues, I consider it important to underline the importance of this dispute and to place it in context.

9. The setting of fair and efficient interconnection charges is an essential requirement for the creation of a competitive

telecommunications market. Interconnection charges can account for a substantial proportion of operators' expenses and can also constitute a very significant revenue flow, and hence the importance thereof cannot be overstated. I therefore consider that the establishment of a correct and appropriate interconnection charge framework is of fundamental importance in ensuring a consumer friendly and pro-competitive telecommunications market in Botswana.

PRELIMINARY ISSUES

10. I shall now address the preliminary points raised by Mascom seriatim.

Whether there is a dispute

11. In its Submissions and during Oral Hearings Mascom has argued that there is no dispute. According to Mascom, BTC's serving of a notice of termination, altered the factual position with regard to the joint declaration of dispute and therefore required a formal withdrawal of the dispute by the parties. Mascom further argued that by serving the notice of termination, BTC was accepting to abide by the existing terms and conditions of the Agreement until it lapses 24 months after the date of the notice. In short, Mascom is arguing that the serving of notice of termination vitiated the review process that has been initiated three days earlier. During the hearing Mascom was asked by the Authority

whether their case was that once a party serves a notice of termination, it forgoes the right to invoke the other provisions of the Agreement during the notice period. In response, Mascom suggested that in so far as the review was concerned, BTC could not during the notice period seek to continue to review the Agreement.

12. In its Reply Submission and during Oral Hearings BTC argued that the serving of notice did not preclude it from continuing with the review process which it had initiated.

13. A dispute, by its very nature, presupposes the co-existence of a non-frivolous claim and a rejection of the said claim. In other words, there must be both a claim and a rejection in order to constitute a dispute or difference. The issue for determination now is whether there is a dispute between the parties, bearing in mind the notice of termination served on Mascom by BTC. **I hold that the serving of notice of termination by BTC on Mascom did not in any way affect the factual position of the parties herein.** The reason for so holding is that the Agreement still subsists and it will only lapse after 24 months from the date of notice of termination. Not only that, even the dispute still subsists since the provision under which it was declared remains valid notwithstanding the notice of termination. In any case the Agreement expressly recognises this fact. Clause 16.5 thereof provides as follows:

> "For the avoidance of doubt, it is hereby agreed that notwithstanding these provisions for review the terms and conditions of this Agreement shall remain in full force and effect during such review until such time as the Parties complete an agreement replacing or amending this Agreement."

14. **Taking into consideration all of the analysis and discussion above, I hold that there is indeed a dispute between the parties.**

Whether BTC has waived its rights to seek review or variation of the Agreement.

15. It has been argued by Mascom that, BTC, by serving a notice of termination thereby waived its right to seek a review or variation of the Agreement. Mascom places heavy reliance on Article 16.3 of the Agreement, which states as follows:

> "If notwithstanding the parties negotiating in good faith pursuant to clause 16.2 above, at the end of (two months) from the date of the Review Notice the Parties have failed to agree appropriate modifications to this Agreement and the Review Notice has not been withdrawn by the issuing party then the parties will each agree either to:

(a) each prepare a written proposal on the dispute and send the other party a copy of such proposal within 7 days of the end of such period; and refer the dispute for resolution in accordance with the procedures specified in clause 21; or (my underlining)

(b) terminate this Agreement."

16 According to Mascom's interpretation of the clause cited supra, the parties can only choose one option and cannot elect both. In other words, once a party proceeds by referring a dispute to the BTA for determination, then and only then will such party be precluded from seeking termination of the same Agreement. Mascom is therefore arguing that the aforecited provisions are mutually exclusive. At this juncture, it is worth mentioning that BTC's notice of termination was pursuant to Article 17.1 as stated in its letter dated 8 July 2002 and not Article 16.3, which Mascom is relying upon.

17. Article 17.1 of the Agreement, which BTC is relying upon, states as follows:

"This Agreement will remain in force unless and until terminated by either party giving to the other at least 24 months notice in writing to expire at the end of the Initial Period or at the end of any calendar month

thereafter or either Party ceases to hold a licence granted by the Regulatory Authority."

18. I hold that serving of notice of termination of the Agreement herein did not ipso jure (through law) and ipso facto (through fact) mean that the terms and conditions of the Agreement lapsed at the time the notice was served. The Agreement will only lapse after effluxion of 24 months from the 8 July 2002, the date on which the notice was served. In the interim, all the constituent terms and conditions of the Agreement remain in existence. Once such terms and conditions are in existence; as I hereby hold, the parties' rights, duties and obligations arising therefrom still subsist. The end result thereof is that any party may invoke any of the provisions of the existing Agreement. The notice of termination did not therefore freeze or stall the operation of the terms of the Agreement.

19. If I were to extend Mascom's interpretation of the Agreement to its logical conclusion, it would mean that once a party has served a 24 months notice as provided for in the Agreement, then there can never be any exercise of any of the terms of the Agreement for instance, review of the terms of Agreement whatsoever. A party will be precluded and estopped from invoking any of the terms of the Agreement and this could not have been the intention of the contracting parties. Serious and far reaching economic ramifications within the telecommunications sector may arise if such an important Agreement is rendered immune from,

not only review, but also the exercise of any rights emanating from the Agreement for a period of 24 months, which is the notice period.

20. The telecommunications market is an ever-evolving industry and having to wait for a period of 24 months (notice period) without invoking any of the terms of such a very vital agreement may have adverse consequences within the telecommunications industry. I would therefore adopt a conjunctive interpretation of Article 16.3 for purposes of giving effect to the intention of the parties and to remove any absurdity that may arise therefrom and to further ameliorate any adverse repercussions (as stated above) that may arise once I find solace in a disjunctive interpretation. The use of the word 'or' in the said Article is therefore construed conjunctively as opposed to disjunctively, bearing in mind that in ordinary usage "or" is disjunctive whereas under certain instances like in the present case, it is construed conjunctively. In this connection see Uddin v. Associated Portland Cement Manufactures Ltd [1965] 2 QB 582. On the basis of this progressive reasoning, I am inclined to conclude that BTC did not waive its right to seek a review of the said Agreement by serving a Notice of Termination of the Agreement on Mascom.

21. Even if I were to rule that BTC can only and distinctively seek either a review or termination of the Agreement, that is to say, to adopt a disjunctive interpretation, the end result shall be the same. If it is review on its own, that does not present any

difficulty at all as the Authority is now asked to review the said Agreement by BTC. On the other hand, if it is termination as preceded by the served notice, still a review of the Agreement shall be in order for the simple reason that notice of termination did not in any way extinguish any of the terms of the Agreement, for instance, review of the said Agreement.

22. If I were to invoke, mero motu, a common sense approach that if two or more acts by the same individual are repugnant or inconsistent, the last one must prevail, still, such an approach does not advance the Mascom case any further. In this case, BTC asked initially for a review of the Agreement and three days later served a notice of termination of the said Agreement. If I uphold that notice of termination must prevail, the aforestated conclusion is also reached, which is: notice of termination does not ipso facto and ipso jure freeze the operation of the terms of the Agreement and BTC will be justifiably entitled to invoke any of the provisions of the Agreement.

23. Assuming I were to agree with Mascom that the provisions of clause 16.3 are mutually exclusive and should be interpreted disjunctively, I still cannot agree that BTC could be said to have waived its right to continue with the review process it initiated prior to the serving of notice of termination. In that case my position would be that BTC did exercise its option, in terms of clause 16.3, on 5 July 2002 by opting for a review process and that by so doing it may have precluded itself from opting for a termination process.

24. **I accordingly hold that BTC has not waived its right to seek a review of the Agreement.**

25. Having adequately addressed the preliminary points in limine raised by Mascom I shall now proceed to briefly consider instances under which a review of the Agreement may be possible.

26. In terms of the Agreement, certain procedural and substantive requirements have to be satisfied in order to initiate the review process. The relevant clause thereof is clause 16, dealing with the giving of the review notice, and review when there is a material change of circumstances. In the circumstance the said conditions precedent have been satisfied by BTC. In any event, Mascom is not arguing that there was non compliance with either procedural and or substantive requirements of the said article dealing with review. **On the basis of the afore mentioned justification I hold that BTC is entitled to seek a review of the Agreement.**

LEGAL BASIS FOR THE DETERMINATION OF INTERCONNECTION CHARGES

27. In reviewing the appropriate legal basis for the determination of interconnection charges, I shall place heavy reliance on the Act, the licences of the two parties herein, the Agreement and the

Telecommunications Policy of Botswana (1995), (hereinafter referred to as the "Policy").

The Telecommunications Act, 1996 (No. 15 of 1996)

28. The relevant provision thereof is section 47 of the Act, which inter alia, provides that in the event of an interconnection dispute the Authority shall have the power to decide on the matter and set down such terms and conditions for interconnection as seem fair and reasonable to it. The fundamental indicia thereof is what seems to be a "fair and reasonable" interconnection charge to the Authority in each case.

29. What amounts to "fair and reasonable" charge as provided for in section 47 depends upon a host of several considerations. Such considerations may include significant market power or otherwise of the operators, the possibility of revenue sharing by concerned operators, level of competition, benchmarking, promotion of universal access, interconnect access charge, consumer interests; subscriber base, transparency, cost orientation; reasonable rate of return on investment, non discrimination, market structure and the Policy. It is not intended that the above stated list is exhaustive, nor that all the factors listed above would necessarily be relevant in any particular dispute. As stated above, it will be upon the Authority to determine what is fair and reasonable in the circumstances. In addition, the Authority is mindful of its mandate under section 17 of the Act,

which is the promotion and development of efficient telecommunications services in Botswana.

Telecommunications Policy for Botswana

30. The Policy recognises interconnection as forming part of the liberalisation process and development of competition in the telecommunications sector. It is prudent for me to refer to the relevant exposition in the Policy where a justification for a mandatory and mutual interconnection obligation is stated at paragraph 8.6 page 18 as follows:

> "**Justification**. In order to rationalise the use of present network and to avoid duplication of infrastructure all new and present networks should be interconnected for national economic benefit as well as for the benefit of the consumer."

31. The Policy further advocates for a fair and reasonable pricing. In this connection, see paragraph 8.9 at page 20 where it is stated as follows:

> "Prices should be deemed fair and reasonable if they reflect recovery of the investment in the medium to long term perspective."

32. An interpretation of the afore-cited Policy guideline reflects or advocates for a fair and reasonable pricing criteria, taking into account all the goals enshrined in the Policy, such as recovery of the investment, promotion of universal access, liberalisation, effective competition and the interests of consumers.

BTC and Mascom Licences

33. In respect of BTC's licence the relevant clause is 5.1, which embraces the principle of cost orientation for regulated tariffs, which includes interconnection charges. See also clause 7.2.3 of the said licence, which obliges the BTC to ensure, that interconnect elements charged for are sufficiently unbundled and that they are based on underlying costs. With respect to Mascom's licence, the relevant clause is clause 3 dealing with leased lines and fixed links. Sub clause 3.1.3 thereof provides that for purposes of establishing interconnection of its public land mobile network elements and the public switched telephone network of BTC, Mascom shall use leased lines. Furthermore, sub-clause 3.4 states that in the event of a dispute relating to the reasonableness of any leased line service or charge, the parties shall refer the dispute to the Authority for determination.

34. When reconciling and juxtaposing the two licences of the parties with the Act, I have no doubt in my mind that Mascom licence is consistent with the Act in that it requires reasonable interconnection charges as contained in clause 3 of the licence.

Concerning BTC's licence, I have no hesitation in concluding that it is equally consistent with the Act insofar as it requires cost based charges, which are an integral component or subset of fair and reasonable charges. In other words, cost based charges and other considerations will shed light on what is fair and reasonable. A licence by its very nature sets out the scope, terms and conditions that the concerned operator should comply with. It may be equated to a contract between the operator and the Authority under which the operator enjoys rights, duties and obligations. A violation of those rights, duties and obligations may attract or be visited by a form of sanction imposed thereon by the Authority. It therefore follows that the BTC and Mascom are duty bound to comply with the terms and obligations imposed by their licences. **My finding is that both the BTC and Mascom licences are consistent with the requirements of section 47 of the Act.**

Interconnection Agreement

35. Appendix C of the Agreement between the parties herein recognises cost-based charges. At paragraph 1 thereof it is stated as follows:

> "The parties recognise that:
>
> - It is the intention that interconnection charges will be based on costs (my emphasis), although it is stated in the cellular tender document that the costing figures may not be available in the short term and another method should be used;

- The charges should:
  - (a) compensate the provider fairly for the services it provides and produced (sic) a reasonable return on the assets and resources involved;
  - (b) encourage increased networks usage and in the long run reduce costs of service to the customers;
  - (c) not be prohibitively high to inhibit the growth of cellular services".

36. The Agreement also recognises cost based charges. Not only that, it also states under (a) above that the charges should compensate the operator fairly, and in my view this encompasses fairness as required in section 47. Under (b) above increased network usage as well as reduction of costs of services to customers is encouraged when setting interconnection charges and lastly (c) advocates for charges that are not prohibitively high to the extent of inhibiting cellular growth. Interpreting all these three guidelines jointly and cumulatively, I make a finding that they require fair and reasonable interconnection charges. The said charges should satisfy what I may term the "triad of interconnection", that is to say, the said charges should be fair to the operators, fair to the end-users or customers and lastly satisfy the general mandate of the Authority as provided for in the organic statute and the Policy. In the final analysis, the said three

guidelines in the Agreement are consistent with section 47 of the Act, which requires fair and reasonable interconnection charges.

37. **Taking into account all of the analysis and discussion above, I hold that the legal principle for determining interconnection charges in Botswana is the "fair and reasonable" test. It is therefore entirely upon the Authority to determine whether in the setting of interconnection charges, cost orientation and or efficiency should be invoked in addition to or forming part of any other criteria which the BTA may deem appropriate and justifiable to satisfy the fundamental or critical epithet of fair and reasonable pricing. Interconnection charges may, in appropriate circumstances be deemed to be fair and reasonable if they approximate costs or are based on efficiency criteria.**

PRICING OF INTERCONNECTION

38. I have identified the following three principal approaches to the pricing of interconnection around the world: revenue sharing arrangements; sender keeps all arrangements (i.e. bill and keep); and interconnection usage charges (hereinafter referred to as IUC). However, sender keeps all arrangements are not relevant to this dispute and hence I shall only discuss revenue sharing arrangements and IUCs.

Revenue Sharing Arrangements

39. Revenue sharing arrangements are relatively simple to implement. Historically, they were the result of negotiations between the corresponding non-competing operators. Hence, revenue sharing arrangements are generally not cost-oriented and therefore they are generally considered to be economically inefficient. Therefore, the actual revenue share amounts tended to reflect the bargaining power of the respective operators. As such, operators often tended to focus on the relative ratio of revenues being assigned to each operator, rather than the absolute level of the revenue amounts. Once competition is introduced, as it is in our jurisdiction, the revenue sharing arrangements becomes impractical and as well exhibits a number of policy disadvantages.

40. From a practical perspective, revenue sharing arrangements introduce a high degree of unpredictability in the revenue flows of terminating operators, and recurrence of disputes. If an entrant wants to lower one of its consumer prices that has traditionally been the subject of a revenue sharing arrangement, the result will be lower revenue share amounts not just for that operator but for all the operators involved in carrying the call. However, these interconnecting operators have no desire to accept lower payments in order to support the competitive strategy of the other operator.

41 Revenue sharing arrangements have a number of additional disadvantages. First, as may be apparent from the discussion above, revenue sharing arrangements are not conducive to vibrant consumer tariff competition. Second, revenue sharing arrangements may also be discriminatory. For example, in competitive markets, different originating operators may set different consumer tariffs for a call to the same terminating network. Hence, the terminating operator may be paid more or less by different originating operators for exactly the same service (termination of traffic), depending on the respective consumer tariffs of the originating operators.

42. My Ruling (No. 1 of 1999), which established the current interconnection framework in Botswana, was generally reflective of a revenue sharing arrangement. At that time, with the recent introduction of mobile services by Mascom and Vista, and the continuing de facto BTC monopoly on fixed services and in order to promote stability and certainty in the sector, it was necessary to set termination and origination charges for BTC only. Based on the fixed consumer tariffs, these BTC termination and origination charges resulted in fixed corresponding revenue share amounts for Mascom.

Interconnection Usage Charges

43. IUCs are the charges payable between interconnecting operators for the actual use of each others' network to originate, transit or terminate a call. Hence, there may be up to three types of IUCs: origination, transit and termination. I will now focus on IUC termination charges, given that IUC transit charges are not applicable to this dispute and that IUC origination charges are generally used and are appropriate for situations where the terminating operator sets the corresponding consumer tariff.

44. The originating operator would, from the consumer tariff that it determines and collects, pay a set amount to the corresponding terminating operator. The amounts paid would generally be independent of the consumer tariff. The residual amount, that is the amount remaining from the consumer tariff after termination charges, is the amount retained by the originating operator (hereinafter referred to as the retention amount).

45. I am of the view that IUCs are currently the best practice approach for the pricing of interconnection in markets where competition has been introduced, such as in Botswana. This is for a number of practical and policy reasons.

46. From a practical perspective, IUCs have been proven around the world as the most sustainable approach to interconnection pricing in competitive multi-operator environments. From a policy perspective, I find that IUCs have number of advantages. First, IUCs are more conducive to vibrant competition in the consumer tariffs. With IUCs, the originating operator has a more direct control on its retention amount, given that it has to pay the terminating operators the corresponding (fixed) charges. Second, IUCs tend to be most equitable under competitive scenarios. In these instances, a terminating operator will charge all operators who terminate their traffic on its network the same non-discriminatory (termination) interconnection charge. Third, IUCs are generally more compatible with the principle of cost-orientation. Because IUC termination charges are independent of consumer tariffs, they may be set at efficient cost-oriented levels.

47. Having addressed the advantages and disadvantages associated with the interconnection pricing methods, I shall now dwell on the submissions of the parties. In its Initial Submission, BTC did not address the pricing of interconnection issue directly. However, I note that BTC appears to include elements of IUCs and of revenue sharing arrangements. The BTC Initial Submission focused on the presentation of the estimates of BTC's origination and termination charges of calls to/from the mobile network. This has elements of IUCs. BTC, however, appears to propose that the changes in its origination and termination charges be undertaken

within the context of a fixed consumer tariff. In effect, therefore, such a proposed increase would appear to result in a reduction in the corresponding shares received and retained by Mascom, respectively. This is an element of a revenue sharing arrangement, with a proposed increase in the share for BTC.

48. In its Reply Submission, BTC did not address the interconnection pricing issue directly. It did, however, address the issue of the relative ratio of fixed to mobile termination charges in neighbouring African countries, in response to the specific benchmarking approach proposed by Mascom in its Initial Submission. As I pointed out earlier, most of the discussions associated with the relative ratio of mobile to fixed interconnection charges are more reflective of revenue sharing arrangements rather than the IUCs.

49. In the Oral Hearings, however, BTC appeared to recognise the relative advantages of the IUC termination charges over a revenue sharing arrangement. In particular, BTC noted the benefits of de-linking (wholesale) interconnection charges from the (retail) consumer tariffs.

50. In its Initial Submission, Mascom did not address the pricing of interconnection issue directly. However, based on my analysis, the Mascom Initial Submission, which places emphasis on the relative ratio of fixed to mobile charges appears to reflect a revenue sharing arrangement.

51. In the Oral Hearings, Mascom, when presented with a revenue sharing versus IUC arrangements options by the Authority, appeared to recognise the relative advantages of the latter over the former.

52. My review of the international practice and experience of interconnection pricing suggests that as sector reforms have taken place around the world, including the introduction of competition, an increasing number of regulators have discarded revenue sharing arrangements in favour of IUCs.

53. I note that while in their Initial and Reply Submissions BTC and Mascom do not directly address the pricing of interconnection issue, once the matter was presented as a clear choice by the Authority during the Oral Hearings, both parties appeared to recognise the relative advantages of the IUC termination charges over revenue sharing arrangements. I further note that in practice, the parties have already adopted a IUC termination charge regime.

54. For practical and policy reasons discussed above, I consider that an IUC termination charge regime is the most desirable approach for the pricing of interconnection in Botswana at this time. I therefore direct that an IUC termination charge approach for interconnection pricing between BTC and Mascom be implemented.

SETTING OF INTERCONNECTION CHARGES

55. In considering the substantive issues under dispute I have carefully reviewed the Initial and Reply Submissions and the arguments made during the Oral Hearings. In order to better understand the dynamics of the dispute, I have undertaken a thorough analysis and assessment of data provided by both parties. I have also reviewed and assessed what I consider appropriate and efficient interconnection trends and practices in other countries, especially with respect to the current best practice of using efficient benchmarks.

56. Given that I have directed BTC and Mascom to implement an IUC termination charge approach to the pricing of interconnection, the next fundamental step is to examine the appropriate methodology for the determination of termination charges for BTC and Mascom. I have identified costing methodologies and benchmarking approaches as the two broad principal approaches to the setting of interconnection and I proceed to examine the advantages and disadvantages of these two approaches.

Costing Methodologies

57. The cost approaches can be identified into two principal criteria as follows: (1) historical or backward-looking approach; and (2) the forward-looking approach.

Backward-Looking Approach

58. This approach involves the compilation of accounting and other historical data to model the actual network in place and to price it based on what was paid for each network element. The best-known variation of this approach is fully distributed cost ("FDC") or "fully allocated costs". Due to general lack of detailed analytical accounting data, however, FDC allocates the relevant investment across broad service categories.

59. The main criticism of this approach is conceptual. In comparison to the forward-looking approach, the backward-looking approach does not adequately reflect the dynamics of competitive markets. Hence, the costs that are calculated by this approach may not be economically efficient.

60. There are also a number of practical criticisms to this approach. One practical criticism of the backward-looking approach that I find particularly pertinent is that historical costs may reflect investment, operational or technological inefficiencies of the operator. These inefficiencies have often been found to be relatively large, especially in state-owned monopoly operators. Further, historical costs do not reflect changes in technology or management methods – such technology and methods, if utilised today, could imply a much lower cost. Another possible form of inefficiency is that often the operator may have over-invested in

the past so that it currently has spare capacity. Hence, with respect to the setting of interconnection charges, it is argued that historically inefficient operators may be "passing on their inefficiencies" as a result of the adoption of this approach. Additionally, such inefficiencies could be passed to the consumer in the form of higher consumer tariffs.

61. In combination, these criticisms have resulted in a significant shift. While still being widely used for management purposes, regulators are increasingly replacing backward-looking approaches with forward-looking costing methodologies and/or benchmark approaches.

Forward-Looking Approach

62. This approach is generally preferred by most regulators because it reflects better the dynamics of competitive markets. Competitive operators are compelled to look forward to set prices to compete, rather than to look back at prices based on their historical investments. Accordingly, the costs that are calculated by this approach, including, in particular, IUC termination costs, are generally considered to be economically efficient because they most closely approximate the prices that would otherwise be present in effectively competitive markets. Therefore I am inclined, to hold the view that cost orientation, in as much as it leads to charges that approximate costs, is an appropriate principle to apply in the current circumstances.

63. The forward-looking approach uses current and projected future prices and attempts to calculate an efficient network to provide the services in question. The most common and generally accepted forward-looking approach is long-run incremental costs ("LRIC"). LRIC are the incremental costs that would arise in the long run with a defined increment to demand.

64. LRIC may be implemented in a number of ways, including the European Commission's long run average incremental costs ("LRAIC") and the United States of America's Federal Communications Commission's total element long run incremental costs ("TELRIC"). These variations are based on the LRIC standard but differ in terms of the size of the increment and the treatment of joint and common costs. All of these variations include "mark-ups" to cover a portion of joint and common costs.

Benchmarking

65. Benchmarking is often used by regulators as a transitional or complementary approach. There are different benchmarking methodologies. In particular, an efficient benchmarking approach would use actual or projected efficient prices in other countries. Efficient prices would result from effective competition or where the regulator has established prices based on an acceptable costing methodology. For instance, the European Union ("EU") used a variant of efficient benchmarking to ensure the progressive

reduction of fixed interconnection charges in the transition period between the general introduction of competition in 1998 and the implementation of LRAIC and other costing methodologies by national regulators in the EU. Specifically, the EU's "best current practice" approach avoided many of the common pitfalls of benchmarking. For instance, it did not select an average or the mid-range of existing charges. Given that at the beginning of this period there was no effective competition in most EU countries or that most countries had not implemented efficient costing methodologies, taking an average or a mid-range of all existing charges would likely have resulted in inefficient benchmark termination charges not oriented to costs.

66. The EU's "best current practice" approach may be summarized as follows. For each level of interconnection, it reviewed the standardized interconnection prices for its 15 member countries. The EU has defined three levels of interconnection charges for fixed termination depending on where in the network hierarchy the call is terminated and the distance the call has to be carried: "Local" represents interconnection at the local exchange; "Single Transit" represents interconnection at the "Metropolitan" level, including the use of one tandem switch; "Double Transit" or "National" allows access to all customers on the network and includes tandem links of at least 200 km. The EU then ranked the standardized prices for each level from the lowest to highest. For each level, the EU based its "best current practice" range on the three lowest interconnection charges in its member

countries. Hence, the lowest interconnection price constituted the lower end of the "current best practice" range while the third lowest interconnection price constituted the upper end.

67. In its Initial Submission, BTC proposed using the backward-looking costing methodology it had earlier developed for the estimation of its own origination and termination charges. Based on these cost calculations BTC argues that its origination and termination charges under the current arrangements are too low and do not allow it to fulfill its obligation of cost-orientation. In its Reply Submission, BTC insisted that its cost-based approach was superior to the benchmark approach proposed by Mascom in its Initial Submission.

68. During the Oral Hearings, BTC continued to put forward its cost-based approach to support its proposed interconnection charges. It maintained its position that the benchmark comparisons proposed by Mascom were inferior in principle to the implementation of a costing methodology.

69. On the other hand, Mascom in its Initial Submission provides an extensive international comparison of fixed and mobile interconnection charges and the relative ratio of fixed to mobile termination charges. After reviewing world-wide and continental averages, Mascom also provides data for a number of developing countries as well as for the 15 member countries of the EU. Mascom argues that these absolute and relative comparisons

support the status quo arrangement in Botswana. Commenting on the EU experience Mascom notes that some regulators have been significantly reducing mobile termination charges. However, Mascom argues that LRAIC-type modelling, especially for mobile services, is generally at its infancy even in the EU.

70. In the Oral Hearings, Mascom continued to express its preference for a benchmark approach to the setting of interconnection charges. Mascom further elaborated on its position with respect to cost methodologies. It noted that it was not opposed in principle to the development and implementation of an approved costing methodology. What Mascom rejected was the imposition of any particular type of methodology by BTC without BTA approval. It argued that the BTA had not made a final decision on an approved costing methodology and hence any specific proposal by BTC was in principle not acceptable to Mascom. At this point, I wish to acknowledge that the Authority has not yet developed principles to be applied by operators in the setting of tariffs as provided for under section 18(1) of the Act and that shall be done in due course. The Authority is nonetheless duty bound to make a determination herein on the basis of what it considerers fair and reasonable.

71. Based on my review of the Submissions and the Oral Hearings and my extensive analysis and assessment of approaches used by regulators around the world to set fixed and mobile interconnection charges, and taking into consideration the

policy and practical advantages and disadvantages of each approach as summarized above, I consider that the current best practice approach for the setting of interconnection charges is a forward-looking LRIC methodology, as it tends to result in the calculation of economically efficient cost oriented charges. I recognise, however that due to the time required to develop and implement such a methodology, it would not be feasible or desirable to implement a forward looking LRIC approach within the context of the current dispute. In the long run, the Authority supports the development and implementation of a forward-looking costing methodology for the determination of interconnection charges.

72. Taking into account the impracticality of implementing a forward-looking LRIC methodology, I have in the interim, considered a number of options with respect to the setting of interconnection charges. Given my findings above, in assessing these options I will place special emphasis on whether their implementation is likely to result in efficient termination charges for BTC and Mascom.

73. One option I considered was to set the BTC interconnection charges based on the backward-looking costing methodology proposed and implemented by BTC. I am of the view that the backward-looking costing methodology is conceptually inferior to the preferred forward-looking costing methodology, in that it does not accurately reflect the workings of competitive markets.

74 If I were to assume that the costing methodology proposed by BTC was acceptable to the Authority, its adoption in this dispute would raise the question of the appropriate methodology to be applied by the BTA to calculate the termination charges for Mascom. Under this scenario, the principle of symmetrical regulatory treatment and fairness would suggest that the same backward-looking cost methodology would also be applied to Mascom. However, due to the time required to actually implement such a methodology for Mascom, this option does not appear to be feasible or desirable within the context of this dispute. Hence, for conceptual and practical reasons, I do not consider this option to be implementable. From a practical perspective, therefore, the most appropriate remaining option appears to be an efficient benchmarking approach.

75. **Based on my analysis and discussion above, I hold that an efficient benchmarking methodology is the most likely to result in efficient benchmark termination charges for BTC and Mascom.**

76. There are two principle variables in implementing an efficient benchmarking methodology. One is the countries to be included in the benchmark sample. The other is the selection criteria of the actual benchmark level or range within that sample. I shall now discuss these in turn.

Sample of Countries

77. In their Submissions, BTC and Mascom presented a number of different samples. I found the world-wide or continental samples presented by Mascom as generally unhelpful, given that the methodologies used to calculate the interconnection charges are not known. Further, many of these samples may include countries with Receiving Party Pays (RPP) regimes, which would make the sample inappropriate given the Calling Party Pays (CPP) regime currently used in Botswana.

78. Mascom presented some samples of Southern African countries. Indeed, I consider that, in principle, the review of African, Southern African or SADC member countries samples could be important. However, I was not given any information with respect to whether any African country has implemented LRIC-type costing methodologies for the calculation of fixed and mobile termination charges. Further, there does not appear to be a significant number of countries in Africa where sufficient competition would result in efficient termination charges. In summary, there is nothing to suggest that in Africa there exists a useful number of countries from which to construct a sample that would incorporate either efficient charges based on appropriate costing methodologies or efficient charges that result from effective competition. In effect, if I were to choose a sample of

African countries, I would be concerned that much of the sample would include interconnection charges that are the result of negotiations, rather than cost-orientation. Hence, I consider that a comparison with these countries would not promote the efficiency objective; rather, such a comparison would reflect the relative negotiating power of the respective operators in each of the countries. In spite of the intuitive appeal of selecting a sample of African countries, I consider that African comparisons are not an appropriate sample.

79. Mascom also placed some emphasis on the 15 member countries of the EU. I have researched the experience of the EU countries with respect to fixed and mobile interconnection. Based on this review, I consider that the EU countries represent a sample that is particularly well-suited to meet the BTA objective for the setting of efficient termination charges for BTC and Mascom, for a number of reason, some of which I discuss below.

80. First, EU countries apply a CPP or CPP-like arrangement for fixed-mobile interconnection. This is consistent with the situation in Botswana. Second, as part of EU governance arrangements, all EU countries are required to implement and comply with European Commission Directives, including with respect to interconnection and interconnection costing methodologies. This results in a relatively homogenous regulatory framework in each country that facilitates intra and extra-EU comparisons. Third, the EU has developed and implemented for more than four years a

well-defined and highly-regarded benchmarking methodology for interconnection charges. This methodology includes the criteria for ensuring adequate comparability to take into account the level of physical interconnection (local, metropolitan and national), the time-of-day that the call is undertaken and the structure of interconnection charges. The fact that the EU benchmarking methodology has been tried and tested ensures that, if I were to consider it, it would be a reasonable alternative. Fourth, many of the national regulatory authorities have developed and actually implemented costing methodologies, including LRAIC methodologies for interconnection charges.

81. For fixed termination, most national regulators in the EU have implemented costing methodologies to guide interconnection charge setting. Of this group, six have implemented forward-looking LRAIC methodologies and an additional number are in the process of developing LRAIC to be implemented in the near future, replacing historical costing methodologies. Hence, I consider that the EU provides a good sample of countries that have reached or are in the process of reaching efficient cost-oriented termination charges for fixed networks, based on the implementation of costing methodologies. In fact, in recognition of this, in 2002 the EU decided to discontinue its "current best practice" benchmarking because of the progressive reduction of interconnection charges to the "current best practice" recommendations.

82. With respect to mobile, there is an increasing trend amongst regulators in favour of the regulation of mobile termination charges. In the EU, in particular, the UK and Austria, have developed and implemented LRIC-based costing methodologies. Other EU regulators have used other approaches, including efficient benchmarking, to mandate significant decreases in mobile termination charges, including in Sweden, France and Belgium.

83. I recognise that the economic and telecommunications development conditions in the EU are different from those of Botswana. One possible risk in this regard is that the selection of the EU sample may result in benchmark termination charges for BTC and Mascom that are below their efficient forward-looking costs. I have fully considered this possibility and have taken the necessary precautions, including the implementation of a transition period, to mitigate this risk.

84. Based on the analysis and discussion above, I hold that the 15 member countries of the EU provide the most appropriate efficient benchmarking sample to be used in the setting of efficient termination charges for BTC and Mascom.

Benchmarking Selection Criteria

85. For fixed termination, I am confident that most of the EU countries have reached or are in the process of reaching efficient cost-oriented termination charges. Based on my review of the data provided by BTC as part of this process, I consider that the EU-defined "National"-level interconnection is the most comparable to the situation in Botswana. **Hence, for fixed termination, I hold that an average or mid-range of all the 15 EU countries for "National" interconnection constitutes an efficient benchmarking methodology and hence a fair and reasonable basis on which to determine the efficient benchmark termination charge for BTC.**

86. For mobile termination, I am not confident that most of the EU countries have reached or are in the process of reaching efficient cost-oriented termination charges. Hence, for mobile termination, I do not consider an average or a mid-range of all the 15 EU countries to constitute an efficient benchmarking methodology. **Instead, I hold that an average or mid-range of the "current best practice" range, as defined by the EU, constitutes an efficient benchmarking methodology and hence a fair and reasonable basis on which to determine the efficient benchmark termination charge for Mascom.**

DETERMINATION OF BTC AND MASCOM TERMINATION CHARGES AND IMPLEMENTATION ISSUES

87. I have already decided on a new framework for the pricing of interconnection (IUC termination charge approach), which is independent of consumer tariffs and on the methodology for the setting of these termination charges (based on efficient EU benchmarking). I now proceed to determine the actual efficient benchmark termination charges for BTC and Mascom. I do not, however, intend to enforce immediately the resultant efficient termination charges. I consider below a transition period and volume discounts.

Volume Discounts

88. In order to facilitate the development of the mobile sector, in my ruling of 1999, I ordered mandatory volume discounts on the revenue amount for the termination of traffic on the then largest operator, BTC. I did not at that time order volume discounts to the termination of traffic on Mascom. In 2003, however, Mascom is significantly larger than BTC, at least in terms of subscribers.

89. Based on the data submitted by the operators as part of this process, I have confirmed a significant traffic imbalance between BTC and Mascom. The most recent data available to the Authority shows that BTC terminates 2.5 to 3.0 times as much traffic on the Mascom network than does Mascom terminate traffic on the BTC

network. Given market developments and the continuing traffic imbalance between BTC and Mascom, I am of the view that the application of mandatory volume discounts only for termination on the BTC network is no longer appropriate.

90. Based on the analysis and discussion above, I direct that, starting on the effective date of this ruling, the mandatory volume discounts on the termination of Mascom-originated calls on the BTC network be discontinued.

Transitional Arrangements

91. The efficient benchmark termination charges I have determined for BTC and Mascom are significantly below the respective current termination charges.

92. In these circumstances, I consider that a transition period is necessary as a risk-mitigating measure. Further, I recognize that a transition period is appropriate to allow both BTC and Mascom to reasonably accommodate the efficient benchmark interconnection charges. I also consider that there is a trade-off between regulatory policy objectives and financial imperatives in determining the optimal time period for the operators to reach the efficient termination levels. The regulatory objectives require a short implementation timeframe while the financial imperatives suggest a longer implementation timeframe.

93. **Based on the analysis and discussion above, I have decided on the applicable mandatory termination charges for BTC fixed termination and Mascom mobile termination. These termination charges are presented in the table below, which includes their implementation schedule. The termination charges in the table are in nominal (current) terms and should be treated as ceilings (i.e. the respective terminating operator may choose to set lower termination charges).**

BTC fixed termination charges and Mascom mobile termination charges			
Operator	**Time-of-Day Period**	**Effective date of Ruling to 29 February 2004**	**From 1 March 2004**
BTC	**Peak**	15.0	11.0
	Off-Peak	12.0	8.8
Mascom	**Peak**	85.0	75.0
	Off-Peak	68.0	60.0

Note: Peak and off-peak hours shall have the same meaning as defined in the Agreement.

CONCLUSIONS

94. Under the IUC termination approach, the originating operator has the right to set and collect the corresponding consumer tariff and the responsibility to pay a fixed termination charge to the terminating operator. With this in mind and taking into account the staged reductions in the underlying termination charges, I expect that the parties will pass on to the end consumers the benefits of the reduced termination charges in the form of lower consumer tariffs.

95. Before I conclude I wish to address specifically the prayer raised by BTC under which BTC is requesting that Mascom be ordered to pay interest at the rate of prime plus two percent on the losses amounting to thirty million Pula suffered as a result of the delay in effecting the proposed charges as purportedly agreed by Vista (Pty) Ltd. In my view, there is no merit in this prayer. The alleged delay on the part of Mascom was justified in the circumstances. Mascom was legitimately safeguarding its interests through proper negotiations, which were also done in good faith. Furthermore, Vista is not a party to the present proceedings let alone to the current Agreement between the parties herein. **There is no basis upon which Mascom may be ordered to pay costs, which may have been suffered by BTC in its dealings with a non-party. The said prayer is accordingly refused.**

96. **This ruling shall remain valid and binding on both parties for a period of 24 months effective from the date of the ruling. In the event that the parties herein reach an agreement during the subsistence of this ruling, the Authority reserves the right to uphold and confirm such agreement in so far as the essence of such agreement does not substantially breach the fundamental framework or tenet as espoused by this ruling.**

97. This ruling takes effect from the date hereof. Any party aggrieved by this decision may appeal to the High Court in terms of section 56 of the Act.

Delivered at Gaborone on this **Twenty Sixth** day of February 2003.

C. M. Lekaukau

Executive Chairman

ANNEX 2

EU Public Network Interconnection and Interconnection Charges and Prices for Unbundled Local Loop, from "Technical Annex of the 8th Report on the Implementation of the Telecommunications Regulatory Package" 3.12.2002.

http://europa.eu.int/information_society/topics/telecoms/implementation/annual_report/8threport/finalreport/Annex%201%20-%20Corrigendum%20March%202003.pdf

3 PUBLIC NETWORK INTERCONNECTION AND INTERCONNECTION CHARGES

3.1. FIXED-TO-FIXED INTERCONNECTION CHARGES

The following charts show the per-minute interconnection charges for call termination on the incumbent's fixed network, based on the first three-minute call at peak rate.

The charts show the absolute value of the interconnection charges (in €-cents) as of 1 August 2002, in comparison to the value as at August 2001.

The figures may have been approved by the NRA or simply agreed between operators, where the legal framework does not require NRA approval.

Interconnection charges for Spain refers to a standard single transit, but a different charge is applied in Barcelona and Madrid (1,05 eurocents/minute)

In the case of France, in order to maintain consistency across Member States, the per minute charge indicated does not include the per minute charge related to the cost of the 2 Mbit/s port, which, however, according to ART, provides a better picture of the cost borne by the interconnecting party. By taking this additional charge into account, per minute charges would be €-cent 0.62, €-cent 1.26 and €-cent 1.76 respectively at local, single transit and double transit interconnection levels.

Charges for Netherlands apply from 1 Sept. 2002.

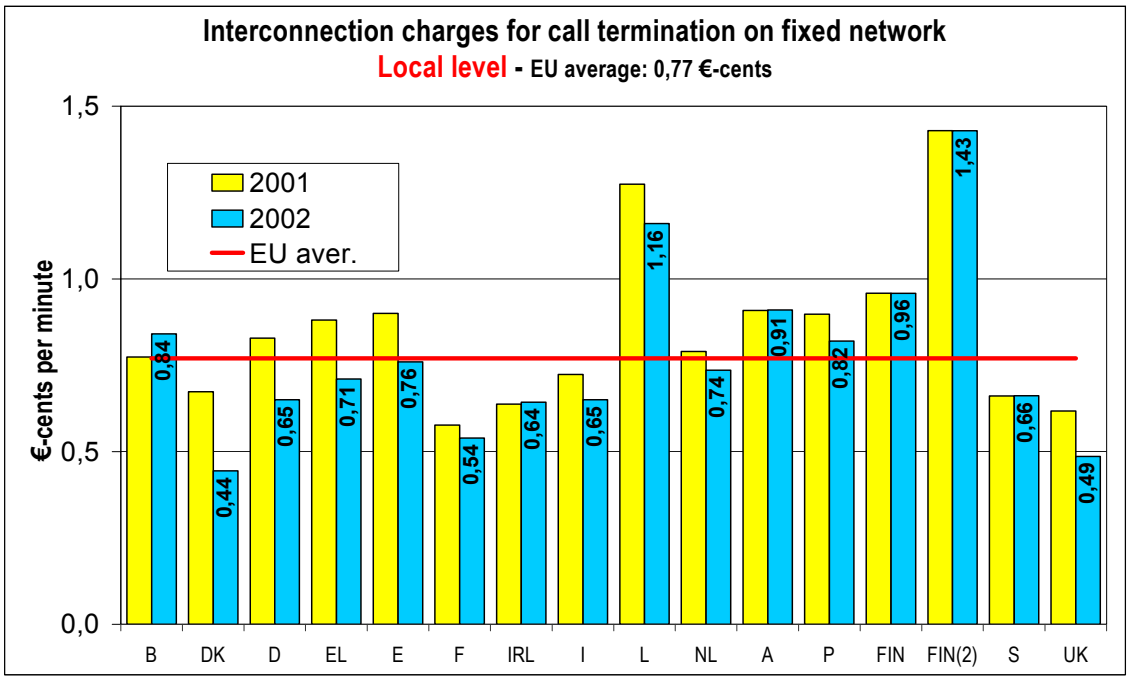
Figures for Austria are valid until 30.06.2002.

In Finland there are about 50 SMP operators who apply different interconnection charges. The charts refer to charges applied by the two major operators Elisa (FIN) and Sonera (FIN2).

Charge for Germany for single transit level is not comparable to last year, since the Regio50 and Regio200 zone rates have been unified in a unique single transit charge.

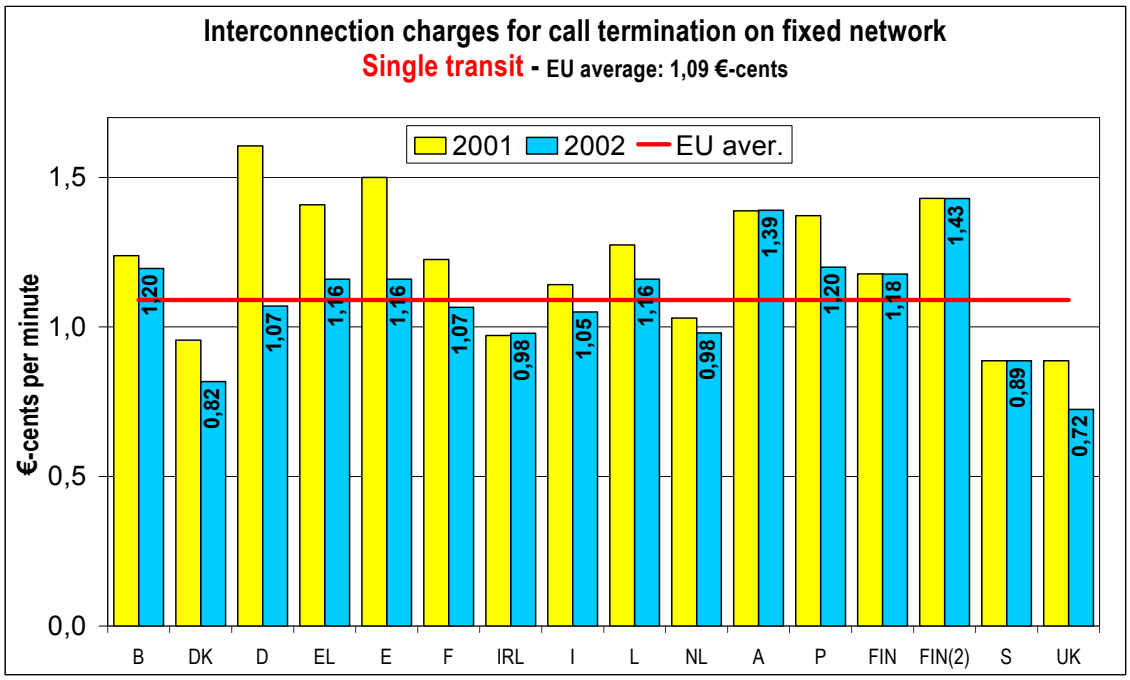
The EU average is a simple, rather than a weighted average.

Chart 25



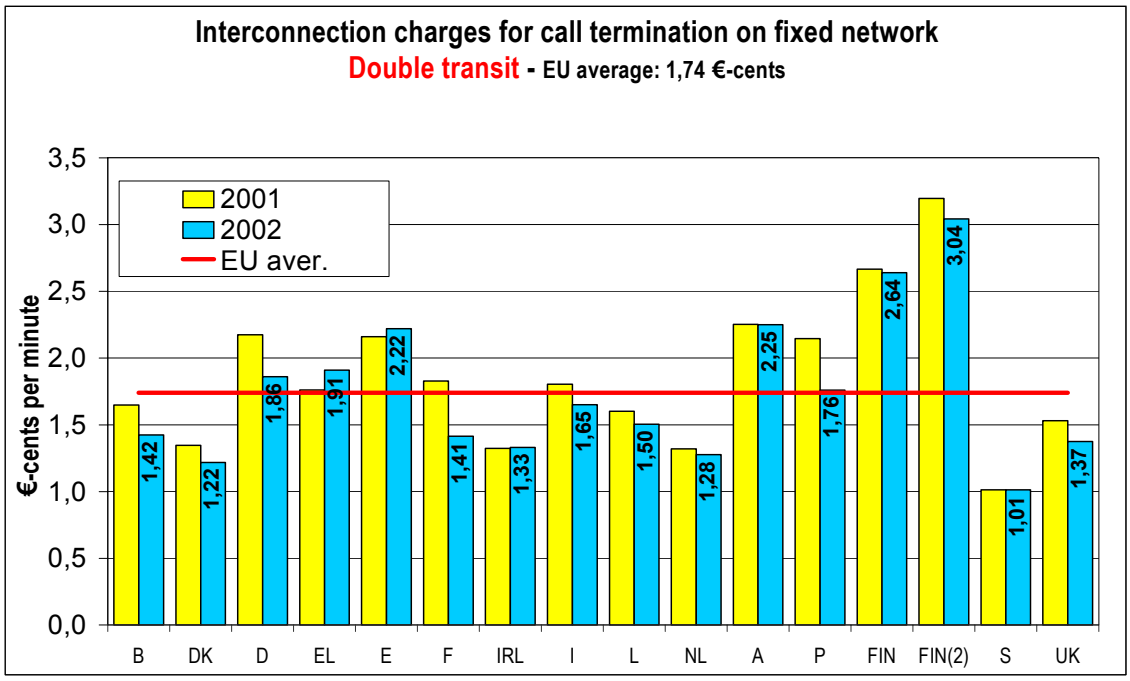
- In Luxembourg there is no distinction between local and long-distance domestic calls.

Chart 26



- Figure for Germany for the year 2001 is the simple average between the Regio50 and Regio200 zone rates.

Chart 27



- Data for the United Kingdom refers to a 100-200km connection length. For length less than 100 the interconnection charges at double level is 1,11184; and for more than 200km is 1,7832

3.2.LEASED LINE INTERCONNECTION CHARGES

This section shows the monthly rental and the one-off charges for short-distance leased lines (local ends, excluding VAT) up to 2 and 5 km provided by the incumbent operator to other interconnected operators. An estimate of the total average monthly rental cost (based on the total cost for the first year) is also presented.

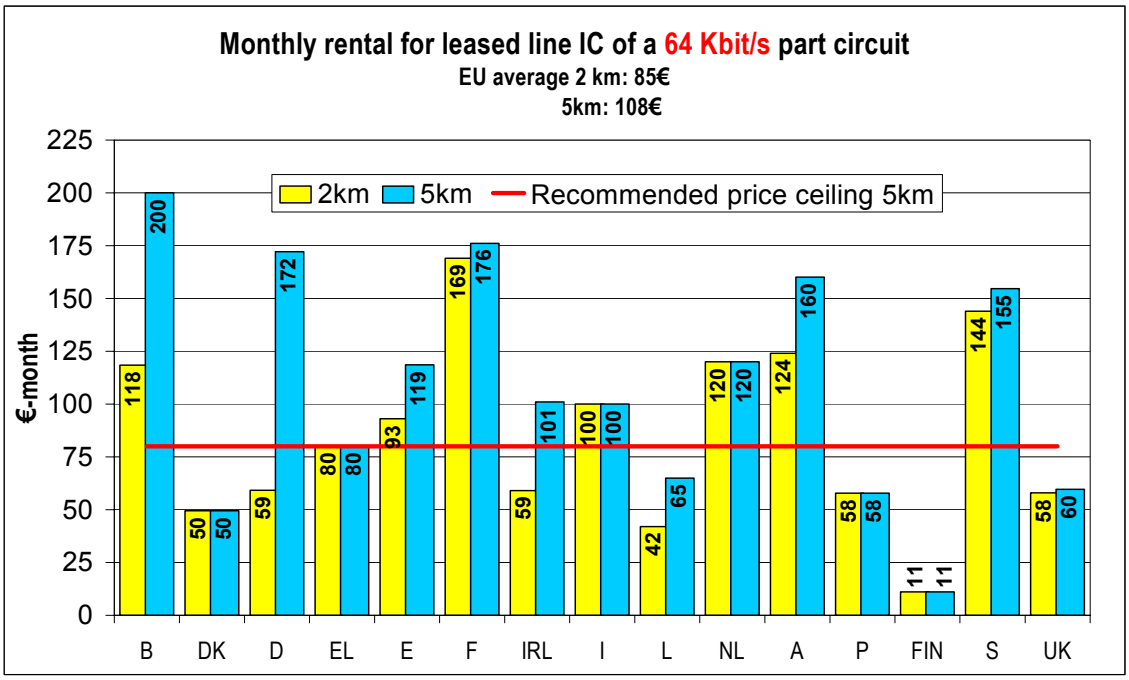
Deviations for the monthly rental from the "recommended price ceiling" set in Commission Recommendation 1999/3863 of 24 November 1999 are also shown. The recommended price ceilings are:

- € 80/month for a 64 Kbit/s leased line part circuit up to 5 km
- € 350/month for a 2 Mbit/s leased line part circuit up to 5 km;
- € 1 800/month for a 34 Mbit/s leased line part circuit up to 2 km;
- € 2 600/month for a 34 Mbit/s leased line part circuit up to 5 km.

These figures have been provided by the national regulatory authorities through the questionnaire for the 8th Implementation Report and the replies to the ONP COM02-18 Document. Figures indicate the position in August 2002.

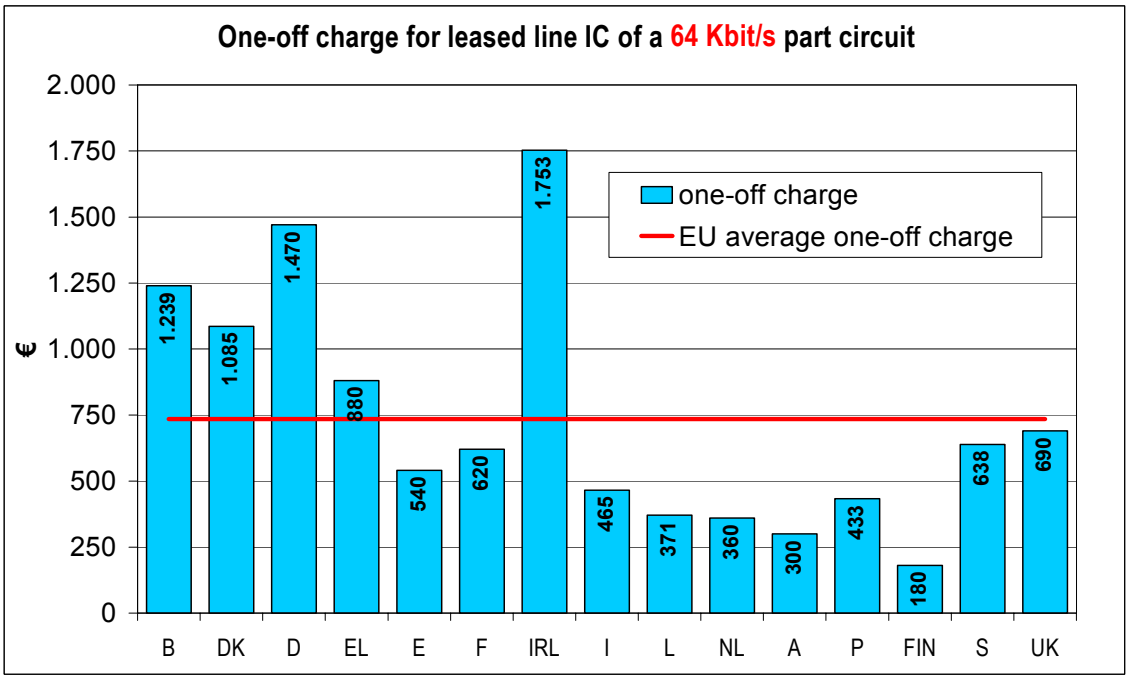
64 Kbit/s part circuit

Chart 28



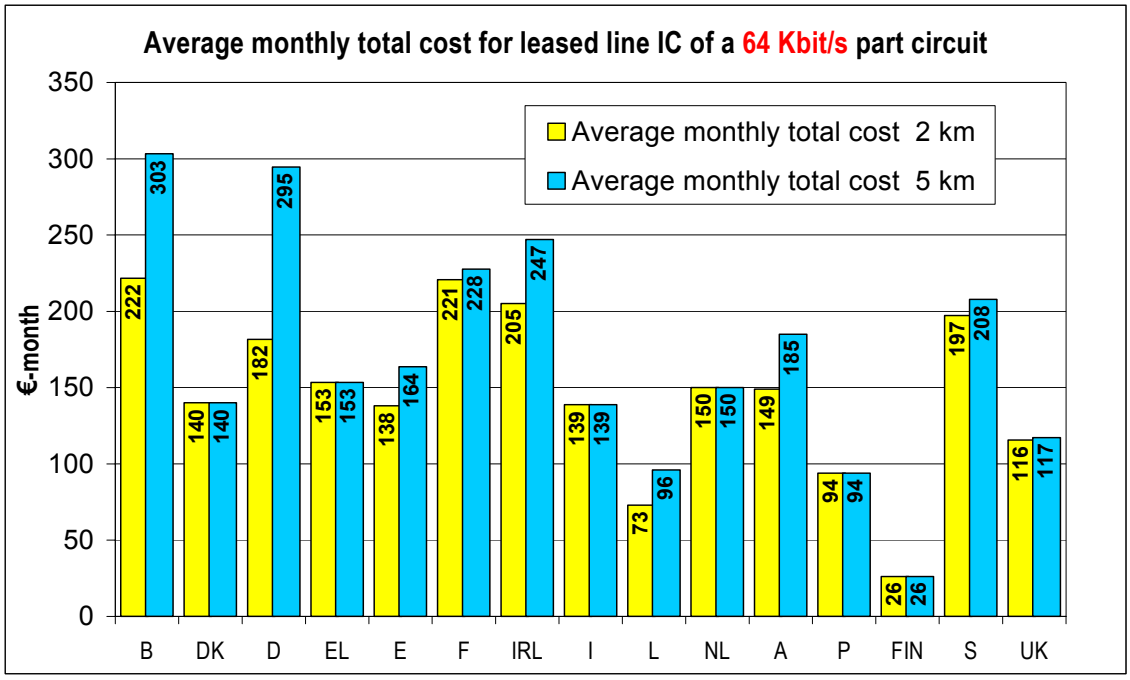
- Figure for Greece refer to August 2001.
- Figure for Denmark in force since October 2002.

Chart 29



- Figure for Denmark in force since October 2002.

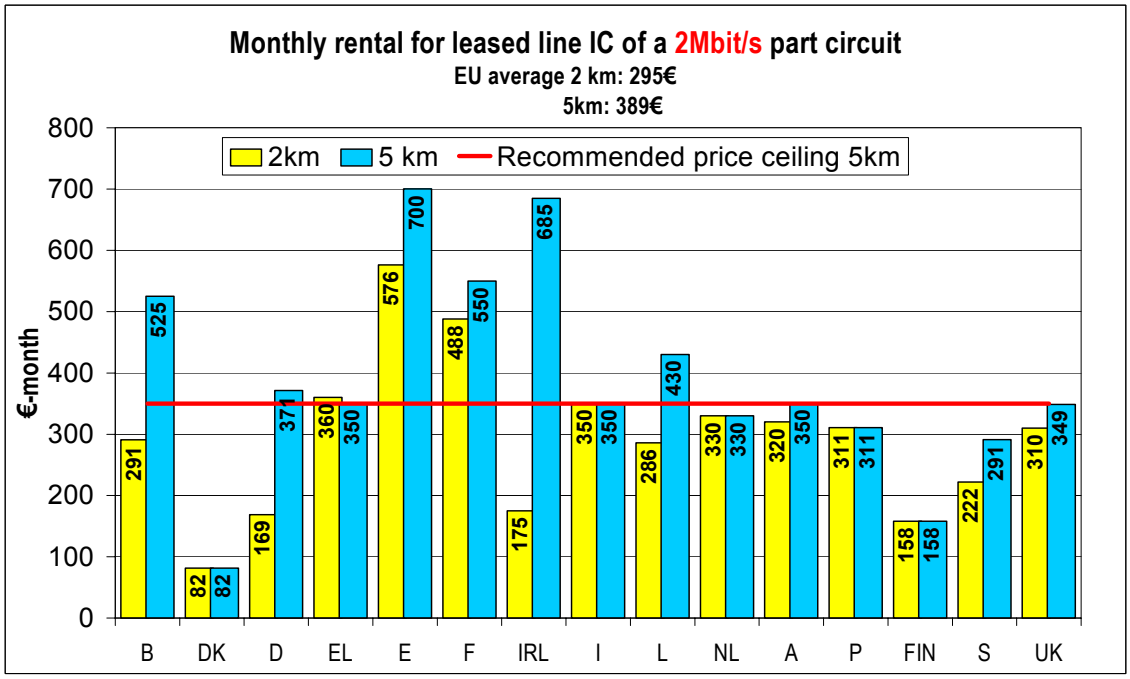
Chart 30



- Monthly rental for Greece refers to August 2001.
- Figure for Denmark in force since October 2002.

2 Mbit/s part circuit

Chart 31



- Figure for 2km for Greece refers to August 2001.
- Figure for Denmark in force since October 2002.

Chart 32

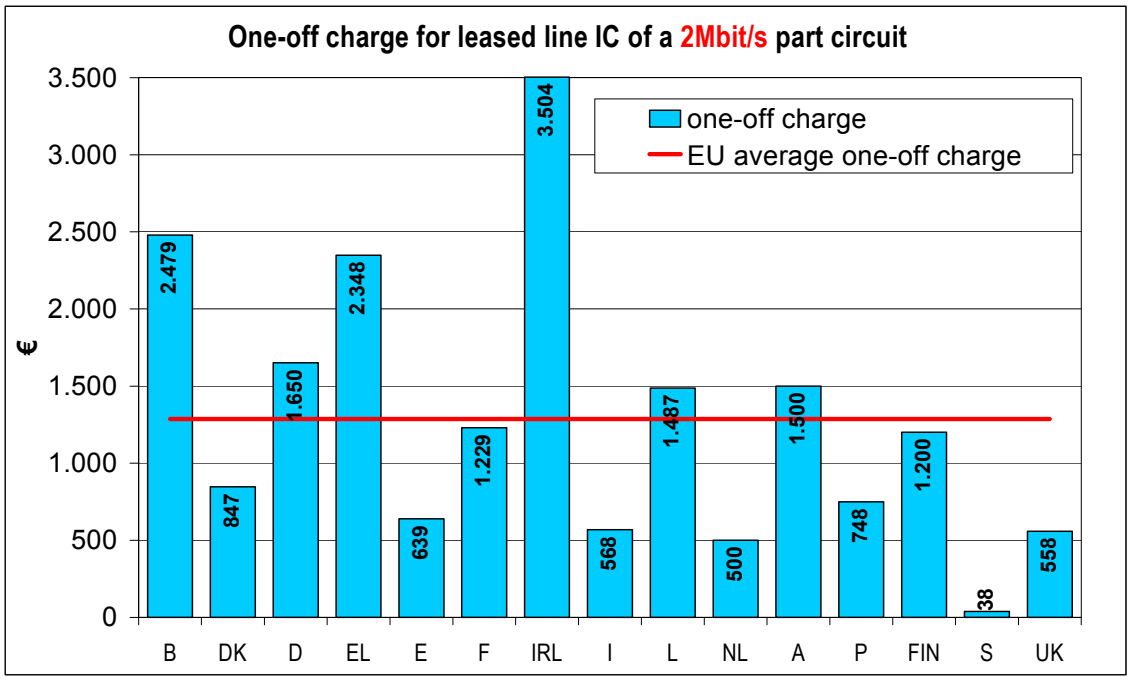
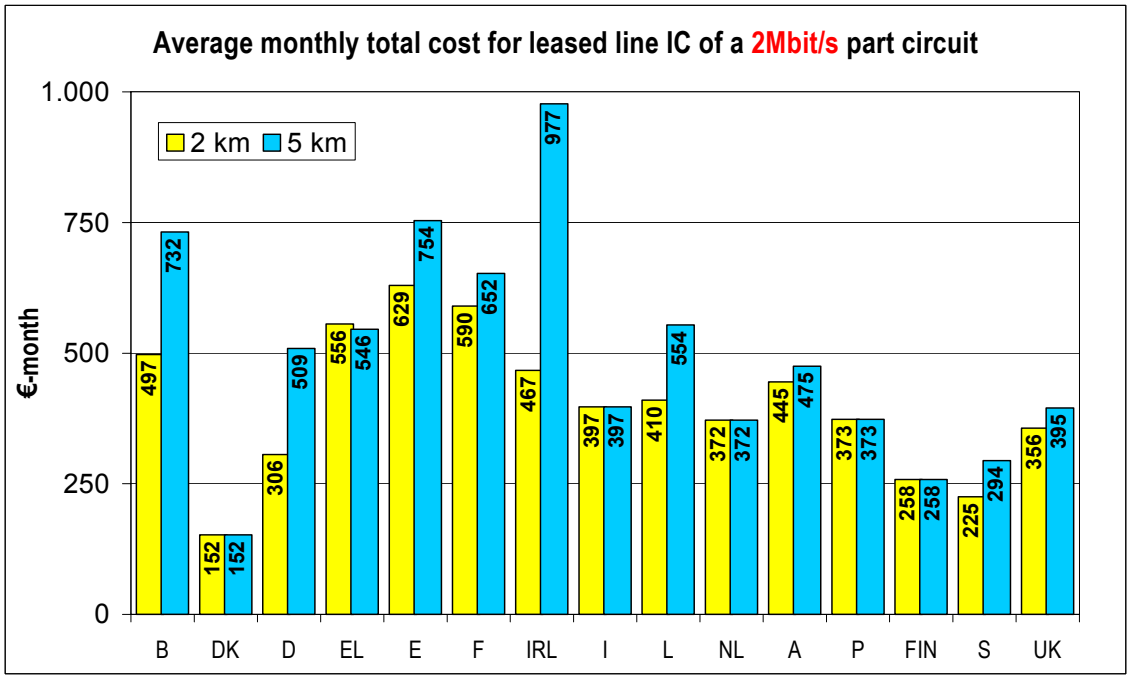


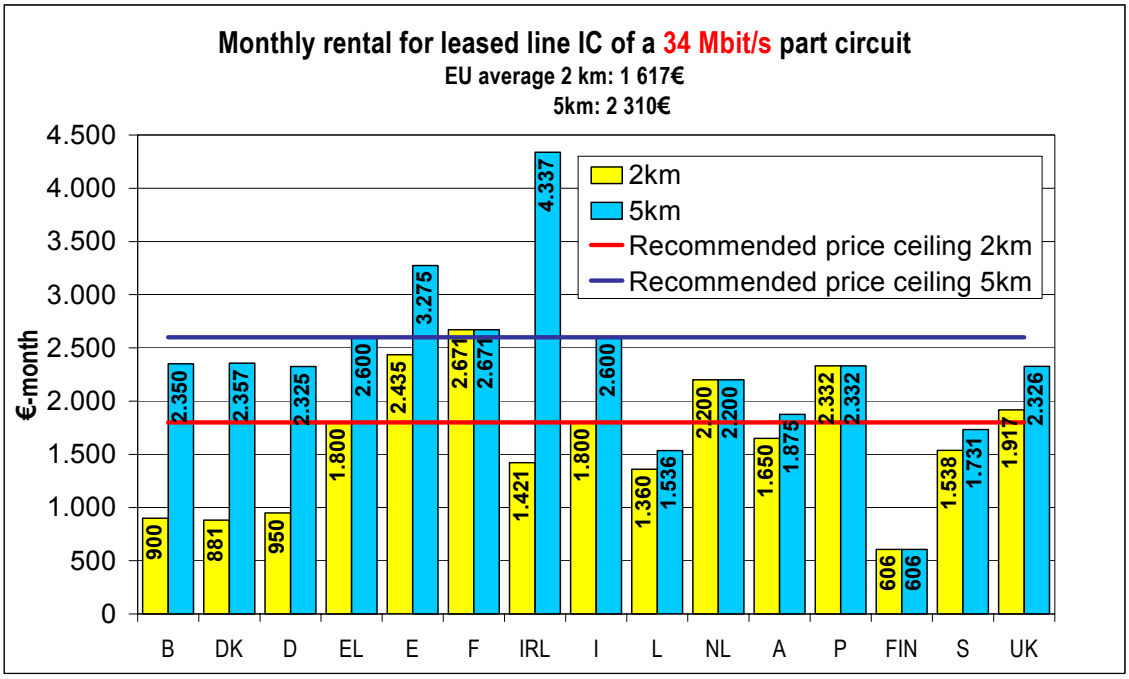
Chart 33



- Monthly rental for 2km for Greece refers to August 2001.

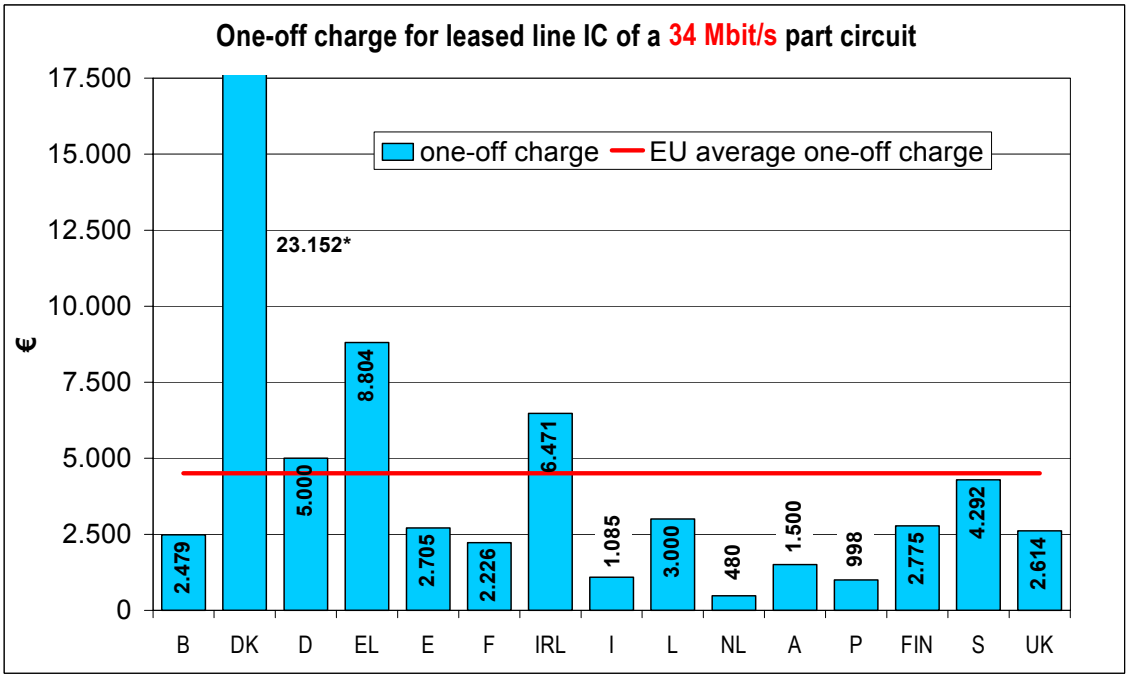
34 Mbit/s part circuit

Chart 34



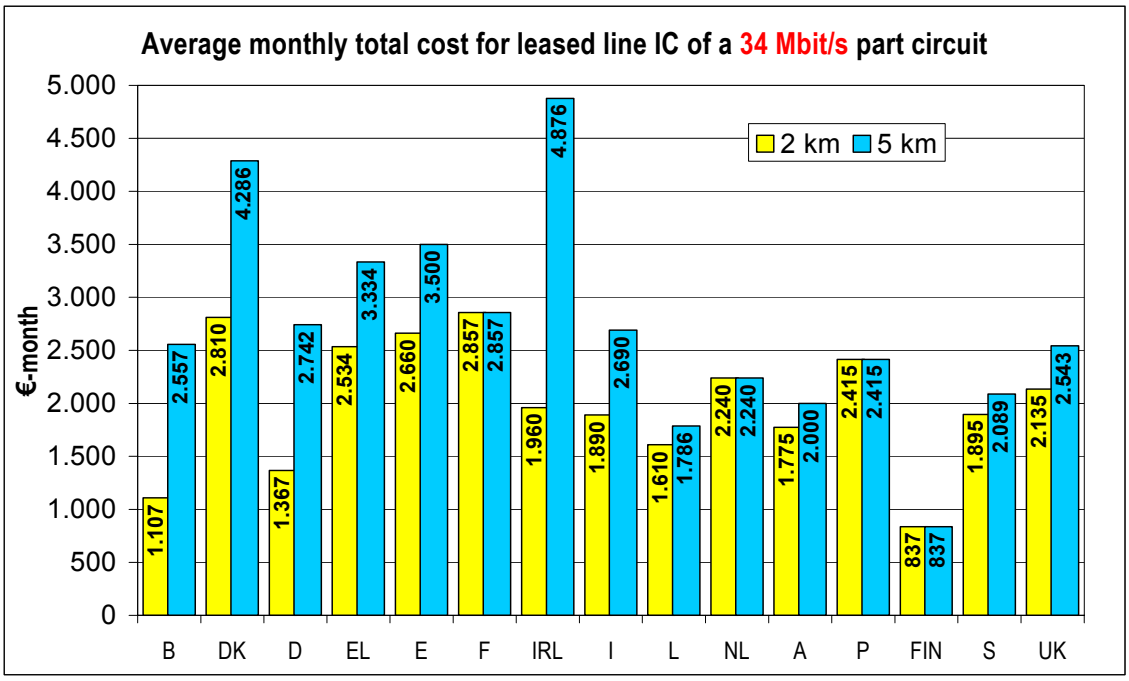
- Figure for Denmark in force since October 2002.
- Figure for Greece refers to 2001

Chart 35



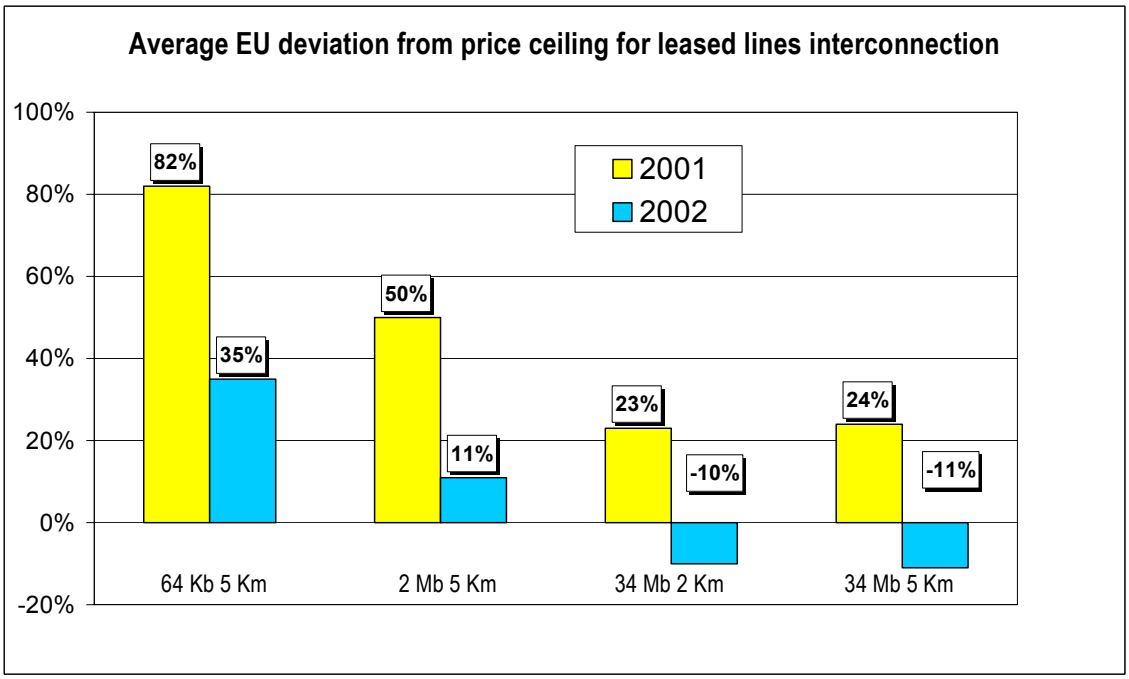
* Value not to scale
- Figure for Denmark in force since October 2002. One-off charge in the chart refers to 2km. One-off charge for 5 km is 55 458€.

Chart 36



- Figure for Denmark in force since October 2002.

Chart 37



3.3.FIXED-TO-MOBILE INTERCONNECTION CHARGES

This section shows the per-minute interconnection charges for fixed call termination on the networks of mobile operators. Charges are for calls originating in the same countries, except for Finland, where charges for mobile termination of international fixed calls are considered.

The charges are based on the first three-minute call at peak rate, except for Finland, where the average peak/off-peak rate set by the NRA has been shown. Different charges may apply for call termination on other mobile networks.

Except for Germany, the figures have been collected by the NRA, and give the position in August 2002. Data for Germany are not publicly disclosed by the NRA and the figure shown in the chart was provided by Cullen International.

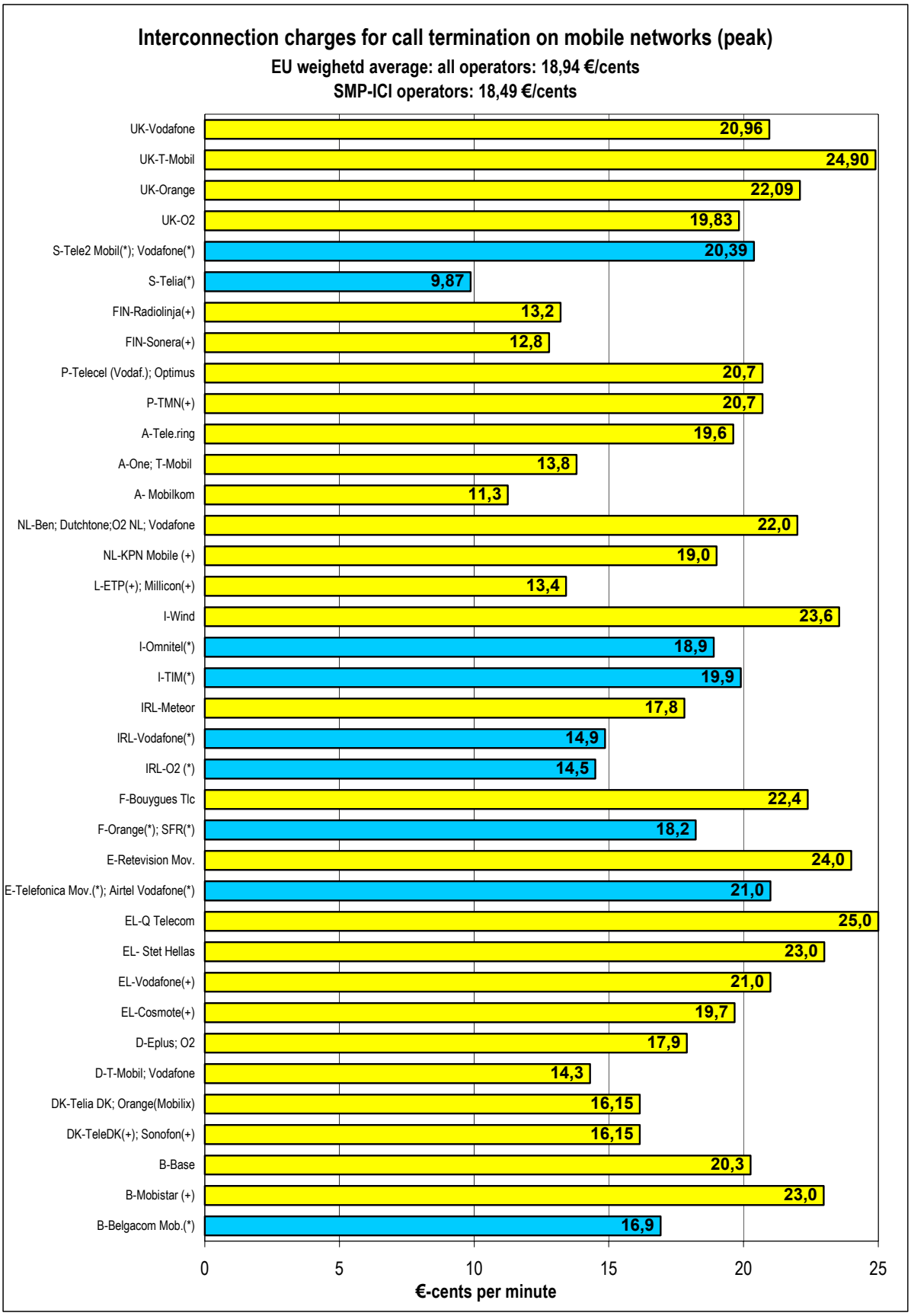
In the following chart figures are shown for a total of 12 operators with SMP in the national market for interconnection (Belgium, France, Ireland, Italy, Spain and Sweden). Figures for all the major mobile operators in each country are also shown (24 operators with SMP in the national mobile market). Denmark and Portugal applied to the non-SPM operators the same interconnection price as for the SMP operators in the mobile market.

In France, mobile-to-mobile interconnection charges are based on the "bill and keep" principle, so operators do not define termination charges.

Tariffs for Portugal are valid until 30.09.2002. Then, according to a NRA's decision they will be progressively reduced to 18.7 cents/min.

Data for Finland indicate the interconnection charges for an international fixed call to a mobile network (interconnection charges also apply to mobile-to-mobile calls). No mobile wholesale termination charges exist for call originating on national fixed network; instead, so-called “end-user” charges are levied.. The originating fixed operator charge a customer for a fixed network retail charge and for a mobile network retail charge (to be forward to the mobile operator). Both fixed and mobile operators determine the charges of their own segments. Example of fixed-to-mobile retail call charge (including VAT at peak rate) is 0,27€ for Sonera and 0,26€ for Radiolinja.

Chart 38

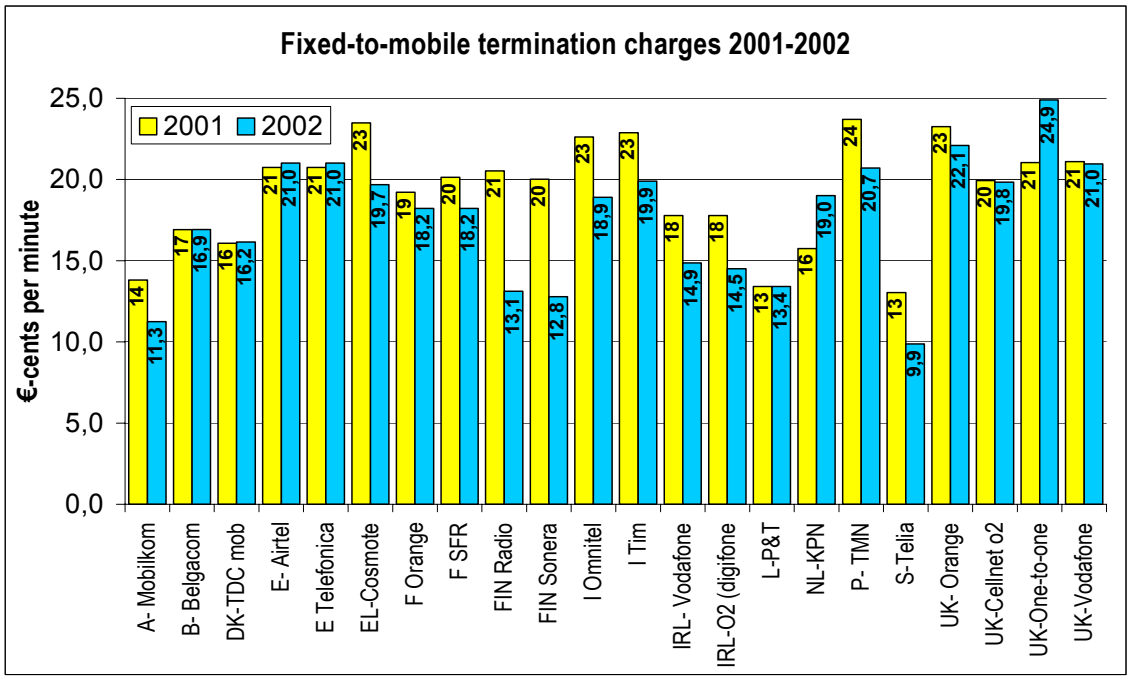


Legend:
(*) SMP operators in the national interconnection market
(+) SMP operators in the national mobile market

Charge for the SMP operator Telia in Sweden refers to a weighted peak/off-peak average rate, set out by the NRA. Charges for the other operators refer to a per minute peak rate. The SMP designation for Tele2 Mobil and Vodafone has not taken effect due to pending court proceedings.

The following chart shows the mobile termination charges for the year 2001 and 2002 for the main EU operators. EU weighted average trend is also shown.

Chart 39



In the following we assume that the loop is active and will be used to provide DSL services. In fact some Member States (Belgium, Luxembourg and Portugal) charge a different price for the loop, depending on if it is used for the voice telephony services or for DSL services. Furthermore, Belgium applied a different price for non-active loop and in some Member States charges are different in case of subsequent access.

5.2.1. PRICES FOR FULL UNBUNDLED LOCAL LOOP

In Belgium a supplementary fee of 28.29 for disconnection is also charged. It should be noted that a disconnection fee is not charged to the incumbent's own retail market.

Data for the connection fee in Germany refers to a unique payment option.

The connection charge for Italy, also includes the charges for the "verification/preparation of the copper line for the provision of ADSL service", that is always paid by the OLOs, except in the case of an existing customer changing from the incumbent to the OLO.

Data for Finland refer to a weighted average of 44 SMP operators providing ULL. Prices vary between 10 -31 € for the monthly rental and between 105 - 303 € for the connection fee.

Data for connection fee in Sweden refers to the first access. Charges for the following access is 85€.

Figure for the United Kingdom refer to an average based on determined price of 194€ per annum for the monthly rental and on a price of 140€ per annum for connection fee.

Chart 64

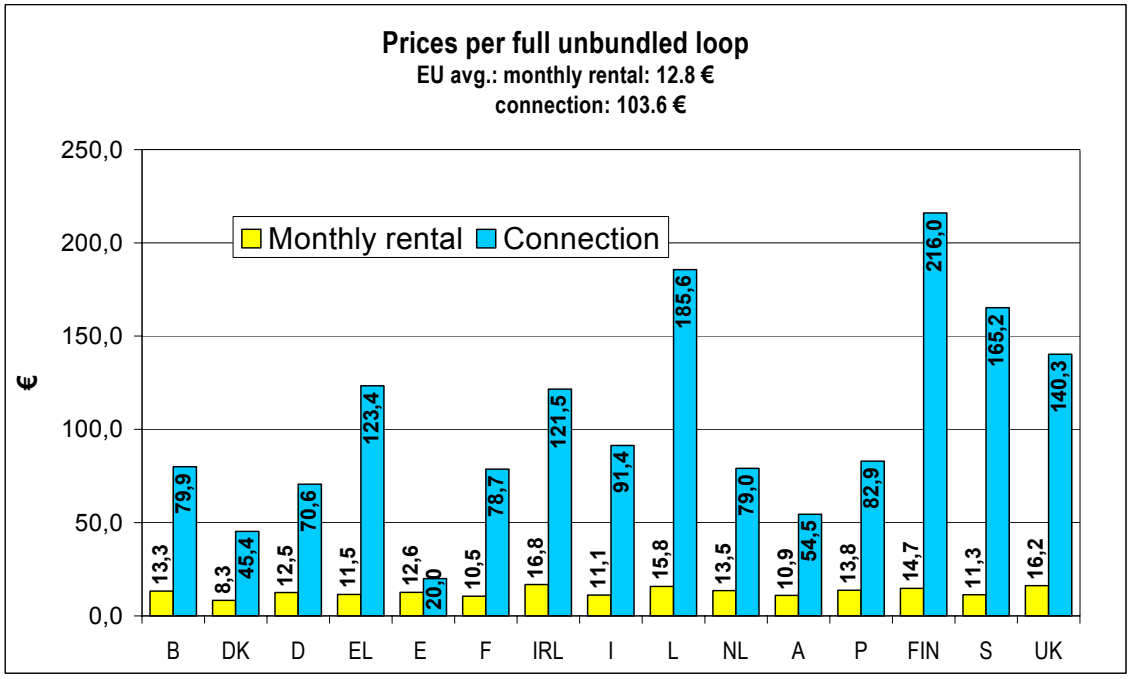
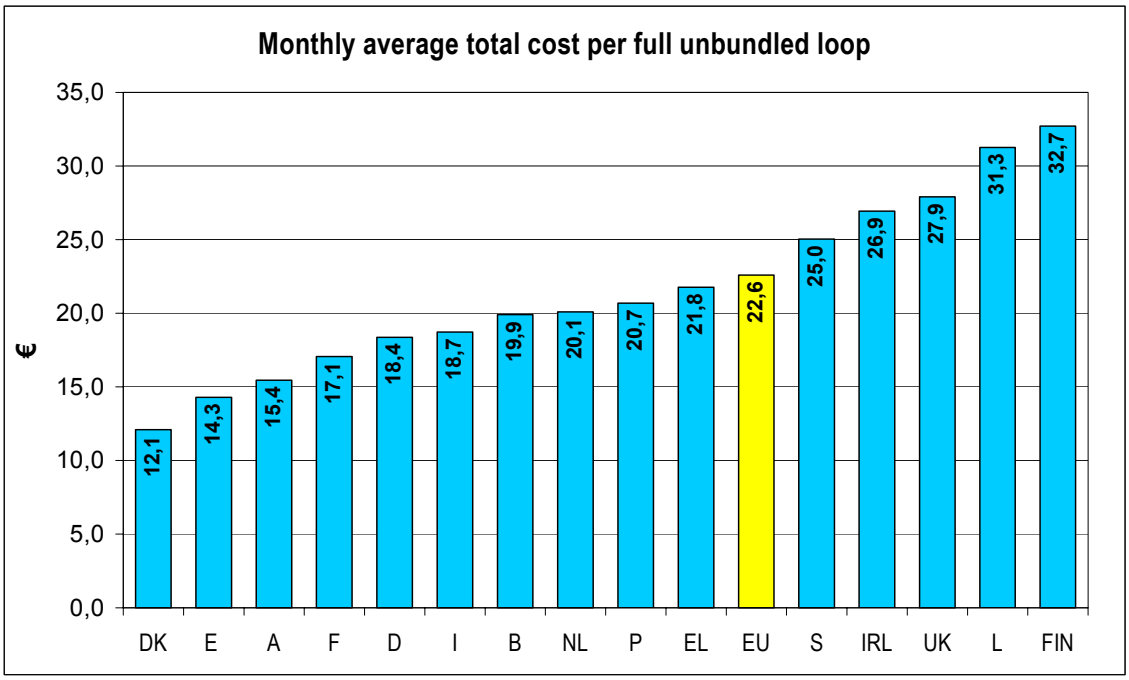


Chart 65



- Estimates are based on the total cost for the loop for the first year.

5.2.2. PRICES FOR SHARED ACCESS LOCAL LOOP

In Belgium a supplementary fee of 28.73€ for disconnection is also charged. It should be noted that a disconnection fee is not charged to the incumbent's own retail market.

Connection fee in Denmark decrease to 57€, when taking over an existing shared access connection.

Data for the connection fee in Germany refers to a unique payment option.

Data for Finland refer to a weighted average of 44 SMP operators providing shared access to local loop. According to the Telecom Market Act, monthly rental for shared access may add up to maximum half the price for full unbundling. Prices for connection fees vary between 57€ and 260€.

Data for Sweden for connection fee refers to the first access. Charges for the following access is 85€.

Data for the United Kingdom refer to an average based on determined price of 84€ per annum for the monthly rental and on a price of 186€ per annum for connection fee.

Chart 66

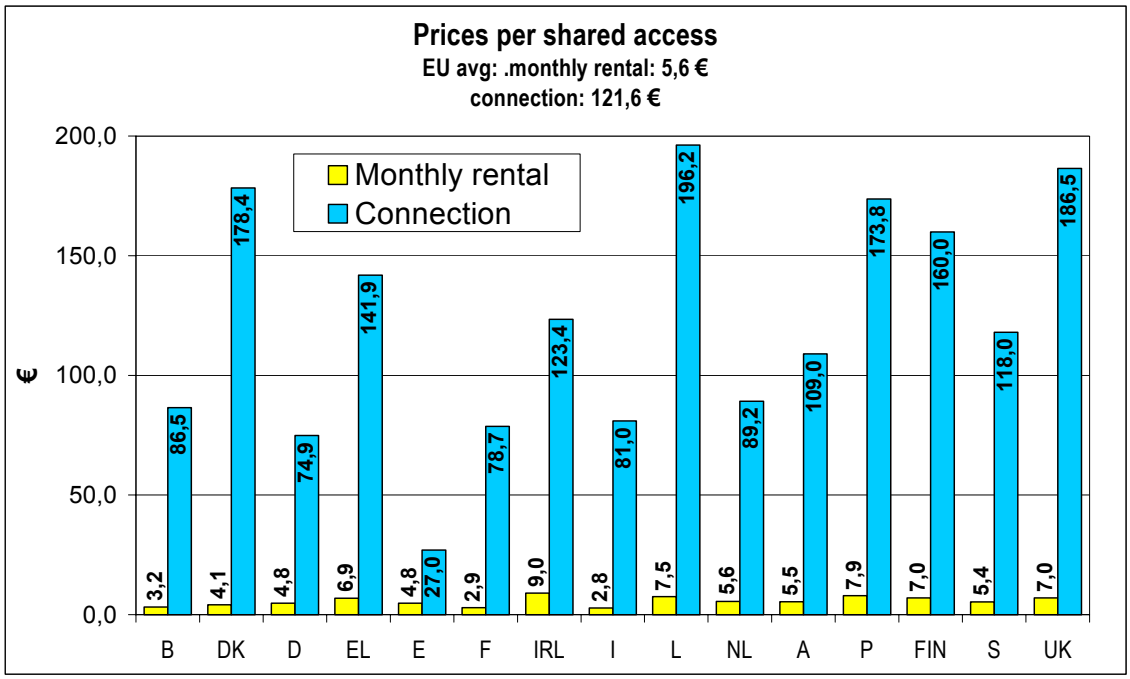
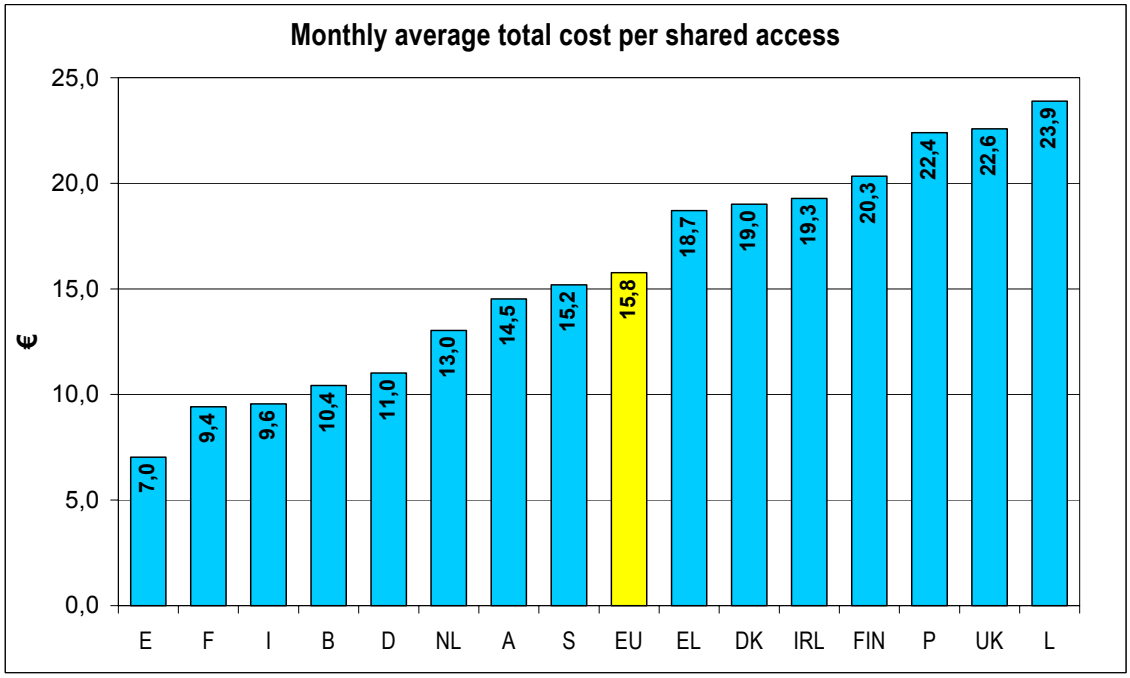


Chart 67



- Estimates are based on the total cost for the loop for the first year.

ANNEX 3

Comparison of the proposed interconnection rates and rates set by BTA, in BW Pula:

	Proposed Rates		Rates set by BTA	
Operator	Rates proposed by Mascom (in effect at time of dispute)	Rates proposed by BTC	Effective date until 29/2/04	Effective from 1/3/04
Terminated on BTC Network:				
- Peak	24.0	35.0	15.0	11.0
- Off Peak	19.1	25.0	12.0	8.8
Terminated on Mascom Network:				
- Peak	96.0	75.0	85.0	75.0
- Off Peak	76.9	58.0	68.0	60.0

Note: BWP 1.00 = US$ 0.20

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

Document: 9

GLOBAL SYMPOSIUM FOR REGULATORS
Geneva, Switzerland, 8-9 December 2003

INTERCONNECTION DISPUTE RESOLUTION MINI CASE STUDY 2003:

DENMARK

Beyond Disputes and Toward Consensus Building

International Telecommunication Union (ITU)

Denmark Mini-Case Study 2003

Beyond Disputes and Towards Consensus Building

International Telecommunication Union

This mini case study was conducted by Robert Bruce and Rory Macmillan of Debevoise & Plimpton, London U.K. with the active participation of country collaborators Joergen Abild Andersen, Lars Sten Jørgensen, Cecile Christensen and Niels Henrik Jensen. The views expressed in this paper are those of the authors, and do not necessarily reflect the views of ITU, its members or the government of Denmark.

The authors wish to express their sincere appreciation to the National IT and Telecommunications Agency for its support in the preparation of this mini case study.

This is one of five mini case studies on interconnection dispute resolution undertaken by ITU. Further information can be found on the web site at http://www.itu.int/ITU-D/treg.

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International Telecommunication Union

Place des Nations

CH-1211 Geneva, Switzerland

Denmark Mini-Case Study:
Beyond Disputes and Towards Consensus Building

I. Introduction

Situated in Northern Europe, Denmark has a population of over 5 million and a GDP of about US$ 136 billion. It has over 3.7 million fixed line subscribers, a teledensity of about 70%, and about 4.5 million mobile subscribers, a penetration rate of about 84%. As a member of the European Union (EU), Denmark's telecommunications sector is fully liberalized.

The National IT and Telecom Agency (NITA) in Denmark oversees one of the most dynamic and efficient telecommunications sectors in Europe through a light-handed approach to regulation that may provide many useful insights for regulators in both developed and developing markets. NITA was established in April 2002 through a merger of the State Information Services and the former National Telecom Agency (NTA). NITA is part of the Danish Ministry of Science, Technology and Innovation and is responsible both for regulating and overseeing the provision of telecommunications infrastructure and services in Denmark, as well as for a cluster of policies concerning the development of Denmark as a leading IT and knowledge society. NITA is, however, independent of the Ministry in relation to NITA's functions vis-à-vis the telecommunications sector.

NITA's mandate is driven by a new vision of convergence between the telecommunications and IT sector more than one based on integration of the telecommunications and traditional media sectors. It also has a mandate to address how new ICT services might have an impact on the performance of the Danish public sector and private sectors. Though NITA's mandate is broad, the commentary below is substantially focused on how NITA is addressing a more traditional agenda of telecommunications sector-related regulatory issues. It is useful, however, to consider how NITA's regulatory initiatives and overall approach have been influenced by its oversight responsibilities for the traditionally less regulated IT sector. This note is focused, in particular, on recent initiatives and developments on the part of NITA that might be of interest and relevance to other telecommunication regulatory agencies that may have a narrower focus on the regulation of telecommunication infrastructure and services.

II. Recent Danish Developments

(a) Recent NITA Overview of Sector Developments: Standing Back and Taking a Long View at Sector Problems

During the first half of 2003, NITA has been in what might be fairly regarded as an unprecedented exercise of consultation with all the players in the Danish telecommunications sector to assess potential problems, impediments, and conditions giving rise to disputes and deadlock in the sector. Early in the year, NITA conducted a wide-ranging set of hearings with all the telecommunications players including incumbent fixed line operator TDC (formerly known as Tele Danmark), mobile operators and other service providers, as well as user organizations, to understand different perspectives on problems impeding competition in the sector.

NITA has recently published a lengthy report in Danish outlining the findings and conclusions of its inquiry.[1] The purpose of the report was to identify any barriers to a well-functioning telecommunications market with a view to closing gaps in current regulation. In response to NITA's invitation, the agency received about 20 contributions from the industry, which pointed out a variety of barriers to competition in various sub-areas of the telecommunications market.

[1] An English summary is available from NITA's website at: http://www.nt a.dk/image.asp?page=image&objno=133331692

The report points to a number of specific initiatives intended to assist in removing the barriers identified by NITA's analyses. NITA's analyses showed that to a wide extent the existing regulation was sufficient for handling the identified barriers in general. However, this presupposed that NITA have a stronger involvement with the industry. The authority of NITA was restated in the bill introduced into Parliament in January 2003 for the purpose of implementing the new EU package of regulatory directives on electronic communications.[2] However, in relation to certain parts of the telecommunications market, the report's analyses indicated a need for strengthening or amending existing legislation. This was so particularly with regard to improving competitive terms in the ADSL market. In other areas, for instance in relation to consumer regulation, the analyses showed that there may be a need for new initiatives although reaching decision on this was not within the scope of the report.

NITA's analyses, then, identified a number of specific issues where in-depth examinations was desirable, e.g. via dialogue with the industry. In addition, NITA has undertaken a renewed assessment of the markets analyzed in a survey published by NITA in May 2002, and has further assessed how price cap regulation in itself affects the competitive situation. NITA has concluded that in relation to the domestic traffic market, there is a case for considering rolling back the minute charging of domestic traffic. Furthermore, NITA's analyses pointed to a need to use alternative forms of regulation and strengthen the dialogue with the industry. (This conclusion has been followed up by a political decision that implies a rollback of regulation of domestic traffic tariffs as from 25 July 2003.)

The barriers identified indicate a need to intensify cooperation and dialogue, both between NITA and the industry, and within the industry itself. Thus NITA has suggested the establishment of a new industry consultative forum that will be known as TeleForum. In addition, the report pointed to the need to create a greater degree of transparency in relation to existing regulation.

What is innovative and intriguing about the recent NITA initiative is its attention to taking a step back from the status quo and getting participants seeking fresh approaches to old areas of controversy. It reflects a focus on de-compartmentalizing issues and looking beyond specific dockets or case files and trying to establish on a sector-wide basis a new set of rules of engagement through agreement and consensus building. NITA reports that they have briefed other European regulators on this initiative at meetings of the Independent Regulators Group (IRG),[3] an informal group of European regulators, and that this initiative is regarded as novel and very noteworthy. It reflects as well a perspective shared by a growing number of other regulators around the world that the key tasks of the regulator can be addressed in the context of a negotiating session with protagonists, not merely in a traditional adversarial setting. It will be significant to see how NITA's involvement in the TeleForum unfolds in the coming months and how it may affect the attitudes of key industry players and their approach to dealing with disputes.

(b) Implementation of the New EU Regulatory Framework

Another key challenge facing NITA involves the implementation of the new EU regulatory framework, which is required to be put in place as of July 25, 2003. With the basic steps in place and considerable planning undertaken, NITA has been conducting a survey of key relevant markets as is required by the new EU framework. NITA has been doing so through cooperation with the industry, including several public hearings, to ensure the transparency of the future regime.

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[2] The European Commission issues a series of directives governing the regulation of electronic communications in July 2002. These directives were to be transposed into the national law of the 15 European Union Member States by 25 July 2003.

[3] The IRG website can be found at http://irgis.icp.pt/site/en/index.asp

The new framework will require NITA to look beyond whether a particular telecommunications provider, including an incumbent telecommunications provider in particular, has significant market power. Instead, the focus will be on the existence of market power in specific relevant markets. An analysis showing that effective competition has emerged in a relevant market segment will mean removal of all current regulatory obligations imposed on telecommunications providers operating in that market. What is significant is that regulatory initiatives are likely to become more targeted and focused on particular regulatory impediments or bottlenecks such as the provision of raw copper or unbundled local loops. In significant respects, the new regulatory framework will result in national regulators like NITA focusing on the same issues and regulatory concerns that had occupied their attention under the prior regulatory framework. However, the implementation of the new regulatory approach mandated by the European Commission is expected to impose significant new demands on the resources of national regulators in so far as they are required to conduct more empirically oriented studies of particular market segments.

(c) Continuing Use of Benchmarking Data by NITA

NITA has for many years been using benchmark data in reviewing the pricing of interconnection and other services offered by the incumbent operator. NITA uses this instrument, which is established by the law for setting prices in Denmark, by comparing prices in either 1 or 3 other countries. Due to this instrument Denmark has been able to continuingly have among the lowest prices in Europe. Typically, NITA has looked at pricing in several neighboring markets including Norway or Sweden, for example, where market and other competitive conditions may be considered to be comparable to those in Denmark. In this way, NITA has been able to extrapolate from the experience of other markets. The Danish regulator is effectively using the results generated in other markets as an alternative to undertaking an independent cost analysis of the provision of services in the Danish market. Benchmarking has also been used in a more formal complaint oriented setting.

Often, NITA has found that information is not readily available from the EU or from public sources and has been required to undertake special studies. NITA has begun to work increasingly through the IRG to develop common or shared data bases of information. One of the issues that may warrant further discussion with NITA and other regulators is the overall process by which benchmark data is collected and made available for the use of third parties.

(d) Development of LRAIC Model

NITA has also developed as a regulatory tool a Long Run Average Incremental Cost (LRAIC) model which is used in analyzing the cost of interconnection services provided by TDC including in particular local loop elements. The modeling process started in year 2000 and, through collaborative discussions involving both NITA as well as TDC and new entrants, the first LRAIC-based interconnection charges were implemented on 1 January 2003. TDC contributed to the process by developing a model reflecting its costs calculated through a top-down, historical cost methodology. In turn, other industry players developed an engineering-oriented, forward looking approach to costing out components of the local network on a current cost basis. This bottom-up model served as the starting point for NITA's hybrid model before the subsequent consolidation with TDC's top down model.

Through extensive involvement and consultation of the market players, NITA has no doubt been working to establish both the long-term acceptability and credibility of an internal cost model. In effect, the LRAIC cost model has become an effective tool which complements other cost measuring tools, i.e., external benchmarking data and historical costs to assess the reasonability of service offerings by the incumbent operator.[4]

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[4] See http://www.itst.dk/wimpdoc.asp?page=tema&objno=95024371 for NITA's top-down and bottom-up models and general guidelines. The Table of Contents of this document are provided as Annex 1 to this report. Annex 2 provides international LRAIC links.

(e) Oversight of Mobile Termination Rates

Unlike a number of other administrations including Oftel in the United Kingdom, Telecom-Control-Commission (TKK) (the Austrian regulator) and the European Commission, NITA has not been active in the regulation of mobile termination rates. The mobile termination rates in Denmark are currently below the EU average and below those in the United Kingdom that have been subjected to close regulatory oversight.

As a consequence of the implementation into Danish law of the EU's new regulatory framework for electronic communications networks, price control is now a remedy—among others—that NITA can impose on mobile operators designated as having a strong market position in the market for mobile call termination. Imposition of price controls will depend on the results of a market review process that NITA was conducting at the time this report was published. Decisions concerning the review of the mobile markets, including the mobile call termination market, are expected in the second quarter of 2004.

(f) Reliance on Transparency and Wide Dissemination of Pricing and Interconnect Information

NITA has, as a matter of practice, tended to take a more informal approach to price regulation than many of its European peer regulators such as Oftel. It has tended to rely on significant public posting of pricing and interconnection related information (see Annex 3).[5] Likewise, NITA gathers and publishes the details of interconnection agreements so that other operators can assure themselves that they are being dealt with on a non-discriminatory basis. Interestingly, disclosure and competitive peer pressure themselves have become significant regulatory tools.

End users are also able to determine the lowest price for services. NITA maintains an interactive guide based on a database that allows consumers to calculate which carrier tariff will be best to serve the user's interest given his or her usage patterns of a service. The guide contains information on tariffs with regard to fixed network services, mobile communications services and Internet, including broadband services. Besides this guide NITA provides a guide on quality of Internet services, aimed at providing consumers with an overview of Internet services. Among other things, this makes it possible for the consumer to measure the speed of the consumer's Internet service. A new guide dealing with quality of telecommunications services in general is under preparation.

(g) Selective Use of Dispute or Complaint Proceedings

Though most of the initiatives described in this report depend on the use of multilaterally oriented proceedings, NITA has also used complaint proceedings to address more general regulatory issues. An example of this is NITA's ADSL investigation in 2002. In view of TDC's growing market share in the ADSL market, NITA held a number of meetings with the ADSL providers at the end of 2001 for the purpose of determining more precisely whether the increase in TDC's market share was due to natural competitive conditions or whether it might be influenced by other circumstances. The ADSL providers suggested that there might be problems of discrimination regarding TDC's delivery times and terms of delivery of ADSL services.

[5] See http://www.itst.dk/wimpdoc.asp?page=tema&objno=95024368 for interconnection rates generally and http://www.itst.dk/wimpdoc.asp?page=tema&objno=95024370 for documents relating to TDC's final network interconnection prices.

In the spring of 2002, jointly with the accountancy firm KPMG C. Jespersen, NITA carried out an analysis of TDC's administrative procedures in connection with the provision of ADSL-related interconnection products. The report was published on 15 July 2002. Based on the report, it was concluded that TDC's administrative procedures did not involve any discrimination between TDC Internet and other providers. However, in continuation of the conclusions of the report, NITA asked TDC to establish better administrative procedures in cooperation with the other providers.

The visibility afforded by the previous initiatives inevitably contributes to a climate in which public operators are subjected to informal and indirect pressures to adjust their practices.

(h) Use of Interconnection Forum: Local Loop Unbundling

NITA's recent proposed creation of a TeleForum is not actually an entirely new initiative on its part. For a number of years, NITA and its predecessor agency, the National Telecom Agency, encouraged reliance on an Interconnection Forum among all Danish players. Over the years, the national regulator convened informal gatherings to discuss differences in approach with respect to interconnect issues and often acted in the role of an informal mediator.

(i) Mediation

Under the Danish telecommunication legislation, NITA may act as mediator if two parties have negotiated without reaching an agreement on interconnection for more than three months. This possibility has been used several times with success. All mediations so far have ended with the parties reaching an agreement.

Denmark has been favored with a comparatively limited amount of administrative proceedings involving interconnection issues or even of administrative or judicial appeals of agreements reached in this area. The reasons for this cooperative approach to regulatory dispute resolution may be largely cultural and attributable to the fact that the country is small and homogenous. In addition, the regulatory agency has often been in a position in the face of deadlocks to resort to legislative relief to back up a proposed regulatory initiative. For example, the Danish Parliament passed a law specifically giving the authority to NITA to order unbundling, illustrating how vital it is for regulators to have political support for their decisions. This may be one of the explanations for the fact that Denmark had a leading role in initiatives to unbundle the local loop and that the unbundling process has largely been unmarred by controversy. Another explanation may be that historically local retail rates in Denmark were significantly rebalanced partly as a result of the historical anomaly that TDC was formed out of a group of regional companies that had been independent of the long distance and international company and that the local companies had to ensure the financial and economic viability of their local tariffs. Consequently, Denmark may have avoided the situation facing Deutsche Telekom where for historical and later strategic reasons local rates were not significantly rebalanced with the result that local loop elements were then priced "at cost" by Deutsche Telekom at levels above the regulated rate levels.

The dynamics of the Danish experience are then significant to assess. The question for other policymakers may well be whether the explanation for the success of low key and cooperative regulatory initiatives is cultural or merely the result of a set of deliberate initiatives to encourage parties to consider their dealings in a commercial context. It may well be that a sensible, forward looking, pragmatic approach to regulation that does not impose onerous regulatory conditions but relies instead on publication of interconnection rates and consumer tariffs to beat down prices through competitive peer pressure will generate its own following among operators. It is unquestionably the case that the behavior of participants in markets or in regulatory settings is inter-dependent and that aggressive behavior by one participant is likely to meet with an equivalent response.

In that respect, low key Danish style regulation may be exportable into other jurisdictions including those where the prevailing approach to controversy is quite divergent from the Danish modus operandi. It may be, of course, necessary and useful to export Danish "regulatory peace-keepers" –as well as some of their cooperatively oriented methodologies—to help establish a new style and approach. Some of the tools such as reliance on benchmarking and cooperative fora, may also have more general applicability.

(j) Private Dispute Resolution in Consumer Cases

The use of innovative techniques is not restricted, moreover, to disputes between carriers and service providers. Until 25 July 2003 NITA has handled certain complaints regarding disputes between individual consumers and service providers. However, as from 25 July 2003, all consumer complaints regarding telecommunications issues are to be handled by a new independent, private complaints board established by the telecommunications providers and the Consumers Council. The activities of the board are financed by the industry.

(k) NITA as "Modern Regulatory Agency"

NTIA may well be an interesting template for a more modern, state-of-the-art regulatory agency. Its mandate reaches not only to the provision of telecommunication infrastructure and services but to the launching of IT services as well. The IT sector is one that has historically been "regulated" by private sector led, "West Coast" style regulation – i.e., industry-led regulation such as the development of protocols. As the telecommunication sector moves inexorably from what one international observers refers to as the "telephone age" to the "Internet age", it may be appropriate for the procedures and policies of regulation to change as well and become more flexible and more driven by private sector initiatives. The regulator's role may be as a regulator of process –of facilitation of appropriate inter-industry initiatives. In this respect, NITA's consultative initiatives and success in mediating tensions between sector participants offer valuable lessons.

ANNEX 1

Table of Contents for LRAIC Model Reference Paper "Guidelines for the Top-Down Cost Analysis".
http://www.itst.dk/wimpdoc.asp?page=tema&objno=95024371

Telestyrelsen
National Telecom Agency

LRAIC MODEL REFERENCE PAPER

GUIDELINES FOR THE TOP-DOWN COST ANALYSIS

Non-binding English translation

6 April 2001

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APPENDIX 1

ANNEX 2

International LRAIC Links http://www.itst.dk/wimpdoc.asp?page=tema&objno=95025297

IT- og Telestyrelsen

LRAIC-links

International links

Portugal

Economic cost model for the fixed telecommunications network (The Hybrid Cost Proxy Model)
http://www.icp.pt/info/noticia.asp?id=1465&ida=182
http://www.icp.pt/actual/MapasInputsuk.xls.

Great Britain

- OFTEL documents relevant to Incremental Costs:
  http://www.oftel.gov.uk/internat/lric498.htm
- OFTEL's submission to the Monopolies and Mergers Commission inquiry into the prices of calls to mobile phones (May 1998)
  http://www.oftel.gov.uk/pricing/mmc0598.htm
- Access to Bandwidth: Delivering Competition for the Information Age *(*November 1999)
  http://www.oftel.gov.uk/competition/a2b1199.htm
- AN ASSESSMENT OF THE INTERIM 1996/7 TOP DOWN MODEL- A Report for OFTEL prepared by NERA (July 1997)
  http://www.oftel.gov.uk/pricing/td797.htm
- Access to Bandwidth: Indicative prices and pricing principles (May 2000)
  http://www.oftel.gov.uk/competition/llu0500.htm
- Access to Bandwidth : Conclusions on charging principles and further indicative charges *(August 2000)*
  http://www.oftel.gov.uk/competition/a2b0800.htm
- Access to Bandwidth: Shared access to the local loop: Consultation Document on the implementation of shared access to the local loop in the UK (October 2000)
  http://www.oftel.gov.uk/competition/shac1000.htm
- Consultation and draft Determination on charges for Metallic Path Facilities and Internal Tie Cables (November 2000)
  http://www.oftel.gov.uk/pricing/llup1100.htm

Germany

- Analytical Cost Model
  http://www.regtp.de/en/reg_tele/start/in_05-07-00-00-00_m/fs.html

USA

- FCC - Common Carrier Bureau - Competitive Pricing Division
  http://www.fcc.gov/ccb/cpd.html
- The HCPM/HAI Synthesis Cost Proxy Model
  http://www.fcc.gov/ccb/apd.hcpm/

Switzerland

Wholesale - Long-run Incremental Cost (LRIC)
http://www.swisscom.com/ws/content/products/interconnection/lric/index_EN.html

Austria

Cost orientation for interconnection in mobile networks
http://www.tkc.at/www/presspub.nsf/83e9f45c11caa9d58525647300561fe6/f8af89ec86ff2d69c125694a00260bf1/$FILE/CostOrientationIC.pdf

Unbundling of the Local Loop in Austria
http://www.tkc.at/www/presspub.nsf/83e9f45c11caa9d58525647300561fe6/f8af89ec86f

f2d69c125694a00260bf1/$FILE/UnbundlingLocalLoop.pdf

Geographically averaged rates in the context of Local Loop Unbundling
http://www.tkc.at/www/presspub.nsf/83e9f45c11caa9d58525647300561fe6/f8af89ec86ff2d69c125694a00260bf1/$FILE/GeographicallyLocalLoop.pdf

Interconnection/FL-LRAIC
http://www.tkc.at/www/Presspub.nsf/pages/KonsIC2000-e

Bottom Up Model
http://www.tkc.at/www/presspub.nsf/pages/KonsIC2000-BottUp-e

Australia

Estimating the Long Run Incremental Cost of PstnAccess (Final Nera Report)
http://www.accc.gov.au/telco/nera.zip

Ireland

lric
http://www.consult.odtr.ie/secure/consultation/lric.htm

The development of Long Run Incremental Costing for interconnection - Decision Notice D6/99 & report on consultation paper ODTR 99/17
http://www.odtr.ie/docs/odtr9938.doc

The development of Long Run Incremental Costing for interconnection - consultation paper
http://www.odtr.ie/docs/odtr9917.doc

Report on the ODTR Consultation on Local Loop Unbundling - Decision Notice D6/00
http://www.odtr.ie/docs/odtr0030.doc

EU

April 2000 - Final Report on the Study of an adaptable "bottom-up" model capable of calculating the forward-looking, long-run incremental costs of interconnection services for EU Member States, prepared for the European Commission by European Economic Research Ltd (Europe Economics).

This Study has resulted in the production of a model spreadsheet in MS-Excel format
http://www.ispo.cec.be/infosoc/telecompolicy/en/Cost_model_2000.xls

(with a voluminous User Guide) which is described in the Main Report:
http://www.ispo.cec.be/infosoc/telecompolicy/en/lricmain.pdf

and an Executive Summary:
http://www.ispo.cec.be/infosoc/telecompolicy/en/lricexsum.pdf

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ANNEX 3

TDC's Final Network Interconnection Rates.

Interconnection in the fixed network
Prices as of 1 January 2003 (DKK/100) set by the NRA:

Access in fixed network	**Local interconnect tariffs**	**Within interconnect areas**	**Between interconnect areas**
Peak	Dkk 0.0308	Dkk 0.0411	Dkk 0.052
Off-peak	Dkk 0.0163	Dkk 0.0217	Dkk 0.0275
Charge per call	Dkk 0.0201	Dkk 0.0287	Dkk 0.0373

Termination In fixed network	**Local interconnect tariffs**	**Within interconnect areas**	**Between interconnect areas**
Peak	Dkk 0.0264	Dkk 0.0411	Dkk 0.052
Off-peak	Dkk 0.0139	Dkk 0.0217	Dkk 0.0275
Charge per call	Dkk 0.0201	Dkk 0.0287	Dkk 0.0373

Interconnection within mobile/fixed networks
Fixed Interconnection charges between operators as of May 2000:

	Termination Fixed to mobile	**Access Mobile to fixed**
Peak	Dkk 1.20	Dkk 1.38
Off-peak	Dkk 0.60	Dkk 0.69
Charge per call	Dkk 0.08	Dkk 0.08

Interconnection in the fixed network
Prices per 1 March 2002 (DKK/100) set by the NRA:

Access in fixed network	**Local interconnect tariffs**	**Within interconnect areas**	**Between interconnect areas**
Peak	Dkk 0.038	Dkk 0.0607	Dkk 0.0904
Off-peak	Dkk 0.0211	Dkk 0.0322	Dkk 0.0479
Charge per call	Dkk 0.02	Dkk 0.03	Dkk 0.03

Termination In fixed network	**Local interconnect tariffs**	**Within interconnect areas**	**Between interconnect areas**
Peak	Dkk 0.033	Dkk 0.0607	Dkk 0.0904
Off-peak	Dkk 0.017	Dkk 0.0322	Dkk 0.0479
Charge per call	Dkk 0.02	Dkk 0.03	Dkk 0.03

Interconnection in the fixed network
Prices per January 1st 2001 (DKK/100) set by the NRA:

Termination/ Access in fixed network	**Local interconnect tariffs**	**Within interconnect areas**	**Between interconnect areas**
Peak	Dkk 0.0397	Dkk 0.0607	Dkk 0.0904
Off-peak	Dkk 0.0206	Dkk 0.0322	Dkk 0.0479
Charge per call	Dkk 0.03	Dkk 0.03	Dkk 0.03

Interconnection in the fixed network
Prices as per May 2000:

Termination/ Access in fixed network	**Local interconnect tariffs**	**Within interconnect areas**	**Between interconnect areas**
Peak	Dkk 0.0460	Dkk 0.0607	Dkk 0.0904
Off-peak	Dkk 0.0244	Dkk 0.0322	Dkk 0.0479
Charge per call	Dkk 0.03	Dkk 0.03	Dkk 0.03

Interconnection in the fixed network
Prices as per October 1999:

Termination/ Access in fixed network	Local interconnect tariffs	Within interconnect areas	Between interconnect areas
Peak	Dkk 0.049	Dkk 0.068	Dkk 0.114
Off-peak	Dkk 0.0245	Dkk 0.034	Dkk 0.057
Charge per call	Dkk 0.04	Dkk 0.06	Dkk 0.06

Interconnection in the fixed network
Prices as per September 1999:

Termination/ Access in fixed network	Local interconnect tariffs	Within interconnect areas	Between interconnect areas
Peak	Dkk 0.056	Dkk 0.104	Dkk 0.122
Off-peak	Dkk 0.028	Dkk 0.052	Dkk 0.061
Charge per call	Dkk 0.04	Dkk 0.06	Dkk 0.06

Interconnection in the fixed network
Prices as per October 1997:

Termination/ Access in fixed network	Local interconnect tariffs	Within interconnect areas	Between interconnect areas
Peak	Dkk 0.06	Dkk 0.11	Dkk 0.14
Off-peak	Dkk 0.03	Dkk 0.055	Dkk 0.07
Charge per call	Dkk 0.04	Dkk 0.08	Dkk 0.08

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

GLOBAL SYMPOSIUM FOR REGULATORS
Geneva, Switzerland, 8-9 December 2003

Document: 10

INTERCONNECTION DISPUTE RESOLUTION MINI CASE STUDY 2003:

INDIA

Dealing with Interconnection and Access Deficit Contributions In a Multi-Carrier Environment

International Telecommunication Union (ITU)

India Mini-Case Study 2003

Dealing with Interconnection and Access Deficit Contributions in a Multi-Carrier Environment

International Telecommunication Union

This mini case study was conducted by Robert Bruce and Rory Macmillan of Debevoise & Plimpton, London U.K. with the active participation of country collaborators Rajendra Singh and Rakesh Kumar Bhatnagar. The views expressed in this paper are those of the authors, and do not necessarily reflect the views of ITU, its members or the government of India.

The authors wish to express their sincere appreciation to the Telecommunication Regulatory Authority of India for its support in the preparation of this mini case study.

This is one of five mini case studies on interconnection dispute resolution undertaken by ITU. Further information can be found on the web site at http://www.itu.int/ITU-D/treg.

India Mini-Case Study:
Dealing with Interconnection and Access Deficit Contributions in a Multi-Carrier Environment

I. Introduction: Indian Telecom Sector in Transition to Full Competition

With a population of over 1 billion and a GDP of around US$ 500 billion, India has about 40 million fixed lines, about 16 million GSM cellular subscribers and about 4 million mobile CDMA wireless loop (WLL(M)) subscribers. The country's combined tele-density rate, therefore, is around 6 lines per 100 inhabitants. India's National Telecom Policy of 1999 calls for attaining a fixed line teledensity rate of 7 by 2005 and 15 by 2010. To help meet this goal, India has actively pursued a competitive multi-operator environment. It has allowed open competition in the fixed, cellular, national long distance and international long distance service sectors.

India's multi-operator environment has naturally led to the need for effective interconnection between the scores of operators now active in the telecommunications sector. Fierce competition among these players—each fighting for market share in a price-sensitive market—has led to a myriad of interconnection disputes. As discussed below, many of these have arisen in the context of the introduction of WLL-based limited mobility services (i.e., the WLL(M) services) and their competition with mobile cellular operators.

This brief mini-case study cannot do justice to the complex and inter-related nature of the current regulatory challenges that are being faced by the Telecommunications Regulatory Authority of India (TRAI) and the Government of India. Nor can it fully and completely describe the current competitive context of the Indian telecom sector. This note does, however, describe and explore briefly one of the country's most recent interconnection issues relating to cost-based interconnection usage charges (IUCs) and the linkage of this issue with access deficit charges (ADCs) and tariff rebalancing.

In addition to discussing interconnection issues, this mini-case study explores the TRAI's proposal to implement a unified licensing regime which is intended to foster the development of the nation's telecom sector. This note is intended to highlight some of the difficult transitory issues being faced by India and other countries that are moving from a sector dominated by a state-owned monopoly to one characterized by open competition, convergence and substitutability between wireline and wireless services.

II. Market Overview

Historically, India maintained one state-owned international long distance monopoly operator (VSNL) and another state-owned local and national long distance monopoly operator (BSNL). Another state owned local operator provided services in Mumbai and Delhi (MTNL). As the country progressively liberalized its market over the last decade, it licensed a series of new entrants to compete in these markets, issuing separate licenses for each of the nation's telecom licensing areas at "circle" (i.e., defined areas) or state level.

India has 21 fixed service licensing areas, in which it now has two to three service providers. In addition to fixed lines, new licenses permit the provision of WLL(M) services the mobility of which is restricted to a short distance charging area or a local area with an average radial coverage of 25 Km. In the GSM cellular segment there are four operators in most of the 25 licensing areas. In the national and international long distance segments, there are four active service providers.

The government has also sold a majority stake of VSNL to private operator Tata. Despite opening its market, BSNL and MTNL together retain over 98% of the fixed line segment and BSNL continues to be the principal national long distance carrier though new carriers have increased their share of cellular-to-cellular long distance traffic. VSNL likewise remains the dominant international service provider for outgoing international traffic, although it is now facing stiff competition from new market entrants for incoming international traffic. Bharti, Reliance and Tata are very active in most segments of the telecom market.

As a fourth cellular license was being finalized, the government announced its policy on open competition in the fixed market segment, and fixed operators became allowed to provide limited mobility services restricted to local calling areas (SDCA). GSM cellular operators have since argued that the fixed line operators have thereby entered the mobile market through the backdoor without having to pay high license fees. The GSM cellular operators have challenged these WLL(M) services, fighting a series of protracted regulatory and court battles aimed at declaring WLL(M) operators illegal, but they appear to have lost this battle in August 2003. There are about 4 million WLL(M) subscribers. TRAI has been asked to address various issues relating to entry fees and spectrum charges and its consultation paper on the subject is already open for public debate as this paper is being written.

III. Interconnection Issues

Over the past two years, TRAI has initiated a number of consultative proceedings that cumulatively have covered and are covering many new regulatory issues addressing the needs of the new multi-carrier environment. A list of these is provided at the end of this report.

A new IUC regime has been implemented from 1st May 2003 subsequent to the TRAI's IUC order of 24th January 2003. The new IUC regime also introduced the calling-party-pays (CPP) principle in the GSM cellular market segment. The new regime also had certain anomalies that allowed GSM-to-GSM and WLL-to-WLL long distance calls an advantage over fixed-to-fixed long distance calls. In this regard, an IUC review Consultative Paper was recently issued on 15th May 2003.

TRAI has already introduced a scheme of cost based carriage, origination and termination charges. IUC charges for calls originating or terminating on the fixed line network comprise the origination and termination charges and an additional component of ADCs on a per minute basis. ADCs are applied with the intention of addressing the issues raised by a government policy which requires basic service operators (BSOs) to receive subsidized monthly rentals, apply below-cost pricing of local calls, and offer a certain number of free calls to all their subscribers (business and residential).

BSOs argue that they have been forced to provide such services below cost. Historically, affordable local service had been cross-subsidized within the integrated state-owned operator, now known as BSNL, by long distance charges and by international revenues generated by the then monopoly international operator, VSNL. Until now, they were able to make up their "losses" by revenue sharing available to them from the national and international long distance call charges.

Competition in the long distance market has, however, reduced long distance tariffs by more than 50% since liberalization began as the IUC regime has resulted in a shift of national long distance traffic from the fixed sector to GSM and WLL(M) sectors. With the introduction of GSM services and the pricing attractions of WLL(M), there appears to be a shift from the fixed line network towards the GSM and WLL(M) segment. The result is that there are a declining number of long distance minutes. This could result in higher per minute ADCs for those calls that continue to be placed on fixed line networks, further exacerbating the loss of subscribers and usage. In addition, the fixed line operators' ability to subsidize local calls through higher international calls has been virtually eliminated as competition and the arrival in 2002 of VoIP have driven down international rates. Thus, with the onset of competition, in India as elsewhere, domestic long distance and international tariffs have rapidly fallen and can no longer subsidize local services through internal subsidies or revenue sharing given the need in a competitive environment to establish a cost-based interconnection regime.

The ADC charge, then, represents an effort to establish a transparent mechanism to continue inter-service cross-subsidies within an interconnection regime. However, the implementation of the ADC scheme is proving to be problematic in India, as might be expected based on the experience of countries such as the U.K.

The May 15, 2003 IUC Consultation Paper is not merely focused on various anomalies in the implementation of the new IUC regime involving the competitive relationship of fixed and cellular operators. It also invites further comment on the basis for the calculation of the ADC itself. For example, it poses the question whether the ADC should be determined based on long run incremental costs (LRIC), taking into account new cost effective technology options like fiber in the loop, wireless in the loop and switches for high traffic handling capacity. Given the potential concerns about the practical problems of implementing the ADC regime, the TRAI is obviously interested in options for reducing the amount of the ADC through the use of a different cost allocation methodology.

IV. Possible Solutions to ADC Issue

(a) Tariff Rebalancing

In addition to reducing the amount of the ADC through use of a different cost allocation methodology, TRAI could also examine the issues of tariff rebalancing addressed in the September 23, 2002 Tariff Consultation and its January 24, 2003 TT Order referenced at the end of this report.

There are undoubtedly extraordinarily sensitive issues relating to tariff policy and rebalancing in India. However, it may be worth highlighting that the concerns expressed about the anomalous and distortive effects of the ADC could be mitigated not simply by reducing the estimate of costs contributing to the deficit. The deficit might be more directly addressed by allowing more flexibility to operators to reduce the actual deficit, including by raising the tariffs. This is an issue that might warrant further assessment not only in the Indian context but also by other national administrations facing similar policy challenges.

A few facts relating to the rate rebalancing process might be useful by way of background. First, it has been the policy of the TRAI to allow both cellular as well as WLL charges to be based on market forces. Fixed services have been treated as essential services, and it has been TRAI's position that "regulatory intervention is also required to meet the social objective of making basic telephony affordable". (Tariff Consultation at 16.) However, the Tariff Consultation offers the following intriguing commentary:

> *"While this conclusion could be valid, an analysis of only the basic services market and the shares of different Basic Services Operators (BSOs) therein could be misleading as it would ignore possible competition from other access providers, i.e., cellular operators. To the extent that these two access services are substitutable, an expansion of the definition of the market to include both basic and cellular services could provide insights into the nature and extent of competition that are different from those that can be had by treating the two i.e., basic and cellular markets, as independent."* (Id.)

In short, the current disparity in regulatory treatment of cellular and WLL services, on the one hand, and fixed line services, on the other, might well warrant closer attention potentially in the context of the TRAI's recently initiated Unified Licensing Consultation discussed in the next section of this mini-case study.

TRAI had noted in its September 23, 2002 Tariff Consultation that "while re-balancing did allow for a recalibration of commercial users' rentals, none of the service providers have raised these rentals". The Consultation document goes on to observe that "the service providers thus have not re-balanced this element although they had the opportunity to do so and [had] thereby foregone some much needed resources which could have been used to cover, at least, a part of the otherwise high access deficit." One cause of this may be that mobile and WLL subscribers are still fixed line subscribers and the operators did not raise the commercial rentals for fear that they might surrender their fixed line connections—especially high calling rate commercial customers. Given such commercial pressures, then, the TRAI's overall approach to rebalancing in its January 24, 2003 TT Order could be characterized as cautious about rebalancing, especially of tariffs for business customers.

(b) Narrowing Tariff Control

The TT Order—and the related Cost Consultation—also addressed other important elements of local tariffs such as the duration of a pulse, the charges per pulse, as well as the numbers of free calls. Among the options for reducing the ADC may be to focus local tariff control more narrowly on services providing basic connectivity, i.e., an access line and a minimum number of calls. Beyond this, given the presence in the fixed market of alternative BSOs and the potential substitution effects of cellular operators, there might well be justification for increasing the flexibility for BSOs to set local tariffs on a basis comparable to that of cellular and WLL operators. It is worth considering whether fixed service providers could also be given full tariff flexibility with the possible exception of rural areas that are primarily being serviced by BSNL at present.

(c) Recognizing Effects of the Convergence and Substitutability Between Wireline and Wireless Services

The TRAI is expected to finalize its decision on IUC and ADC issues. However, there may be reason to take a more fundamental look at the underlying issues of competitive comparability of fixed and mobile operators. This issue of convergence and transition in the Indian telecom sector is also addressed in the recently released Unified Licensing Consultation, discussed below.

V. July 20, 2003 Unified Licensing Consultation

The TRAI's Unified Licensing Consultation Paper focuses on the fact that in India basic and mobile services have been licensed separately. There has been significant unification in terms of license conditions, i.e., in terms of annual license fees, spectrum charges, permitting mobility (though to different extents) and access to the Universal Service Obligation Fund, among other areas. There are, however, still differences on issues such as varying amounts of entry fee paid by the initial set of operators as compared to new entrants, service areas, level of interconnection and roll out obligations that "need further discussion" in view of the Unified Licensing Consultation process. The Preface of the Consultation Paper suggests that the purpose of the Unified Licensing Consultation is to examine "various licensing, regulatory and level playing field issues in enabling a Unified License for basic and cellular services".

The Unified Licensing Consultation argues that "over the last few years owing to technological developments and a reduction in costs, wireless telephony has changed from being a product for the elite to that for a common man". It further asserts that "the cost of establishing a wireless network has become significantly lower than the wireline, encouraging even the incumbents to adopt roll out strategies based on wireless, as can be seen from the provision of WLL with limited mobility, ie. WLL (M), as well as GSM by both BSNL and MTNL".

The Unified Licensing Consultation addresses its vision of the changing competitive conditions in the Indian telecom market, asserting that "basic (wireline and wireless) and cellular services are now competing with each other". It goes on to develop this point further:

> *"With greater deployment of wireless technologies, competition between Basic and Cellular Mobile Service providers is becoming severe and this market overlap is increasing. Moreover, ongoing technological changes are making it possible for wireline technologies to provide value added services which were earlier not feasible. The availability of low price prepaid cards for both services will further expedite the overlap between these two services."*

The Unified Licensing Consultation notes that "while this competition is increasing, the license and tariff structure is such that a regulatory limit, for reasons of affordability, has been prescribed for local calls and monthly rentals only for Basic Services". It draws out the implication that "while competition among services (technologies) is increasing, their applicable tariff regimes have different conditions".

Interestingly, though the background discussion of the paper focuses on issues of competitive comparability and price regulation, the Unified Licensing Consultation primarily seeks comments on whether a number of other areas of license conditions should be harmonized:

- entry fees
- service areas
- network layout
- roll out obligations
- performance bank guarantees
- spectrum policy
- spectrum allocation
- level of competition
- interconnection with other service providers
- selection of the NLD operator by the subscriber
- validity of the license period
- numbering plan
- different mobile technologies.

The Unified Licensing Consultation discusses both the unique factors relating to the Indian licensing regime for BSOs and cellular operators against the background of international experience in countries such as Malaysia and Singapore in establishing a unified licensing scheme. The European Union's new regulatory framework is also seen as precedent for a more coherent approach to licensing in India.

However, an important underlying concern behind this consultation document appears to be laying the groundwork for consolidation and modernization of the current structure of the Indian telecommunications sector, especially among cellular operators and new entrant BSOs. A more unified view of the market focusing on the increasing convergence and substitutability of fixed and mobile operators is likely to create more flexible and more favorable conditions for any analysis of the competition effects of industry consolidation. A more pragmatic and realistic view of the real competitive dynamics in the Indian telecom sector is likely to expedite necessary industry restructuring.

Such restructuring might not merely involve consolidation among new entrants but might permit potential collaborative ventures between state-owned and private operators. These developments are likely to create a new and increasingly positive climate for new investment in the Indian telecom sector. If the current examination of a Unified Licensing scheme leads to more flexible terms and conditions for consolidation, it might also contribute to a fresh look at the current regime of price regulation. Such new perspectives might contribute momentum to the process of tariff rebalancing and increased impetus to see the ADC scheme as having very short-lived significance in the overall Indian regulatory framework.

VI. Some Process-oriented Observations

This brief review does not give adequate attention to the important process-related initiatives underlying the various TRAI regulatory documents discussed herein. Many of these documents are intended to elicit comments from industry players and establish grounds for consensus on important new initiatives. A number of the documents refer to TRAI's steps to use what it describes as "Open House" proceedings to gather views of stakeholders including consumer groups. During the course of establishing a new interconnect regime, TRAI also established a technical committee to address detailed issues involved in structuring of interconnection issues.

In dealing with pricing and cost-related issues for origination, termination, transit charges, as well as the calculation of ADC, the TRAI consultative documents demonstrate a commitment to the use of top down, bottom up, and "outside in" or benchmarking cost methodologies. Its Cost Consultation documentation provides a particularly impressive assessment of the use of these three methodologies in developing Interconnection Usage Charges. Overall, the body of documentation generated by TRAI in the past two to three years, in spite of its orientation to many specific issues facing the Indian telecom sector, is clearly an important benchmark to be considered by other national regulators in large (or small) markets dealing with similar issues of market opening and convergence.[1]

Some of the key consultative documents that may be of interest to other national regulators facing similar challenges, include:

- Consultative Paper dated December 14, 2001 on issues relating to interconnection between access providers and national long distance operators[2] (the "Carrier Interconnection Order"), attached hereto as annex 1;
- Consultation Paper dated September 23, 2002 on tariffs for basic services[3] (including arrangements for Interconnection Usage Charges and Access Deficit Charges) (the "Tariff Consultation"), attached hereto as annex 2;
- 24th Amendment to Telecommunications Tariff Order, 1999 dated January 24, 2003[4] (the "TT Order"), attached hereto as annex 3;
- Telecommunications Interconnection Usage Charges (IUC) Regulation, 2003 dated January 24, 2003[5] (the "IUC Order") , attached hereto as annex 4;
- Consultation Paper on the Implementation of the IUC Regulation dated May 15,2003[6] (the "IUC Consultation Paper") , attached hereto as annex 5; and
- Consultation Paper on Unified Licensing for Basic and Cellular Services dated July 16, 2003[7] (the "Unified Licensing Consultation"), attached hereto as annex 6.

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1 See the TRAI web site www.trai.gov.in generally in this regard.

2 Available at the TRAI's website at: http://www.trai.gov.in/consultation.htm

3 Available at the TRAI's website at: http://www.trai.gov.in/consultation.htm

4 Available at the TRAI's website at: http://www.trai.gov.in/torders.htm

5 Available at the TRAI's website at: http://www.trai.gov.in/Notificationfy.htm

6 Available at the TRAI's website at: http://www.trai.gov.in/consultation.htm

7 Available at the TRAI's website at: http://www.trai.gov.in/consultation.htm

ANNEX 1

Consultative Paper dated December 14, 2001 on issues relating to interconnection between access providers and national long distance operators (the "Carrier Interconnection Order").

http://www.trai.gov.in/consultation.htm

Consultation Paper No. 2001/5

Telecom Regulatory Authority of India

Consultation Paper

On

Issues Relating to Interconnection between Access Providers and National Long Distance Operators

14th December 2001, New Delhi

PREFACE

1. Following the announcement of the New Telecom Policy (NTP) 1999 by the Government, Open Competition has already been introduced in the Basic, National Long Distance (NLD) and Cellular Mobile Services. TRAI has recently issued its recommendations for Open Competition in the International Long Distance (ILD) Service and Government's guidelines on ILD Services are also expected shortly.

2. As result of introduction of Open Competition in various service sectors, the Indian Telecommunication sector is now headed towards a Multi-operator Multi-service scenario. Interconnection in such a scenario is going to be rather complex and a number of issues are required to be adequately addressed so that fruits of the competition are available to the telecom users in the form of high quality services at competitive prices. Interconnection is the key to the success of Open Competition. TRAI through this Consultation Paper is attempting to address various issues relating to Interconnection between Access Providers and National Long Distance Operators.

3. The objective of this public consultation is:

(a) to develop a General Framework for Interconnection (GFI) in the context of private NLD Operators' entry into the Telecom service market;

(b) to evolve a methodology for charging carriage of a Long Distance call in a Multi-operator environment i.e., when more than two operators are involved, in the light of the best International practice.

(c) to discuss issues relating to Equal Ease of Access by subscribers to the NLD Networks particularly relating to Carrier Access Code (CAC), Pre-selection and Default Carrier.

(d) to present the outline of an Interconnect Billing System for proper reconciliation and settlement of Access Charges between Access Providers i.e., BSOs / CMSOs and National Long Distance Operators, and to discuss various issues relating to the same.

4 This paper also seeks to generate discussion / views on the framework of a typical Interconnection Agreement as published in ITU's Publication on Interconnection Regulation. The objective would be to get the different stakeholders views on its applicability in the Indian conditions, in parts or as a whole. The paper also reproduces for ready reference, extracts relating to Interconnection and Interconnect Billing from Licensing Agreements of Access Providers and NLDOs. Extracts from Interconnection Agreements, TRAI's Recommendations on Carrier

Selection of National Long Distance Calls have also been made available. International practices on various Interconnection issues find a place in the paper and where considered helpful, references to certain relevant important documents, especially from other International Telecom Regulators have also been made.

5. The Authority intends to issues its Regulations on Interconnection issues relating to the Multi-operator scenario in a time-bound manner and would therefore like to have the comments and views on any or all issues raised in this paper on or before 14th January, 2002. TRAI would be conducting a few Open House Sessions for all stakeholders including consumers / consumer organisations. A separate Open House discussion with the Access Providers and the NLDOs is also proposed, to discuss various technical issues, in more detail.

6. For further clarifications, Adviser (Fixed Network Division), TRAI may be contacted on telephone number: 6166930. The Fax number is 6103294 and E-Mail is: trai06@bol.net.in. Written submissions accompanied by floppy diskette having the contents of the submission would be appreciated.

Sd/-
M. S. Verma
Chairman

New Delhi
13th December, 2001

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Note: Annexures marked with ** (asterisk) below are not included in the printed document but will be available on TRAI's Web Site

I.** ITU-T E-164 Recommendation Supplement 1 "Alternatives for Carrier Selection and Network Identification"

II** EU's Directive 97/33 on Interconnection in Telecommunication practices on Interconnection Agreements and Charging

1. BACKGROUND INFORMATION

1.1 In 1999, the Government announced a New Telecom Policy (NTP'99). Subsequent to the announcement of NTP 99, the Government sought TRAI's recommendation on opening up of the National Long Distance (NLD) segment of the PSTN. Based on the Authority's recommendation, the DOT (Licensor) has recently issued detailed terms & conditions for operating the NLD Service in the country. Extracts of the terms and conditions as far as they relate to the Interconnection are placed in Annexure D. This includes other Interconnection references as appearing in other Licence and Interconnect Agreements.

1.2 The Authority in its recommendation on NLD had recommended setting up of a High Level Technical Committee to sort out various technical issues relating to the Interconnection of Access Provider's (BSOs'/ CMSOs') Network to that of the NLDs. Accordingly, the Authority, in consultation with the DOT, set up a High Level Committee under the Chairmanship of the Secretary TRAI to address various issues on Interconnection. Representatives of the DOT, MTNL, BSNL, VSNL, TEC, Associations of Basic and Cellular Mobile Operators and TRAI are members of the Committee. The Committee has given a number of recommendations to the TRAI, which have helped the Authority in its decision making process.

1.3 The Authority had issued the Telecommunications Interconnection Charges and Revenue Sharing Regulation'99 (Annexure C) specifying Interconnection Charge i.e. for 'Port' & 'Leased Lines' required to terminate Interconnection links between the Network of the Interconnection seekers and that of the Interconnection givers. The Interconnection Regulation issued by the Authority defines the following three types of Costs/ Charges:

i) **Set-up Costs** i.e. all costs required for initially linking up two Networks and making that link operational (including inputs such as fibre links, ports, building space and any up-gradation of equipment, as well as software required to make the Interconnection operational)

ii) **Interconnection Charges** are the (recurring) amounts payable for the link, ports and other resources as indicated at i) above;

iii) **Usage Charges** are payments for use of the Network for transmission of telecommunications messages by the subscriber of the Interconnection seeker. The mode of payment of such charges includes, *inter-alia,* revenue sharing arrangements.

1.4 Although Interconnection regulation of May'99 specifies Port charges, Leased line charges as well as usage charges for all types of calls including domestic long distance and International calls, it needs to be reviewed because it was issued before the NLD licensing regime, keeping in view only two Networks involved in conveyance of a long distance call i.e. that of basic

service operator providing the originating carriage service, and that of the DOT (now BSNL) providing both transit and terminating carriage services. The Authority, therefore considers it necessary to develop a general framework for Interconnection in the context of NLD operator's entry in to the telecom service market so as to provide a basis for Interconnection between Access Provider's Network and that of the new entrant NLD operator.

1.5 The objective of the public consultation is:-

(e) to develop a General Framework for Interconnection (GFI) in the context of private NLD Operators' entry into the Telecom service market;

(f) to evolve a methodology for charging of Origination, Transit and Termination carriage of a Long Distance call in a Multi-operator environment i.e., when more than two operators are involved, in the light of the best international practice.

(c) to discuss issues relating to Equal Ease of Access by subscribers to the NLD Networks particularly relating to Carrier Access Code (CAC), Pre-selection and Default Carrier.

(d) to present the outline of an Interconnect Billing System for proper reconciliation and settlement of Access Charges between Access Providers i.e., BSOs/ CMSOs and NLDOs.

2. GENERAL FRAMEWORK OF INTERCONNECTION

2.1 Inputs from other countries / ITU Guidelines

2.1.1 The global practices suggest that the structure and level of Interconnection charges often determine whether competitors will be financially viable. Efficient technical arrangements for Interconnection are considered as one of the most important pre-requisite for sustainable competition. These arrangements should specify gateway functions to be performed at Network-Network Interfaces such as those relating to Signalling, generation of Call Data Records (CDRs) by Transit Switches for Interconnection Billing as well as Points of handing over traffic by one operator to another, in conformance with Fundamental Technical Plans.

2.1.2 International experience shows that the Incumbent operators generally have little incentive to make Interconnection easy for their new competitors, as it may be contrary to their immediate corporate interests to provide full, open and low cost Interconnection on a timely basis. When negotiations do occur, the incumbent operators usually retain most of the bargaining power. Regulators in such a scenario are expected to play a central role in ensuring that the National Interconnection Framework becomes more competitive.

2.1.3 The latest ITU publication on Interconnection indicates that more than 101 countries have established Interconnection Regulatory Framework in some form or the other relying upon a host of measures such as legislation, license provisions, executive orders, directives, guidelines and determinations.

2.1.4 In addition to National Regulatory Frameworks, a number of Regional groups have begun developing common approaches to Interconnection. European Union (EU) has Interconnection directive to be incorporated into the national laws of its 15 member states. Asia Pacific Economic Cooperation (APEC), Inter-American Telecommunication Commission (CITEL) and Telecommunications Regulators Association of Southern Africa (TRASA) are also working towards global harmonisation approach for Interconnection. The Malaysian Regulator has recently issued a General Framework of Interconnection, to facilitate detailed negotiations between Operators.

2.1.5 Many countries have favoured a policy of industry negotiation on Interconnection Agreements and are allowing operators to seek Regulatory intervention for dispute resolution if negotiations fail. However, there appears to be a growing consensus that advance regulatory guidelines – or even specific Interconnection rules – may be necessary to establish the proper environment to facilitate Interconnection.

2.1.6 It is becoming clear that the lack of advance Regulatory Guidelines may have some serious drawbacks. Without Guidelines, Interconnection negotiations are frequently protracted, delaying the introduction of competition. This leads to regulatory uncertainty and discourages investment.

Interconnection arrangements that are negotiated in such an environment often reflect the unequal bargaining power of the incumbent operator and may not be optimal for developing an efficient competitive market place.

2.1.7 The issue, of whether to establish binding Rules or Regulatory Guidelines, is often described in terms of ex-ante versus ex-post regulation. An ex-ante framework involves setting in advance, clear and possibly detailed, sector-specific rules for all market players to follow. An ex-post model, by contrast, gives market players substantial freedom and flexibility to act in the market, punishing any transgressions of telecommunication or general competition law only after they occur.

2.1.8 Many countries have adopted ex-post model but actually practice ex-ante, sector-specific regulation. That is to say that policy-makers generally agree that in truly competitive market, Interconnection Agreements should be left to market forces and commercial negotiation. But in viewing their own markets, very few policy-makers have concluded that Interconnection markets are sufficiently competitive to warrant pure ex-post regulation.

2.2. Making the Dominant Operator responsible for offering Interconnection on Cost based Principles to new entrants.

2.2.1. Some countries seeking to introduce competition, require "Dominant" Carriers i.e, the former monopoly operators of the Public Switched Telephone Network who are also the dominant NLDO, to Interconnect with the other Carriers such as Access Providers (BSOs / CMSOs), based on a regulator approved Reference Interconnection Offer (RIO). One such example is Singapore, where the Regulator i.e., the Info-Communications Development Authority (IDA) has mandated that the Dominant Carrier i.e. SingTel to prepare a RIO, based on which, the new entrants can seek Interconnection.

2.2.2 The Singapore RIO is in two Parts. The first outlines the procedures necessary to accept the RIO and enter into a RIO Agreement with SingTel; the second includes the minimum terms and conditions on which SingTel will enter into such an Agreement with Telecommunications Licensees. A Requesting Licensee, that has notified SingTel that it wishes to negotiate an Individualised Agreement, may obtain Services on the prices, terms and conditions specified in this RIO on an interim basis pending the adoption of the Individualised Agreement, either as a result of voluntary agreement or the dispute resolution procedure.

2.2.3 Basically, the Dominant Operator is required to publish the cost of unbundled network elements and services, based on which the new entrants can avail his Network Carriage services, such as Origination, Transit and Termination. Similar approach has been adopted in the UK, where the Regulator (OFTEL) has mandated the Dominant Carrier i.e. British Telecom (BT), to publish Accounting Statements showing the cost of unbundled network elements involved in call conveyance from the Point of Entry to the Point of Exit

on the BT network, to determine the charges of using the BT Network i.e, per mile-minutes (MM) of use of various elements. The format used by BT to show the unbundled network elements involved in call conveyance, as well for Interconnection of links, is placed at Annexure L.

2.3 Key Items in an Interconnect Agreement

An orderly Interconnection regime is extremely important for the healthy growth of the telecommunications sector. There are many complex aspects and settlement of these issues is an ongoing activity. The Authority is of the view that the following key items should be elaborated in full details in an Interconnection Agreement to be signed between Access Providers and National Long Distance Operators:

a) Scope and definition of services;
b) Interconnection and POI requirements and principles;
c) Provision of all relevant technical information;
d) Interconnection provisioning procedures;
e) Network and transmission capacity requirements;
f) Technical service level commitments;
g) Technical specifications and standards;
h) Transmission and performance standards;
i) Fault reporting and resolution procedures;
j) Network management, maintenance and measurement procedures;
k) Network integrity, safety, protection and related matters;
l) Call routing, handling and operations procedures;
m) Access to Interconnection gateway facilities and sharing of infrastructure;
n) Charging mechanisms, billing and settlement procedures;
o) Transmission of calling line identification (CLI) information;
p) Operator assisted services, directory information and assistance;
q) Commercial terms and conditions;
r) Provision for contribution to the cost of local access;
s) Fundamental Technical Plans;
t) Confidentiality of information;
u) Liability and indemnities;
v) Provision for an Interconnection Agreement liaison and co-ordination Committee; and
w) Review periods and terms for review
x) Quality of Service

2.4 Provisions of the Licence Agreements issued to NLD / BSOs relating to Interconnection:

2.4.1 Since the Interconnection Agreement will have to be finalised within the framework of the existing Licence regime, the relevant clauses from

agreements between Licensor and Licensee (BSOs/NLD) are brought out in the following sub-sections for ready reference and also to provide the general framework of Interconnection. Clauses 2.4, 2.5 and 17.5 of the Licence Agreement for provision of Basic Service (new players) and the DOT, stipulates that:

> *"Clause 2.4 It shall be mandatory for the LICENSEE to provide Interconnection with National Long Distance (NLD) Service Providers, through suitable mutual arrangements / agreements, where by the subscribers could have a free choice to make Inter-Circle / International Long Distance Calls through any NLD Service Provider. For International Long Distance Calls, the LICENSEE shall access International Long Distance OPERATOR through National Long Distance Operator only. Similarly, inter-circle leased lines are to be provided by suitable mutual agreements / arrangements with NLD Service Providers.*
>
> *Clause 2.5 Direct Interconnectivity among all Telecom Service Providers in the licensed SERVICE AREA is permitted. LICENSEE shall Interconnect with Cellular Mobile Telephone SERVICE PROVIDER at the station Gateway Mobile Switching Centre (GMSC) or Mobile Switching Centre (MSC), unless mutually agreed otherwise, subject to compliance of prevailing regulations, directions or determinations issued by TRAI under TRAI Act, 1997"*
>
> Clause 17.5 "The LICENSEE may enter into suitable arrangements with other Service providers to negotiate Interconnection Agreements whereby the Interconnected Networks will provide the following:
>
> a) To connect, and keep connected, to their applicable systems,
> b) To establish and maintain such one or more Points of Interconnect as are reasonably required and are of sufficient capacity and in sufficient numbers to enable transmission and reception of the messages by means of the applicable systems,
> c) To meet all reasonable demands for the transmission and reception of messages between the Interconnected systems.

2.4.2 The TRAI had issued a detailed Regulation on Interconnection in May 99, which gives certain general principles of Interconnection. These mainly relate to - non-discrimination, timeliness, unbundling and payment only for elements which are required and costs based price based on Directly Attributable Incremental Costs.

The Telecommunication Interconnection (Charges and Revenue Sharing) Regulation 1999 (1 of 1999) lays down the following general framework for Interconnection:

- Interconnection charges shall be cost based, unless as may be specified otherwise.
- For determining cost based Interconnection charges, the main basis shall be "incremental or additional" costs directly attributable to the provision of Interconnection by the Interconnection provider.
- No service provider shall discriminate between service providers in the matter of providing Interconnection and levying of charges thereof.

Provided that a different charge may be levied if justified on the basis of a substantial difference in costs incurred for providing that particular Interconnection.

2.5 ITU's Typical Interconnection Agreement

Contents of a Typical Interconnection Agreement contained in the ITU's publication "**Trends in 2000-2001 : Telecommunication Reform : INTERCONNECTION REGULATION**" which will hopefully provide a framework for negotiations between APs and NLDs for entering into an Interconnection Agreement, are placed at Annexure A for ready reference and soliciting the comments of the stakeholders.

2.6 In many countries, time frames are set for Interconnection provision. There are provisions for penalties in the event of delays in Interconnections. Annexure 'B' is having one such set of details covering the provisions made by some of the courtiers in the American Region.

2.7 Technical Interfaces between Access Providers' Network and National Long Distance Operators' Network

2.7.1 Best International practice mandates each of the Interconnecting parties provide, Interconnection of comparable technical and operational quality as is applicable between their own structurally separate NLD/ BSO/ CMSO Networks.

2.7.2 Some of the relevant considerations applicable to technical interfaces between APs' Network and NLD Network are as follows:

a) Compliance with National standards. Where such standards for Interconnection interfaces do not exist, ITU standards may be used as long as the arrangements do not restrict Interconnection by other licensees;

b) the offering of technical and operational Interconnection facilities should be on the basis of unbundled Network elements (UNE);

c) Network operators should plan for adequate switching and transmission capacities to Interconnect with other Networks without undue delay;

d) need for a reasonable lead times for provisioning of Network resources to the other party;

e) the need for the Network to Network Interface (NNI) to conform to the Fundamental Technical Plans such as Numbering, Signalling, Synchronisation and Charging;

f) the timely and efficient deployment of sufficient resources such as number of time slots in E1 links connecting the two Networks to meet the specified Grade of Service (GOS) on the NNI;

2.8 Questions

A number of questions arise in the context of the points brought out in this Section. These are listed below:

2a) In the event that the Interconnection Provider and Interconnection seeker are not able to reach an Agreement, whether the Regulator should step in suo-moto or should his intervention be only at the request of one or both the parties?

2b) Does the TRAI's Telecommunication Interconnection Regulation of May 99 need any amendment(s) in the light of the latest ITU publication "Trends in Telecommunication Reform 2000-2001 Interconnection Regulation"/ the licenses issued by the DOT to BSOs/ NLDOs? If the answer is yes, what are the suggested modification(s) to the Regulation.

2c) What should be a reasonable time for the Interconnection provider to give the requested resources such as leased line/ ports etc to the Interconnection seeker? In case of an Interconnection Provider's failure to adhere to the given time-frame, what corrective or remedial measures should be stipulated?

2d) Should the Regulator in India mandate the dominant Operator i.e., BSNL to publish a Reference Interconnect Offer (RIO) document containing Un-bundled Network Element (UNE) costs so that the Interconnection charges are settled without any undue delay, based on principles enunciated in the May 99 Regulation of TRAI?

3. Methodology for calculating Origination, Transit and Termination Carriage Charges in a Multi-Operator Environment

3.1 Revenue Sharing on the basis of Origination/ Transit/ Termination carriage charges:

3.1.1 The current sharing of call revenues between private BSOs/CMSOs and the incumbent i.e., BSNL, who presently is the only long distance service provider in the country, is based on "The Telecommunication Interconnection (Charges and Revenue Sharing) Regulation issued by TRAI in May 99. The Explanatory Memorandum annexed to this Regulation contains the following explanation: "To begin with, it must be re-iterated that the revenue sharing arrangements specified in this Regulation are interim, and are not based on detailed cost analysis. Application of an access/carriage charge regime will provide more logically tenable usage charges. That requires a detailed assessment of the underlying costs".

3.1.2 It will be seen from the above explanation contained in the Interconnect Regulation issued by TRAI in May 99, that the existing call by call access charges, i.e., of 48 p multiplied by MCUs registered on the bulk meters at the POI, paid by BSOs to the Transit and Terminating Carrier i.e., BSNL (erstwhile DOT) and Rs. 1.20 multiplied by MCUs paid by CMSOs to the Transit and Terminating Carrier, will need revision based on 'detailed cost analysis'. Moreover, the Authority's Regulation of May 99 was applicable, when the carriage of a long distance call involved only two Networks i.e., one of the APs (BSOs/ CMSOs) and the other of the incumbent. With the induction of the NLDOs, who will provide long distance carriage service between two telecom circles, the total carriage charges from the point of origination to the point of termination, may need to be shared, between at least three operators based on detailed cost analysis of origination, transit and termination, as detailed in the following sub-section.

3.1.3 Figure 3.1 gives the Network elements involved in carrying a call from a PSTN Network in an SDCA (A) situated in Telecom Circle 'X' to another SDCA (B) situated in Telecom Circle 'Y'. Figure 3.2 gives the Network elements in carrying a call from a PLMN Network situated in a Telecom Circle 'X' to a PSTN subscriber located in an SDCA 'B' of the Telecom Circle 'Y'.

Figure 3.1

Typical Carriage on the PSTN

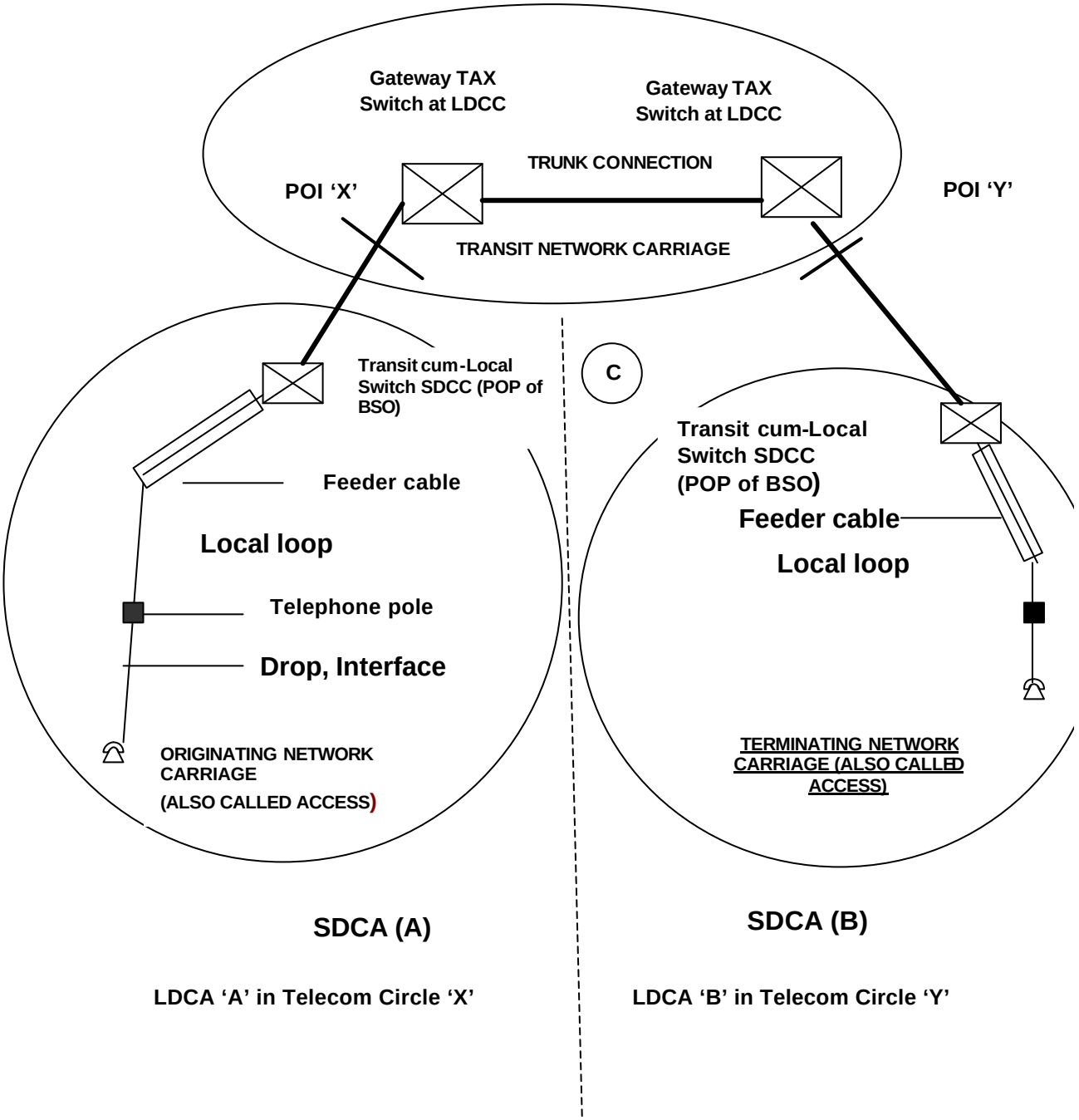
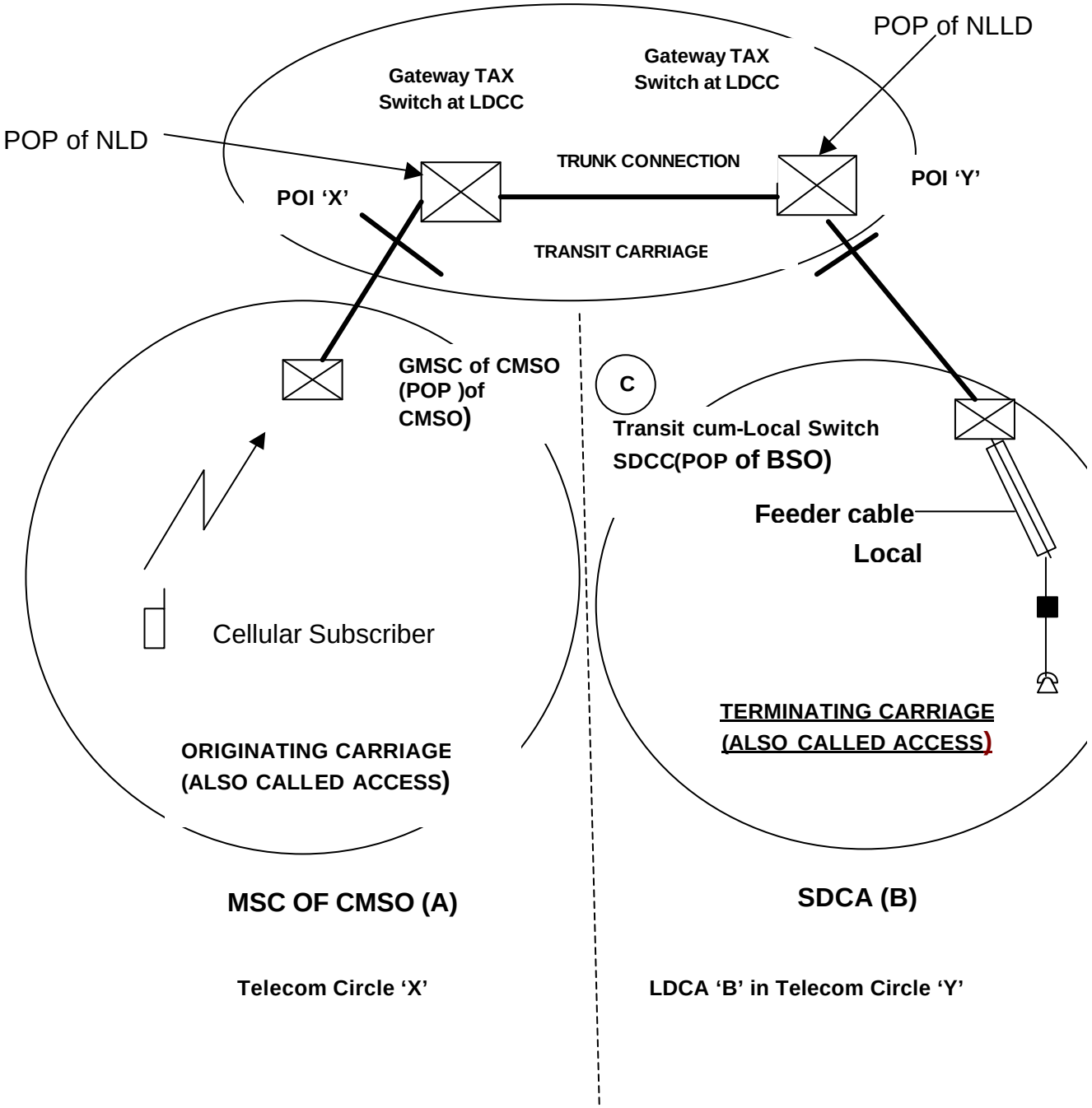


Figure 3.2

Typical Carriage of a Call originating in a PLMN and transited / terminated in a PSTN



3.1.4 Two alternative methodologies for assessing cost based carriage charges in the three Network clouds shown in the Figure 3.1 can be adopted. The first one is based on capturing the distance element between POIs 'X' and 'Y' i.e., on the NLD Network cloud, in real time, in an off line billing system (also called Interconnect Billing System) and categorizing the same in three or four distance slabs and based on the same, deciding the quantum of resources in terms of Network elements used in the three Networks. The cost of the carriage to be determined based on the resources used for the carriage of the call in the three Network clouds. Such a comparative costing of Network elements on the three clouds can hopefully provide a basis for sharing of the collection charges. In general, the Network elements (both switching and transmission) involved in the originating and terminating Networks will not differ significantly, that is to say that the revenue percentage for origination and termination, may be almost equal. However, the revenue percentage for transit carriage provided by the NLD cloud, based on the distance between originating LDCC and terminating LDCC i.e., X – Y will vary call by call, due to dramatic variation in the distance element of each carriage. It may be in the range of 200 Kms in case of neighbouring Circles such as Haryana and Punjab, but in case of J & K and Karnataka, could be greater than 1500 Kms.

3.1.5 Thus, the carriage on the NLD cloud may have to be categorized as suggested below:

- Short haul (upto 200 Kms),
- Medium haul (upto 500 Kms),
- Long haul (upto 1000 Kms),
- Very long (above 1000 Kms):

3.1.6 The average costs of the Network elements involved in the long distance carriage of the above four or five categories will have to be determined either by mutual discussions or regulatory analysis, based on the cost data furnished by the operators involved. Similar cost analysis will have to be done for other types of Network combinations such as PLMN (Originating) – PSTN (Transit) – PLMN (Terminating) or PLMN (Originating) – PSTN (Transit) – PLMN (Terminating) as shown in Figure 3.2.

3.1.7 In so far as revenue sharing on domestic long distance calls originated in cellular mobile Network (PLMN) and terminating in a basic service provider's Network (PSTN) are concerned, the schedule II of the Telecom Interconnection Regulation of May'99 stipulates that the payment to the basic service providers for the long distance carriage will be made at a rate applicable to domestic long distance calls from the point of Interconnect. The number of metered call unit (MCU) shall be measured at the pulse rate applicable to long distance calls from the point of Interconnection to ultimate destination. The cellular mobile operators is permitted to retain airtime charge, which is distance insensitive, for the resources consumed on the PLMN cloud. Subsequently, the Authority has permitted them to retain 5 % of the STD charges collected from the subscribers

as a compensation for billing and bad debt charge vide its determination of 8th January 2001. After the induction of private NLD operators, the PSTN carriage may involve the facilities of two PSTN operators, namely as far as transit is concerned, the NLD operator's cloud, and as far as termination is concerned that of the terminating BSOs. The sharing of the STD collection charges between the two operators namely the NLDO and terminating BSO, may have to be done on the same basis as in those cases in which the call is entirely conveyed on the PSTN. In this case also, the cost of carriage on the NLD cloud may have to be determined on the basis of the distance travelled on the NLD clouds i.e. from the point of entry to the point of exit and the distance of carriage involved from the point of entry in the terminating BSOs' Network to its destination. It could perhaps be shared on the same ratio as distance travelled on the two clouds, namely NLD cloud and the terminating BSOs cloud.

3.1.8 It will be seen from the methodology of determining the revenue shares or usage charges on per call basis presented in pre-paras, that a detailed cost analysis of the Network elements involved in the carriage of call from its origin to destination is an essential pre-requisite to determine either the revenue share percentage for the call volumes i.e., minutes of use (MOU) or usage charges on per call basis. The same could vary on call by call basis based on the distance element involved in the three clouds or could be worked out as a percentage of all call revenues (for call volumes) based on average distance of carriage in the respective clouds. The fundamental concepts relating to costing of Network facilities are given below.

3.2 Fundamental concepts relating to costing of Network facilities

3.2.1 Fixed and Variable Costs:

a) In principle, all telecommunication costs can be classified either as fixed or variable. Fixed costs remain constant over time, regardless of how much the Network is used. There are two main types of fixed costs: One-time investment costs, also known as 'Capital Expenditures', and recurring 'Operating Expenses'.

b) Capital Expenditures are generally large purchases of plant and equipment that have a planned useful life of at least four to five years. Such equipment typically includes all major Network switching and transmission facilities. Standard accounting practice calls for converting capital expenditures to recurring expenses as either annual depreciation or amortization charges.

c) Operating expenses are the costs that the operator incurs on a regular basis – monthly or annually, for example. These expenses generally are constant; they do not vary in amount according to the level of Network usage. Operating expenses can be divided into two major categories; fixed operating expenses (including materials and services), and labour expenses such as salaries and employee benefits.

d) Variable costs are directly related to the level of Network usage.

In telecommunication Networks, variable and fxed costs are categorised "Traffic-Sensitive" and "Non-Traffic-Sensitive" costs, respectively.

3.3 Cost Study Approaches recommended by ITU:

a) Cost studies should be as thorough as possible, given the available data. Examination of the costs needs to be made from more than one point of view, to reinforce the accuracy of the results. Three general approaches to cost studies can be pursued, either separately or in combination:

- Top-Down,
- Bottom-Up, and
- Outside-In.

b) Each approach could, in principle, yield meaningful cost results by itself. But in reality, there are likely to be too many data gaps and methodological variances to rely on a single approach. Including all three methods in a single study can yield a range of results that will serve as basis for meaningful conclusions on costs and Interconnection rates.

3.4 The Bottom-Up Approach:

a) According to ITU, this method is arguably the most "accurate" means of measuring unit costs, assuming sufficient data are available. It is based on the idea that service costs can be identified from the facilities and other inputs needed to provide the services. The costs of the inputs are combined in proportion to their utilisation in providing each service, then divided by the number of total units of service, resulting in per-unit facility costs.

b) This approach depends on the availability of complete, disaggregated data on input costs and the relative use of facilities in the provision of different services. This can be analysed on a historical-cost basis or a forward-looking incremental cost basis, but any result expressed as pure, incremental facility-based unit costs must be reconciled with joint and common costs and administrative overheads.

c) Figure 3.3 explains the Bottom-Up Approach.

3.5 The Top-Down Approach:

a) As per ITU recommendation, the Top-Down approach begins with aggregate, company-wide cost data such as total annual expenditures, capital investments and operating costs. Ideally, such costs will be tracked according to some general categories, such as whether they are capital or operating costs. The goal of a top-down study is to take these aggregate costs and

allocate them among all services provided by the carrier. The advantage is that this method assures that all of the carrier's costs are accounted for. The difficulty, on the other hand, is determining an economically justifiable allocation formula.

b) The most appropriate use of top-down analysis is as a check and comparison against a comprehensive bottom-up, incremental cost analysis. Unfortunately, such a complete bottom-up analysis is rarely possible because of a lack of adequate data. Aggregate company costs, by contrast, are usually available. As a result, the top-down analysis often becomes an integral part of the cost study and is used to estimate capital and operating costs where exact facility input data are unavailable

c) The Australian Competition and Consumer Commission (ACCC) uses a form of top-down analysis – dubbed a "full-cost approach" – as an option for settling Interconnection disputes. The analysis is used to arrive at Total Service Long Range Incremental Cost (TSLRIC) results, which depend upon extensive carrier record data.

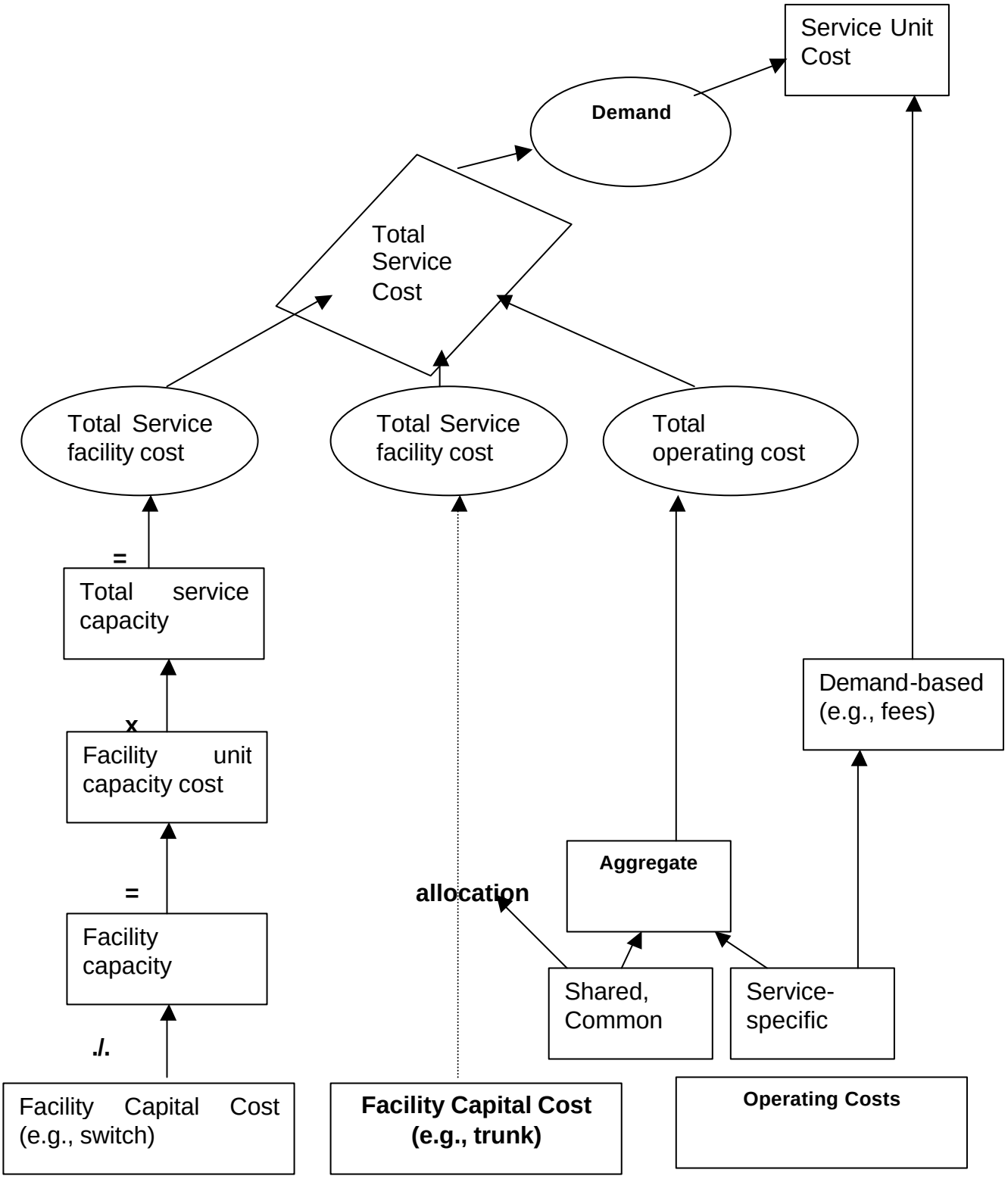
Figure 3.4 explains the Top-down Approach.

3.6 The Outside-In Approach:

a) The third approach is to use "proxy" estimates from outside sources, establishing cost "benchmarks", or ranges of costs, for services or facilities. This involves two steps. First, the regulators must define the appropriate cost elements and the scope of cost comparisons – whether they will be comparisons of specific facility costs, operating unit costs or service-wide costs. Second, the results have to be adjusted to account for differing conditions between the subject country and the benchmark country.

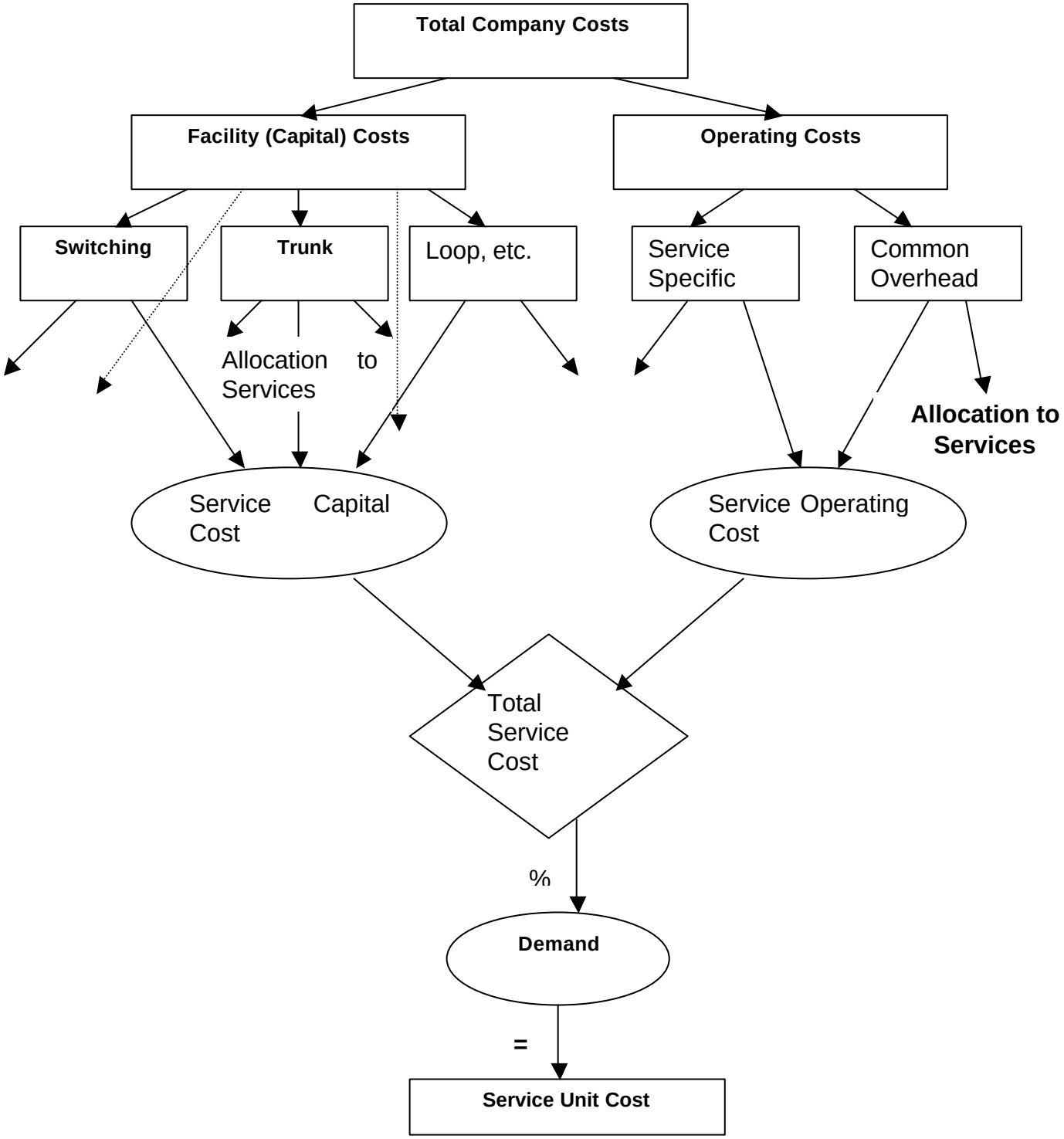
b) Figure 3.5 explains the Outside-In Approach.

Figure 3.3 Bottom-Up Analysis:



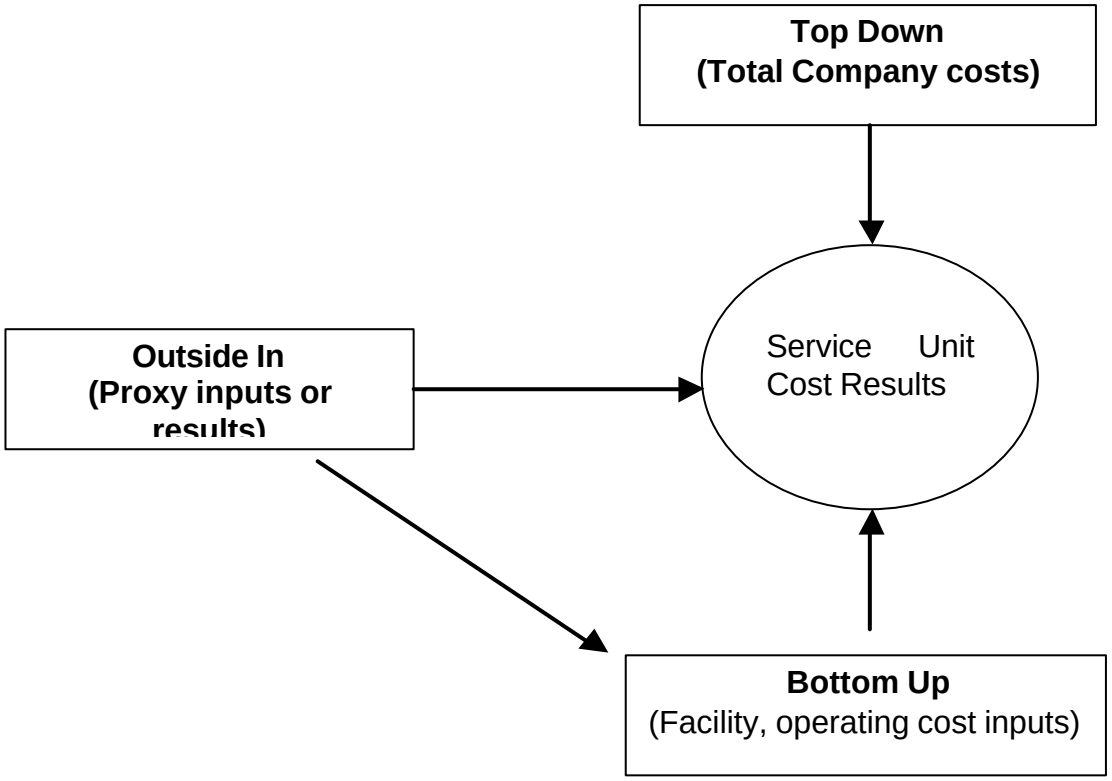
Source: ITU – Trends in Telecommunication Reform 2000-2001

Figure 3.4 Top-Down Analysis:



Source: ITU – Trends in Telecommunication Reform 2000-2001

FIGURE 3.5 OUTSIDE-IN APPROACH:



Source: ITU Trends in Telecommunication Reform 2000-2001 (Interconnection Regulation)

3.7 **Questions:** Views of the stakeholders are solicited on the following issues, based on the discussions in this section.

3. a) Which of the three costing Approaches referred in Section 3.4 to 3.6 above would be appropriate for adoption in our present Indian Telecom environment?

3 b) Whether the Revenue Sharing methodology for Long Distance calls should be based on call by call assessment of cost of Originating, Transit and Terminating Carriage? Would it be correct to assume that the distance elements involved in the Originating and Terminating carriages are on an average, almost equal? Can we fix equal percentage say 'X' for origination and Termination and 'Y' for Transit. Both 'X' and 'Y' to vary based on the Cost of Carriage incurred on the three Network segments i.e. Originating, Transit and Terminating?

3 c) What would be the most acceptable way to work out Revenue Share percentages, when there are more than one NLDOs involved in Carriage of a Long Distance call between two Telecom Circles?

3 d) What Revenue Sharing methodology should be adopted in case of International Long Distance Calls for scenarios when ILD traffic is

- Delivered through NLDOs
- Delivered directly to ILDO by Access Providers

4. DISCUSSION ON ISSUES RELATING TO EQUAL EASE OF ACCESS

4.1.1 Dialling Parity

a) If conditions for healthy competition are to be established, telecommunications end users should be able to access the services of new market entrants as easily as they can access those of the incumbent operators. Without equal – or at least comparable – ease of access, new entrants will find it difficult to attract customers. For example, in the early days of long distance competition in Canada and the United States, many customers found it inconvenient to use competitive operator's services because of the need to dial more digits than what would be required if the STD call is dialled through the incumbent's network.

b) US policy-makers addressed that problem by requiring dominant local exchange carriers to offer equal access for long distance carriers to reach potential customers. That regulatory solution also included the information of 'Pre-subscription' for Long distance services, allowing US customers' calls to be routed automatically to their chosen carriers.

c) Today, many incumbent operators and telecommunications equipment manufacturers have redesigned their switches and related software, making them very easily adaptable to the requirements of multi-operator environment. Dialling parity is thus fairly painless to achieve with the right software package. Nevertheless, implementing dialling parity usually requires incumbent carriers to alter their operating procedures and reprogram their equipment. There are basically two approaches to providing equal access:

4.1.2 Call-by-Call Carrier selection:-

a) Customers select the operator of their choice for each call by dialling a short code or prefix unique to their selected operator. For example, in Colombia, customers dial "09" to route national calls through the incumbent operator TELCOM's Network, and other two-digit prefixes to route them through competitive operator's Networks. The main requirements to provide this type of equal access efficiently are:

- A Numbering Plan that allocates available numbers on equitable basis among all NLD Operators including the incumbent.

- Rules requiring incumbent operators to gives new entrants access to basic signalling services, including Calling Line Identification (CLI), Databases, answer and disconnect supervision functions.

- Appropriate billing and auditing arrangements, allowing each carrier to bill customers directly or to procure billing services from another carrier or third-party billing agent.

4.1.3 Operator Pre-selection

a) Under this approach, customers pre-select an operator for some or all of their calls. For example, a customer may select a preferred carrier for all long distance and international calling. Pre-selection allows all such calls to be routed automatically to the chosen carrier. The main requirements for this type of equal access are:

- Switch software features needed to identify each customer's pre-selected carrier and to route and bill all calls accordingly.

- Appropriate billing and audit arrangements to permit direct billing by each pre-selected carrier or consolidated billing by a single carrier (usually the local access provider, which may bill the end user and then remit payments for long distance calls to the pre-selected long distanced carrier).

b) The implementation of equal access has been uneven around the world. It is available in many countries – including Argentina, Australia, Canada, Chile, Germany, Hong Kong SAR, Switzerland and the United States, among others – but it remains unknown in many parts of the globe. Equal access is more common for international services. In some countries, equal access is delayed due to delays in implementing a Numbering Plan that allows equivalent allocation of numbers to competitors.

c) A combination of the two methods is also possible.

4.1.4 In the European Union, dynamic carrier selection and pre-selection has been implemented in most of the countries. Annexure H is an extract from a EU document on Carrier Selection options in Europe and some other countries. Annexure I contains a release dated 8th January 2001 by OFTEL on finalisation of Carrier Pre-Selection Charges. Annexure J indicates the status of Carrier Selection in the European Union.

4.2 Carrier Selection Status in India

4.2.1 Given below is an extract from NLD Licence Agreement on Equal Ease of Access.

> Clause 17.1 It shall be mandatory for fixed service providers, cellular mobile service providers, cable service providers, to provide Interconnection to NLD service providers whereby the subscribers could have a free choice to make inter-circle/ international long distance calls through NLD service provider.

4.2.2 The new Basic Service Licence Agreement has the following main provisions on Equal Ease of Access:

> 2.2 Licensee shall be free to carry Intra-Circle long distance traffic. However subject to technical feasibility, the subscriber of the Intra-Circle long distance calls, shall be given the choice to use the Network of another Basic Service Provider in the same service area. The Licensee can also make mutual agreements with National Long Distance Operators for carrying intra-Circle Long Distance traffic.
>
> 2.4: It shall be mandatory for the LICENSEE to provide Interconnection with National Long Distance (NLD) Service Providers, through suitable mutual arrangements / agreements, whereby the subscribers could have a free choice to make Inter-Circle / International Long Distance Calls through any NLD Service Provider. For international Long Distance Calls, the LICENSEE shall access International Long Distance OPERATOR through National Long Distance Operator only. Similarly, inter-circle leased lines are to be provided by suitable mutual agreements / arrangements with NLD Service Providers.
>
> 16.1: The Licensee shall ensure adherence to the National Fundamental Plan (describing Numbering and Routing Plan as well as Transmission Plan) issued by Department of Telecom and technical standards as prescribed by the Licensor or TRAI from time to time. In the case of providing choice of Long Distance Operator, the equipment shall support the selection facilities such as dynamic selection or pre-selection as per prevailing regulation, direction, order or determination issued by Licensor or TRAI on the subject.
>
> 17.3: Licensee shall Interconnect with National Long Distance (NLD) Service Providers through suitable arrangements/ Agreements whereby the subscribers could have a free choice to make Inter-circle/ International Long Distance calls through any NLD Service Provider. For international long distance call, the Licensee shall access International Long Distance Operator through National Long Distance Operator only. Similarly, inter circle leased lines are to be provided by suitable mutual agreements / arrangements with NLD Service Providers. Licensee can enter into mutual agreement/ arrangement with NLD Service Providers for carriage and delivery of inter-circle traffic for the leg between LDCC and SDCC.
>
> 17.4 Licensee shall be free to carry Intra-Circle Long Distance traffic. However, subject to technical feasibility, for these Intra-Circle Long Distance calls, subscriber shall also have the choice to use the Network of the Basic Service Providers in the same service area. The Licensee can enter into mutual agreement with NLDO for carriage of Intra-Circle Long Distance calls.
>
> 17.11: The Network resources including the cost of upgrading/ modifying Interconnecting Networks to meet the service requirements of service will be provided by service provider seeking Interconnection. However mutually negotiated sharing arrangements for cost of upgrading/ modifying Interconnecting Networks between the Service Providers shall be permitted.

4.2.3 The issues relating to Carrier Selection were examined by a High Level Technical Committee under the aegis of TRAI as referred earlier in para 1.3 also. This was subsequent to TRAI Recommendations on National Long Distance Services. Based on the same, TRAI issued Recommendations to the Licensor on the Allotment of Codes for introduction of Dynamic Call by Call Selection of NLD Carriers. These are available at Annexure F. Letter to the Licensor for incorporating suitable clauses in the License Agreement of BSOs

to reflect the Recommendations of TRAI on NLD operations relating to Equal Ease of Access was also issued and the same is available as Annexure G.

4.2.4 Extracts from TRAI's Recommendation on Carrier Selection Code are reproduced below:

> For Dynamic Call by Call selection, the subscriber should dial the STD prefix i.e. "0" followed by a NLD Service Code (NLDSC, a Carrier Access Code (CAC), and thereafter the National Significant Number (NSN) of the called subscriber. Thus dialling sequence will be : 0 + NLDSC + CAC + NSN.
>
> For example, for dialling Mumbai from Delhi, the subscriber will dial :

'0'	+	'10'	+	'55'	+	22	+	3451234
		(NLDSC)		(CAC)		(Area Code)		(Local Number)

> The Authority recommends adoption of "10" as the NLD Service Code. This code will be required to be dialled for all NLD Calls involving carriage over NLLD Network operators facilities.
>
> In regard to Carrier Access Code, which will identify the NLD Operator chosen by the subscriber, the Authority recommends a two digit Code beginning 40 and ending at 59, thus giving 20 codes to be allotted to all NLD Carriers, including BSNL. The Authority feels that number of NLD operators would be less than '20' for the planning period of five years. The position would be reviewed after that period.
>
> Regarding charging for Interconnection link between NLD Operator's POP at LDCC, and that of the BSO at the SDCC, the charges specified for such links in the Telecommunication Interconnection (Charges and Revenue Sharing) Regulation of May 1999 are applicable. Please note that this Interconnection Regulation also emphasizes mutual negotiations between Interconnection seeker and provider. Further, for estimating cost of origination, termination and transit on the NLD Network, cost of unbundled Network elements are required by the Authority to issue a determination, in case operators do not come to a mutual agreement on the modalities of inter Carrier settlements. The work of Accounting Separation and has just begun, and is likely to take about 6 to 8 months. The operators may be asked to expedite the Accounting Separation in accordance with Authority's recommendations.

4.2.5 TRAI has not yet issued any Recommendations on dialling procedures for ILD Carrier Selection or code allotment, though the High Power Technical Committee had recommended 00+10+XY+ International Significant Number. There is an alternate option to use 00 +91 + XY+ International Significant Number. As recent TRAI Recommendations permit normal Toll Quality and below normal Toll Quality ILD Services, each ILD Operator would need two 'XY' codes if the ILDO deploys two type of ILD Services.

4.2.6 At present, it is not technically feasible to provide a dynamic choice for International calls since the digit storage capacity is inadequate. Service Providers will have to take steps to upgrade their switches to handle 23 digits.

4.2.7 In the Pre-Selection procedure, the subscriber registers in advance, the identity of his preferred National/ International Carrier with his Basic/ Cellular Service provider. When a pre-selection registered subscriber dials '0' or '00',

the specified operator will be automatically selected by the system. This requires identification of the subscriber's class by introducing certain procedures in the exchanges and requires significant Network up-gradation. The local exchange would have to use this information, to determine the outgoing trunk route. It would be possible for the user to override the Pre-Selection process by dialling the Dynamic Selection Code.

4.2.8 TRAI's Recommendation on International Long Distance Services envisages direct routing from an access provider to an ILDO in some cases. This would be possible after a minimum storage capacity of 21 digits is available.

4.3 Schedule for Introduction of Pre-Selection

In the context of NLD competition, a subscriber is likely to find it difficult to change his / her pre-selected choice from the incumbent's (BSNL's) Long Distance Network to another Network, until the alternative NLDO has established a Network that can be reached for most destinations. Dynamic Carrier selection, by which the subscriber selects the NLDO only for selected destinations, may be a more acceptable option at the starting stage of the NLD liberalisation process. By the time NLDOs achieve substantial Roll-out (say 2/ 3 years), Pre-Selection also will become more practicable option. There would, however, be another major consideration for an early introduction of Pre-Selection, that is the issue of 'Default Carrier' which is discussed in the next Section.

4.4. DEFAULT CARRIER

4.4.1 Background

If the Carrier Selection Code is not dialled, either the call will not be completed or it will have to be routed to a default Carrier. This is in the interest of the subscriber who should not be forced to dial 4 extra digits on every trunk call. If default Carrier procedure is not followed, users will be forced to dial 14 digits instead of 10 digits on all NLD calls. This may lead to adverse public reaction, increased dialling errors and other problems. **Default Carrier is significant only in the interim phase before Pre-Selection is introduced.** This procedure puts a new NLDO at a disadvantage with respect to the BSNL which functions as both NLDO and Access Provider. This matter requires to be considered and addressed.

4.4.2 TRAI's NLD Recommendation

4.4.2.1 TRAI NLD Recommendations of 13th Dec.1999 on Carrier Selection made following points.

> 47. Suitable access arrangements shall be made available to NLD service providers by Access Providers. Carrier Access Codes (CAC) should be notified having

dialing parity with Access Providers in conformity with the National Numbering Plan. It should be used to identify a long distance carrier by a customer of any AP in order to promote free choice and equal ease of access (EEA).

48. The technical arrangements for choosing an NLD service provider by dialing a CAC or pre-selection shall be made by all Access Providers (AP). Such arrangements should be made by APs in consultation with NLD service provider before commissioning NLD service and should form part of an Interconnect agreement. In case the facility of carrier pre-selection needs extended time, the APs must ensure its provision preferably within a **period of three years.**

49. It would be desirable that a technical group consisting of representatives of DOT, DTS and other APs, under the aegis of TRAI, is assigned the task of devising a scheme for dialing- access to different NLDOs and APs. The objective should be to formulate a suitable scheme of access codes of uniform number of digits for the NLD service providers and APs with adequate provision for additional players at a later date. The group may also supervise arrangements for introduction of pre-selection and for an inter-carrier charge billing system.

4.4.2.2 In response to DOT's reference for reconsideration, Revised TRAI Recommendation on the subject is as follows:

47 All NLD/ AP operators including DTS will be allotted a carrier access code (CAC) in the interest of dialling parity as already recommended. In case of default i.e. absence of CAC, in the digits dialled by the subscriber, the call should be routed to a recorded announcement requesting the subscriber to prefix his destination code with the CAC of the chosen operator. In due course pre-selection will be introduced to achieve equal ease of access as already recommended.

4.5 Considerations

a) The available options for selection of the default Carrier is to specify it by policy or allow it to be selected at the discretion of the BSO. The BSO may also choose to distribute such traffic amongst available NLDOs. No changes are required in the current Network in case the option of default Carrier Selection is left to the discretion of the Access Provider. If the Carrier Selection Code is not dialled, feeding a recorded announcement asking the subscriber to consult the directory or a special service operator to find out the 'CAC' of a NLD of his choice, is technically feasible. However, this could cause some annoyance to the customers and also increase the total processing time for such calls, with some adverse affect throughput of the switches.

b) Access Providers (BSOs/ CMSOs) have in their interaction with High Level Technical Committee strongly recommended that the system of default carrier be introduced. Because if no default mode is prescribed, the average number of digits dialled would increase, and the requirement of providing announcements for incomplete dialled calls could lead to avoidable congestion in their Network in the initial stages of the introduction of the NLD competition.

c) NLDOs have expressed a contrary view. According to them, compulsory dialling of the CAC is an important aspect of the 'Level Playing Field' and they would be handicapped in their effort to collect traffic particularly in the period

before Pre-Selection is available. One possible solution could be to ask the Access Providers (APs) including BSNL/ MTNL to pass an agreed share of default traffic to the NLDOs who have established Points of Presence (PoPs) in the area of operation of concerned Access Providers (APs) until the Pre-selection procedure is established and subscriber's choices ascertained.

4.6 UPGRADATION COSTS

4.6.1 Dynamic (Call by call) Selection

a) The existing BSNL switches have the capacity for handling the extra digits for selection of National Carriers, but not for International calls. In principle, the additional capacity for analysis exists in most exchanges, but in a few of the older exchanges, modifications or replacements may be necessary. NLDOs and the Access providers will have to co-ordinate their programmes and changes may have to be carried out over a year or so in a phased manner. CMSP operators have generally indicated that their systems already provide for such selection procedures.

b) The traffic related up-gradations, require a much more detailed analysis on the part of all operators and a clearer picture will emerge on the basis of the inputs provided by the operators, much of which is not yet available. Additional Network Costs may be involved in one or more of the following cases:

i) Software upgrades to accommodate the Carrier Selection Code
ii) Changes in software, and in some cases in hardware of local exchanges, for extra analysis and processing
iii) Increase in storage capacity for International Carrier Selection

c) The costs of I) & ii) above are not likely to be very high and Call by Call selection by dialling Carrier Access Code (CAC), can be introduced at an early date i.e., as soon as NLD Operators commission their Networks.

4.6.2 Preselection

a) In the UK, the costs for introduction of Pre-Selection appears to have been distributed between the subscribers and operators. If the subscriber has to pay additional costs to register his pre-selected choice, he may be reluctant and the NLDOs, who do not have any captive subscriber base, may end up having to pay the charges on the subscriber's behalf. Another way of addressing this issue may be to obtain mandatory payment from all subscribers for implementation of the overall pre-selection regime, in the form of small additional payments in their bills. This seems feasible but could prove to be unpopular.

b) In India the principle is that the operator seeking changes should pay for them, however, the methodology for estimating costs, collection and distribution of funds may be complex. There is a strong need to collectively work out the principles relating to verification of costs and sharing amongst various operators. Without a mutually agreed sharing regime system, changes may not be affected smoothly and in time.

4.6.3 General Issues regarding Network Up-gradation Costs

a) The question of compensation to be provided by Operators who seek up-gradations in the Network of other Operator needs careful consideration. Up-gradations in the Operator's Network may be of two types:

- Those that are required to be made to meet National Standards, for example QOS.
- Those that are required to meet the Service needs of other operators

b) It could safely be assumed that the first type of up-gradation i.e. to meet the QOS norms, should be met by each Operator for his Network.

c) It is likely that the second type of improvement may not be carried out until the operator, who has to upgrade, has received payment. This may delay matters unless principles for such payments are agreed to in advance.

d) In this connection two major issues will arise. How should costs be estimated, and how should funds be collected and distributed for implementing the changes.

e) For estimating costs of up-gradation, a statutory mechanism may be necessary since operators have been reluctant to provide any information to the High Level Committee. It may be necessary for the Licensor to mandate these up-gradations subject to a post facto settlement of dues. Also, since the up-gradations can be phased over a period, it is necessary to have a coordinated approach on this issue between APs and NLDOs. This could perhaps be initiated through the High Level Committee (HLC). Once the cost per line of up-gradation are determined, the requesting operators should start making payments based on the areas covered in their roll-out plan.

f) Where an up-gradation would benefit a number of operators, the collection of funds will have to be distributed amongst them. However, when new operators join they may have to reimburse their share to the existing operators.

g) Another practical alternative would be to create a fund, possibly out of the Licence fees recovered from the Access Providers and NLDOs and to advance amounts out of this fund to the incumbent in whose Network most of the up-gradations may have to be done. The amount may be recovered from the concerned Operators, through the license payment regime as a temporary

surcharge and credited back to the fund. A rolling fund like that could take care of the funding problems relating to the up-gradation of the incumbent's Network and could avoid quite a few roadblocks to the growth of a satisfactory Interconnection regime.

4.7 Questions : In the light of the above discussion, the following issues need to be discussed with the stakeholders:

4a) What should be a reasonable time frame to introduce Carrier Pre-selection, after the NLD Service is started based on Carrier Access Code (CAC) as already recommended by TRAI?

4b) Introduction of Pre-Selection and increase of storage capacity to 23 digits, may involve significant up-gradation costs. These costs are future costs. What should be the mechanism for determination of these costs? Who should bear the cost of up-gradation of the incumbent's Network to introduce pre-selection?

4c) In case NLDOs are to bear the costs, how to apportion share of the cost recovered between various Access Providers?

4d) In an open competition scenario, when a new operator comes in at a later date, to what extent should he contribute towards meeting the costs incurred in the past?

4e) Pre-selection would involve additional storage capacity and other hardware and software-upgrades. What would be the best way to coordinate the efforts / actions of the different BSOs and NLDOs towards technical/ Network up-gradation or modification to facilitate Carrier Selection? Can an industry level agreement to which all operators will subscribe, achieve this objective? Such an arrangement will also be an important step towards industry self-regulation.

4f) What would be a techno-economically feasible and an acceptable Carrier Pre-Selection Procedure for International Long Distance Calls and Intra-Circle Long Distance Calls?

4g) What would be a reasonable time frame for introduction of Carrier Pre-selection facilities in respect of International calls?

4h) In the interim period before Pre-Selection is made available, all calls where no Carrier Access Code is dialled, the following options would be available:

- Routing call to an announcement machine so that the caller dials again.
- Routing automatically to Default Carrier as selected by BSO.

- Specifying a Routing policy so that Default traffic is distributed amongst the NLDOs in an agreed proportion.

Which of the above or any other option would you recommend and why?

4i) In case calls are routed through a default Carrier, those operators who own both Access and National Long Distance Networks will have an advantage over those NLDOs who have no direct access to subscribers. How can this issue be addressed for maintaining a level playing field?

5. ISSUES RELATING TO AN INTERCONNECT BILLING SYSTEM

5.1 BACKGROUND

The Interconnect Agreement between the Department of Telecom (now BSNL) and six Basic Service Operators to whom licenses were issued in the second half of 1997, at Chapter VII gives the details of an Interconnect Billing System. The latest License Agreement issued to the new Basic Service Operators also provides for Interconnect Billing so that proper Inter-carrier settlements and reconciliation take place in respect of Carriage Charges.

5.2 Outline of an Interconnect Billing System

The existing digital Switching Systems are designed to generate only detailed charging information for billing the subscribers for calls made by them. Subscriber charging is based on an analysis of the destination code. Detailed information for billing the subscribers like Calling Number, Called Number, Duration of the call etc are generated in a local exchange. In a single operator environment, there was no need to provide for Bulk Billing at the Points of Interconnections for Inter-carrier settlements based on actual usage of each other's Network resources. In a multi-operator environment, there is need for a different kind of Billing System to be connected to Gateway Transit exchanges for settlement of Carriage Charges. Such Interconnect Billing Systems also called Inter-carrier Charge Billing Systems in some countries, are based on Call Data Records (CDRs) generated by Gateway Transit or Trunk Automatic Exchanges (TAX). An Interconnect Billing System is connected to the TAX or Tandem Switches by data communication links. The latter generates Call Data Records which is inputted to the Billing Systems in real time for each call transited through the Transit Network indicating typically the following information:

a) Carrier Related Information
   i) Identity of Originating Carrier
   ii) Identity of Terminating Carrier
   iii) Identity of Transit Carrier.

b) Geographical Information
   i) Originating Charging Area
   ii) Terminating Charging Area
   iii) Charging areas of POIs located at Entry and Exit of the Transit Network.

Based on the above information, the Interconnect Billing System generates a bill for the Network resources used in transiting the call from Point X to Point Y (Ref Fig. 3.1). Interconnect Billing System determines the Cost of Carriage of the call from Point of Entry to Point of Exit in a Network cloud using a distance element based Cost Matrix, which is part of the Billing Software. The Billing Process essentially characterizes the calls in types such as Short

Haul, Medium Haul and Long Haul, to account for the differences in the Transmission length as well Switching stages.

5.3 Need to upgrade the existing Signalling System

It will be seen from the pre-paras that one of the essential requirements to implement a sophisticated Inter-carriage Charge Billing System (also called Interconnect Billing System) is to generate Call Data Records in the Transit Switches (TAX) to capture various types of Carrier related information, as well as information relating to the Originating, Terminating and Transit Point Charging Areas. Such information flows is only possible if CCS7 Signalling System is available end to end. The existing CCS7 Signalling System i.e. ISDN User Part specified by TEC for the country, does not have provision for conveying these Charging information from one Network to another. Therefore, the National Specifications for CCS7 Signalling will also need modifications. The Switching Software in the existing TAX as well as local exchange will also need modifications. These may involve considerable expenditure in terms of monetary resources as well as time.

5.4 Whether the existing System can be adapted for Multi-operator environment

Considering the Techno-economic problems of implementing the state of the art Inter-carrier Charge Billing System outlined above, it is worthwhile examining whether the existing System between Access Providers and BSNL which is based on Bulk meters provided on incoming junctions could be adapted for the Multi-operator environment involving more than two Operators. These Bulk meters are incremented by the periodic pulse received from down the stream Gateway TAXs. The Gateway TAXs generate pulses at the rates applicable for the distance from the POI to the Destination. The existing System although easier to be implemented, may cause problems relating to reconciliation of the Carriage Charge in case the two Gateway Switches of the two Networks are separated by a distance slab . It does not bill for the distance carriage on a pure Transit Network such as that of a NLD.

5.5 Questions

In the light of the above discussions, the following issues need to be discussed with the stakeholders:

5a) What type of Inter-Carrier Charge Billing System should be adopted for proper settlement and reconciliation between two operators? Whether the Inter-Carrier Charge Billing should be based on the concept of call by call detailed records or on Bulk basis as at present?

5b) In case the first option is chosen, what modifications would be necessary in the Signalling procedure to introduce new messages and new parameters in

the National CCS7 Specification, to accommodate the capability of Charging for Inter-Operator Billing in Multi-Operator Scenario?

5c) How the technical / Network up-gradation or modifications to facilitate Inter Carrier Billing System for Multi-Operator Scenario could be coordinated? How should the cost of such up-gradations in the incumbent's Network be met?

5d) For capturing varying distance elements on the Transit cloud, sophisticated Signalling and Charging Systems may have to be employed. This may involve up-gradation of existing Switching elements in the incumbent's Network. What would be the most appropriate and acceptable method to meet the cost of such up-gradation?

ANNEXURE A

CONTENTS OF A TYPICAL INTERCONNECTION AGREEMENT

Contents	Detail and Comments
Interpretation	
Recitals	'Whereas' clauses add historical and legal context to assist understanding by future readers of agreements.
Definitions of key terms	Terminology varies significantly among different countries and operators. It is important to ensure compatibility of terminology with the local environment when adapting Interconnection agreements from other countries. Definitions in other documents may be referenced, e.g. definitions in law or regulations, regulatory guidelines, ITU definitions
Scope of Interconnection	
Description of scope and purpose of Interconnection	Different types of Interconnection agreements have different purposes; (e.g. between local Networks, local to long distance/ international, fixed to mobile, mobile to mobile, local ISP to ISP backbone). The purpose of some Interconnection agreements is to provide termination services or transit services; other involve provision of unbundled *facilities*, etc. Interconnection architecture (annotated diagrams).
Points of Interconnection and Interconnection Facilities	
Points of Interconnection (POI) and related facility specifications	POI locations (e.g exchanges, meet points) usually listed in an appendix; may be modified from time to time; typically includes exchange types and street addresses. Specific POI facility locations (e.g. digital distribution frame; manhole splice box). Description of Network facilities to be Interconnected (e.g. large-capacity fibre optic terminals with Interconnecting single-mode optical fibres). Specify capacity and/or traffic volume requirements. Indicate which party is to provide which facilities (include diagram of POIs and Interconnected facilities). Technical specifications, for example: Calling Line Identification (CLI) specifications. Other advanced digital feature specifications, e.g. call forwarding, caller name ID, etc. Basic and ISDN call control interface specifications. Local number portability (LNP) query-response Network specifications.
Signalling Interconnection	Specify type of signaling Networks/standards (e.g. CCS7). Signalling POI locations to be specified (i.e. Signal Transfer Points or STPs). Point codes to be specified. Technical interface specifications (e.g. signaling links to be dedicated E-1 or DS-1 transmission facilities; operating at 56 kbps). Diagram of signaling Interconnection architecture.
Network and Facility Changes	
Planning and forecasts	Requirement for mutual notification of Network changes and capacity forecasts, for example: traffic forecasts for each POI;

	local number and portability requirements; area code saturation and changes to increased digit phone numbers; default and redundant routing arrangements; Periodic Network planning reports may be specified.
Facility ordering procedures	Specify rights and obligations of each party with respect to ordering and provisioning of Interconnection facilities (including unbundled Network elements – see below). Confidentiality requirements and procedures. Ensure no anti-competitive use of order information (e.g. no contacts with end users; competitive service divisions of operator receiving orders). Specify point of contact (e.g. Interconnection Service Groups; E-mail addresses, etc.). Specify order format and procedures (e.g. standard order forms may be utilized in paper or electronic (EDI) format). Procedures to expedite specific orders. Co-ordination process for migration of customers between operators (e.g. coordination of cutovers to prevent or minimize service interruptions to end-users). Procedures for ordering operator to arrange for all equipment installations and changes at end user premises. Order confirmation and order rejection procedures; timely notification, notification of additional charges, etc. Order completion notification and reporting requirements.
Traffic Measurement and Routing	
Traffic measurement responsibilities and procedures	Describe party responsible; measurement and reporting procedures (see billing procedures (below). Rules for routing of different types of traffic, if any; e.g. local traffic that is to be terminated reciprocally without charge may be carried on “bill-and keep” trunks; traffic for which termination charges apply may be carried on other trunks (e.g. transit trunks, national traffic trunks, etc.).
Infrastructure Sharing and Collocation	
Sharing of infrastructure, procedures and costs.	Availability of poles, conduits, towers, right of way, etc. Procedures, if any, for determining available capacity; procedures for allocating capacity among requesting operators (e.g. first come/ first served). Prices and/or costing method. Provision and pricing of supplementary services (electrical power, security systems, maintenance and repairs, etc.). Sub-licences on property of third parties (e.g. right of way owners, municipal and other public and private property owners, where infrastructure is located), insurance and indemnification for damages.
Collocation	Availability of poles, actual or virtual collocation (e.g. for transmission facilities on exchange premises); list of addresses where collocation is available; procedures for determining available space; reservation of expansion space. Prices and/or costing method for collocated space. Provision and pricing of supplementary services (e.g. electrical power and emergency backup power, lighting, heating and air conditioning, security and alarm systems, maintenance and janitorial services, etc.). Procedures for ensuring access to and security of collocated facilities (notification; supervised repair and provisioning work and/or separated premises, etc.).

	Negotiation of other lease and/or licence arrangements, including issues of sub-licences on property of third parties (e.g. building owners, right of way owners, municipal and other public property owners), insurance and indemnification for damages.
Billing	
Scope of billing arrangements and responsibilities	May include different arrangements, for example: Operators billing each other for Interconnection services (e.g. termination) and facilities (e.g. unbundled loops and other Network elements). Performance of billing functions by some operators for others (e.g. local operators billing end-users for long distance or international operators., ISPs, etc.).
Billing procedures	Interconnection billing media – discs, tapes, paper and/or electronic (EDI) transfers; format and software specifications. Guidelines for production of Interconnection billing outputs, including: Applicable industry standards or systems for metering and billing. Billing data format and data elements. Standardized codes and phrases. Billing schedules. Customer Service Record (CSR) provision, including: Details to be supplied by provisioning local operator (e.g. record of Interconnection elements used, including circuit and other (e.g. DSLAM) equipment identification numbers). Media (e.g. tape, paper, etc.) and schedule for delivery. Other requirements to facilitate efficient verification and billing of end-user by non-provisioning operator. Retention periods for billing data.
Payment terms and conditions	Billing fees and related charges. Payment terms and conditions (including late payment penalties, service disruption credits, etc.).
Billing disputes and reconciliation procedures	Contact details for reconciliation and billing queries. Responsibilities to provide any back-up records. Notification of billing disputes. Initial resolution procedures (e.g. escalation to more senior management). Final resolution (referral to arbitration, regulator or courts).
Quality of Service/Performance and Trouble Reports	
Quality of Service	Service performance standards may be specified in appendix, for example: Average time for provisioning Interconnection circuits. Percentage of Interconnection cut-overs made on scheduled dates. Switching and transmission quality measures on Interconnected circuits (e.g. probability of blockage at peak hours, transmission delay and loss).
Testing and Maintenance	Right to make reasonable tests, and to schedule service interruptions; procedures to minimize disruption.
Trouble Reports	Procedure for trouble reports; notice periods; response time standards. Duty to investigate own Network before reporting faults to Interconnecting operator. Responsibility for costs incurred to second operator in investigating faults subsequently found to exist in first operator's Network. Calculation of charges (labour, etc.) for

	investigating trouble reports.
System protection and safety measures.	Responsibilities of parties to take necessary precautions to prevent interference with or interruptions of other party's Networks or customers.
Interchange and Treatment of Information	
Data Interchange Format	Method and format of data interchange between carriers, including data interfaces, software, forms, etc.
Data to be exchanged	Specify all data types and systems for which data is to be interchanged, for example: New facilities and service orders, Network changes and forecasts, billing, etc. Number allocations and other data required for call routing and local number portability (where applicable, e.g. where LNP system is operated by incumbent operator rather than an independent party). Customer listings in directories and databases. Access to other Network databases, for provision of advanced services.
Access to and use of customer information	Confidentiality procedures for customer information, including: Establishment of separate Interconnection services group with secure data (password protection for electronic files; locks for data rooms and filing cabinets, etc.). Confidentiality forms to be completed by all relevant employees (penalties and bonding optional). Procedures to ensure protection of customer privacy.
Access to and use of operator information	Confidentiality procedures (see customer information procedures, above). Intellectual property rights.
Equal Access and Customer Transfer	
Equal access procedures	Procedures depend on equal access approach, e.g. carrier pre-selection, casual selection. Detailed procedures normally incumbent for carrier pre-selection, including: Customer authorization requirements (signature on prescribed form, clear choice requirements). Authentication and measures to prevent unauthorized customer transfers (slamming). Penalties for unauthorized customer transfers. Methods of reporting customer transfers (contact points and data to be provided). Order confirmation procedure (format, medium, etc.). Schedule to implement transfers. Procedures to implement transfers. Dispute resolution process (e.g. escalation through senior management, arbitrator and regulator); information to be provided in dispute resolution process. Procedures for dealing with disputed customers (which operator may contact customer, information to be provided to and/or obtained from disputed customers.
Ancillary Services	
Operator-assistance	Types of operator assistance services to be provided, including directory assistance, translation services, fault report routing, etc. Call handling and operations procedures. Fees and billing procedures.
Other Ancillary Services	Subscriber listings in telephone directories. Information and billing inserts. Repair and maintenance services.

	Other services provided by one or other operator to increase mutual operating efficiencies.
Termination	
Grounds for termination and restrictions	Termination may only be permitted subject to certain restrictions (e.g. regulatory approval for termination of Interconnection by incumbent operator). Grounds for termination by incumbent operator may include: regulatory or court orders; bankruptcy, insolvency, receivership, etc.; cessation of business; fewer, if any, termination restrictions in competitive markets, and by non-dominant operators.
Termination procedures	Advance notice requirements. Payment of non-recoverable Interconnection costs incurred by disconnected operator. Computation and payment schedule for disconnection costs. Dealings with end-users, communication restrictions, etc. Disconnection cutover procedures.
Other Provisions	
Force majeure	List of conditions for which non-performance of Interconnection agreement obligations will be excused.
Assignment	Rights of assignment and restrictions on same (e.g. consent or regulatory approval requirements).
Applicable laws	Identifying jurisdiction whose laws will govern the agreement.
Regulatory Approvals	Specify regulatory approvals required for effectiveness and/or renewal, amendment, termination, etc. of agreement.
Breach of Agreement	Remedies and penalties. Liabilities, indemnification and limitation of liabilities.
Legal interpretation	Standard provisions for legal interpretation and enforcement of agreement (e.g. entire agreement clause, effect of unenforceable terms, cumulative rights and remedies, etc.).
Dispute resolution	Procedures for resolution of disputes under agreement that are not specifically dealt with elsewhere; for example: good faith negotiations, time schedule for same, escalation through management levels; referral to regulator, arbitrator or court (e.g. of different types of issues). Selection of and procedures for arbitration
Term	Duration of term. Renewal rights and procedures.
Amendment	Review and re-negotiation procedures. Impact of regulatory changes.

ANNNEXURE 'B'
Interconnection time frames, delays, and penalties in the American region, selected countries.

Country	Period to reach agreement	Entity in charge of dispute resolution	Penalty for not Interconnecting
Bolivia	3 months from the request for Interconnection	Superintendencia de Telecommunicaciones	Fines from 2.45 million BS (Bolvianos) to 36.75 million Bs, (roughly between 400,000 USD and 6 million USD), the confiscation of equipment and materials, or one year prohibition from providing services.
Dominican Republic	3 months from the request for Interconnection	Instituto Dominicano de Telecommunicaciones	n.a.
El Salvador	n.a.	Superintendencia General de Electricidad y Telecom	Fines from 5,000 to 5000,000 colones (570 USD to 57,000 UKSD), and 500 to 5,000 colones per day if the infraction continues.
Guatemala	40 working days from the request for Interconnection	Superintendencia de Telecommunicaciones	Fines up to 100,000 USD per day
Mexico	2 months from the request for Interconnection	Comision Federal de Telecommunicaciones	Fines and/or revocation of concession.
Peru	2 months from the request for Interconnection	Organismo Supervisor de Inversion Privada en Telecom	Fines established by OSIPTSEL; repeated infractions lead to revocation of licence
United States	135 days from the request for Interconnection	State Commission	Fines from 110,000 USD for a single violation, up to 1 million USD for a continuing violation
Venezuela	2 months from the request for Interconnection	Comision Nacional de Telecommunicaciones	Monetary penalties of various types

Source: ITU- Trends in Telecommunication Reform Interconnection Regulation

ANNEXURE C

Extracts from THE TELECOMMUNICATION INTERCONNECTION (CHARGES AND REVENUE SHARING) REGULATION 1999 (1 of 1999)

Section III

3. Interconnection Charges

i. Interconnection charges shall be cost based, unless as may be specified otherwise.

ii. For determining cost based Interconnection charges, the main basis shall be "incremental or additional" costs directly attributable to the provision of Interconnection by the Interconnection provider.

iii. No service provider shall discriminate between service providers in the matter of levying of charges for Interconnection.

Provided that a different charge may be levied if justified on the basis of a substantial difference in costs incurred for providing that particular Interconnection.

iv. No service provider shall be charged for any Interconnection facility it does not seek or require.

Provided that if Interconnection facility cannot be provided in the form that is sought or required by the Interconnection seeker, the issue may be decided mutually between the seeker and provider of Interconnection. In case such mutual agreement is not possible, the matter may be reported to the Authority for a decision. The Interconnection provider shall inform the Interconnection seeker within 45 days of the request for Interconnection facilities whether the facilities can be provided in the form sought or required by the Interconnection seeker.

v. Charges for certain elements of the Network used to provide Interconnection are specified in the Schedules to this Regulation. Interconnection charges in respect of leased circuits and internet port charges shall be the same as the tariffs for these services specified, respectively, in Schedules IV and VI of the Telecommunication Tariff Order 1999.

vi. Unless specifically so provided, the Authority has forborne with respect to Interconnection charges.

vii. Where the Authority has, for the time being, forborne from specifying Interconnection charges, Interconnection seekers and providers shall mutually decide on such charges.

viii. Interconnection charges mutually agreed among Interconnection seeker and provider shall be based on the principles enunciated in this Section.

ix. Where mutual agreement for Interconnection charge cannot be reached within three months of initiating such a process for charges with respect to which the Authority has forborne, the Authority may intervene to settle the matter *suo moto* or on the application of either party.

Section IV

4. Revenue Sharing Arrangements

i. Any revenue sharing among Interconnection seeker and Interconnection provider shall take place out of the proceeds of the amount payable by the subscriber for obtaining the service which involves the usage of the Network of the Interconnection provider.

ii. Unless specifically provided in the Schedules to this Regulation, the Authority forebears with respect to revenue sharing arrangements.

iii. Where the Authority has, for the time being, forborne from specifying revenue sharing arrangements for any telecommunication service or part thereof, service providers shall mutually decide on such arrangements.

Where mutual agreement for revenue sharing cannot be reached within three months of initiating such a process for revenue sharing with respect to which the Authority has forborne, the Authority may intervene to settle the matter *suo moto* or on the application of either party.

For Basic Services:

(3) Local calls	Bill and keep for each service provider.
(4) Domestic long distance calls (STD calls)	The originating/transit service provider to pay Rs. 0.48 per unit of measured call for traffic delivered from its Network to the Network of the transit/terminating service provider for the call units measured at the point of Interconnection for its further carriage from the point of Interconnection to destination, based on the STD pulse rate. Provided no such charge shall be payable if the point of Interconnection is at the destination Short Distance Charging Area (SDCA) and also provided that no such charge will be payable if the terminating service provider requests that the call be handed over by the originating/transit service provider at an SDCA other than the destination SDCA.
(5) International calls	The originating service provider to pay Rs. 0.66 per unit measured call to the transit service provider (at present the Department of Telecommunications), for the call units to be measured at the point of Interconnection.

For Cellular Mobile:

(3) Local calls from cellular mobile to basic service subscriber	Payment to basic service provider at the rate of Rs. 1.20 per metered call, with number of metered calls measured at the pulse rate applicable to a basic service local call.
(4) Domestic Long distance calls from cellular mobile to basic service subscriber	Payment to basic service provider at a rate applicable to domestic long distance calls. The charge shall be Rs. 1.20 per metered call, with the number of metered calls measured at the pulse rate applicable to basic service long distance calls, with the chargeable distance equal to the distance of the call carried by the basic service provider for an equivalent STD from point of Interconnection to destination.
(5) International calls from cellular mobile	Payment to basic service provider at a rate applicable to international calls. The charge shall be Rs. 1.20 per metered call, with the number of metered calls measured at the point of Interconnection at a pulse rate applicable to an equivalent international call made by a basic service subscriber.

Explanatory Memorandum:

6. The Authority is preparing a consultation paper on access/carriage charge regime. Access/carriage charges will provide for an efficient Interconnection regime in a situation with multiple service providers Interconnecting with each other, i.e. the telecom environment envisaged in the National Telecom Policy 1999.

7. Work is also underway in the Authority for preparing a consultation paper on accounting separation for telecommunication service providers. Implementation of accounting separation is very important for determining cost based Interconnection charges and revenue sharing arrangements, but this is a time consuming process. The Authority's consultation paper on access/carriage charges will take into account certain aspects of accounting separation in order to determine an access/carriage charge regime in the near future. Any further refinements will be made, if required, when the accounting separation exercise provides more detailed information.

8. The payment by any service provider for connection and use of the Network of another service provider is conceptually divided as under:

- **set-up costs**, i.e. all costs required for initially linking up two Networks and making that link operational (including inputs such as fibre links, ports, building space and any up-gradation of equipment, as well as software required to make the Interconnection operational).

- **Interconnection charges** are the (recurring) amounts payable for the set-up costs;

- **usage charges** are payments for use of the Network for transmission of telecommunications messages by the subscriber of the Interconnection seeker. The mode of payment of such charges includes, *inter alia*, revenue sharing arrangements

In the second consultation paper, the nature of the change in the prevailing system of revenue sharing for basic telecom was summarized as follows:

> "*In view of the fact that proposed prices for various services are in the form of price caps, revenue shares are suggested, inter alia, for basic telecom operators. This alters the present system of revenue sharing. For example, in the basic services sector where the current condition requires a payment of specific amounts per pulse (Rs. 0.50 for long distance, and Rs. 0.70 for international), revenue shares of 60:40 and 45:55, respectively, for long distance and international call revenue are proposed for new entrant and DOT [for a call originating from the Network of the new entrant and carried by DOT]*." (Chapter I, page xiii)

The second consultation paper had proposed no revenue sharing for the terminating service provider because of the technical difficulty in implementing the proposed arrangement, and the premise that there would likely be similar number of calls originating and terminating for each new service provider.

To begin with, it must be re-iterated that the revenue sharing arrangements specified in this Regulation are interim, and are not based on detailed cost analysis. Application of an access/carriage charge regime will provide more logically tenable usage charges. That requires a detailed assessment of the underlying costs. It would, moreover, imply major changes to the existing revenue sharing arrangements, and hence an analysis is required also of the revenue implications for service providers. This is so also for suggestions made by ABTO regarding revenue sharing principles. Till any access/carriage charge regime is implemented, a system of revenue sharing must be in place to give effect to the commercial relationships arising through Interconnection.

E. **CERTAIN OTHER FEATURES**

1. The Regulation includes, similar to the Telecommunication Tariff Order 1999, a reporting requirement and the possibility for the Authority to review and alter any Interconnection charge or revenue sharing arrangement, whether specified by the Authority or those agreed mutually among Interconnection seeker and provider.

2. Similarly, as with the Telecommunication Tariff Order 1999, the Regulation states that in matters addressed by it, the Regulation's provisions over-ride those of the license or Interconnection charges and revenue sharing arrangements specified by originating, transit or terminating service providers.

3. As mentioned above, the Regulation addresses on Interconnection charges and revenue sharing arrangements with regard to Interconnection. Other rules and regulations pertaining to Interconnection have either been specified elsewhere by the Authority, or will be addressed by other Regulations/Orders of the Authority. These include aspects such as agreement on points of Interconnection, technical feasibility of providing Interconnection, and the quality of Interconnection services.

Annexure D

PROVISIONS RELATING TO INTERCONNECTION IN

(i) LICENSE AGREEMENTS OF BASIC SERVICE, CMTS & NATIONAL LONG DISTANCE SERVICE;
(ii) INTERCONNECTION AGREEMENTS BETWEEN BSNL & BSOs;
(iii) TRAI DETERMINATION ON POINTS OF INTERCONNECTION BETWEEN CMTS OPERATORS AND BSOs

i a) Old Basic Service License Agreement:

4: Unless otherwise mentioned or appearing from context, all the schedules annexed hereto including the tender document with clarifications thereto and the *Interconnect Agreement (omitted in the License Agreement for new licenses)*, entered into between the two operators i.e. Government of India and the Licensee, with subsequent amendments made thereto will form part and parcel of this agreement. Provided, however, in case of conflict or variance on an issue relating to this agreement, the terms set out in the main body of this agreement read with all the Schedules annexed hereto shall prevail.

12: The Licensor reserves the right to, in case of a default of any of the terms and conditions stipulated in the License Agreement or the Interconnect Agreement, impose any penalty as it may deem fit under the provisions of these agreements.

Part-B

1.7.3.1: The Licensee may develop its own independent Network, with its own transmission links within each Circle in its service area. However, National/Inter-Circle links would be provided exclusively by DOT, through its long distance Network.

1.7.3.2: The Licensee's Network can have Interconnectivity with DOT's Network at the equivalent level at a local/ tandem exchange and at the LDCC TAX.

1.7.3.3: The Licensee shall be responsible for providing the required transmission links from/to his Network to/from DOT's Network interface points at local/tandem and TAX levels, during the currency of Licence.

1.7.3.4: Interconnectivity between Licensee's Network as specified in the licence and the Network of any other Licensee of Service shall be only through DOT's Network. The Licensee shall not, directly or otherwise, extend any type of service to DOT subscribers through the DELs provided by DOT.

1.7.3.5: Interconnectivity between Licensee's Network as specified in the licence and the overseas communication Network operated by VSNL shall only be through the TAXs of DOT.

1.7.3.6: All planning activities of the Licensee for providing Intra Circle connectivity will be coordinated with the planning activities of DOT. Any circuits leased by the Licensee from DOT shall not be resold as leased circuits to a third party.

1.7.3.7: Demands of either party, i.e., DOT and the Licensee, on the other for the following shall be firmed up at least 12 months (provided that this time frame shall be six months for demand

made for the first occasion in the first year of Licence Period) before the date on which the required connectivity or circuits is/are required:

- number of ports (2048 kbps digital trunks) and type of signaling in the telephone exchanges, location-wise.
- Addition to traffic capacity of exchanges in Erlangs and call handling capacity in BHCA.
- Number of exchanges and signaling capacity to be connected over CCS 7 signalling.
- Number of 2048 kbps circuits or higher order circuits over transmission facilities.
- Analogue connectivity and ports required in exceptional cases.

1.7.3.9: If any change in DOT's/Licensee's Network/ system is introduced to comply with international and national standards or for any other reason mutually agreed to, costs associated with such changes that either party has to make in its Network/ system to maintain the SERVICE and to maintain inter-connectivity with other's Network, shall be borne by the respective parties.

1.7.3.10: Normally, the altering party shall notify in writing atleast 12 months in advance setting out details of the nature, effect, technical details and potential impact on the other party's system of such alteration. A notice period shorter than 12 months can be considered in exceptional circumstances by mutual agreement.

Either party requiring enhancement of features in switching and transmission systems to meet new or unforeseen situations and demands, shall notify the other party at least 12 months in advance.

1.7.3.11: Irrespective of who owns a transmission system of the link Interconnecting one party's exchange to the exchange of the other party, each party will provide accommodation for and operate the terminals of the other party located in its premises. Each party will permit mounting of antennae owned by the other party on its transmission towers subject to feasibility for this purpose. Rental for such lease of space and mounting shall be arrived at on a mutually agreed basis.

1.7.3.15: Licensee shall also comply with the terms and conditions of the Interconnect Agreement along with this licence Agreement.

1.7.6.3: The Licensee may install TAX in the LDCC in which it wants to operate. This could be an Integrated Local cum Tandem exchange. This will be known as Licensee's LD TAX.

1.7.6.4(i): If Licensee has only one exchange in an SDCA, connectivity from that exchange to DOT's Network in the SDCA shall be through a direct link between that exchange and the DOT's local exchange/ SDCC tandem. If Licensee has two or more terminal exchanges in an SDCA, connectivity between Licensee's exchanges in the SDCA and DOT's Network in the SDCA shall be through a link between Licensee's SDCC tandem and DOT's local exchange/ SDCC tandem.

1.7.6.4(ii): In a multi-exchange area such as Metro and Major telephone districts, wherever the originating and terminating traffic to and from an exchange of DOT justifies more than two PCMs, the Licensee shall provide direct junctions for the said exchange.

1.7.6.5: Interconnectivity for STD/ISD calls shall be ordinarily only between DOT's LDCC TAX and Licensee's LDCC TAX. In case Licensee does not have his own TAX in the LDCC, STD/ISD calls from Licensee's SDCC Tandem/ local exchange in an SDCA in the LDCA shall be routed to DOT's LDCC TAX. This requires the Licensee to connect to the nearest DOT TAX even for Intra Circle calls that may be between two LDCCs. However, the Licensee is free to have his Network for carrying the traffic entirely over his own Network within the Circle/ Service Area.

1.7.6.6: Calls from DOT subscriber or DOT Network to Licensee's Network will be routed in the DOT Network upto the farthest point i.e. upto DOT's SDCC Tandem/local exchange in the terminating SDCA and then will be delivered to the Licensee's SDCC Tandem/Terminal exchange. National numbering plan, which is revised periodically from time to time, shall have to be adhered to/complied with.

1.7.6.7: If the Licensee serves multiple SDCs through one large exchange, DOT shall deliver the traffic directly into Licensee's large exchange from its TAX except for local and intra SDCA calls. For calls delivered from DOT's TAX to Licensee's Main exchange, the latter shall be treated as terminal exchange and no access charges shall be payable by the DOT to the Licensee.

The above situation of one main exchange serving multiple SDCs does not exist in DOT at present. However, if a similar situation arises at a later date, the same facility shall be extended to the Licensee as well, provided it is not technically feasible to accept the calls directly by the remote DOT exchange in the SDC.

i b) New Basic Service License Agreement:

2.3 Licensee shall be free to carry Intra-Circle long distance traffic. However subject to technical feasibility, the subscriber of the Intra-Circle long distance calls, shall be given the choice to use the Network of another Basic Service Provider in the same service area. The Licensee can also make mutual agreements with National Long Distance Operators for carrying intra-Circle Long Distance traffic.

2.4: It shall be mandatory for the LICENSEE to provide Interconnection with National Long Distance (NLD) Service Providers, through suitable mutual arrangements / agreements, whereby the subscribers could have a free choice to make Inter-Circle / International Long Distance Calls through any NLD Service Provider. For international Long Distance Calls, the LICENSEE shall access International Long Distance OPERATOR through National Long Distance Operator only. Similarly, inter-circle leased lines are to be provided by suitable mutual agreements / arrangements with NLD Service Providers.

2.5: Direct Interconnectivity among all Telecom Service Providers in the licensed SERVICE AREA is permitted. LICENSEE shall Interconnect with Cellular Mobile Telephone SERVICE PROVIDER at the station of Gateway Mobile Switching Centre (GMSC) or Mobile Switching Centre (MSC), unless mutually agreed otherwise, subject to compliance of prevailing regulations, directions or determinations issued by TRAI under TRAI Act, 1997.

9.2: The LICENSEE shall intimate the LICENSOR one month prior to his intention of commencement of service by establishing a POINT OF PRESENCE (POP). However, the exact date of commencement of the service shall be required to be intimated to the LICENSOR within one week from the date of such commencement along with the proof of completion of INTERCONNECTION tests as stipulated in Clause 25 of this AGREEMENT.

16.1: The Licensee shall ensure adherence to the National Fundamental Plan (describing Numbering and Routing Plan as well as Transmission Plan) issued by Department of Telecom and technical standards as prescribed by the Licensor or TRAI from time to time. In the case of providing choice of Long Distance Operator, the equipment shall support the sselection facilities such as dynamic selection or pre-selection as per prevailing regulation, direction, order or determination issued by LICENSOR or TRAI on the subject.

17.1: Direct Interconnectivity among all Telecom SERVICE PROVIDERs in a SERVICE AREA is permitted. Interconnect between the Networks of different SERVICE PROVIDERs shall be

as per national standards of CCS No.7 issued from time to time by Telecom Engineering Centre (TEC). However, if situation so arises, INTERCONNECTION with R2MF signaling may be permitted by LICENSOR upon mutual agreement of LICENSEES.

17.2: The number of points of INTERCONNECTION (POIs) of Cellular Mobile Service Providers with Basic Service Providers shall be as per mutual agreement subject to compliance of prevailing determination, regulation or direction issued by TRAI under the TRAI Act 1997.

17.3: LICENSEE shall Interconnect with National Long Distance (NLD) SERVICE PROVIDERs through suitable arrangements/ Agreements whereby the subscribers could have a free choice to make inter-circle/international long distance calls through any NLD SERVICE PROVIDER. For international long distance call, the LICENSEE shall access International Long Distance Operator through National Long Distance Operator only. Similarly, inter circle leased lines are to be provided by suitable mutual agreements / arrangements with NLD SERVICE PROVIDERs. LICENSEE can enter into mutual agreement/ arrangement with NLD SERVICE PROVIDERs for carriage and delivery of inter-circle traffic for the leg between LDCC and SDCC.

17.4 LICENSEE shall be free to carry intra circle Long Distance traffic. However, subject to technical feasibility, for these intra circle long distance calls, subscriber shall also have the choice to use the Network of the Basic Service Providers in the same service area. The LICENSEE can enter into mutual agreement with NLDO for carriage of intra-circle long distance calls.

17.5: The LICENSEE may enter into suitable arrangements with other service providers to negotiate Interconnection Agreements whereby the Interconnected Networks will provide the following :

a) To connect, and keep connected, to their applicable systems,
To establish and maintain such one or more Points of Interconnect as are reasonably required and are of sufficient capacity and in sufficient numbers to enable transmission and reception of the messages by means of the applicable systems,
c) To meet all reasonable demand for the transmission and reception of messages between the Interconnected systems.

17.6: The terms and conditions of Interconnection including standard interfaces, points of Interconnection and technical aspects will be as mutually agreed between the service providers subject to compliance of prevailing regulations, directions and determinations issued by TRAI under TRAI Act 1997.

17.7: The LICENSEE shall, for the purpose of providing the SERVICE, install own equipment so as to be compatible with other service/ access providers' equipment to which the LICENSEE 's applicable systems are intended for Interconnection.

17.8: The LICENSEE shall comply with any order, direction, determination or regulation issued by TRAI under TRAI Act, 1997 as amended from time to time.

17.9: The LICENSEE shall operate and maintain the licensed Network conforming to QUALITY OF SERVICE standards to be mutually agreed between the service providers in respect of Network-Network Interface subject to such other directions as LICENSOR or TRAI may give from time to time. Failure on part of LICENSEE or his franchisee to adhere to the QUALITY OF SERVICE stipulations by TRAI and Network to Network interface standards of TEC, shall adversely affect the LICENCE of the LICENSEE.

17.10: The charges for access or Interconnection with other Networks shall be based on mutual Agreements between the service providers subject to compliance of any determination,

orders, directions, restrictions and regulations issued from time to time by TRAI under TRAI Act, 1997.

17.11: The Network resources including the cost of upgrading / modifying Interconnecting Networks to meet the service requirements of service will be provided by service provider seeking Interconnection. However mutually negotiated sharing arrangements for cost of upgrading/ modifying Interconnecting Networks between the service providers shall be permitted.

25: The Interconnection Tests for each and every interface with any service provider may be carried out by mutual arrangement between the LICENSEE and the other party involved. The Interconnection Tests schedule shall be mutually agreed. Adequate time, not less than 30 days, will be given by the LICENSEE for these tests. On successful completion of Interconnection tests or on mutual agreement between service providers for rectification of deficiencies / deviations, if any, the LICENSEE can commence the SERVICE. In case of disagreement for rectification of deficiencies / deviations in conducted Interconnection tests, prior approval of LICENSOR shall be required.

i c) CMTS License Agreement:

4: The resources required for operation of the services, for extending them over the Network of the DOT and MTNL and any other service provider licensed by the Authority will be mutually agreed between the parties and shall be listed. The resources may refer to include but not limited to – physical junctions, PCM derived channels, private wires, leased lines, data circuits, other communication elements. The Licensee shall apply for and obtain from the DOT the determined resources. The operation and charge of the traffic passed through these resources shall be treated on the basis of the prevailing rules and guidelines of the DOT on the subject.

Necessary interface specification and requirements with full details with DOT/MTNL equipment for Interconnecting the Cellular Mobile Telephone Equipment should be furnished within one month from the effective date by the Licensee to the Authority. The Authority will have the right to decide the extent of the equipment required based on genuine needs of the Licensee.

The acceptance testing for every interface with the DOT and MTNL Network shall be carried out by the Acceptance Testing party of the DOT/MTNL. The Acceptance Testing schedule shall be mutually agreed to.

All long distance connectivity outside the service area will be through PSTN Network of DOT.

i d) National Long Distance Service License Agreement:

Schedule-I

Definition of Point of Presence (POP): Setting up of switching center and transmission center of appropriate capacity by NLDO at the LDCC level to provide on demand inter-circle long distance services of prescribed quality and grade of service in a non-discriminatory manner.

16.3 Interconnection between the Networks of different service providers shall be as per national standards of CCS No.7 issued from time to time by Telecom Engineering Center (TEC).

17.1 It shall be mandatory for fixed service providers, cellular mobile service providers, cable service providers, to provide Interconnection to NLD service providers whereby the subscribers

could have a free choice to make inter-circle/international long distance calls through NLD service provider.

17.2 NLDO shall be required to make own suitable arrangements / agreements for leased lines with the Access Providers for last mile

17.3 The NLDO Licensee may enter into suitable arrangements with other service providers to negotiate Interconnection Agreements whereby the Interconnected Networks will provide the following :

a) To connect, and keep connected, to their Applicable Systems,

b) To establish and maintain such one or more Points of Interconnect as are reasonably required and are of sufficient capacity and of sufficient numbers to enable transmission and reception of the messages by means of the Applicable Systems,

c) To meet all reasonable demand for the transmission and reception of messages between the Interconnected systems.

17.4 The terms and conditions of Interconnection including standard interfaces, points of Interconnection and technical aspects will be such as mutually agreed between the service providers.

17.5 The LICENSEE shall for the purpose of providing the SERVICE install own equipment so as to be compatible with other service/ Access providers' equipment to which the LICENSEE's Applicable Systems are intended for Interconnection.

17.6 The LICENSEE shall promptly comply with any order or direction or regulation on Interconnection issued by the TRAI under TRAI Act, 1997.

17.7 The LICENSEE shall operate and maintain the licensed Network conforming to Quality of Service standards to be mutually agreed between the service providers in respect of Network-Network Interface.

17.8 The charges for access or Interconnection with other Networks for origination, termination and carriage of calls shall be based on mutual agreements between the service providers subject to the restrictions issued from time to time by TRAI under TRAI Act, 1997.

17.9 The Network resources including the cost of upgrading / modifying Interconnecting Networks to meet the service requirements of National Long Distance service will be as per mutually negotiated sharing arrangements between the service providers.

25.1 The Interconnection Tests for each and every interface with the DTO / MTNL / VSNL / or any other Service Provider may be carried out by mutual arrangement between the Licensee and the other party involved. The Interconnection Tests schedule shall be mutually agreed. Adequate time, not less than 30 days, will be given by the Licensee for these tests.

25.2 Service will be commissioned after obtaining clearance from licensor after successful completion of Interconnection tests as mentioned in para 25.1 above.

ii) Interconnect Agreement between BSNL & BSOs

(Main Provisions)

2.1: Interconnectivity to DOT Network:

2.1.1: The Licensee may develop its own independent Network, with its own transmission links within each Circle in its service area. However, National/Inter-Circle links shall be provided exclusively by DOT, through its long distance Network.

2.1.2: The Licensee's Network shall have Interconnectivity with DOT's Network at the equivalent level at a local/ tandem exchange and at the LDCC TAX.

2.1.3: The Licensee shall be responsible for providing the required transmission links from/to his Network to/from DOT's Network at interface points under Clause 2.1.2, at local/ tandem and TAX levels, initially as well as for augmentation from time to time.

2.1.4: Interconnectivity between Licensee's Network as specified in the licence and the Network of any other Licensee of Service shall be only through DOT's Network. The Licensee shall not, directly or otherwise, extend any type of service to DOT subscribers through the DELs provided by DOT.

2.1.5: Interconnectivity between Licensee's Network as specified in the licence and the overseas communication Network operated by VSNL, shall only be through the TAXs of DOT.

2.1.6: The Basic Service Operator will not be permitted to route the traffic originated from GSM Network for inter-circle and international calls, which shall be routed through DOT Network. As regards GSM Network originated calls, which are intra-circle in nature, these may be routed by the Basic Service operator through his own Network but for delivery of such GSM originated calls into DOT Network, the Basic Service Operator will provide a separate group of junctions purely for this purpose which would be distinct from the normal junctions on which Basic Service Licensee's Network originated calls are carried. Provided, this facility will not be available in respect of GSM originated calls within the Metro cities as the licence conditions stipulate that calls going out of Metro Cellular Network will necessarily be routed only through DOT Network.

2.1.7: Notwithstanding anything contained in the above stated clause, the terms and conditions provided in the Licence Agreements including any modifications made thereto, for provision of Cellular Mobile Telephone Service as well as for the provision of Basic Telephone Service, shall have overriding effect.

2.1.9: Licensee is not authorized to provide 'Call Back Services' to its subscribers. Any unauthorized provision and use of such services by any person or firm shall be liable to attract penal provisions of Indian Telegraph Act 1885 and the Indian Telegraph Rules made there under.

2.1.10: Any circuit leased by the Licensee from DOT shall not be resold as leased circuit to a third party.

2.1.11: Irrespective of who owns a transmission system of the link Interconnecting one party's exchange to the exchange of the other party, each party subject to availability and feasibility may provide accommodation for the terminals of such equipment of the other party located in its premises. Each party may permit mounting of antennae for Interconnect link owned by the party on its transmission towers subject to feasibility. Rental for use of such space and mounting shall be arrived at on a mutually agreed basis. Arrangements for installation, operation and maintenance of such equipment will be arrived at by mutual agreement at respective locations.

2.3.0: Network Interconnectivity:

2.3.1: Interconnectivity between the Licensee's Network and the DOT's Network shall be as in Clause 2.1.2 of this agreement. Interface points referred to in clause 2.1.2 are described below:

-A tandem switch/ group dialing center of DOT at SDCC will be known as DOT SDCC tandem. Corresponding switch of the Licensee will be called Licensee's SDCC tandem, which can be local cum tandem.

-Tax at the LDCC will be known as DOT's LDCC TAX.

-The Licensee may install TAX in the LDCC in which it wants to operate. This may be an Integrated Local cum TAX and will be known as Licensee's LDCC TAX.

2.3.2.1: If Licensee has only one exchange in an SDCA, connectivity from that exchange to DOT's Network in the SDCA shall be through a direct link between that exchange and the DOT's local exchange/ SDCC tandem. If Licensee has two or more terminal exchanges in an SDCA, connectivity between Licensee's exchanges in the SDCA and DOT's Network in the SDCA shall be through a link between Licensee's SDCC tandem and DOT's local exchange/SDCC tandem.

2.3.2.2: In a multi-exchange area such as Metro and Major Telephone Districts, wherever the originating and terminating traffic to and from an exchange of DOT justifies more than 2 PCMs, the Licensee shall provide junctions for the said exchange.

2.3.3: Interconnectivity for STD/ ISD Calls:

2.3.3.1: Interconnectivity for STD/ISD calls shall be between DOT's LDCC TAAX and the Licensee's LDCC TAX. In case Licensee does not have his own TAX in the LDCC, STD/ISD calls from Licensee's SDCC Tandem/ local exchange in an SDCA in the LDCA shall be routed to DOT's LDCC TAX.

2.3.4: Calls from DOT Network/Subscriber to Licensee's Network:

2.3.4.1: Calls from DOT subscriber or DOT Network to Licensee's Network will be routed in the DOT Network upto the farthest point i.e. upto DOT's SDCC Tandem/ local exchange in the terminating SDCA and then will be delivered to the Licensee's SDCC Tandem/ Terminal exchange.

If the Licensee serves multiple SDCs through one large exchange, DOT shall deliver the traffic directly into Licensee's large exchange from its TAX except for local and intra SDCA calls. For calls delivered from DOT's TAX to Licensee's main exchange, the latter shall be treated as terminal exchange and no access charges shall be payable by DOT to the Licensee.

The above situation of one main exchange serving multiple SDCs does not exist in DOT at present. However, if a similar situation arises at a later date, the same facility shall be extended to the Licensee as well, provided it is not technically feasible to accept the calls directly by the remote DOT exchange in the SDC. The numbering and charging plans shall always be adhered to by both DOT as well as Licensee.

3.1: Capacity Ordering:

3.1.1: Demand/Forecasts of either party i.e. DOT and the Licensee, on the other for the following shall be firmed up at least 12 months (provided that this time-frame shall be six

months for demand made for the first occasion in the first year of Licence period) before the date on which the required connectivity or circuits is/are required:

- number of ports (2048 kb/sec digital trunks) and type of signaling in the telephone exchanges, location-wise.
- Addition to the traffic capacity of the exchanges in Erlangs and call handling capacity in BHCA.
- Number of exchanges and signaling capacity to be connected over CCS7 signalling .
- Number of 2048 kb/sec circuits or higher order circuits over transmission facilities.
- Analogue connectivity and ports required in exceptional cases.

The requirements mentioned above shall be furnished in the prescribed proforma.

3.1.3: Licensee is responsible for providing the required transmission links to and from DOT's Network at permitted interface points at local/ tandem and TAX levels initially as well as for augmentation from time to time. However, in case Licensee requests DOT in writing to provide for such links against payment of prescribed charges, to Interconnect Licensee's Network to DOT's Network, then DOT, subject to technical feasibility, may accept such request in normal circumstances.

3.1.4: The party receiving the Interconnect capacity demand shall intimate, within a period of 15 days from the date of receipt of appropriate demand, either the acceptance or otherwise an alternative proposal for meeting this demand. In case an alternative proposal is not made within such 15 days, the Interconnect capacity demand shall be deemed to have been accepted.

3.1.5: In case an alternative proposal as referred to in para 3.1.4 is made, both parties will meet to firm up the mutually agreed proposal within next 15 days.

3.1.6: After the acceptance of Interconnect capacity demand, DOT will issue a bill based on the Interconnect capacity demand, calculated as per clause 6.3.1, within 15 days to the Licensee for the advance charges for the first year's use of connection. The Licensee shall pay such bill within 15 days of its issue date.

3.1.7: The above stated Interconnect capacity demand will be treated as firm demand from the date of receipt of the first year's advance payment of connection charges. The advance payment thus received by the DOT from the Licensee will be adjusted against the first year's (reckoned from date of actual provision of connection to the Licensee) connection charges for the connections, calculated as per para 6.3.1. In subsequent years, the annual connection charges for the link connections will be paid each year in advance by the Licensee.

3.2.1: The time scale for the provision of capacity ready for testing shall be 12 months following the date of receipt of the firm demand. However, in exceptional cases, a longer or a shorter time frame can be mutually agreed.

3.3: Liquidated Damages:

3.3.1: After placement of the firm demand to provide the Interconnect capacity, if the DOT fails (otherwise than through an act of omission of the Licensee) to make available connection on the ready for test date i.e. 12 months (or mutually agreed time frame) from the date of receipt of advance payment as in para 3.1.6 and 3.1.7 above, then the DOT shall pay, on demand, to the Licensee, liquidated damages for such delays calculated as follows:

(i) 0.5% of annual connection charge calculated for each PCM link/port as per clause 6.3.1. (a) & (b)/(c) of chapter 6 for the number of connections not made available on the ready for test date as per the relevant firm demand multiplied by number of days following the ready for test date till the required connections are made available for ready for test.

(ii) For the purpose of calculation of liquidated damages, the said quantum of delay in provision of connections, shall be reckoned from the date of expiry of 12 months period from the date of receipt of advance/firm demand upto the actual date of issue of notification certifying that such capacity is ready for testing.

The maximum number of days for which the liquidated damages are payable is limited to 30 days.

The payment of liquidated damages shall not release the DOT from the obligation to deliver the ordered connections to the Licensee. In exceptional cases where the delay is beyond 30 days, DOT shall be liable to explain the reasons to Licensee and also to indicate the revised ready for test date.

3.3.2: In those cases where Interconnection links are being provided by Licensee and Licensee fails (otherwise than through an act of omission of the DOT) to make available connections on the ready for test date i.e 12 months (or mutually agreed time frame) from the date of advance payment of port charges to DOT, then the Licensee shall pay, on demand, to DOT the liquidated damages for such delays calculated as follows:

0.5% of annual port charges calculated for each port as per Clause 6.3.1. of Chapter 6 for the number of connections not made available on the ready for test date as per relevant firm demand multiplied by the number of days following the ready for test date till the required connections are made available for ready for test.

The maximum number of days for which the liquidated damages are payable is limited to 30 days.

The payment of liquidated damages shall not release the licensee from the obligation to deliver the requisite connections/links.

3.4: Cancellation of Firm Demand:

3.4.1: The Licensee may cancel a firm demand made for Interconnections required by him at any time prior to ready for test date, by written notice to DOT. In the event of cancellation of an order for Interconnection more than 30 days after its placement, the Licensee shall pay cancellation charges to the DOT.

The amount deposited by the Licensee in accordance with paragraph 3.1.6 above for provision of connections for the relevant capacity firm demand shall be refunded to the Licensee after deducting appropriate cancellation charges.

3.5: Removal and Cessation of Interconnect Capacity:

3.5.1: Subject to the provision of licensing conditions, either party may place a written order on the other for the removal and cessation of Interconnect capacity.

3.5.2: If Licensee requires the removal of, in part or in full, Interconnect capacity already provided under this agreement then an order (in short “removal order” shall be placed on the DOT to that effect. DOT will in turn verify the requirement and remove the capacity within 30 days (or mutually agreed time from) from the date of receipt of the removal order.

If DOT after receiving the request disagrees with the proposed removal, then the capacity will not be removed until joint agreement is reached in accordance with the dispute resolution procedure.

3.5.3: A removal certificate will be issued by DOT to the Licensee for the removed capacity within one month of the completion of the removal work.

3.5.4: The cost of removal of such capacity, thus agreed upon, as payable by the Licensee to DOT shall be the one year's connection charge as defined in Clause 6.3.1. (B) & (c) in respect of such capacity. In case of links provided on Rent & Guarantee basis, the prevalent terms and conditions of DOT for Rent & Guarantee cases, will apply.

3.5.5: Where DOT suggests removal of some Interconnect capacity e.g. due to underutilization of already provided Interconnect capacity etc., the similar procedure as laid down in clause 3.5.1 to 3.5.3 above shall be followed. No removal charge shall be payable by DOT in such cases. However, suitable adjustment for the connection charges already paid shall be made from the date of such removal.

3.6: Traffic Forecast:

3.6.1: The content of the traffic forecast shall be as follows:

traffic from licensee's Network to DOT (For each TAX/SDCC tandem/ local exchange of DOT)

traffic from DOT to Licensee's Network (From each TAX/SDCC tandem/ local exchange of DOT)

3.6.2: Each traffic forecast shall contain

- BHCA of each TAX/SDCC tandem/ local exchange.
- Busy hour Traffic in Erlangs.

3.6.3: Busy hour may vary for various exchanges and it shall be determined from actual traffic figures in the Network.

3.6.4: The traffic figures indicated in the forecast shall be reviewed after the implementation of the Licensee's Network on monthly basis. Both parties shall provide traffic report on all trunk groups used for Interconnection.

3.7: Enhancement of Standards and Features:

3.7.1: If any change in DOT's/Licensee's Network/system is introduced to comply with international standards and national standards or for any other reason mutually agreed to, costs associated with such changes that either party has to make in its Network/system to maintain Interconnectivity with other's Network shall be borne by the respective parties.

3.7.2: Normally the altering party shall notify in writing at least 12 months in advance setting out details of the nature, effect, technical details and potential impact on the other party's system of such alteration. A notice period shorter than 12 months can also be considered in exceptional circumstances by mutual agreement.

3.7.3: Either party requiring enhancement of features in switching and transmission systems to meet new or unforeseen situations and demands shall notify the other party at least 12 months in advance.

Fault Identification and Reporting:

5.1.(i) Each party shall be responsible for running its own system and ensuring the safety of such system.

5.1(ii): Fault reporting mechanism for Interconnect operational problems will be initially worked out jointly by both the parties and this mechanism shall be upgraded from time to time.

6.1 Interconnectivity to DOT Network:

6.1.1: Provision of links to Interconnect Licensee's Network with DOT's Network will be the responsibility of the Licensee as provided under Clause 2.1.2 and 2.1.3.

6.1.2: DOT may, subject to availability, lease lines to Interconnect Licensee's exchange to DOT's exchange in the SDCA/LDCA on payment of charges prescribed by DOT.

6.1.3: The cost of terminating equipment including measurement devices in the DOT LDCC TAX shall be payable by Licensee.

6.1.4: STD/ISD calls will be always delivered to DOT's LDCC TAX and not at the SDCC as provided under Clause 2.3.3. On answering by the called party, periodic pulses will be sent by the LDCC TAX to the Licensee's exchange on R2 signalling and for CCS7 signalling a Charge Band message will be sent, if required.

6.3: Connection Charges:

6.3.1: DOT may, subject to availability, lease PCM links to Interconnect Licensee's exchange to DOT's exchange either at SDCA level or at LDCA TAX level. In both the cases, the connection charge will consist of the following components:

Annual rent and guarantee for the PCM links between the Licensee's exchange to the nearest DOT exchange building will be calculated as per standard DOT terms. The Licensee will also have the option of having the 'end link' or 'last mile' on R&G systems or on contribution work basis as per the standard DOT terms.

In case, DOT's inter-working exchange (point of Interconnection to Licensee's Network) is located in a building other than the nearest DOT exchange building mentioned in para (a) above, annual inter exchange junction charge shall be levied.

For the initial period of three years, the charges for terminating the Interconnecting PCM links (port charges of DOT) shall be payable after opting by the Licensee for either of the two formulae given hereunder and the choice of the Licensee once made on the first occasion shall be treated as final for the total period and for entire Service Area:

The graded scale given below (excluding cost of infrastructure) of Interconnect port charges applicable separately for each exchange of the Circle/ Service Area for various demand situations:-

Sl.No.	Demand for No. of PCMs given by the Licensee to DOT in each exchange	Annual Interconnect port charge per PCM termination (excluding the cost of infrastructure viz land, building, air-conditioning etc.) (in Rs.)
1	2 PCM	2,16,200
2	4 PCM	1,08,100
3	8 PCM	54,100
4	16 PCM	30,600
5	32 PCM	20,400
6	64 PCM	15,400
7	PCM	12,900

(i) A fixed amount, irrespective of the number of terminations in each exchange for the Circle/ Service Area, of Rs.54,100/- per PCM termination per annum.

After expiry of the said period of three years, the aforesaid arrangements shall stand terminated where after DOT will provide the facility of Interconnect on payment of the charges based on full cost including the cost of incremental infrastructure like land, building, air-conditioning etc.

Notwithstanding anything contained hereinabove, the directions or decisions on the subject by the Telecom Regulatory Authority of India shall be binding on either party and such decision or direction shall be implemented in good faith by both the parties.

Provided always that for a 64 Kbps Analogue port, the said charges shall be Rs.3,200/- per annum per port.

6.3.2: The rates indicated in Annexure 5 for the aforesaid components are based on present costs and are subject to change in the intervening period till the date on which the Interconnect Agreement comes into effect (Effective date). Once, the Interconnect agreement comes into effect, the rates in respect of the aforesaid components at (b) and (c) as applicable on the effective date may remain fixed for the capacity orders placed within 24 months from the effective date. However, as regards the aforesaid component at (a) above, the rates as per DOT terms prevalent at the time of charging shall be applicable.

6.3.3: Even in cases where the link is provided by the Licensee, port charges as at 6.3.1(c) shall be payable by the Licensee to the DOT.

6.4: Access Charges (*now as per TRAI REGULATIONS*)

iii) TRAI Determination on Interconnection between BSNL & CMTS Operators:

For metro cellular operators who provide service in the metro cities of Delhi, Mumbai, Chennai and Kolkata and its adjoining areas, the lowest level where Interconnection (at the request of Interconnection seeker) should mandatorily be provided by the BSNL/BSO is up to the level of tandem exchanges, for Cellular Telecom Circle operators covering a large geographical area, it should be with the long distance Network of the circle i.e., at the TAX level. The CMTS providers Network may have Interconnectivity with FSP's Network at the level of a Gateway TAX.

In accordance with the stipulation contained in pre para, the incumbent i.e. BSNL will provide the Interconnection requested by the cellular operator within three months at the TAXs of both the levels i.e., I & II. If the incumbent is unable to provide the sought Interconnection within three months, the matter should be referred to the expert committee working under the aegis of TRAI, which will look into the reasons for the delay and attempt a resolution thereof. This Committee has representatives of ABTO, COAI, BSNL, MTNL and VSNL and is chaired by Secretary, TRAI. The Committee will try to resolve all disputes relating to Interconnection arrangements amongst service providers.

In accordance with the Government guidelines relating to NLD services, the NLD operators will be asked to have matching capability of CCS-7 signalling in their gateway TAXs from day one. The Interconnection arrangement should be in accordance with the National Fundamental Plans relating to switching, routing, traffic, charging etc.

Network Interconnectivity will be provided based on technical feasibility from TAX as well as TANDEM in the city where MSC is located. However, connectivity to TAX will be only for outstation calls and connectivity to TANDEM will be only for local calls. Multiple POIs in a service area will be given subject to technical feasibility and integrity of Network. The connectivity of two Networks shall be at the level of Gateway TAX/ Gateway MSC.

Annexure E

PROVISIONS RELATING TO BILLING IN

i) LICENSE AGREEMENTS OF BASIC SERVICE, NATIONAL LONG DISTANCE SERVICE, CMTS;

ii) INTERCONNECTION AGREEMENTS BETWEEN BSNL & BSOs;

i a) Old Basic Service License Agreement:

2.1.4: Telephone billing:

Issue of bills at least once in two months to Licensee's subscribers a) for local, national and international calls (dialled and operator assisted) made by the subscriber and b) for service rentals installation etc.

Provision of itemized billing for all STD/ISD calls made by a subscriber.

1.7.8.1: DOT and the Licensee will collect and retain the billed amount for calls originating from their respective Networks which terminate within the same SDCA or the contiguous telephone exchange of the adjacent SDCA (Group Dialed Calls). No access charges is payable for local call traffic. Access charges are payable by Licensee for STD and ISD calls.

1.7.8.2: The traffic delivered on any DOT LDCC TAX from Licensee's LDCC TAX/SDCC tandem/ local exchange will be measured on the incoming junctions of the DOT's LDCC TAX at the destination wise pulse rates applicable to the calls generated locally at the same station, where the DOT's LDCC TAX is located.

11.9: Message Measurement:

The Licensee shall equip itself with the means to measure the originating traffic in respect of each subscriber. It shall be able to generate the billing information in enough detail, to convince the subscribers satisfactorily. The billing disputes or difference, between the Licensee and its subscribers, unless settled amongst themselves within six months can be subjected to arbitration by the Telecom Authority or its nominee.

Condition 6: Issue of Bills to subscribers.

6.1: It shall be the responsibility of the Licensee, to cause regular issue of the bills to its subscribers.

6.2: Billing

The Licensee shall not charge, for Service provided to its subscribers, more than DOT's tariff fixed from time to time. The Licensee may, however, charge lower rate of tariff without prior approval from Licensor, provided such changes are intimated to Licensor prior to their implementation.

6.3: The billing system shall be subject to scrutiny by the Licensor.

6.4: Suitable arrangements shall be provided by the Licensee to enable to the Licensor to monitor the billing software and billing data, of its Network.

6.5: The billing period may be decided by the Licensee, but it should be at least once in two months.

i b) New Basic Service License Agreement:

8.3(b): The LICENSEE shall invariably preserve all billing and all other accounting records (electronic as well as hard copy) for a period of one year from the date of publishing of duly audited & approved Accounts of the company and any dereliction thereof shall be treated as a material breach independent of any other breach, sufficient to give a cause for cancellation of the LICENCE.

19.4 The LICENSEE's contractual obligations towards the CUSTOMER will include terms and conditions under which the SERVICES shall be provided or terminated. The LICENSEE shall notify to customers all the arrangements or everything with respect to billing, repair, fault rectification, compensation or refunds etc. All complaints in this regard will be addressed/ handled as per the guidelines, orders or regulations or directives issued by the LICENSOR.

20. BILLING

20.1 The LICENSEE shall offer a regular itemised billing service (for long distance calls) to its customers without demanding any extra charge. In every case the LICENSEE shall be responsible to its customers and shall ensure fulfillment of the obligations in this regard. The LICENSEE shall also maintain necessary records for the billing cycles as specified by the LICENSOR or TRAI from time to time.

20.2. LICENSEE will work out suitable regular Interconnect billing arrangements with other licensed service providers in the respective Interconnect Agreements with them.

20.3 All complaints of customers in this regard will be addressed/ handled as per the guidelines, orders or regulations or directives issued by the LICENSOR or TRAI from time to time.

20.4 Any dispute, with regard to the provision of SERVICE shall be a matter only between the aggrieved party and the LICENSEE, who shall duly notify this to all before providing the SERVICE. And in no case the LICENSOR shall have any liability or responsibility in the matter towards the aggrieved party and shall be kept indemnified from all costs, charges, claims or damages.

i c) National Long Distance Service License Agreement:

8.3 (b): The licensee shall preserve all billing and all other accounting records (electronic as well as hard copy) for a period of three years from the date of publishing of duly audited & approved concerned Accounts of the company and any dereliction thereof shall be treated as a material breach independent of any other breach sufficient to give a cause for cancellation of the licence.

20. BILLING
20.1 The LICENSEE shall offer either itself directly or through access providers itemised billing services to its customer. In every case the LICENSEE shall be responsible to its customers and shall ensure fulfillment of the obligations in this regard. The Licensee shall also maintain necessary records for the billing cycle as specified by the Licensor or TRAI from time to time.

20.2. The Licensee will provide itemised billing to its customer without demanding any extra charge either directly or through Access Provider. A billing handling charge as mutually agreed

with NLDO may be payable to Access Provider, coinciding with the billing schedule of access providers.

20.3 All complaints of customers in this regard will be addressed / handled as per the guidelines, orders or regulations or directives issued by the Licensor or TRAI from time to time.

20.4 Any dispute, with regard to the provision of SERVICE shall be a matter only between the aggrieved party and the LICENSEE, who shall duly notify this to all before providing the SERVICE. And in no case the LICENSOR shall have any liability or responsibility in the matter towards the aggrieved party.

i d) CMTS License Agreement:

Schedule "C" Part-III – Terms & Conditions:

1.6: The Licensee is responsible for the measurement of the messages, in units, in segments of kilobytes or as the case may be and shall keep a record of the same for purposes of billing in so far as his equipment and the Services are concerned. The Licensee shall maintain all commercial records with regard to the communications exchanged on the Network till the Authority clears for destruction. Such records should be archived for atleast one year for scrutiny by the Authority for security reasons.

6.3: The metering being essence of the amount to be charged from the subscriber should be suitably secured so that it is not accessible to all staff members of licensee but only to a specified few and authorized representative of 'Authority'.

6.4: The record of metering shall be maintained on fortnightly basis by the Licensee. The billing schedule may be longer, if required, than that of metering.

Condition 7: Issue of Bills to Subscribers:

7.1: It shall be the responsibility of the Licensee, to cause issue of the bills to his subscribers. The Licensee can issue bills only to the extent of those messages and for the duration, where applicable, carried on the Cellular System at rates prescribed by the Authority.

7.2: The billing shall be subject to audit by the Authority. Billing and/ or collection may be done by EDOT, if so requested, on mutually agreed terms and conditions.

7.3: The operator should provide detailed itemized billing information to those subscribers who may like to have it.

7.4: The billing cycle may not be less that one month or more than three months for any connection provided under this License.

13.1(b): In the interest of security, billing records will be preserved for a period of one year and made available to the Authority or it's representative as and when required.

ii) Interconnect Agreement between BSNL & BSOs:

Chapter 1 – Definitions:

Bill Issue Date means the 10th of every calendar month.

Billing Period: The period of one calendar month commencing on the first day of every month.

Billing Information: Information, as in Chapter 6 and 7, necessary to ascertain the charges payable by either party under this agreement.

6.2: Detailed Billing:

6.2.1: For every STD/ISD call originating from the Licensee's Network and accepted by DOT, a detailed billing and/or bulk billing record will be generated in the LDCC TAX. For this purpose calling subscriber's identity shall be supplied by the Licensee for detailed billing purpose.

6.4.2: DOT and the Licensee will collect and retain the billed amount for calls originating from their respective Networks which terminate within the same SDCA or the contiguous telephone exchange of the adjacent SDCA (Group Dialled Calls).

6.4.4: For STD calls, originating in the Licensee's Network and accepted by DOT (ref. Para 6.2.1), DOT will bill the Licensee on monthly basis as STD-access charge at a rate of Rs.0.50 per unit measured call at the point of Interconnection.

6.4.5: For international calls originating in the Licensee's Network and accepted by DOT (ref. Para 6.2.1), DOT will bill the Licensee on monthly basis as ISD Access charge at a rate of Rs.0.70 per unit measured call at the point of Interconnection. The responsibility of paying to the international carrier (presently Videsh Sanchar Nigam Limited) will lie with the DOT.

6.6.2: Licensee will be billed by DOT on monthly basis for trunk call charges and phonogram charges at the prevalent notified DOT tariffs.

6.6.3: Duration of the call will be counted from the time when the Licensee's operator is informed by the DOT Trunk operator that:

in the case of particular person call, the specified person is one the line.
In the case of call other than a particular person call, the called number or called extension, when the call is booked to an extension is connected.

Chapter 7 – Interconnect Billing System:

7.1: Bill Information:

7.1.1: Each party shall provide to the other party information relating to detailed billing/ trunk group bulk billing as may be reasonably required for ascertaining the charges payable by each party under this agreement on monthly basis.

7.1.2: The DOT or the Licensee shall have the right in case of dispute, having given the other not less than ten clear and working days advance written notice to such effect, to inspect the books and records of the other relating to a period not exceeding two years prior to the date of inspection, for the purpose of verifying the Billing information provided by the other in respect of such period.

7.1.3: Each Party shall keep all books and records relating to Billing Information provided by it to the other, in respect of access charges (clause 6.4) and charges for special services (clause 6.6), for a period of two years from the end of the Billing Period in respect of which such Billing Information was delivered to the other. If a request has been made as per provisions in 7.1.2 such records will have to be preserved till final settlement of the case.

7.1.4: In the event that any time during the continuance of this Agreement the Billing System of either Party malfunctions and is unable to provide all or part of the Billing Information necessary for such Party to prepare a bill to the other, the other Party shall at the request and expense of the first mentioned Party use its reasonable endeavours to supply the necessary

Billing Information to the first mentioned Party without any legal liability to the first mentioned party for the contents of such Billing Information.

7.1.5: Licensee shall be responsible to cover its liability for payment of taxes imposed by the Central or State Government, as the case may be.

7.2: Issue of Bills:

7.2.1: Bills for access charges and charges for special services including trunk calls will be issued on monthly basis by the designated unit of DOT to the Licensee and such bills shall be payable within 15 days from the date of issue. Similar bills may also be issued by the Licensee for the access charges, if any, due to it.

7.2.2: Bills for telecom resources and other support facilities, such as connection charges, charges for leased facilities and charges for enhancement of features, if availed by the Licensee will be issued by DOT and paid by the Licensee at the intervals specified in this agreement.

7.3: terms of payment:

7.3.1: DOT and the Licensee agree that the payment of bills will be made by the Licensee within the time specified in clause 7.2 above.

The mode of payment will be through cheque/Demand draft in favour of the designated authority of DOT, drawn at the local branch of any scheduled bank at the place where such designated authority of DOT is located.

All payments due to DOT will be paid without set off (netting) or counter claim and shall be free and clear of any withholding or deductions.

If the bill issuing authority subsequently finds that some charges have been omitted from the bills issued, he will include the omitted charges in the subsequent bills at any time, but within 6 months from the date of issue of the relevant bill except in cases where additional billing becomes necessary due to the tariffs/rates changes notified subsequently with retrospective effect by the appropriate authority.

7.3.2(i): If due payment is not received within specified period outlined in the bill, the DOT shall have a right to obtain payment through the use of Letter of Credit which shall be opened by the Licensee in favour of DOT as provided herein below after the concurrence of Licensee's first and single failure of making said payments in specified time.

7.3.2(ii): The opening of the aforesaid Letter of Credit in favour of DOT or use thereof to receive payments shall not detract in any manner the DOT from discontinuing the use of its facilities by the Licensee after failure in making due payment. Provided, before disconnecting the said facilities, 30 day's notice shall be given to the Licensee but such notice will be construed to have any link or connection with the use of Letter of Credit.

7.4: Opening of Letter of Credit:

7.4.1: The Licensee, immediately on the occurrence of first and singular failure in making due payment of DOT's bills, shall open an irrevocable and confirmed Letter of Credit in favour of DOT at the point of access in a scheduled bank with one year period of validity extendable from time to time such that the extension shall be requested for a period of one year from the last default, if the default occurred during the validity period of the Letter of Credit for an amount equal to 10% of the access charges and trunk call charges in respect of each Service Area, payable/paid by the Licensee to the DOT during the preceding 12 calendar months.

7.5: In the event of delayed payment by the Licensee, interest will be charged on the due amount at the following rates:

	Period Delay	Interest Rate
A.	For the first two occasions of delay: (i) Delay of 15 days beyond the due date	18%
	(ii) Delay beyond 15 days but up to the next 15 days	21%
B.	For the third & subsequent occasions of delayed payment: (i) Delay of 15 days beyond the due date	21%*
	(ii) Delay beyond 15 days but up to next 15 days	24%*

*Note: This stipulated interest rate or the prevailing prime lending rate of State Bank of India plus 5% (five percent) per annum (compounded monthly), which ever is higher, shall be applicable.

Explanation: The interest referred above will also be applicable in case the bill is disputed but subsequently it is found to be in order by the appropriate authority.

7.6: Settlement of Disputes regarding wrong/excess Billing:

7.6.1: In the event the Licensee disputes the accuracy of a bill delivered by the DOT pursuant to this Agreement it will, as soon as practicable, but in any case before the pay-by-date notify the billing liaison contact of the DOT of the nature and extent of the dispute along with all details reasonably necessary to substantiate its claim, which shall be reasonably capable of being verified by the DOT.

7.6.2: In case of calculation or clerical error in the bill, the bill issuing authority after verifying the bill, if it finds the error genuine, will correct the relevant bill accordingly within three days of the receipt of the complaint.

7.6.3: In cases other than those referred in clause 7.6.2, the Licensee shall immediately obtain a provisional bill from DOT before the pay by date of the original bill on the basis of the number of call units of the previous month. The provisional bill shall be paid by the Licensee before the pay by date indicated in the provisional bill. Thereafter, within 7 days of the issue of the provisional bill, the Licensee shall approach the designated authority of DOT along with all his relevant records based on which the Licensee disputes the bill issued by DOT. The Licensee shall, in consultation with the designated authority of DOT, settle the dispute within 15 days of the issue of the provisional bill referred in this clause. In this consultation, the records made by the measurement devices located at the DOT interface point shall have precedence over the records of the Licensee. If after consultation, it is found that the bill issued by DOT is correct, the balance amount of the bill, which was kept under dispute (after the issue of the provisional bill), will also have to be paid by the Licensee within 7 days of the settlement of such dispute.

7.6.4: After the settlement of the dispute, if balance of the due payment is not made within the period referred to in clause 7.6.3., the DOT shall discontinue the use of its facilities by the Licensee immediately on occurance of this default. Restoration of the facility will be made only on clearance of the due payments by the Licensee. The Licensee shall also take action to open irrevocable Letter of Credit in favour of DOT as per clause 7.4.1 of the Inter Connect Agreement in the event of such a default.

7.6.5(i): Not withstanding provided herein above, if the dispute over the accuracy of the bill fails to be resolved, in the manner already provided, one party, after calling upon the other so to

agree, refer the dispute to the Telecom Authority, as an expert and not as an arbitrator, for resolution of the dispute. The decision of the Telecom Authority shall be final and binding.

7.6.5(ii): The cost of reference to Telecom Authority as an expert shall be borne equally by the parties unless such expert shall decide that one party has acted unreasonably in which case, he may have discretion as to awarding of costs.

7.6.5(iii): This clause may not be construed to preclude the right of a party under the Telecom Regulatory Authority Ordinance 1996 or any other law in force to seek TRAI's involvement in the resolution of a dispute where such involvement is within TRAI's functions and powers under the said Ordinance.

7.6.5(iv): Each party shall continue to fulfill its obligations under the Interconnect Agreement during the pendency of dispute and which dispute resolution process invoked under sub para (i) above.

7.6.5(v): Any party shall not use any information obtained from other party during the course of dispute resolution process under this clause for any purpose other than to resolve the dispute and such information shall not be in a litigation before Civil Court.

ANNEXURE F

Telecom Regulatory Authority of India

No.404-1/2000-FN Dated the 19th June 2001

To

The Dy. Director General (Basic Services),
Department of Telecommunications,
Sanchar Bhawan,
New Delhi

Sub: Allotment of Codes to NLD Operators, for introduction of Dynamic Call by Call Selection of NLD Carriers by subscribers
Ref: DOT letter No. 10-5/99-BS.I/Vol.II dated 24th Aug 2000

Dear Sir,

Kindly refer to your letter on the above subject. A high level Committee was set up by the TRAI to examine all the relevant issues relating to the implementation of NLD guidelines referred to in your letter. The Committee has representatives of DOT, BSNL, MTNL, ABTO, COAI, C-DOT, TEC and is chaired by Secretary, TRAI. The subject matter has been deliberated at length in the committee and in its Working Group. Based on the inputs provided by the Committee, the Authority would like to recommend as follows:

For Dynamic Call by Call selection, the subscriber should dial the STD prefix i.e. "0" followed by a NLD Service Code (NLDSC)/a Carrier Access Code (CAC), and thereafter the National Significant Number (NSN) of the called subscriber. Thus dialing sequence will be : 0 + NLDSC + CAC + NSN.

For example, for dialing Mumbai from Delhi, the subscriber will dial :

'0'	+	'10'	+	'55'	+	22	+	3451234
		(NLDSC)		(CAC)		(Area Code)		(Local Number)

b) The Authority recommends adoption of "10" as the NLD Service Code. This code will be required to be dialed for all NLD Calls involving carriage over NLLD Network operators facilities.

c) In regard to Carrier Access Code, which will identify the NLD Operator chosen by the subscriber, the Authority recommends a two digit Code beginning 40 and ending at 59, thus giving 20 codes to be allotted to all NLD Carriers, including BSNL. The Authority feels that number of NLD operators would be less than '20' for the planning period of five years. The position would be reviewed after that period.

2. Regarding charging for Interconnection link between NLD Operator's POP at LDCC, and that of the BSO at the SDCC, the charges specified for such links in the Telecommunication Interconnection (Charges and Revenue Sharing) Regulation of May 1999 are applicable. Please note that this Interconnection Regulation also emphasizes mutual negotiations between Interconnection seeker and provider. Further, for estimating cost of origination, termination and transit on the NLD Network , cost of unbundled Network elements are required by the Authority to issue a determination, in case operators do not come to a mutual agreement on the modalities of inter Carrier settlements. The work of Accounting Separation and has just begun, and is likely to take about 6 to 8 months. The operators may be asked to expedite the Accounting Separation in accordance with Authority's recommendations.

Yours faithfully,
(Harsha Vardhana Singh),Secretary

ANNEXURE G

Telecom Regulatory Authority of India
A-2/14, Safdarjung Enclave,
New Delhi-110 029

No. 404-1/2000-FN Dated the 20th July 2001

To

DDG (Basic Services)
Department of Telecommunications,
Sanchar Bhawan,
New Delhi-110 001.

SUB : Incorporation of suitable clauses in the License Agreement of BSOs to reflect the recommendations of TRAI on NLD operations relating to Equal Ease of Access through Pre-selection.

Ref : DOT's letter No.10-5/99-BS-I/Vol.II dated 24th Aug'2000 & TRAI's letter No.404-1/2000-FN dated 19th June, 2001.

Dear Sir,

Your attention is invited to the recommendations (para 48 of the NLD recommendation) of the Authority on the above subject matter. The same is quoted below for ready reference :

"The technical arrangements for choosing an NLD service provider by dialing a CAC or pre-selection shall be made by all Access Providers (AP). Such arrangements should be made by APs in consultation with NLD service provider before commissioning NLD service and should form part of an Interconnect agreement. In case the facility of Carrier pre-selection needs extended time, the APs must ensure its provision preferably within a period of three years".

2. A High Level technical committee working under the aegis of TRAI with representations of DOT/ BSOs/ BSNL/ MSOs has finalized Carrier Access Codes for NLD operators, for introduction of Dynamic Call by Call selection immediately after commissioning of NLD Network s. The same was communicated to you vide our letter of even number dated 19th June.

3. The Committee has done considerable work regarding the introduction of pre-selection for Equal Ease of Access (EEA), so as to introduce pre-selection at an early date. A tentative time plan has been drawn up by the committee to introduce pre-selection within 2 ½ years of issue of the first licence. A copy of a tentative plan drawn up by the committee for upgradation of switches of the Access Providers and for making other technical arrangements to implement Carrier pre-selection is enclosed.

4. It is requested that suitable clauses may be incorporated in the license agreement of the BSOs/ CMSPs to reflect the Authority's recommendations relating to Equal Ease of Access (EEA), through pre-selection. A copy of the License Agreement after incorporating suitable clauses as suggested, may please be sent to this office for information of the Authority.

Yours faithfully,

(Harsha Vardhana Singh)
Secretary-cum-Principal Advisor

TENTATIVE TIME SCHEDULE FOR IMPLEMENTATION OF PRE-SELECTION

Assuming that the first NLD License is issued at time **D,** the following schedule is proposed:

i. **D+1 months** NLDO supplies the first year roll-out plan to Access Providers within 1 month of issue of the licence.

ii. **D+1 months** TRAI to lay down principles and procedures of compensation for directly attributable incremental costs of Access Providers for carrier selection.

iii. **D+6 months** All Access Providers who are ready, to provide Dynamic Carrier Selection to the subscribers requesting for the same in LDCAs covered in the first year's Roll-out Plan.

iv. **D+6 months** All Access Providers who can provide pre-selection may start to do the same.

v. **D+9 months** NLDOs to supply Roll-out plans for years 2 and 3 to Access Providers.

vi. **D+12 months** Access Providers to arrange for introduction of Dynamic Carrier selection in accordance with the roll-out plan provided the NLDO is ready for the same.

vii. **D+12 months** All Access Providers start action for introduction trials of pre-selection in accordance with an agreed programme.

viii. **D+21 months** All Access Providers to upgrade switches for handling of 23 digits in support of International Carrier Selection.

ix. **D+30 months** All Access Providers to complete pre-selection in the network covering all LDCAs covered in the NLDO's request and Roll-out Plan.

ANNEXURE H
CARIER SELECTION OPTIONS : EUROPEAN UNION

One possibility for Carrier selection is through the use of prefixes (short codes) to be dialed in front of the subscriber number in a single stage dialing procedure Identification of the calling party is done through the Calling Line Identification (CLI).

Another possibility is by calling a special service access codes to Carrier services after which the dialed number is entered together with a special code for authentication of the subscriber. This latter possibility is a two stage dialing procedure which is more prone to fraud and resembles calling card services in use today.

The main options for Carrier selection in a single stage dialing procedure are:

A: default Carrier determined by access Network operator (local operator) with possibility of override by user on call by call basis. This options is sometimes referred to as easy access;

B: pre-selection of Carrier by the customer plus possibility of override on call by call basis. There are some variants on this method e.g. change default Carrier through instant DTMF dialing (change pre-selected Carrier on-line) or pre-selected Carrier determined by regulator on the basis of market share. This option is referred to as equal access;

C: the use of Carrier Selection Codes for all calls. Clearly, this option is in contradiction with the Council Decision on the introduction of a standard telephone access code.

The commission believes that the requirement for a harmonized access code should prevail as, with the implementation of Option B, it does not form a barrier to the development of effective competition. Option C is therefore not considered further.

With the implementation of easy access (Option A), operators will not loose market share in long-distance and International traffic as quickly and substantially as with the implementation of equal access (Option B) because they will normally elect to route their long-distance and International traffic via their own channels. Option A could therefore be an intermediate step in a phased approach with Option B as the medium to long-term goal and cause a more gradual transition towards an open competitive market then with the implementation of Option B right from the start.

Cost/benefit of Carrier selection

Studies carried out for the Commission and ETO concluded that Carrier selection mechanisms are mandatory to foster competition in main telecommunications markets. Users must be able to easily select a Carrier wherever they are in Europe for their National and International long-distance telephony services.

The experience with Carrier selection is strongest in the US where, after the divestiture of AT&T and the introduction of inter-exchange long-distance competition, the long-distance rates have been slashed by approximately 40 %. Another example is Finland. Since the introduction of long-distance competition between Telecom Finland and the long-distance Carrier of the independent local operators in 1993, long distance tariffs fell by more than 50 %. Remarkably, the total revenue did fall but not as substantial because of increased telephone usage.

The total revenues of the telecommunications market in the European Union in 2000 is estimated at 110-120 Billion ECU. Some 50 % of the traffic is business traffic with some 20% International traffic. By introducing Carrier selection throughout the EU, it works out that between 40-50 Billion ECU of revenues is at stake. Extrapolating the effects on long-distance tariffs which were seen in the US and Finland to the European Union, the introduction of Carrier

selection could save the European customer as much as 20-25 Billion ECU per year. Obviously, the reductions of tariffs would change telephone calling patterns and thus offset somewhat the loss of revenues for operators.

The lower prices of telephone traffic would make the diffusion of information cheaper and thus form an immediate stimulus to the European economy. These direct effects are difficult to quantify in financial terms but are believed to be huge. Besides that, the introduction of Carrier selection would assist in the migration of users from one operator to the other. It would make customers more aware of competitive alternatives, customers would not have to invest so much time and money (including any necessary CPE alterations) in changing to a new operator, customers could try out new operators on a call-by-call basis with no long term commitment, and customers would avoid having to dial additional digits in order to access an other operator's Network .

The cost of introducing Carrier selection cover local Network implementation cost for the incumbent operator and any other local operator required to provide equal access; costs for long distance operators, any extra costs of Network capacity or operations that result from increased customer churn; and end user equipment costs.

An analysis of the cost of implementation of equal access to long-distance Carrier was carried out in the UK. The total direct cost to BT over the period 1995-2004 was estimated between 136.6 and 261.2 [sterling]M. This included cost for Network changes, cost for information system changes, and cost for data build maintenance and staff, training and organization. The cost for other operators for the same period was estimated at 68.6 [sterling]M.

Extrapolating this to the European Union market and assuming similar degrees of Network digitisation and efficiency, the introduction of Carrier selection at the European level would cost about 2 Billion ECU over the ten year period considered.

It is obvious from this very rudimentary analysis that the benefits of introducing Carrier selection by far outweigh its costs. Even if the drop in long-distance tariffs would be much less than assumed, benefits of equal access to Carrier will exceed costs.

Pre-selection equal access was introduced in the US and Australia using slightly different methods.

Move to equal access in the US

Pre-selection was introduced in the US from September 1, 1984 as local exchanges were given equal access capabilities in rolling conversion programmes. To begin with, once an exchange had been converted to equal access, their was no immediate requirement for all customers to be balloted on their preferred long-distance Carrier. By early 1985, it became apparent that only around 30 % of customers connected to equal access exchanges were pre-selecting a long-distance Carrier (either AT&T or one of the other long-distance Carriers) whilst the remaining 70% were staying with AT&T default.

In May 1985 the FCC released an Order specifying a balloting and allocation plan to be used by local exchange Carrier (LECs) on the introduction of equal access into their exchanges and a retroactive balloting process in cases where equal access had already been introduced. This process required a re-ballot of customers who failed to respond to the first ballot, after which customers who did not respond to either ballot had to be assigned a long-distance Carrier in proportion to those who did respond in the first ballot. Under this system, LECs found that between 60 % and 75 % of their customers now pre-selected a long-distance Carrier, whilst the remaining 24 % to 40% were assigned a Carrier. This increase in pre-selection has been argued to have been a major factor behind AT&T's loss of market during the late 1980s. In particular, its share of inter-state switched traffic fell from 82 % in 1985 (when it had already

faced eight years of competition from MCI without equal access), to 63 % in 1991 when equal access had been rolled out to over 90% of access lines in the US.

Move to equal access in Australia

Australia licensed a second Carrier, Optus, in December 1991. The new Carrier's Network was operational in major cities by November 1992, and was available to 65 % of the population by the end of 1993. Within 18 months of launch it had captured about 15 % of National and International traffic. Originally access to the Optus Network was through a simple dialing code prefix – 1". If this prefix was omitted calls would be routed over the Telstra (incumbent) Network . However, it was always intended to move to an equal access system of pre-sel;ection with call-by-call override.

Pre-selection balloting began in Australia in July 1993, and will continue on a sequential city-by-city basis until 1997. The process takes the form of a first ballot, with the option for Optus to call for a second ballot in cities where the response rate is less than 60 %. Non-respondents remain with the existing Carrier (in contrast to the US system where they were assigned). It is likely that the share of traffic captured by Optus exceeds its share of lines since it will have tended to have captured customers with higher than average calling rates.

On the basis of the experience of the US and Australia, it appears that effective pre-selection would require the balloting of all customers; and an option of a second ballot if response rates are low. There are however other possibilities than ballots to let users make their pre-selection for instance through marketing campaigns. Unlike the ballot, this latter method allows a better control quality and quantity of customers by the new entrant and allows new entrants with less marketing resources to compete fairly.

Source: EU Website

ANNEXURE I
OFTEL FINALISATION OF CARRIER PRE-SELECTION CHARGES

Ref: 03/01
Date: 08 January 2001

Oftel has today set the charges that BT will make to operators for the setting up and running of permanent carrier pre-selection services.

The charges are contained in a Determination published today.

Launched in December, carrier pre-selection allows consumers with a BT line to choose between different telephone companies for different types of call without changing their existing phone line, and without dialling extra numbers.

Consumers have the option to use BT for their telephone line and local calls, a different supplier for national calls and another supplier again for international calls.

Oftel has made the determination because telecoms companies were unable to agree the charges themselves.

David Edmonds, Director General of Telecommunications said today:

"Carrier pre-selection means far greater choice for consumers. They will be able to shop around for the best deal from several different telephone companies, without having to change their phone line or dialling extra digits.

"This determination gives operators certainty about the charges that will apply to carrier pre-selection so that they can continue in confidence with their roll-out of carrier pre-selection services to customers.

"Consumers are already signing up to the service and with at least 15 companies planning to launch services in the coming year, I expect to see many more consumers benefiting from the greater choice and savings that carrier pre-selection can offer."

Notes to editors

1. *Determination under Condition 50A of the Licence of British Telecommunications plc relating to 'permanent' carrier pre-selection* is available from Oftel's website at

www.oftel.gov.uk/publications/carrier/pcps0101.htm. Copies are also available to the media from Oftel's Press Office on 020 7634 8991 and to the public from Oftel's Research and Intelligence Unit on 020 7634 8761.

2. There are several different types and levels of charge in the Determination. Two important examples are:

- The charge to an alternative operator for setting up CPS on a simple residential line will be £4.46
- The once-off charge for an alternative operator wishing to offer CPS is approximately £22,700.

3. The determination has been made following public consultation on a draft determination that was made on 7 December 2000.

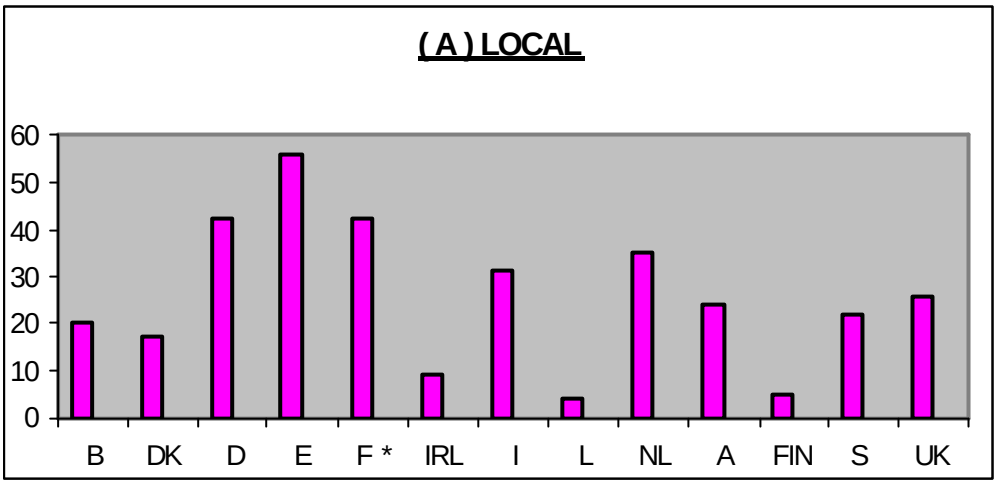
Source: OFTEL

ANNEXURE J

CARRIER SELECTION in European Union [Source: EU]

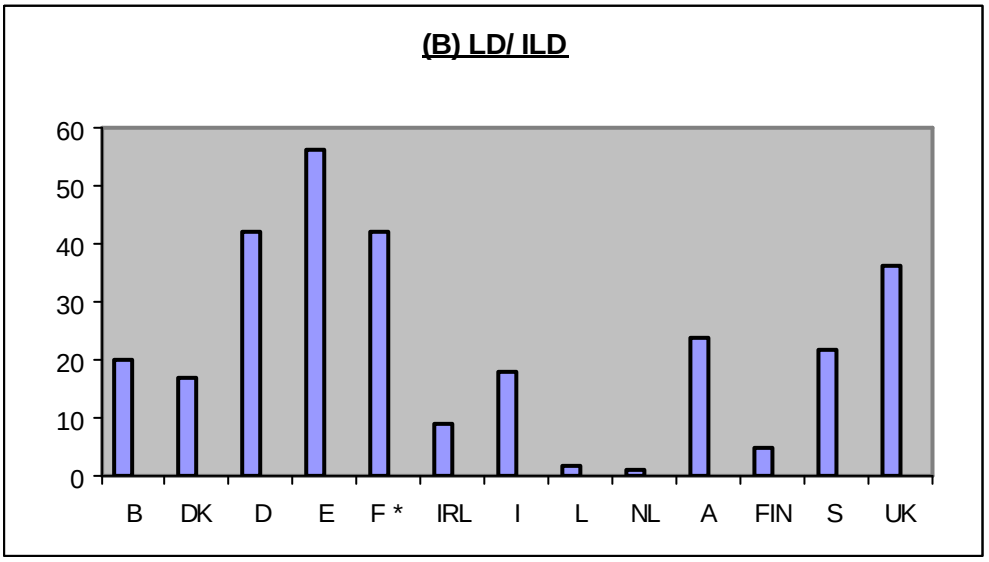
New operators using **Carrier Selection** in European Union for providing fixed voice telephony to residential users for Local, National/ International Long Distance Services is shown in following figures 1 and 2 respectively.

Figure1



Note : Countries are : Belgium (B), Denmark (DK), Germany (D), Spain (E), France(F), Ireland (IRL), Italy (Italy), Luxemburg (L), Netherland (NL), Austria(A), Finland (FIN), England (UK).

Figure 2



New operators using **Carrier Pre-Selection** in European Union for providing fixed voice telephony to residential users for Local, National/ International Long Distance Services is shown in following figures 3 and 4 respectively.

Figure 3

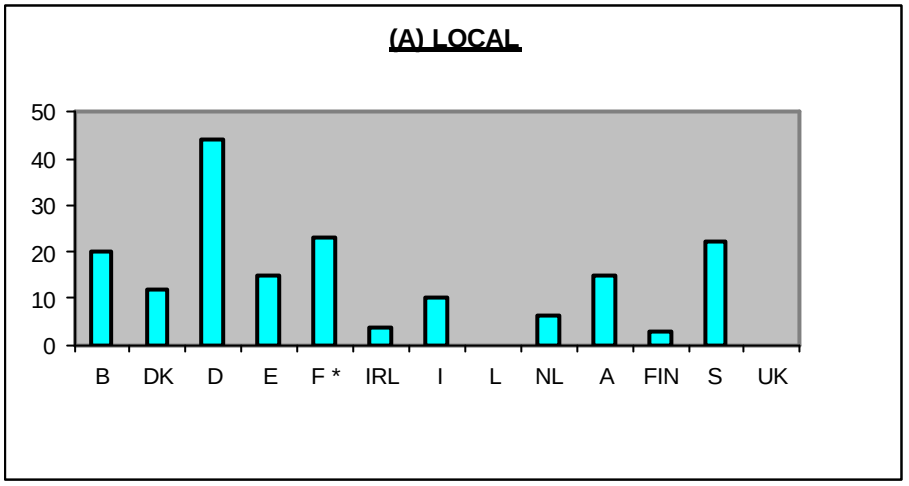
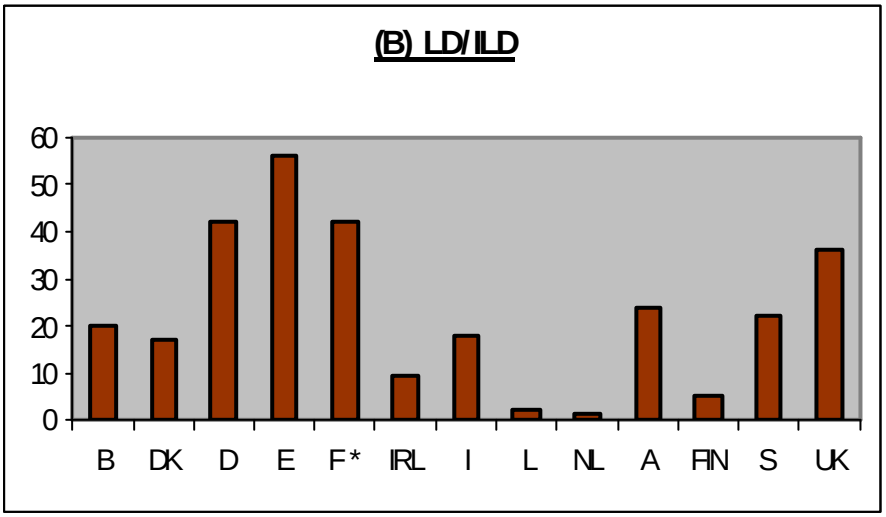


Figure 4



ANNEXURE K

INTERCONNECT BILLING IN BT

There are two main billing systems in BT: CSS which is used to provide retail billing for end (retail) customers and INCA which is used to bill for Interconnected calls from other operators. The two systems are completely separate. In general long distance calls are handed over at a BT Tandem switch and can be routed through the BT Network to either the same operator or a second operator i.e. OLOI-BT-OLOI or OLOI-BT-OL02. Interconnected calls handed over at a local switch must terminate on that local switch, BT will not provide long distance conveyance for Interconnected calls handed over at a BT local switch. To provide long distance transit for calls handed over at a local exchange would require additional local to tandem exchange capacity, modifications to local exchange and modifications to the billing systems.

The retail billing system uses only the BT local switches to determine call charges for retail billing. Billing information collected from tandem switches, when collected, is used only for Interconnect billing. Until the need arose to perform Interconnect billing (early 90s) there was generally no need for billing at the tandem switches. The Interconnect billing system has grown substantially and handles more calls than a regional retail billing system. This is a reflection of the number of the number of other operators in the UK market who Interconnect with BT.

The call information recorded at the tandem switch where the calls enters is used in conjunction with an Element Based Cost EBC matrix to compute the cost of the calls. This concept is increasingly being used in Europe. The process essentially characterises the calls as types for example single tandem or double tandem depending on the number of switching stages used. The UK also uses a further splitting of the double tandem in to double tandem long and double tandem short to accommodate the transmission length.

For BT the call charges are regulated and BT is required by Oftel to demonstrate that the charges are cost oriented. As a quick and crude example of how this works, a double tandem call would require the use of two tandem switches and some length of transmission. The total call cost would be calculated by summing the call costs of the components used: switching and transmission. The cost of the transmission would be calculated from the unit cost (p/km/min) of inter-tandem transmission and the average distance a double transit call would be carried. Historical traffic data is used to determine the average distances. Thus the call charges calculated are averaged over the appropriate distance. We can provide more about the method of calculating charges if required.

It is possible that between two points there are many alternative routes. The Network routing system therefore employs a least cost routing algorithm. Essentially the algorithm determines several routes and then looks at the number of switches on each route. The route with the lowest number of switches is selected as the quickest route. The key point is that although the routing of the call through the Network may vary the call charge depends only on the point where the call enters the Network and where it leaves, not the actual route taken.

Source : Inputs received from British Telecomm Regulatory Division in response to a query from TRAI

ANNEXURE L

BT format showing the unbundled network elements involved in call conveyance, as well for interconnection of links.

Statement of costs For the year ended 31st March 1999	Total Operating costs £m	Mean capital employed £m	Applicable rate of return on capital %	Capital costs £m	Total of operating and capital cost £m	Volume min/unit (b)	Average Cost per min/unit
Network components							
Local exchange concentrator	184	661	12.5	82	266	287,197 mm	**0.093p**
Local exchange processor	353	1,112	12.5	139	492	280,551 mm	**0.176p**
Main and digital junction switching	104	255	12.5	32	136	192,421 mm	**0.070p**
Local to remote transmission link	58	154	12.5	19	77	217,407 mm	**0.035p**
Local to remote transmission length (c)	74	378	12.5	47	121	343,059 mm	**0.035p**
Local to tandem transmission link	48	101	12.5	13	61	151,192 mm	**0.040p**
Local to tandem transmission length (c)	37	203	12.5	25	62	435,459 mm	**0.014p**
Tandem to tandem transmission link	17	51	12.5	6	23	59,411 mm	**0.039p**
Tandem to tandem transmission length (c)	28	186	12.5	23	51	824,917 mm	**0.006p**
Digital derived services network-switch	45	113	12.5	14	59	4,912 mm	**1.204p**
Digital derived services network-link	5	26	12.5	3	8	4,076 mm	**0.197p**
Inland directory enquiry	138	40	12.5	5	143	19,997 ms	**0.718p**
International directory enquiry	15	3	12.5	-	15	936 ms	**1.601p**
National operator assistance	67	21	12.5	3	70	6,678 ms	**1.045p**
International operator assistance	12	4	12.5	-	12	1,065 ms	**1.159p**
Emergency operator assistance (999)	13	2	12.5	-	13	1,306 ms	**1.012p**
Product management, policy and planning	36	7	12.5	1	37	86,826 mm	**0.042p**
Numbering information system (DAS)	1	-	12.5	-	1	298 t	**£3,464**
Public payphone line	12	42	12.5	5	17	140,527 L	**£119**
Public payphone operations	152	209	12.5	26	178	n/a	(a)
Interconnect connections and rentals	35	81	12.5	10	45	n/a	(a)

Numbering information system (other)	3	1	12.5	-	3	n/a	(a)
Inland private circuits	669	1,999	12.5	250	919	n/a	(a)
BT only other	149	377	12.5	48	197	n/a	(a)
Multifunction platform	59	200	12.5	25	84	n/a	(a)
International network	332	819	12.5	103	435	n/a	(a)
All out-payments	1,970	(511)	12.5	(62)	1,908	n/a	(a)
Total	**4,616**	**6,534**		**817**	**5,433**		

(a) These components include a number of different elements which are used in different proportions for the delivery of services within this heading. As a result no single volume of usage can be applied and so no unit cost is derived.

(b) mm = million minutes; ms = million seconds; t = terminals; L = lines.

(c) Unit of length is 10 km.

ADDITIONAL ANNEXURES To

Consultation Paper 2001/5

Issues Relating to Interconnection between Access Providers and National Long Distance Operators

Dated 14 Dec. 2001

ANNEXURE I

Supplement 1 to Recommendation E.164

ALTERNATIVES FOR CARRIER SELECTION AND NETWORK IDENTIFICATION

(Geneva, 1998)

1 INTRODUCTION

The changing telecommunications environment has enhanced the importance of being able to choose the Service providers which perform functions on a call. This ability to designate a specific Service provider for a specific portion of a call may be achieved through the use of a prefix, presubscription, signalling, database analysis, or embedding the identification in the number itself. At each hand-off point of a call, the current provider must determine the next provider to which to route the call (provider determination).

2 SCOPE

This supplement presents a summary of the potential methods for Carrier / Service provider selection and network identification on the public network. The guidance provided may be utilized for both international and national implementations.

This supplement does not specifically address the class of provider determination methods based on contractual agreements, bilateral negotiations, transit routes, or previous traffic (proportional routing). These methods are used by individual providers in determining the next provider to which to route the call.

2 ASSUMPTIONS

The following is a list of basic assumptions used in generating this supplement.

In considering Carrier Selection and Network Identification techniques methodologies that use information within the signalling should be considered. Information within this supplement is based on current needs and technologies but not at the expense of future needs and technology.

Where a competitive environment is not present, normal call set-up should not be impacted by Carrier Selection techniques.

4 REFERENCES

– ITU-T Recommendation E.164 (1997), The international public telecommunication numbering plan.

5 DEFINITIONS

The term **carrier selection** is used when the decision is controlled by the **calling party**, and the term **network identification** is used when the decision is controlled by the **called party.** This supplement uses a functional model of network Services to provide a framework for examples of both carrier selection and network identification.

The word "Carrier" in this supplement included both "Access Provider" and "Transport Provider".

6 ACRONYMS

This supplement uses the following acronyms.

ISP Intermediate Service Provider(s)
ITP Intermediate Transport Provider(s)
OAP Originating Access Provider(s)
OASP Originating Access Service Provider(s)
OSP Originating Service Provider(s)
OTP Originating Transport Providers(s)
TAP Terminating Access Provider(s)
TASP Terminating Access Service Provider(s)
TSP Terminating Service Provider(s)
TTP Terminating Transport Provider(s)

7 FUNCTIONAL MODELS

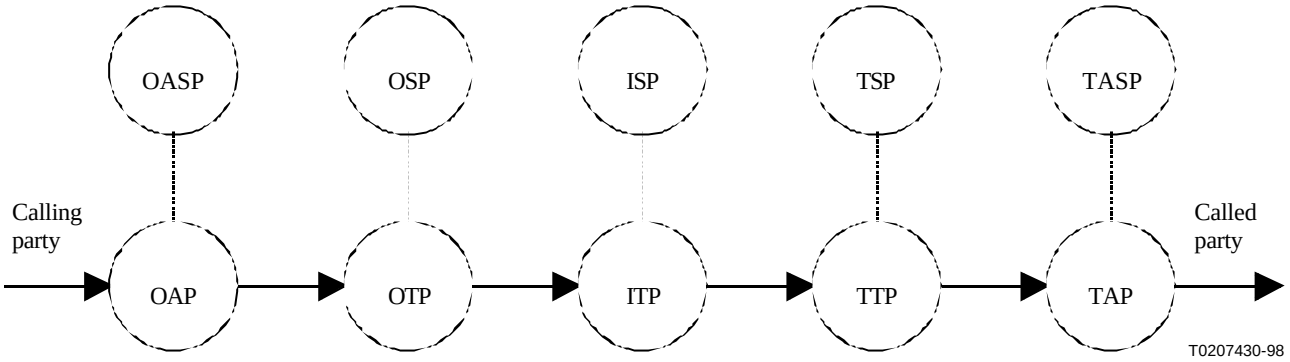


Figure 1 – Functional model

In discussing issues related to carrier selection/network identification, it is useful to address them in the context of a general model. The model shown (see Figure 1) illustrates the entities and relationships involved in a call. This is a functional model and hence the entities shown are not necessarily distinct companies.

The functions provided in network Service are: connection to/from the network, transport through the network, and Service features. These functions are provided to the calling party (originating) and the called party (terminating). Each provider offering connection or transport may provide Service features or access to an entity providing Service features.

For a call, the calling party connects to the network through the Originating Access Provider (OAP). The OAP determines the Originating Transport Provider (OTP) to carry the call forward via voice path or signalling. The OTP progresses the call to the Terminating Transport Provider (TTP) which could be done via an Intermediate Service Provider (ISP), (e.g. who may provide transit transport Services). The TTP routes the call to the called party through the Terminating Access Provider(TAP). Any one or all of these connection providers could provide access to a Service provider offering features to the calling or called parties.

It is important to re-emphasize that these are functional entities. One carrier could function as multiple entities on a given call. There could be multiple instances of one entity on a given call.

8 ALTERNATIVES

8.1 General options for Carrier Selection and Network Identification in relation to E.164 numbers

For Carriers and Networks, it may be necessary to identify the Carrier/Network which is providing a specific Service. There are three basic methods that can be used to identify Carriers/Networks in relation to E.164 numbers. These options are:

a) the implementation of Carrier Selection and Network Identification external to the E.164 number;

b) the implementation of Network Identification internal to the E.164 Number;

c) the implementation of the complete E.164 Number as a means of identification of the Carrier/Network.

8.1.1 GENERAL CONSIDERATIONS FOR NETWORK IDENTIFICATION IN RELATION TO THE E.164 NUMBER

The choice of implementation of one of the above methods should be done on the basis of evaluating each individual Service. It will be selected based on Service and operational requirements for each Service application. In some applications, specific recommendations should be made for a preferred method of Carrier Selection and Network Identification using particular numbering resources. In other cases, specific recommendations on the Carrier Selection and Network Identification method should be left as a national matter.

The following is a list of general issues to be evaluated when considering all three Carrier Selection and Network Identification methodologies.

a) ***Timing and equipment availability***

The choice of a particular Carrier Selection and Network Identification approach can be impacted by the time frame (i.e. the requested date) when the Service for which the numbering resources are required. This is because the availability of hardware and software to support the specific Carrier Selection and Network Identification scheme can have an impact on the Carrier Selection and Network Identification method that is selected.

b) ***Impact on network interconnections and interworking***

In choosing a Carrier Selection and Network Identification methodology, the issues of network interconnection and interworking between

networks and carriers should be considered. For example, should a subscriber dial an E.164 number destined to a Carrier or Network other than the network or carrier from which the call originates, then certain inter-working arrangements must be in place for the call to be routed and billed. The apportionment of international traffic between Carriers/Networks may also be impacted once Carrier Selection and Network Identification is associated with an E.164 number.

The transport of Carrier Selection and Network identification information between networks may also be necessary.

c) *Impact on retaining or discarding Carrier Selection and Network Identification information*

Carrier Selection and Network Identification information is necessary to determine the routing and settlement arrangements for international calls. The nature of a given call type (e.g. calling or called party paid) will determine the need to retain or discard the Carrier Selection and Network Identification information as an international call is routed to its destination address.

8.1.2 CONSIDERATIONS FOR CARRIER SELECTION/NETWORK IDENTIFICATION OPTIONS

The following sub-clauses contain specific considerations applying to each of the above three Carrier Selection and Network Identification options.

8.1.2.1Considerations for applying the Carrier Selection and Network Identification external to the E.164 number

It may be possible to use either prefixes or suffixes in dialling E.164 Numbers. The Carrier Selection and Network Identification may also take place in the call related signalling information external to the number. Pre-subscription to a carrier may be one method. Another method may be to allow a subscriber to change their pre-subscription by dialling a short code (on a semi-permanent basis).

Some ramifications of this approach are:

a) No portion of the numbering space is used for Carrier Selection and Network Identification, and therefore the carrier selection and network identification does not impact the quantity, format or makeup of the numbers.

b) Additional digits may be dialled (e.g. a prefix or suffix).

c) All digit combinations (used for the prefix or suffix) are available unless they are already assigned or apportioned for other uses.

d) Service Provider Portability of Numbers is feasible under this Carrier Selection and Network Identification option.

e) Modifications to existing signalling protocol may be required to transmit the Carrier Selection and Network Identification identifiers. This may be achieved by using the transit network selection parameter in existing signalling Recommendations.

f) The calling party must dial the correct information in addition to the E.164 number.

8.1.2.2 Considerations for applying Network Identification internal to the E.164 number

When identifying the Carrier Selection and Network Identification internal to the E.164 number for particular applications, the following implications should be considered:

a) Impact on efficient use of the quantity of available numbers:

If a portion of the E.164 number is used for Network Identification, then the numbering space is divided into some finite quantity of carrier or network identification groupings. Under each such grouping, a block of numbers is then assigned to individual networks. The efficient use of these E.164 number allocations is dependent on the utilization of the numbers under each network Identification allocation. Should some networks not assign many numbers, the overall efficiency in utilizing these resources may be low. This may lead to premature exhaust of the specific E.164 numbering resource.

b) Trade off between Network Identifiers and quantity of subscriber numbers per Network:

The designation for Network Identification purposes of some quantity of digits in the E.164 number reduces the number of available digits for subscriber numbers and limits the quantity of numbers that any one Network has available for assignment to its particular customer base. The quantity of Network specific numbers is inversely proportional to the number of networks that can be identified within the number.

c) Service provider portability is precluded:

When an E.164 number contains Network specific identification, the flexibility to change Service providers and maintain the same number is lost.

d) Routing to the appropriate network is facilitated in an efficient fashion.

e) No additional digits are required when an E.164 number is dialled.

f) From a subscriber's perspective, no additional signalling information is required from the calling user for Network Identification beyond the E.164 number. From a network perspective, no additional signalling information is required for Network Identification beyond the E.164 number if every network node involved in the call correctly interprets the internal E.164 field designated for network identification.

g) No additional knowledge is required by the calling party beyond the number itself to convey Network Identification information.

8.1.2.3 Use of the complete E.164 number as a means to achieve Carrier Selection and Network Identification

Recommendations E.164 and E.162 require networks to do analysis on seven (7) digits for international calls. Using the complete E.164 number as a means of achieving Carrier Selection and Network Identification requires that the originating network have the ability to analyze the entire Number (up to 15 digits) to determine the particular Carrier Selection and Network Identification. This may require a database lookup capability for E.164 numbers of up to 15 digits in length.

a) No portion of the numbering space is used for Carrier Selection and Network Identification, and therefore the Carrier Selection and Network Identification does not impact the quantity, format or makeup of the numbers.

b) All the E.164 numbers can be used and mapped for Carrier Selection and Network Identification unless they are already assigned to some other application.

c) Service Provider Portability of Numbers is feasible under this Carrier Selection and Network Identification option.

d) Modifications to existing signalling protocol may be required to transmit the Carrier Selection and Network Identification information.

e) Routing to the appropriate carrier/network may need database lookup.

f) No additional digits are required when an E.164 number is dialled.

g) No additional knowledge is required by the calling party beyond the number itself to obtain Carrier Selection or Network Identification information.

8.2 Selection by calling party

8.2.1 FUNCTIONAL DESCRIPTION

The following diagrams utilize the functional model, showing implementations to clarify carrier selection. Each of the cases discussed shows only a voice-path between entities. Some applications may use signalling paths between entities, but these are determined by the same carrier selection methods shown here. We have shown only selection of the connection carriers for simplicity, it is assumed the Service providers at each stage are either the same as the connection carrier or are determined by the connection carrier based on the selection information received.

Table 1 summarizes various methods of selecting the different carriers shown in the functional model.

Table 1 – Carrier selection methods

Selection of	Based on	Identification in	Controlled by
Originating Transport Provider (OTP)	Pre-subscription (Figure 2) Prefix (Figure 3) Number Analysis By OAP (Figure 4)	Subscriber Info Prefix, Signalling Number	Calling party Calling party Calling party

8.2.1.1 External to the number

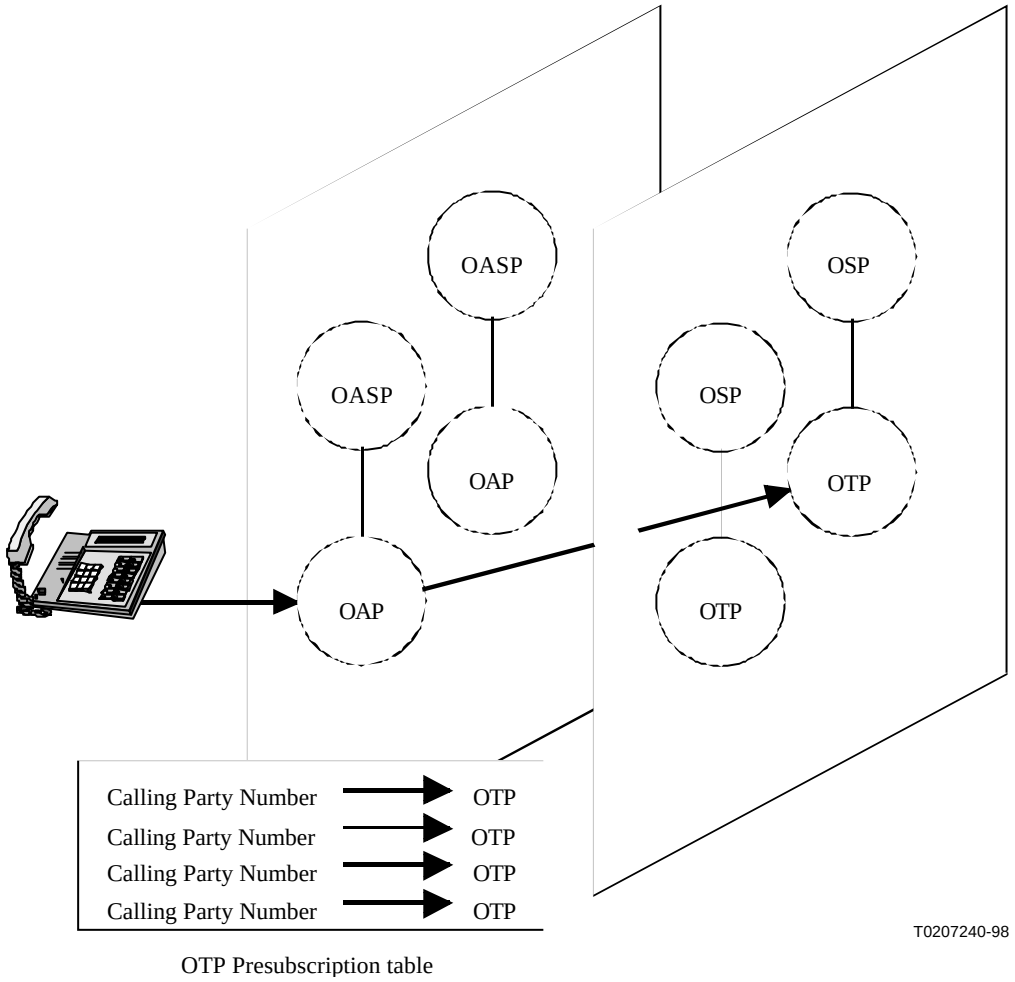


Figure 2 – Selection of OTP – Presubscription

In Figure 2, the OAP performs the function of carrier selection through means of a provisioned pre-subscription table using the calling party number as the key. The data in this table is provisioned prior to the call being made on a line

basis in the carrier providing the OAP function and is used to determine the default carrier providing the OTP function for a call.

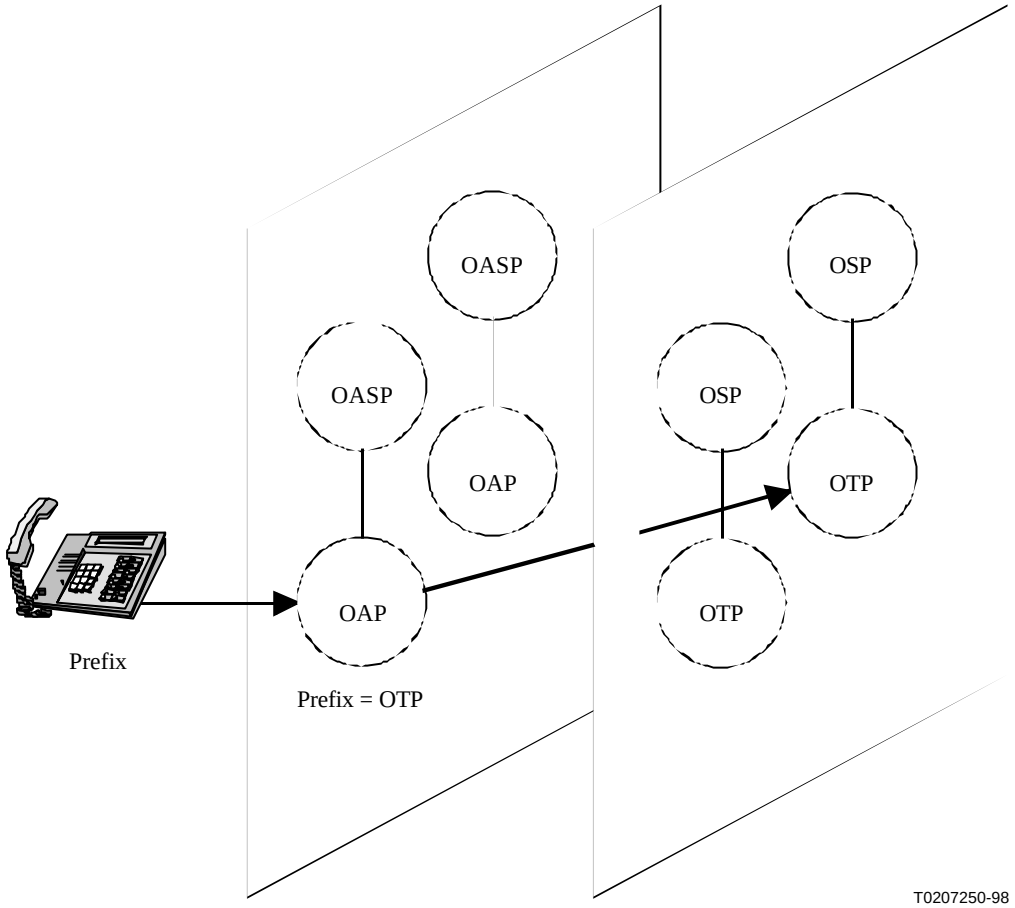


Figure 3 – Selection of OTP – Prefix

In Figure 3, the OAP performs the function of carrier selection through means of a dialled prefix. In addition to being dialled, the carrier selection information could also be populated in the call set-up message by the calling party's equipment. The OAP translates this information to determine the requested OTP.

8.2.1.2 The complete number

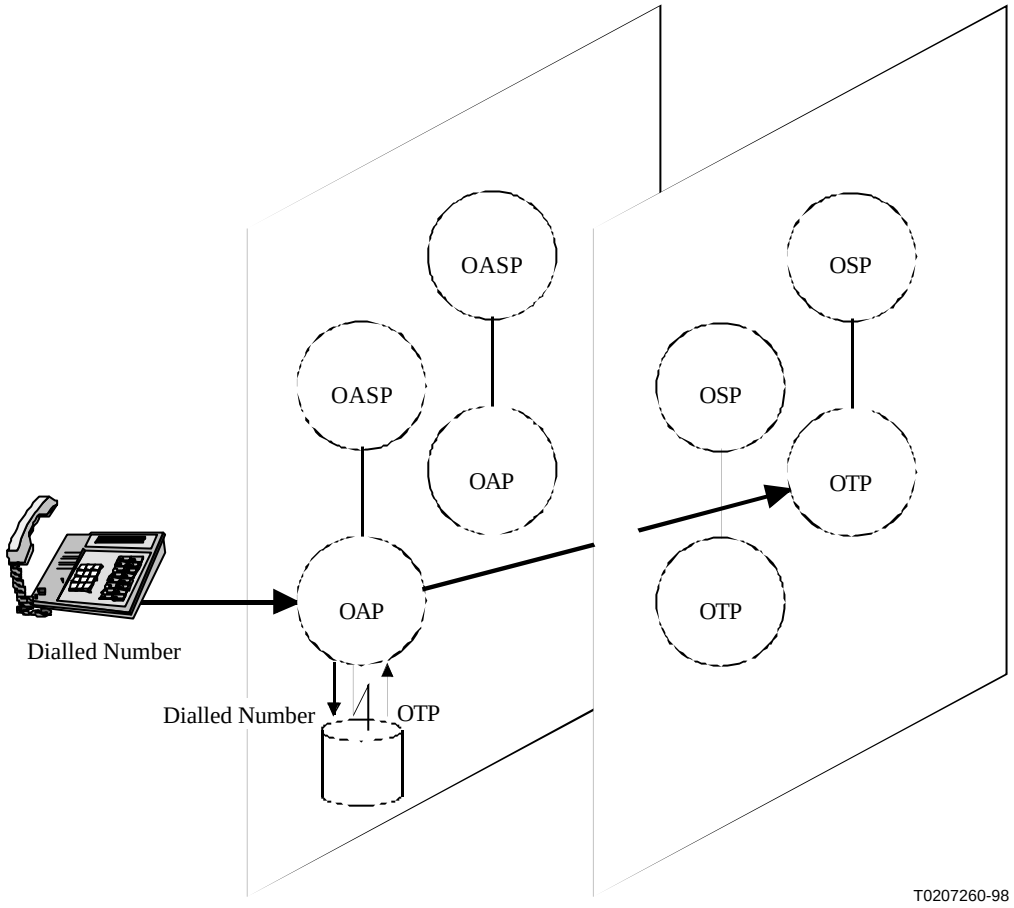


Figure 4 – Selection of OTP – Number analysis by OAP

In Figure 4, the OAP performs the function of carrier selection through means of analysis of the dialled number to determine the requested OTP.

8.3 Selection by the Called Party

8.3.1 FUNCTIONAL DESCRIPTION

The following diagrams utilize the functional model, showing implementations to clarify network identification. Each of the cases discussed shows only a voice-path between entities. Some applications may use signalling paths between entities, but these are determined by the same network identification methods shown here. We have shown only identification of the connection networks for simplicity – it is assumed the Service providers at each stage are

either the same as the connection network or are determined by the connection network based on the identification information received.

Table 2 summarizes various methods of network identification.

Table 2 – Network identification methods

Selection of	Based on	Identification in	Controlled by
Terminating Transport Provider (TTP)	Number Analysis By OTP (Figure 6) Destination Number By OTP (Figure 5)	Number Number	Called Party choice of Service provider Called Party choice of Service provider

8.3.1.1 Internal to the number

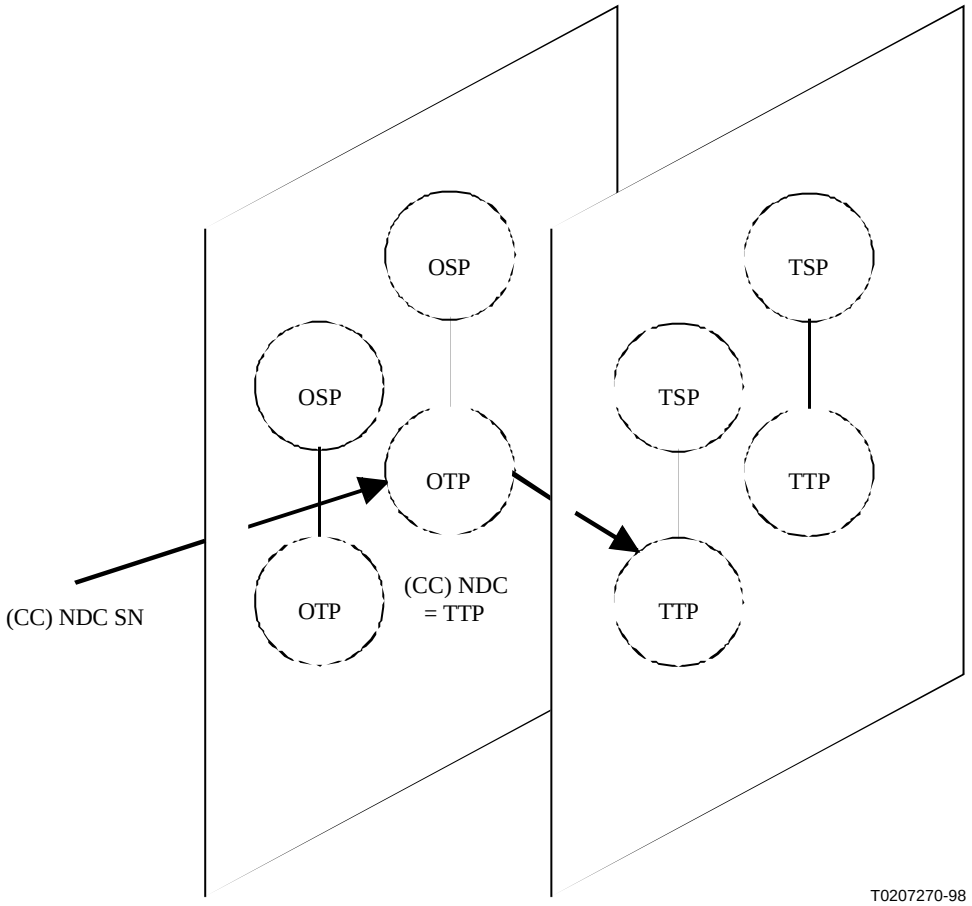


Figure 5 – Identification of TTP – Destination number by OTP

In Figure 5, the OTP performs the function of network identification through means of digit analysis of the destination number. The destination number contains a field which explicitly identifies the TTP. The OTP must recognize that the destination number contains explicit network identification, identify the field within the number containing that identification, and translate the value of the field to the appropriate TTP.

8.3.1.2 The complete number

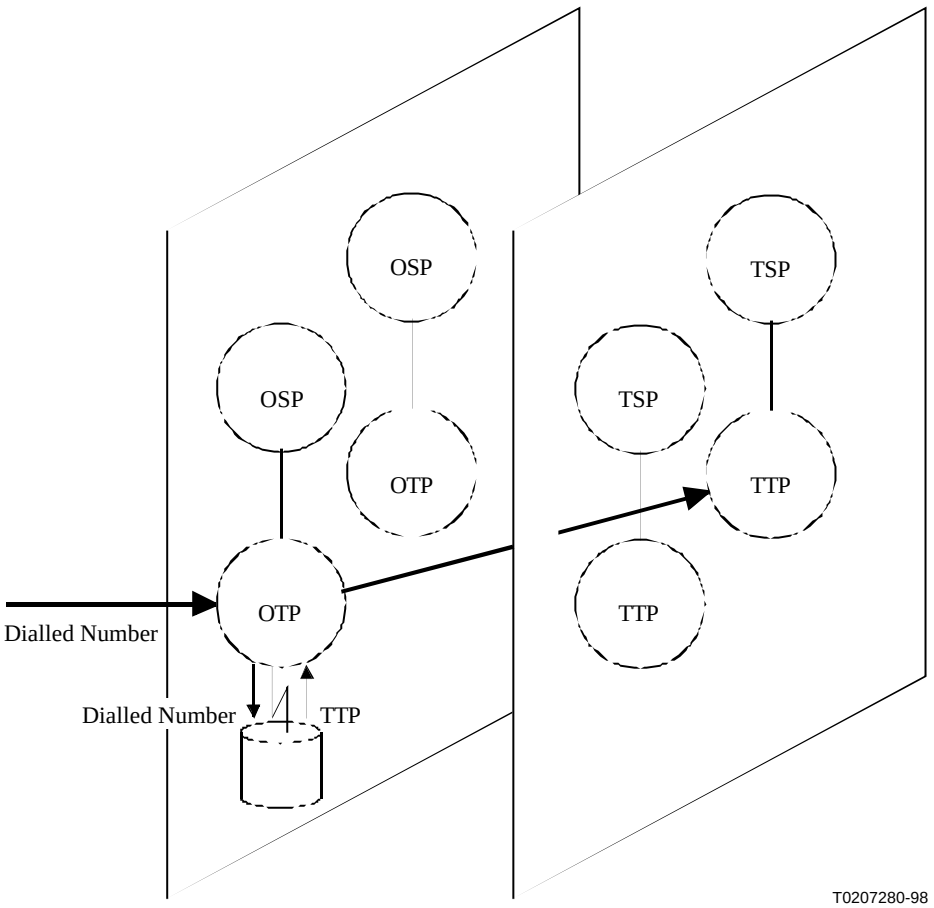


Figure 6 – Identification of TTP – Number analysis by OTP

In Figure 6, the OTP performs the function of network identification through means of analysis of the entire dialled number. The OTP must recognize that the destination number must be analyzed to determine the appropriate TTP, and perform analysis on the entire number.

Annexure II

Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in Telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP)

(31997L0033*) Official Journal L 199 , 26/07/1997 p. 0032 - 0052*

Article 1
Scope and aim

This Directive establishes a regulatory framework for securing in the Community the interconnection of telecommunications networks and in particular the interoperability of services, and with regard to ensuring provision of universal service in an environment of open and competitive markets.
It concerns the harmonization of conditions for open and efficient interconnection of and access to public telecommunications networks and publicly available telecommunications services.

Article 2
Definitions

1. For the purposes of this Directive:
(a) 'interconnection` means the physical and logical linking of telecommunications networks used by the same or a different organization in order to allow the users of one organization to communicate with users of the same or another organization, or to access services provided by another organization. Services may be provided by the parties involved or other parties who have access to the network;
(b) 'public telecommunications network` means a telecommunications network used, in whole or in part, for the provision of publicly available telecommunications services;
(c) 'telecommunications network` means transmission systems and, where applicable, switching equipment and other resources which permit the conveyance of signals between defined termination points by wire, by radio, by optical or by other electromagnetic means;
(d) 'telecommunications services` means services whose provision consists wholly or partly in the transmission and routing of signals on telecommunications networks, with the exception of radio and television broadcasting;
(e) 'users` means individuals, including consumers or organizations, using or requesting publicly available telecommunications services;
(f) 'special rights` means rights that are granted by a Member State to a limited number of undertakings through any legislative, regulatory or administrative instrument which, within a given geographical area, limits to two or more the number of such undertakings authorized to provide a service or undertake an activity, otherwise than according to objective, proportionate and non-discriminatory criteria, or designates, otherwise than according to such criteria, several competing undertakings as being authorized to provide a service or undertake an activity, or confers, on any undertaking or undertakings, otherwise than according to such criteria, legal or regulatory advantages which substantially affect the ability of any other undertaking to provide the same service or to undertake the same activity in the same geographical area under substantially the same conditions;
(g) 'universal service` means a defined minimum set of services of specified quality which is available to all users independent of their geographical location and, in the light of specific national conditions, at an affordable price.

2. Further definitions given in Directive 90/387/EEC shall apply, where relevant.

Article 3
Interconnection at national and Community level

1. Member States shall take all necessary measures to remove any restrictions which prevent organizations authorized by Member States to provide public telecommunications networks and publicly available telecommunications services from negotiating interconnection agreements between themselves in accordance with Community law. The organizations concerned may be in the same Member State or in different Member States. Technical and commercial arrangements for interconnection shall be a matter for agreement between the parties involved, subject to the provisions of this Directive and the competition rules of the Treaty.

2. Member States shall ensure the adequate and efficient interconnection of the public telecommunications networks set out in Annex I, to the extent necessary to ensure interoperability of these services for all users within the Community.

3. Member States shall ensure that organizations which interconnect their facilities to public telecommunications networks and/or publicly available telecommunications services respect at all times the confidentiality of information transmitted or stored.

Article 4
Rights and obligations for interconnection

1. Organizations authorized to provide public telecommunications networks and/or publicly available telecommunications services as set out in Annex II shall have a right and, when requested by organizations in that category, an obligation to negotiate interconnection with each other for the purpose of providing the services in question, in order to ensure provision of these networks and services throughout the Community. On a case-by-case basis, the national regulatory authority may agree to limit this obligation on a temporary basis and on the grounds that there are technically and commercially viable alternatives to the interconnection requested, and that the requested interconnection is inappropriate in relation to the resources available to meet the request. Any such limitation imposed by a national regulatory authority shall be fully reasoned and made public in accordance with Article 14 (2).

2. Organizations authorized to provide public telecommunications networks and publicly available telecommunications services as set out in Annex I which have significant market power shall meet all reasonable requests for access to the network including access at points other than the network termination points offered to the majority of end-users.

An organization shall be presumed to have significant market power when it has a share of more than 25 % of a particular telecommunications market in the geographical area in a Member State within which it is authorized to operate.

National regulatory authorities may nevertheless determine that an organization with a market share of less than 25 % in the relevant market has significant market power. They may also determine that an organization with a market share of more than 25 % in the relevant market does not have significant market power. In either case, the determination shall take into account the organization's ability to influence market conditions, its turnover relative to the size of the market, its control of the means of access to end-users, its access to financial resources and its experience in providing products and services in the market.

Article 5
Interconnection and universal service contributions

1. Where a Member State determines, in accordance with the provisions of this Article, that universal service obligations represent an unfair burden on an organization, it shall establish a mechanism for sharing the net cost of the universal service obligations with other organizations operating public telecommunications networks and/or publicly available voice telephony services. Member States shall take due account of the principles of transparency, non-discrimination and proportionality in setting the contributions to be made. Only public

telecommunications networks and publicly available telecommunications services as set out in Part 1 of Annex I may be financed in this way.

2. Contributions to the cost of universal service obligations if any may be based on a mechanism specifically established for the purpose and administered by a body independent of the beneficiaries, and/or may take the form of a supplementary charge added to the interconnection charge.

3. In order to determine the burden if any which the provision of universal service represents, organizations with universal service obligations shall, at the request of their national regulatory authority, calculate the net cost of such obligations in accordance with Annex III. The calculation of the net cost of universal service obligations shall be audited by the national regulatory authority or another competent body, independent of the telecommunications organization, and approved by the national regulatory authority. The results of the cost calculation and the conclusions of the audit shall be open to the public in accordance with Article 14 (2).

4. Where justified on the basis of the net cost calculation referred to in paragraph 3, and taking into account the market benefit if any which accrues to an organization that offers universal service, national regulatory authorities shall determine whether a mechanism for sharing the net cost of universal service obligations is justified.

5. Where a mechanism for sharing the net cost of universal service obligations as referred to in paragraph 4 is established, national regulatory authorities shall ensure that the principles for cost sharing, and details of the mechanism used, are open to public inspection in accordance with Article 14 (2).

National regulatory authorities shall ensure that an annual report is published giving the calculated cost of universal service obligations, and identifying the contributions made by all the parties involved.

6. Until such time as the procedure described in paragraphs 3, 4 and 5 is implemented, any charges payable by an interconnected party which include or serve as a contribution to the cost of universal service obligations shall be notified, prior to their introduction, to the national regulatory authority. Without prejudice to Article 17 of this Directive, where the national regulatory authority finds, on its own initiative, or after a substantiated request by an interested party, that such charges are excessive, the organization concerned shall be required to reduce the relevant charges. Such reductions shall be applied retrospectively, from the date of introduction of the charges, but not before 1 January 1998.

Article 6
Non-discrimination and transparency

For interconnection to public telecommunications networks and publicly available telecommunications services as set out in Annex I provided by organizations which have been notified by national regulatory authorities as having significant market power, Member States shall ensure that:

(a) the organizations concerned adhere to the principle of non-discrimination with regard to interconnection offered to others. They shall apply similar conditions in similar circumstances to interconnected organizations providing similar services, and shall provide interconnection facilities and information to others under the same conditions and of the same quality as they provide for their own services, or those of their subsidiaries or partners;
(b) all necessary information and specifications are made available on request to organizations considering interconnection, in order to facilitate conclusion of an agreement; the information provided should include changes planned for implementation within the next six months, unless agreed otherwise by the national regulatory authority;

(c) interconnection agreements are communicated to the relevant national regulatory authorities, and made available on request to interested parties, in accordance with Article 14 (2), with the exception of those parts which deal with the commercial strategy of the parties. The national regulatory authority shall determine which parts deal with the commercial strategy of the parties. In every case, details of interconnection charges, terms and conditions and any contributions to universal service obligations shall be made available on request to interested parties;
(d) information received from an organization seeking interconnection is used only for the purpose for which it was supplied. It shall not be passed on to other departments, subsidiaries or partners for whom such information could provide a competitive advantage.

Article 7
Principles for interconnection charges and cost accounting systems

1. Member States shall ensure that the provisions of paragraphs 2 to 6 apply to organizations operating the public telecommunications networks and/or publicly available telecommunications services as set out in Parts 1 and 2 of Annex I, which have been notified by national regulatory authorities as having significant market power.

2. Charges for interconnection shall follow the principles of transparency and cost orientation. The burden of proof that charges are derived from actual costs including a reasonable rate of return on investment shall lie with the organization providing interconnection to its facilities. National regulatory authorities may request an organization to provide full justification for its interconnection charges, and where appropriate shall require charges to be adjusted. This paragraph shall also apply to organizations set out in Part 3 of Annex I which have been notified by national regulatory authorities as having significant market power on the national market for interconnection.

3. National regulatory authorities shall ensure the publication, in accordance with Article 14 (1), of a reference interconnection offer. The reference interconnection offer shall include a description of the interconnection offerings broken down into components according to market needs, and the associated terms and conditions including tariffs. Different tariffs, terms and conditions for interconnection may be set for different categories of organizations which are authorized to provide networks and services, where such differences can be objectively justified on the basis of the type of interconnection provided and/or the relevant national licensing conditions. National regulatory authorities shall ensure that such differences do not result in distortion of competition, and in particular that the organization applies the appropriate interconnection tariffs, terms and conditions when providing interconnection for its own services or those of its subsidiaries or partners, in accordance with Article 6 (a).

The national regulatory authority shall have the ability to impose changes in the reference interconnection offer, where justified.
Annex IV provides a list of examples of elements for further elaboration of interconnection charges, tariff structures and tariff elements. Where an organization makes changes to the published reference interconnection offer, adjustments required by the national regulatory authority may be retrospective in effect, from the date of introduction of the change.

4. Charges for interconnection shall, in accordance with Community law, be sufficiently unbundled, so that the applicant is not required to pay for anything not strictly related to the service requested.

5. The Commission shall, acting in accordance with the procedure laid down in Article 15, draw up recommendations on cost accounting systems and accounting separation in relation to interconnection. National regulatory authorities shall ensure that the cost accounting systems used by the organizations concerned are suitable for implementation of the requirements of this Article, and are documented to a sufficient level of detail, as indicated in Annex V. National regulatory authorities shall ensure that a description of the cost accounting system, showing the main categories under which costs are grouped and the rules used for the

allocation of costs to interconnection, is made available on request. Compliance with the cost accounting system shall be verified by the national regulatory authority or another competent body, independent of the telecommunications organization and approved by the national regulatory authority. A statement concerning compliance shall be published annually.

6. Where they exist, charges related to the sharing of the cost of universal service obligations, as described in Article 5, shall be unbundled and identified separately.

Article 8
Accounting separation and financial reports

1. Member States shall require organizations providing public telecommunications networks and/or publicly available telecommunications services which have special or exclusive rights for the provision of services in other sectors in the same or another Member State to keep separate accounts for the telecommunications activities, to the extent that would be required if the telecommunications activities in question were carried out by legally independent companies, so as to identify all elements of cost and revenue, with the basis of their calculation and the detailed attribution methods used, related to their telecommunications activities including an itemized breakdown of fixed asset and structural costs, or to have structural separation for the telecommunications activities.
Member States may choose not to apply the requirements referred to in the first subparagraph to these organizations where their annual turnover in telecommunications activities in the Community is less than the limit set in Part 1 of Annex VI.

2. Member States shall require organizations operating public telecommunications networks and/or publicly available telecommunications services as set out in Parts 1 and 2 of Annex I and notified by national regulatory authorities as organizations having significant market power which provide public telecommunications networks and/or telecommunications services available for users and which offer interconnection services to other organizations, to keep separate accounts for, on the one hand, their activities related to interconnection - covering both interconnection services provided internally and interconnection services provided to others - and, on the other hand, other activities, so as to identify all elements of cost and revenue, with the basis of their calculation and the detailed attribution methods used, related to their interconnection activity, including an itemized breakdown of fixed asset and structural costs.
Member States may choose not to apply the requirements referred to in the first subparagraph to organizations where their annual turnover in telecommunications activities in the Member States is less than the limit set in Part 2 of Annex VI.

3. Organizations providing public telecommunications networks and/or publicly available telecommunications services shall provide financial information to their national regulatory authority promptly on request and to the level of detail required. National regulatory authorities may publish such information as would contribute to an open and competitive market, while taking account of considerations of commercial confidentiality.

4. The financial reports of organizations providing public telecommunications networks or publicly available telecommunications services shall be drawn up and submitted to independent audit and published. The audit shall be carried out in accordance with the relevant rules of national legislation.
The first subparagraph shall also apply to the separate accounts required in paragraphs 1 and 2.

Article 9
General responsibilities of the national regulatory authorities

1. National regulatory authorities shall encourage and secure adequate interconnection in the interests of all users, exercising their responsibility in a way that provides maximum economic efficiency and gives the maximum benefit to end-users. In particular, national regulatory authorities shall take into account:

- the need to ensure satisfactory end-to-end communications for users,
- the need to stimulate a competitive market,
- the need to ensure the fair and proper development of a harmonized European telecommunication market,
- the need to cooperate with their counterparts in other Member States,
- the need to promote the establishment and development of trans-European networks and services, and the interconnection of national networks and interoperability of services, as well as access to such networks and services,
- the principles of non-discrimination (including equal access) and proportionality,
- the need to maintain and develop universal service.

2. General conditions set down in advance by the national regulatory authority shall be published in accordance with Article 14 (1).
In particular, in relation to interconnection between organizations set out in Annex II, national regulatory authorities:
- may set ex ante conditions in the areas listed in Part 1 of Annex VII;
- shall encourage coverage in interconnection agreements of the issues listed in Part 2 of Annex VII.

3. In pursuit of the aims stated in paragraph 1, national regulatory authorities may intervene on their own initiative at any time, and shall do so if requested by either party, in order to specify issues which must be covered in an interconnection agreement, or to lay down specific conditions to be observed by one or more parties to such an agreement. National regulatory authorities may, in exceptional cases, require changes to be made to interconnection agreements already concluded, where justified to ensure effective competition and/or interoperability of services for users.

Conditions set by the national regulatory authority may include inter alia conditions designed to ensure effective competition, technical conditions, tariffs, supply and usage conditions, conditions as to compliance with relevant standards, compliance with essential requirements, protection of the environment, and/or the maintenance of end-to-end quality of service. The national regulatory authority may, on its own initiative at any time or if requested by either party, also set time limits within which negotiations on interconnection are to be completed. If agreement is not reached within the time allowed, the national regulatory authority shall take steps to bring about an agreement under procedures laid down by that authority. The procedures shall be open to the public in accordance with Article 14 (2).

4. Where an organization authorized to provide public telecommunications networks or publicly available telecommunications services enters into interconnection agreements with others, the national regulatory authority shall have the right to inspect all such interconnection agreements in their entirety.

5. In the event of an interconnection dispute between organizations in a Member State, the national regulatory authority of that Member State shall, at the request of either party, take steps to resolve the dispute within six months of this request. The resolution of the dispute shall represent a fair balance between the legitimate interests of both parties.
In so doing, the national regulatory authority shall take into account, inter alia:
- the user interest,
- regulatory obligations or constraints imposed on any of the parties,
- the desirability of stimulating innovative market offerings, and of providing users with a wide range of telecommunications services at a national and at a Community level,
- the availability of technically and commercially viable alternatives to the interconnection requested,
- the desirability of ensuring equal access arrangements,
- the need to maintain the integrity of the public telecommunications network and the interoperability of services,
- the nature of the request in relation to the resources available to meet the request,
- the relative market positions of the parties,
- the public interest (e.g. the protection of the environment),

- the promotion of competition,
- the need to maintain a universal service.

A decision on the matter by a national regulatory authority shall be made available to the public in accordance with national procedures. The parties concerned shall be given a full statement of the reasons on which it is based.

6. In cases where organizations which are authorized to provide public telecommunications networks and/or publicly available telecommunications services have not interconnected their facilities, national regulatory authorities, in compliance with the principle of proportionality and in the interest of users, shall be able, as a last resort, to require the organizations concerned to interconnect their facilities in order to protect essential public interests and, where appropriate, shall be able to set terms of interconnection.

Article 10
Essential requirements

Without prejudice to action which may be taken in accordance with Articles 3 (5) and 5 (3) of Directive 90/387/EEC, the essential requirements as specified in Article 3 (2) of Directive 90/387/EEC shall for the purpose of this Directive apply to interconnection to public telecommunications networks and/or publicly available telecommunications services as set out in points (a) to (d) of this Article.

Where the national regulatory authority imposes conditions based on essential requirements in interconnection agreements, these conditions shall be published in the manner laid down in Article 14 (1).

(a) Security of network operations: Member States shall take all necessary steps to ensure that the availability of public telecommunications networks and publicly available telecommunications services is maintained in the event of catastrophic network breakdown or in exceptional cases of force majeure, such as extreme weather, earthquakes, flood, lightning or fire.

In the event of the circumstances referred to in the first subparagraph, the bodies concerned shall make every endeavour to maintain the highest level of service to meet any priorities laid down by the competent national authorities.

The need to meet these requirements shall not constitute a valid reason for refusal to negotiate terms for interconnection.

Furthermore, the national regulatory authority shall ensure that any conditions for interconnection related to the security of networks as regards risk of accidents are proportionate and non-discriminatory in nature, and are based on objective criteria identified in advance.

(b) Maintenance of network integrity: Member States shall take all necessary steps to ensure that the integrity of public telecommunications networks is maintained. The need to maintain network integrity does not constitute a valid reason for refusal to negotiate terms for interconnection. The national regulatory authority shall ensure that any conditions for interconnection related to protection of network integrity are proportionate and non-discriminatory in nature, and are based on objective criteria identified in advance.

(c) Interoperability of services: Member States may impose conditions in interconnection agreements in order to ensure interoperability of services, including conditions designed to ensure satisfactory end-to-end quality. Such conditions may include implementation of specific technical standards, or specifications, or codes of conduct agreed by the market players.

(d) Protection of data: Member States may impose conditions in interconnection agreements in order to ensure the protection of data, to the extent necessary to ensure compliance with relevant regulatory provisions on the protection of data including protection of personal data, the confidentiality of information processed, transmitted or stored, and the protection of privacy, compatible with Community law.

Article 11
Collocation and facility sharing

Where an organization providing public telecommunications networks and/or publicly available telecommunications services has the right under national legislation to install facilities on, over or under public or private land, or may take advantage of a procedure for the expropriation or use of property, national regulatory authorities shall encourage the sharing of such facilities and/or property with other organizations providing telecommunications networks and publicly available services, in particular where essential requirements deprive other organizations of access to viable alternatives.
Agreements for collocation or facility sharing shall normally be a matter for commercial and technical agreement between the parties concerned. The national regulatory authority may intervene to resolve disputes, as provided for in Article 9.
Member States may impose facility and/or property sharing arrangements (including physical collocation) only after an appropriate period of public consultation during which all interested parties must be given an opportunity to express their views. Such arrangements may include rules for apportioning the costs of facility and/or property sharing.

Article 12
Numbering

1. Member States shall ensure the provision of adequate numbers and numbering ranges for all publicly available telecommunications services.

2. In order to ensure full interoperability of Europe-wide networks and services, Member States in accordance with the Treaty shall take all necessary steps to ensure the coordination of their national positions in international organizations and fora where numbering decisions are taken, taking into account possible future developments in numbering in Europe.

3. Member States shall ensure that national telecommunications numbering plans are controlled by the national regulatory authority, in order to guarantee independence from organizations providing telecommunications networks or telecommunications services and facilitate number portability. In order to ensure effective competition, national regulatory authorities shall ensure that the procedures for allocating individual numbers and/or numbering ranges are transparent, equitable and timely and the allocation is carried out in an objective, transparent and non-discriminatory manner. National regulatory authorities may lay down conditions for the use of certain prefixes or certain short codes, in particular where these are used for services of general public interest (e.g. freephone services, kiosk billed services, directory services, emergency services), or to ensure equal access.

4. National regulatory authorities shall ensure that the main elements of the national numbering plans, and all subsequent additions or amendments to them, are published in accordance with Article 14 (1), subject only to limitations imposed on the grounds of national security.

5. National regulatory authorities shall encourage the earliest possible introduction of the number portability facility whereby end-users who so request can retain their number(s) on the fixed public telephone network at a specific location independent of the organization providing service, and shall ensure that this facility is available at least in all major centres of population before 1 January 2003.
In order to ensure that charges to consumers are reasonable, national regulatory authorities shall ensure that pricing for interconnection related to the provision of this facility is reasonable.

6. National regulatory authorities shall ensure that numbering plans and procedures are applied in a manner that gives fair and equal treatment to all providers of publicly available telecommunications services. In particular, Member States shall ensure that an organization allocated a range of numbers shall avoid undue discrimination in the number sequences used to give access to the services of other telecommunications operators.

Article 13
Technical standards

1. Without prejudice to Article 5 (3) of Directive 90/387/EEC whereby the implementation of specified European standards may be made compulsory, national regulatory authorities shall ensure that organizations providing public telecommunications networks or publicly available telecommunications services take full account of standards listed in the Official Journal of the European Communities as being suitable for the purpose of interconnection. In the absence of such standards, national regulatory authorities shall encourage the provision of technical interfaces for interconnection according to the standards or specifications listed below:
- standards adopted by European standardization bodies such as the European Telecommunications Standards Institute (ETSI) or the European Committee for Standardization/European Committee for Electrotechnical Standardization (CEN/CENELEC), or, in the absence of such standards,
- international standards or recommendations adopted by the International Telecommunications Union (ITU), the International Organization for Standardization (ISO) or the International Electrotechnical Committee (IEC), or, in the absence of such standards,
- national standards.

2. The Commission may, acting in accordance with the procedure laid down in Article 15, request standards for interconnection and access to be drawn up, where appropriate, by European standardization bodies. Reference to standards for interconnection and access may be published in the Official Journal of the European Communities in accordance with Article 5 of Directive 90/387/EEC.

Article 14
Publication of and access to information

1. With regard to the information identified in Article 7 (3), Article 9 (2), Article 10 and Article 12 (4), national regulatory authorities shall ensure that up-to-date information is published in an appropriate manner in order to provide easy access to that information for interested parties. Reference shall be made in the national Official Gazette of the Member State concerned to the manner in which this information is published.

2. With regard to the information identified in Article 4 (1), Article 5 (3), Article 5 (5), Article 6 (c) and Article 9 (3), national regulatory authorities shall ensure that up-to-date specific information referred to in those Articles is made available on request to interested parties, free of charge, during normal working hours. Reference shall be made in the national Official Gazette of the Member State concerned to the times and location(s) at which the information is available.

3. Member States shall notify to the Commission before 1 January 1998 - and immediately thereafter in case of any change - the manner in which the information referred to in paragraphs 1 and 2 is made available. The Commission shall regularly publish a corresponding reference to such notifications in the Official Journal of the European Communities.

Article 15
Advisory Committee procedure

1. The Commission shall be assisted by the committee set up by Article 9 (1) of Directive 90/387/EEC, hereinafter referred to as the 'ONP Committee`.

2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft, within a time limit which the chairman may lay down according to the urgency of the matter, if necessary by taking a vote.

3. The opinion shall be recorded in the minutes; in addition, each Member State shall have the right to ask to have its position recorded in the minutes. The Commission shall take the utmost account of the opinion delivered by the committee. It shall inform the committee of the manner in which its opinion has been taken into account.

Article 16

Regulatory Committee procedure

1. Notwithstanding the provisions of Article 15, the following procedure shall apply in respect of the matters covered by Article 19.

2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148 (2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

3. The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the committee.

4. If the measures envisaged are not in accordance with the opinion of the committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority. If on the expiry of a period of three months from the date of referral to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

Article 17
Procedure for resolving disputes between organizations operating under authorizations provided by different Member States

1. Without prejudice to:
(a) any action that the Commission or any Member State may take pursuant to the Treaty;
(b) the rights of the party invoking the procedure in paragraphs 2 and 3, of the organizations concerned or of any other party under applicable national law;
the procedure set out in paragraphs 2 and 3 shall be available for the resolution of interconnection disputes between organizations operating under authorizations granted by different Member States, where such dispute does not fall within the responsibility of a single national regulatory authority exercising its power in accordance with Article 9.

2. Any party having a complaint against another organization over interconnection may refer the complaint to the national regulatory authority of the Member State that has granted the authorization of the organization against which the complaint is made. The national regulatory authority shall take steps to resolve the dispute in accordance with the procedures and timescale set out in Article 9 (5).

3. Where there are concurrent disputes between the same two organizations, the national regulatory authorities concerned shall, on request of either party in dispute, coordinate their efforts in order to bring about resolution of the disputes, in accordance with the principles set out in Article 9 (1), within 6 months of referral. The solutions shall represent a fair balance between the legitimate interests of both parties in dispute and be consistent with interconnection rules in the Member States concerned, in conformity with Community law.

Article 18
Notification

1. Member States shall ensure that national regulatory authorities have the necessary means for carrying out the tasks identified in this Directive, and shall notify to the Commission by 31 January 1997 the national regulatory authorities responsible for those tasks.

2. National regulatory authorities shall notify to the Commission by 31 January 1997, and immediately thereafter in the event of any change, the names of those organizations which:
- have universal service obligations for the provision of the public telecommunications networks and publicly available telecommunications services set out in Part 1 of Annex I and which are

authorized to collect directly a contribution to the net cost of universal service under the procedure in Article 5 (2),
- are subject to the provisions of this Directive concerning organizations with significant market power,
- are covered by Annex II.
The Commission may request national regulatory authorities to provide their reasons for classifying an organization as having or not having significant market power.

3. The Commission shall publish the names referred to in paragraph 2 in the Official Journal of the European Communities.

Article 19
Technical adjustment

Modifications necessary to adapt Annexes IV, V and VII to the Directive to new technological developments or to changes in market and consumer demand shall be determined by the Commission in accordance with the procedure laid down in Article 16.

Article 20
Deferment

1. Deferment of the obligations under Articles 3 (1), 3 (2), 4 (1), 4 (2), 9 (1) and 9 (3) insofar as those obligations concern direct interconnection between the mobile networks of that Member State and the fixed or mobile networks of other Member States, and under Article 5, shall be granted to those Member States identified in the Council Resolutions of 22 July 1993 and 22 December 1994 which benefit from an additional transition period for the liberalization of telecommunications services for as long as and to the extent that they avail themselves of such transition periods. Member States shall inform the Commission of their intention to make use of them.

2. Deferment of the obligations under Article 12 (5) may be requested where the Member State concerned can prove that they would impose an excessive burden on certain organizations or classes of organization. The Member State shall inform the Commission of the reasons for requesting a deferment, the date by which the requirements can be met, and the measures envisaged in order to meet this deadline. The Commission shall consider the request taking into account the particular situation in that Member State and the need to ensure a coherent regulatory environment at a Community level, and shall inform the Member State whether it deems that the particular situation in that Member State justifies a deferment and, if so, until which date such deferment is justified.

Article 21
Interconnection with third country organizations

1. Member States may inform the Commission of any general difficulties encountered, de jure or de facto, by Community organizations in interconnecting with organizations in third countries, which have been brought to their attention.

2. Whenever the Commission is informed of the existence of such difficulties, the Commission may, if necessary, submit proposals to the Council for an appropriate mandate for negotiation of comparable rights for Community organizations in these third countries. The Council shall decide by qualified majority.

3. Measures taken pursuant to paragraph 2 shall be without prejudice to the Community's and Member States' obligations under relevant international agreements.

Article 22
Review

1. The Commission shall report to the European Parliament and to the Council by 31 December 1997, and periodically thereafter, on the availability of rights to interconnect in third countries for the benefit of Community organizations.

2. The Commission shall examine and report periodically to the European Parliament and to the Council on the functioning of this Directive, on the first occasion not later than 31 December 1999. For this purpose, the Commission may request information from the Member States. The report shall examine what provisions of this Directive should be adapted in the light of the developments in the market, the evolution of technology and the changes in user demand, in particular:
(a) for the provisions under Article 5,
(b) to confirm the timetable laid down in Article 12 (5).
The Commission shall also investigate in the report the added value of the setting up of a European Regulatory Authority to carry out those tasks which would prove to be better undertaken at Community level.

Article 23
Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 1997. They shall immediately inform the Commission thereof.
When Member States adopt these provisions, these shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such reference shall be adopted by Member States.

2. Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field covered by this Directive.

Article 24
Entry into force

This Directive shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Communities.

Article 25
Addressees

This Directive is addressed to the Member States.

Done at Brussels, 30 June 1997.

For the European Parliament

The President
J. M. GIL-ROBLES

For the Council

The President
A. NUIS

ANNEX I

SPECIFIC PUBLIC TELECOMMUNICATIONS NETWORKS AND PUBLICLY AVAILABLE TELECOMMUNICATIONS SERVICES

(referred to in Article 3 (2))

The following public telecommunications networks and publicly available telecommunications services are considered of major importance at European level. Organizations providing the public telecommunications networks and/or publicly available services identified below which have significant market power are subject to specific obligations with regard to interconnection and access, as specified in Articles 4 (2), 6 and 7.

Part 1

The fixed public telephone network

The fixed public telephone network means the public switched telecommunications network which supports the transfer between network termination points at fixed locations of speech and 3,1 kHz bandwidth audio information, to support inter alia:

- voice telephony,
- facsimile Group III communications, in accordance with ITU-T Recommendations in the 'T-series`,
- voice band data transmission via modems at a rate of at least 2 400 bit/s, in accordance with

ITU-T Recommendations in the 'V-series`.

Access to the end-user's network termination point is via a number or numbers in the national numbering plan.

The fixed public telephone service according to Directive 95/62/EC of the European Parliament and of the Council of 13 December 1995 on the application of open network provision (ONP) to voice telephony (1).

The fixed public telephone service means the provision to end-users at fixed locations of a service for the originating and receiving of national and international calls, and may include access to emergency (112) services, the provision of operator assistance, directory services, provision of public pay phones, provision of service under special terms and/or provision of special facilities for customers with disabilities or with special social needs.

Access to the end-user is via a number or numbers in the national numbering plan.

Part 2

The leased lines service

Leased lines means the telecommunications facilities which provide for transparent transmission capacity between network termination points, and which do not include on-demand switching (switching functions which the user can control as part of the leased line provision). They may include systems which allow flexible use of the leased line bandwidth, including certain routing and management capabilities.

Part 3

Public mobile telephone networks

A public mobile telephony network is a public telephone network where the network termination points are not at fixed locations.

Public mobile telephone services

A public mobile telephone service is a telephony service whose provision consists, wholly or partly, in the establishment of radiocommunications to one mobile user, and makes use wholly or partly of a public mobile telephone network.

ANNEX II

ORGANIZATIONS WITH RIGHTS AND OBLIGATIONS TO NEGOTIATE INTERCONNECTION WITH EACH OTHER IN ORDER TO ENSURE COMMUNITY-WIDE SERVICES

(referred to in Article 4 (1))

This Annex covers those organizations which provide switched and unswitched bearer capabilities to users upon which other telecommunications services depend. Organizations in the following categories have both rights and obligations to interconnect with each other, in accordance with Article 4 (1). Interconnection between these organizations is subject to additional supervision by national regulatory authorities, in accordance with Article 9 (2). Special interconnection charges, terms and conditions may exist for these categories of organizations in accordance with Article 7 (3).

1. Organizations which provide fixed and/or mobile public switched telecommunications networks and/or publicly available telecommunications services, and in so doing control the means of access to one or more network termination points identified by one or more unique numbers in the national numbering plan. (See notes below).
2. Organizations which provide leased lines to users' premises.
3. Organizations which are authorized in a Member State to provide international telecommunications circuits between the Community and third countries, for which purpose they have exclusive or special rights.
4. Organizations providing telecommunications services which are permitted in this category to interconnect in accordance with relevant national licensing or authorization schemes.

Notes

Control of the means of access to a network termination point means the ability to control the telecommunications services available to the end-user at that network termination point and/or the ability to deny other service providers access to the end-user at the network termination point.

Control of the means of access may entail ownership or control of the physical link to the end-user (whether wire or wireless), and/or the ability to change or withdraw the national number or numbers needed to access an end-user's network termination point.

ANNEX III

CALCULATING THE COST OF UNIVERSAL SERVICE OBLIGATIONS FOR VOICE TELEPHONY
(referred to in Article 5 (3))

Universal service obligations refer to those obligations placed upon an organization by a Member State which concern the provision of a network and service throughout a specified geographical area, including - where required - averaged prices in that geographical area for the provision of that service.
The cost of universal service obligations shall be calculated as the difference between the net cost for an organization of operating with the universal service obligations and operating without the universal service obligations.
This applies whether the network in a particular Member State is fully developed or is still undergoing development and expansion.
The calculation shall be based upon the costs attributable to:
(i) elements of the identified services which can only be provided at a loss or provided under cost conditions falling outside normal commercial standards.
This category may include service elements such as access to emergency telephone services, provision of certain public pay telephones, provision of certain services or equipment for disabled people, etc.
(ii) specific end-users or groups of end-users who, taking into account the cost of providing the specified network and service, the revenue generated and any geographical averaging of prices imposed by the Member State, can only be served at a loss or under cost conditions falling outside normal commercial standards.
This category includes those end-users or groups of end-users which would not be served by a commercial operator which did not have an obligation to provide universal service.
In peripheral regions with expanding networks, the cost calculation should be based on the additional cost of serving those end-users or groups of end-users which an operator applying the normal commercial principles of a competitive environment would choose not to serve.
Revenues shall be taken into account in calculating the net costs. Costs and revenues should be forward-looking.

ANNEX IV

LIST OF EXAMPLES OF ELEMENTS FOR INTERCONNECTION CHARGES (referred to in Article 7 (3))

Interconnection charges refer to the actual charges payable by interconnected parties. The tariff structure refers to the broad categories into which interconnection charges are divided, e.g.

- charges to cover initial implementation of the physical interconnection, based on the costs of providing the specific interconnection requested (e.g. specific equipment and resources; compatibility testing),
- rental charges to cover the on-going use of equipment and resources (connection maintenance, etc.),
- variable charges for ancillary and supplementary services (e.g. access to directory services; operator assistance; data collection; charging; billing; switch-based and advanced services etc.),
- traffic related charges, for the conveyance of traffic to and from the interconnected network (e.g. the costs of switching and transmission), which may be on a per minute basis, and/or on the basis of additional network capacity required.

Tariff elements refer to the individual prices set for each network component or facility provided to the interconnected party.

Tariffs and charges for interconnection must follow the principles of cost orientation and transparency, in accordance with Article 7 (2).

Interconnection charges may include a fair share, according to the principle of proportionality, of joint and common costs and the costs incurred in providing equal access, and number portability, and the costs of ensuring essential requirements (maintenance of the network integrity; network security in cases of emergency; interoperability of services; and protection of data).

ANNEX V

COST ACCOUNTING SYSTEMS FOR INTERCONNECTION
(referred to in Article 7 (5))

Article 7 (5) calls for details of the cost accounting system; the list below indicates, by way of example, some elements which may be included in such accounting systems.
The purpose of publishing this information is to provide transparency in the calculation of interconnection charges, so that other market players are in a position to ascertain that the charges have been fairly and properly calculated.
This objective should be taken into account by the national regulatory authority and the organizations affected when determining the level of detail in the information published.
The list below indicates the elements to be included in the information published.

1. The cost standard used
e.g. fully distributed costs, long-run average incremental costs, marginal costs, stand-alone costs, embedded direct costs, etc.
including the cost base(s) used,
i.e. historic costs (based on actual expenditure incurred for equipment and systems) or forward-looking costs (based on estimated replacement costs of equipment or systems).

2. The cost elements included in the interconnection tariff
Identification of all the individual cost components which together make up the interconnection charge, including the profit element.

3. The degrees and methods of cost allocation, in particular the treatment of joint and common costs
Details of the degree to which direct costs are analyzed, and the degree and method by which joint and common costs are included in interconnection charges

4. Accounting conventions
i.e. the accounting conventions used for the treatment of costs covering:
- the timescale for depreciation of major categories of fixed asset (e.g. land, buildings, equipment, etc.),
- the treatment, in terms of revenue versus capital cost, of other major expenditure items (e.g. computer software and systems, research and development, new business development, direct and indirect construction, repairs and maintenance, finance charges, etc.)

The information on cost accounting systems, as identified in this Annex, may be amended in accordance with the procedure referred to in Article 19.

ANNEX VI

THRESHOLDS FOR TELECOMMUNICATIONS TURNOVER

(referred to in Article 8 (1) and 8 (2))

Part 1

The threshold for annual turnover in telecommunications activities referred to in Article 8 (1) shall be fifty million ecus. (ECU 50 million)

Part 2

The threshold for annual turnover in telecommunications activities referred to in Article 8 (2) shall be twenty million ecus. (ECU 20 million)

ANNEX VII

FRAMEWORK FOR NEGOTIATION OF INTERCONNECTION AGREEMENTS
(referred to in Article 9 (2))

Part 1

Areas where the national regulatory authority may set ex ante conditions

(a) Dispute resolution procedure,
(b) Requirements for publication/access to interconnection agreements and other periodic publication duties,
(c) Requirements for the provision of equal access and number portability,
(d) Requirements to provide facility sharing, including collocation,
(e) Requirements to ensure the maintenance of essential requirements,
(f) Requirements for allocation and use of numbering resources (including access to directory services, emergency services and pan-European numbers),
(g) Requirements concerning the maintenance of end-to-end quality of service,
(h) Where applicable, determination of the unbundled part of the interconnection charge which represents a contribution to the net cost of universal service obligations.

Part 2

Other issues, the coverage of which in interconnection agreements is to be encouraged

(a) Description of interconnection services to be provided,
(b) Terms of payment, including billing procedures,
(c) Locations of the points of interconnection,
(d) Technical standards for interconnection,
(e) Interoperability tests,
(f) Measures to comply with essential requirements,
(g) Intellectual property rights,
(h) Definition and limitation of liability and indemnity,
(i) Definition of interconnection charges and their evolution over time,
(j) Dispute resolution procedure between parties before requesting national regulatory authority intervention,
(k) Duration and renegotiation of agreements,
(l) Procedure in the event of alterations being proposed to the network or service offerings of one of the parties,
(m) Achievement of equal access,
(n) Provision of facility sharing,
(o) Access to ancillary, supplementary and advanced services,
(p) Traffic/network management,
(q) Maintenance and quality of interconnection services,
(r) Confidentiality of non-public parts of the agreements,
(s) Training of staff.

ANNEX 2

Consultation Paper dated September 23, 2002 on tariffs for basic services (including arrangements for Interconnection Usage Charges and Access Deficit Charges)(the "Tariff Consultation").

http://www.trai.gov.in/consultation.htm

Consultation Paper No. 2002/3

TELECOM REGULATORY AUTHORITY OF INDIA

CONSULTATION PAPER

ON

TARIFFS
FOR
BASIC SERVICES

23rd September, 2002, New Delhi

PREFACE

1. The rapid technological advance in telecommunications sector has resulted in substantial improvement in availability and accessibility of basic telephony which has significantly helped in the spread of tele-density in the country. A key target of regulatory policy is to promote these objectives of improving access, and tariff policy plays a major role in this regard. Tariff policy aims at protecting consumer interest in a sustainable manner, which involves inter alia, financial viability of the service provider and fostering increased investments for rapid development of the sector. The telecom sector is identified as a high priority area needing swift growth and massive investments. It is felt that competition in the delivery of services can provide the required impetus for a quick growth of this sector.

2. The emerging multi-service multi-operator environment would require a renewed regulatory assessment in the context of both tariff & interconnection issues. All round and sustainable growth in a multi-operator environment would require a streamlined interconnect regime, based on cost based Interconnection Usage Charges (IUC). This becomes all the more critical when competition in the long distance call markets leads to sharp price declines and thus to precipitate larger reduction in the margins available for cross-subsidising the access deficit. The IUC regime provides an important source of revenue to the basic access providers and is a key part of the model Reference Interconnect Offer that has been notified by the TRAI.

3. The last major tariff review was conducted by the Authority in 1998/1999. The present situation has changed substantially and a new review is called for. This consultation paper seeks to explore the tariff framework for basic service, including dial-up access to Internet services, in the context of the competitive trends seen in the telecom market. The outcome expected in the Consultation Paper is two fold. One, the Authority would like to elicit a feedback on the key objectives to be served by this tariff review. Two, to determine the regulatory direction for a medium term scenario. Thus the questions posed are set in the context of trends seen to be emerging in the market for basic services.

4. This consultation paper concentrates on certain key principles relating to regulation of tariff for basic services. Chapter 2 of the Consultation paper examines the evolving structure of the basic service market with an analysis of the degree of competition that is likely to arise in the near future, the changes in tariffs for basic services in the past few years including the substantial changes that have taken place due to the introduction of competition in the NLD and ILD markets. Certain key questions on the regulatory framework for tariffs are raised in this background. Chapter 3 of the Consultation Paper addresses the details regarding basic tariff review with respect to monthly rentals and call charges. Chapter 4 deals with a short exposition on the tariffs for dial up access to internet. The Authority is of the view that it is important to consider these tariffs if a faster spread of internet is to be encouraged. Chapter 5 provides details on the Interconnection Usage Charge (IUC) regime for National Long Distance Calls. This chapter gives estimates prepared by the TRAI for origination, termination and carriage charges for NLD traffic, which is intended to be used as the basis for discussion on this issue.

5. The Authority invites written responses from all stakeholders latest by closing hours of 25th October, 2002. It would be appreciated if the response is accompanied by a Floppy Diskette or Email having the contents of the submission.

6. For further clarifications, Dr.(Mrs) Roopa R.Joshi, Advisor (Economic) – Tel. No. 6160752. Email address: **trai01@bol.net.in** and Shri R.K.Bhatnagar, Advisor (FN) – Tel. No. 6166930 Email address: **trai06@bol.net.in** may be contacted. The Fax no. of TRAI is 6103294.

New Delhi
23 September, 2002

M.S.Verma
Chairman

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GLOSSARY

ADC	Access Deficit Charge
ARE	Average Recurring Expenditure
ARPU	Average Revenue Per User
BSNL	Bharat Sanchar Nigam Ltd.
BSO	Basic Service Operator
BT	British Telecom
CPE	Customer Premises Equipment
CPI	Consumer Price Index
DEL	Direct Exchange Line
DIAS	Direct Internet Access System
DID	Direct Inward Dialing
DSL	Digital Subscriber Line
FRIACO	Flat Rate Internet Access Call Origination
ILALD	Internet Lease Access Line Doubler
ILD	International Long Distance
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
ITU	International Telecom Union
IUC	Interconnection Usage Charges
LE	Local Exchange
MOU	Minutes of Use
MTNL	Mahanagar Telephone Nigam Ltd.

NLD	National Long Distance
NTP	National Telecom Policy
OFC	Optical Fiber Cable
OFTEL	Office of Telecommunications (UK)
PABX	Private Automatic Branch Exchange
PCO	Public Call Offices
PLMN	Public Land Mobile Network
POTS	Plain Old Telephone Service
PSTN	Public Switched Telecom Network
RIO	Reference Interconnection Offer
SDCC	Short Distance Charging Centre
STD	Subscriber Trunk Dialing
STP	Standard Tariff Package
TAX	Tandum Automatic Exchange
TDSAT	Telecom Dispute Settlement Appellate Tribunal
TRAI	Telecom Regulatory Authority of India
TTO	Telecommunication Tariff Order
USF	Universal Service Fund
USO	Universal Service Obligation
VPT	Village Public Telephone
WLL(M)	Wireless in Local Loop (with Limited Mobility)

I. INTRODUCTION

1.1 It is well recognized that the availability of affordable basic telephony on demand is essential for meeting the tele-density targets set in NTP 1999 (National Telecom Policy). Given that telecommunications is an important contributor to economic growth, recent developments, particularly that of rapid technological progress have changed the pace of expansion and more importantly made basic services less costly to provide because of falling costs of network elements. On the supply side, traditional models of a monopoly service provider providing telephony is giving way to a multi-operator environment - wherein new entrants also provide the added investment and spur efficiency gains in the provision of services.

1.2 The main objective of this consultation paper is to examine in depth, the nature, content and direction of tariff regulation with respect to basic services. The paper seeks to explore the right framework for basic services tariff regulation in the context of competitive trends seen in the basic telephony market.

1.3 Some of the key principles relating to the regulation of tariff for basic services being focussed in the consultation paper are listed below:-

- Promoting access to basic telecommunication services, particularly in rural and remote areas by making them affordable.
- Creating enabling conditions to promote competition.
- Prevent abuse of market power and anti-competitive behaviour of service providers, who enjoy significant market power.
- Increase tele density to meet the targets of NTP 1999, by making basic services affordable.
- Ensure transparency in regulatory processes.

1.4 The consultation paper is structured as follows:-

1.5 Chapter two examines the structure of the basic service market with an analysis of the degree of competition that is likely to arise in the near future. The Chapter summarises the evolution of the market structure and tariffs for basic services in the past few years, noting the process of tariff re-balancing that was begun by the TRAI with its notification of the Telecommunication Tariff Order (TTO) 1999 and the substantial changes that have taken place due to market competition in the National Long Distance ("NLD") and International Long Distance ("ILD") markets.

1.6 Chapter three addresses the issue of telecom tariffs in greater detail, and raises a number of questions for consultations with respect to monthly rentals, call charge, free calls, etc. The objective of the Chapter is to consider the main issues relating to the regulation of tariffs for basic service, including the methodology and principles applicable to such regulation. Some examples of tariff schemes have been given to help initiation of discussions. The tariff schemes that have been mentioned in the Chapter should not be treated as any indication of the TRAI's thinking on the subject. This Chapter also provides a basis for considering introduction of origination/termination charges applicable to local calls.

1.7 Chapter four is a short exposition on tariffs for dial up access to internet. This is an area which has been the subject of the Authority's concern for some time now. In the recent times there have also been many representations about their being very user unfriendly and actually a deterrent to the growth of internet usage in the country. A Task Force set up by the TRAI to provide inputs for promoting the growth of the internet sector has also identified it as one of the factors responsible for the slow growth of internet in the country.

1.8 Chapter five outlines a framework for introducing the Interconnection Usage Charge (IUC) regime for National Long Distance Calls. The Chapter provides the estimates for origination, termination and carriage charges for NLD traffic, based on a detailed exercise undertaken by the TRAI. The estimates have been arrived at after examining the IUC charges based on different costing methodologies (top down, bottom up, and outside in) and also taking into account some international benchmarks in this regard. These would be relevant for the negotiations in respect of IUC within the framework of the Reference Interconnect Offer that is required to be notified by the dominant operators. In this context, the Authority also raises the issue whether for the IUC there should be a range given by the regulator or voluntarily agreed upon by all the parties concerned. It also invites comments on the estimates that have been given in this paper.

II. COMPETITIVE TRENDS IN BASIC SERVICES- AN ANALYSIS OF EMERGING TRENDS

(a) Tariff Changes since notification of TTO in March 1999

2.1 In this section, we consider the market driven tariff changes for Basic Services that have occurred since the implementation of the Telecommunication Tariff Order (TTO) 1999. The focus is on monthly rentals and local call charges. In this context it is worth emphasising that National Long Distance (NLD) and International Long Distance (ILD) have recently emerged as stand alone services and are offered competitively by independent private operators holding specific licenses for offering these services. When the last exercise was done in 1998/99, the Department of Telecom (DOT) was operating a vertically integrated network offering bundled local and long distance service in a monopolistic market structure.

2.2 The TTO 1999 had begun a process of tariff re-balancing with an increase in monthly rentals and decrease in NLD and ILD tariffs i.e., to bring them near the cost. The change in monthly rentals, and tariffs for NLD and ILD calls were implemented by TTO 1999 in three steps, so as to phase-in the sizeable revisions in these tariffs. However, it is noteworthy that at present the prevailing NLD and ILD tariffs are much below the levels envisaged in TTO 1999; while the NLD tariffs are below the TTO specified levels by up to 62 per cent, the ILD tariffs are lower by up to 50 per cent.

2.3 The large decline in the NLD and ILD tariffs witnessed in recent years has more than achieved the reductions envisaged in TTO, 1999 as part of the tariff rebalancing exercise. However, rebalancing which also envisages a corresponding increase in rentals to bring them near cost has not taken place. The Regulator has maintained the initial levels of rentals specified in TTO 1999 for the non-commercial subscribers, on account of considerations of affordability and increasing teledensity in the country. The Authority did, however, increase the monthly rentals for the commercial subscribers this year as a part of re balancing of tariff, but these higher rentals for commercial subscribers were not made

effective by the service providers partly because of apprehensions that the competitors may not act similarly and partly for fear of encountering consumer resistance and diversion of his business.

2.4 While there is no denying that rebalancing of tariffs prepares the grounds for competition, the adverse impact it is likely to have on affordability by ordinary/general subscribers cannot be overlooked. In the final analysis the tariff structure has to sustain demand and help achieve higher tele density by making basic telephone service affordable. In view of this, TTO 1999 permits Alternative Tariff Packages (ATP) in addition to the mandatory Standard Tariff Package (STP). The mandatory STP protects the interest of subscribers, while ATPs allows operators to compete for the subscriber's differentiated needs, thereby ensuring that the benefits of competition are available to the subscribers, in the form of lower prices and/or better quality.

(b) <u>Number and Nature of Alternative Tariff Packages in Basic Service</u>

2.5 For the period January, 2001 to December, 2001, the number of tariff plans reported were around 282 (including by BSNL and MTNL). Since the beginning of this year until mid July i.e. in 7 months of 2002 for which up to date information is available, the total number of tariff reports received is 283 (private BSO 256, BSNL 20, MTNL 6) for the various services they are providing under the basic service licence. These include PSTN, PCO, ISDN, EPABX service etc. Important features of the ATPs reported by the BSOs for provision of PSTN services are the following:-

i) The BSOs generally offer ATPs that have higher monthly rentals with higher free call allowance or low rental and no free call allowance. In addition, volume discounts are a popular method of offering lower effective prices to subscribers of Basic Services. Promotional packages are also offered by most of the BSOs. Such offers include free Internet access, free calls, Free CLIP, free Voice Mail, rebate in rentals, discount in installation fee and registration fee etc.

ii) A feature worth noting is that between the period March 1999 and January 2001, the number of ATPs reported by BSOs were limited. Since opening up of the NLD and ILD markets, issue of fresh licenses to BSOs and entry of the fourth cellular player in certain service areas has had the effect of increasing the level of competition for Basic Services as manifested in an increase in the number, frequency and variety of alternative tariff plan filings by operators.

(c) <u>Price Changes for Basic Services</u>

2.6 Such alternative tariff packages available along with the STP prescribed by TRAI imply that the effective tariff for subscribers is different from the level specified by TRAI in the STP. In order to calculate the changes in tariffs over the period of operation of TTO 1999 until the present, one will have to look at the usage pattern i.e. break up of calls over local, long distance and International long distance. Such information is not readily available, although based on such figures as are available, some assumptions can be made. In the absence of precise information, and an estimate of demand elasticity, it is possible to make a tentative estimate of price decline of basic services from the changing ARPUs over the period.

2.7 Table 2.1 shows Average Revenue Per User (ARPU) per year for BSOs. The projections are based on the information provided to TRAI by the operators. The trend that emerges from the table is that ARPUs have declined for each BSO and are expected to continue to decline in the medium term. The reason for the decline in ARPUs is a mixture of both fall in tariffs as well as competition for acquiring subscribers who are likely to be the lower users.

Table 2.1 Current and Projected Annual ARPUs of different BSOs (Rs./annum)

Operator	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
A	8,278	7,061	5,948			
B	40,198	15,691	15,727	17,105	16,553	16,761
C	-	-	17,564	20,168	17,991	16,273
D	-	84,052	52,658	35,813	33,994	31,041
E	-	-			15,994	14,750
F	-	-	22,604	17,730	17,088	12,470
G	-	30,822	30,030	19,575	16,404	16,060

Source: Reports from BSO's

2.8 Tariff reports submitted by service providers were also examined to gauge the extent of tariff changes in the alternative tariff packages. Table 2.2 present data for the period 2000-2001. The methodology used for determining the trends in tariffs for basic service over the period 2000 to 2001 consisted of taking alternate tariff plans offered by the basic operator during the two points of time i.e in the year 2000 and year 2001 from which financial implications (Minimum monthly bill amount) for minutes of use ranging from 100 to 1000 per month were computed. This exercise was repeated for various basic service operators in different circles/cities. As stated above, the intensity of price competition during this period for Basic Services was low and the figures reflect this aspect of the market. For example, while in certain Circles there was no change in tariffs in the last year, in another Circle the average tariffs declined by 3 per cent to 10 per cent depending upon usage. On the other hand, in one Circle, there was an increase in average tariffs, with a higher burden falling on low users. Besides the lack of effective competition in the market during this period, one could also presume a tendency amongst the new private operators to focus, in the first few years of operation, less on market share and more on attracting the high-end users.

Table 2.2 Estimate of Price Changes for different categories of subscribers (2000 – 2001)

Service Providers in Various Circles	No. of Minutes of usage					
	100	200	300	400	500	1000
A	17%	13%	10%	7%	6%	3%
B	35%	25%	18%	15%	12%	6%
C	0%	0%	0%	0%	0%	0%
D	0%	0%	0%	0%	0%	0%
E	100%	53%	28%	18%	13%	5%
F	-7%	-7%	-5%	-4%	-6%	-3%
G	-7%	-10%	-8%	-7%	-6%	-3%

Source: Computed from Tariff plans reported by service providers

(d) Subscriber base - Market Share of different Service Providers

2.9 The share of BSNL and MTNL in basic services continues to be over 98% of the total market. Private provision of basic services has so far been able to create only a very limited impact accounting for no more than 1.6% of the total market. There could be several reasons for this. The first private operator to begin commercial services was Bharti Telenet in Madhya Pradesh Circle in June 1998 followed by Hughes Telecom in Maharashtra about four months later. In all six private basic operators have started commercial services and it has been only slightly over four years since the start of the first private basic operation. Four years is too small a time to make any serious dent in the market monopolised by a Government owned operator who for several decades has dominated the markets. Table 2.3 shows the extent of subscriber coverage, past and present as well as projections for the future. These are on the basis of inputs received by the TRAI from the Service Providers.

Table 2.3 Market Share of Basic Service Operators

	1998-99	1999-00	2000-01	2001-02
BSNL	82.99%	84.32%	85.95%	86.43%
MTNL	16.92%	15.12%	13.23%	12.05%
A	0.06%	0.35%	0.35%	0.47%
B	0.03%	0.08%	0.21%	0.42%
C		0.10%	0.18%	0.39%
D			0%	0%
E			0.03%	0.07%
F		0.03%	0.04%	0.17%

Source: Based on DEL's reported by BSO's to TRAI.

Table 2.4 Current and Projected Subscriber Base for Basic Services

		1998-99	1999-00	2000-01	2001-02	2002-03 (projected)	2003-04 (projected)
Incumbents							
BSNL	Opg	14,394,956	17,939,773	22,479,721	28,108,976	N.A	N.A
	Clg	17,939,773	22,479,721	28,108,976	33,218,498	N.A	N.A
MTNL	Opg	3,406,740	3,653,913	4,031,624	4,327,158	N.A	N.A
	Clg	3,653,913	4,031,624	4,327,158	4,629,709	N.A	N.A
New Entrants							
A	Opg	-	13,980	91,967	115,212	165,000	210,000
	Clg	13,980	91,967	115,212	165,000	210,000	260,000
B	Opg	-	-	-	13,705	77,333	158,199
	Clg	-	-	13,705	77,333	158,199	246,647
C	Opg	-	5,717	22,913	69,599	150,000	220,665
	Clg	5,717	22,913	69,599	150,000	220,665	300,914
D	Opg	-	-	4	109	140	360,000
	Clg	-	4	109	140	360,000	600,000
E	Opg	-	-	-	9,119	29,575	87,000
	Clg	-	-	9,119	29,575	87,000	180,000
F	Opg	-	285	26,744	58,709	150,797	302,638
	Clg	285	26,744	58,709	150,797	302,638	450,286

Source: Data provided by service providers (Opg : Opening) (Clg : Closing)

2.10 The projections available from the new entrants (i.e. the private sector operators) in Tables 2.4 indicate that BSNL and MTNL will remain the dominant operators in terms of market share in the near future and will continue to be so for some time to come.

2.11 Market trends given in pre-para indicate that as far as basic services are concerned, there is no likelihood of effective competition in the medium term, necessitating regulatory intervention to fix tariff in the absence of market forces. Regulatory intervention is also required to meet the social objective of making basic telephony affordable. This is in line with trends witnessed in most developing countries as well as a large number of developed countries.

2.12 While this conclusion could be valid, an analysis of only the basic services market and the shares of different Basic Services Operators (BSOs) therein could be misleading as it would ignore possible competition from the other access providers i.e. cellular operators. To the extent that these two access services are substitutable, an expansion of the definition of the market to include both basic and cellular services could provide insights into nature and extent of competition that are different from those that can be had by treating the two i.e. basic and cellular markets, as independent.

(e) <u>Level of Competetion in Long Distance Segment of Basic Service</u>

i) <u>NLD Service</u>

2.13 With the opening up of the market for long distance i.e. NLD and ILD (by the entry of players other than the incumbent) the monopolistic nature of the long distance market is likely to evolve towards a multipolistic market structure sooner than later. In this change, cellular mobile services and their fast growth will have an important role as this will affect competition in the telecom market. However, taking note of the fact that at present the private NLD operator has established POPs in only 18 LDCAs out of 321 and is in a position to pick up traffic from less than 10% of the SDCAs, the conclusion that the incumbent will continue to dictate NLD tariff for quite some time, is inescapable.

2.14 The TRAI in its 20th Amendment to TTO 1999 provided for implementation of the third tranche of rebalanced tariff levels for National long distance traffic. However, as already mentioned earlier, current levels of NLD tariffs announced by the NLD operators are up to 62% below the TRAI prescribed, rebalanced levels. Table 2.5 below provides a snapshot of the TRAI determined pulse and call charge per minute and the existing call charges as announced by the incumbent operator.

Table 2.5 Comparison Between NLD Tariff Ceilings Specified By TRAI and the NLD Tariffs Implemented By BSNL

	TRAI (TTO 20th Amendment)		Tariff Given By NLD Operators	
	Existing Pulse (Seconds)	Existing call charge per min. (Rs.)	Existing Pulse (Seconds)	Existing call charge per min. (Rs.)
Local calls	180	0.40	180	0.40
NLD				
0 to 50 Kms	180	0.40	180	0.40
51 to 200 Kms	18	4.80	30	2.40
201 to 500 Kms	6.8	10.80	15	4.80
501 to 1000 Kms	4.6	16.80	8	9.60
Above 1000 Kms	3.5	21.60	8	9.60

Note: A call of 3 minutes duration has been taken for local calls and for the NLD call for distance "0 to 50 kms."

ii) ILD Service

2.15 Competitive trends witnessed in the ILD market is much more pronounced than in the NLD market, because of the recent entry of two new operators in addition to the incumbent VSNL, namely Data Access and Bharti Telesonic. Table 2.6 provides the differentials between the ILD tariffs as set in the third tranche of rebalancing and the competitive rates offered by the operators.

Table 2.6 **Peak Hour Pulse Duration/Ceiling Tariff Specified By TRAI and the Tariffs Offered in The Market By the ILD Operators (tariff calculated at Rs.1.20 per metered call)**

Country Categories	TRAI (20th Amendment) (Third Tranche Ceiling Tariff)		VSNL/Data Access/BTSOL (Reported/ existing)	
	Pulse Rate (Seconds)	Per minute Charge (Rs.)	Pulse Rate (Seconds)	Per minute Charge (Rs.)
SAARC & other Neighboring Countries	3.3	21.60	3.4	21.60 (18.00)
Africa, Europe, Gulf & Oceania	2.3	32.40	3.0	24.00 (21.60)
Countries in American Continent and other places in Western Hemisphere	1.8	40.80	3.0	24.00 (21.60)

Note: The figures in the parentheses show the off peak tariff. TRAI did not specify any off-peak tariff, i.e. it had forborne with respect to those tariffs.

2.16 An important factor which could put downward pressure on ILD tariffs is the emergence of IP telephony. A comparison of IP telephony rates per minute (range) with existing landline ILD tariffs is shown in the Table given as Annex-I. It is observed and interestingly so, that the most competitive tariffs are to the European, Australian and North American continents.

2.17 Evidence from the above sections would suggest that while the market for access is heavily skewed towards the incumbent and is likely to remain so in the near and mid-term, the trends are different in both the NLD and ILD segments. In these segments competition would be more vibrant, and this would need to be factored in for regulatory policy formulations.

(f) TTO 1999, its background and Changes since its introduction

2.18 Tariff regulation is seen as a key regulatory tool to protect consumer interest and to give cost orientation to basic service tariffs when this is not being done through effective market competition. Tariff provisions contained in TTO 1999 need to be seen in the background of the level of competition in basic services then obtaining and growth of competition since then. In the absence of effective competition regulatory intervention in basic services tariff will continue to be important and for some time more remain one of the major functions of the Authority. At the time TTO 1999 was brought into force teledensity was very low and affordability and social objectives of accessibility had to be kept in focus together with the need to encourage investment and efficient roll out of networks. Historically, the local call charges and rentals had been kept below cost in the interest of affordability and were cross subsidized by cost plus long distance charges. It is difficult to alter a tariff structure based on above considerations all of a sudden. However, with such a tariff structure, a small subscriber base provides majority of the revenue, and if competition is allowed the new entrant would initially focus mainly on this small base of subscribers who account for high revenue. This makes it difficult for the incumbent to sustain its revenue surplus and the subscriber base. To mitigate the burden of adjustment on the incumbent and to maintain a level playing field for all service providers, there is a need to re-balance tariffs for the basic services i.e. to increase rental/local call charges and decrease long distance call charges. This need was felt and given effect through TTO 1999. The proposed extent of rebalancing was spread over three years in corresponding three phases which have since been completed.

2.19 Based on extensive consultations in 1998, with the objective of achieving some rebalancing between access and long distance call charges the TRAI notified charges for the following elements of basic service tariff in its TTO 1999: Installation, Deposits, Monthly rentals for rural subscribers, Monthly rentals for urban subscribers, Tariff per metered call for rural subscribers, Free calls for rural

subscribers, Tariff per metered call for urban subscribers, Free calls for urban subscribers, Pulse rate for local calls, Pulse rates for peak hours for domestic long distance calls, Pulse rates for peak hours for international subscriber dialed calls, Peak hour tariff for trunk manual calls, Franchised group PBX or PABX and EPABX with DID facility (for multistory buildings, co-operative housing societies), and Tariffs for ISDN services.

2.20 Since its notification, the TTO, 1999 has been amended with respect to the areas shown in Annex-II. These amendments were made either to correct some anomalies which were observed in the course of implementation of the TTO 1999 or arose from changes in the market situation including changes in the cost structure of service provision.

2.21 In this consultation, we are addressing the tariff categories which are covered under Schedule I of TTO 1999. These include, inter alia, monthly rentals, call charges for local calls, long distance calls, and international calls, charges for end-users of DID exchange, call charges for dial-up for internet, and free calls. In addition, competition issues in other relevant markets, wherever applicable will be addressed.

(g) <u>Tariff Rebalancing in TTO, 1999</u>

2.22 Tables 2.7 to 2.12 show the extent of change in Tariffs that was envisaged in the TTO 1999 in the Standard Tariff Package over the three years of operation of TTO 1999 from May 1999 to March 2002. As is evident from the Tables the proposed extent of tariff rebalancing, in particular the increase in monthly rental, envisaged in TTO 1999 was more than the tariff changes that were actually implemented.

2.23 In contrast, for National Long Distance (NLD) and International Long Distance (ILD), the decrease in tariff envisaged for the third phase lost relevance because apprehensions of loss of market spurred the incumbent to drop these rates substantially below the rebalanced levels proposed in TTO 1999 .

2.24 In order to culminate the process of rebalancing in its targeted penultimate year, the Authority, while taking note of the competitive trends in the NLD and ILD markets decided to notify the third tranche of STD tariffs for NLD and ILD tariffs as ceilings in the 20th Amendment to the TTO 1999. The monthly rentals were kept unchanged for low user category and general user category (which were combined into a single category of non commercial user subscriber). However, for commercial subscribers, the rentals were increased as specified in the third tranche of rebalancing and the number of applicable free calls reduced to 30 and 45 metered calls per month of billing cycle for urban and rural commercial subscriber respectively.

2.25 It would be observed that in respect of monthly rentals the extent of re-balancing achieved in the STP has been less than envisaged, although the extent of tariff decline for NLD and ILD tariffs has been significantly more than that specified under the TTO 1999.

Table 2.7: Monthly Rental for Basic Services for Rural Areas – Low User

Item	Rates before the re-balancing prior to 1.5.1999 (Rs.)	Rates according to Telecom Tariff Order 1999		Cumulative increase envisaged in TTO from 1-5-99 to 31-3-02	% increase not implemented by virtue of 9th Amendment to TTO 1999
		Rates for the final phase of rebalancing	% rise		
Rentals (for exchanges with capacity up to 999 lines)	50	70	40%	**40%**	**0%**
1,000 to 29,999 lines	100	120	20%	**20%**	**0%**
30,000 to 99,000 lines	137.5	180	31%	**31%**	**0%**
1 lakhs to below 3 lakhs lines	180	250	39%	**39%**	**0%**
3 lakhs and above	190	250	32%	**32%**	**0%**

Table 2.8 : Monthly Rental for Basic Services for Rural Areas – General User

Item	Rates before the re-balancing prior to 1.5.1999 (Rs.)	Rates according to Telecom Tariff Order 1999		Cumulative increase envisaged in TTO from 1-5-99 to 31-3-02	% increase not implemented by virtue of 9th Amendment to TTO 1999
		Rates for the final phase of rebalancing	% rise cumula-tive		
1,000 to 29,999 lines	100	160	60%	**60%**	**40%**
30,000 to 99,000 lines	137.5	220	60%	**60%**	**29%**
1 lakhs to below 3 lakhs lines	180	310	72%	**72%**	**33%**
3 lakhs and above	190	310	63%	**63%**	**32%**

Table 2.9 : Monthly Rental for Basic Services for Urban Areas – Low User

Item	Rates before the re-balanc-ing prior to 1.5.1999 (Rs.)	Rates according to Telecom Tariff Order 1999		Cumulative increase envisaged in TTO from 1-5-99 to 31-3-02	% increase not implemented by virtue of 9th Amendment to TTO 1999
		Rates for the final phase of rebalancing	% rise cumula-tive		
Rentals (for exchange with capacity of less than 100 lines)	50	120	140%	**140%**	**0%**
Upto 999 lines	75	120	60%	**60%**	**0%**
1,000 to 29,999 lines	100	120	20%	**20%**	**0%**
30,000 to 99,000 lines	137.5	180	31%	**31%**	**0%**
1 lakhs to below 3 lakhs lines	180	250	39%	**39%**	**0%**
3 lakhs and above	190	250	32%	**32%**	**0%**

Table 2.10 : Monthly Rental for Basic Services for Urban Areas – General User

Item	Rates before the re-balanc-ing prior to 1.5.1999 (Rs.)	Rates according to Telecom Tariff Order 1999		Cumulative increase envisaged in TTO from 1-5-99 to 31-3-02	% increase not implemented by virtue of 9th Amendment to TTO 1999
		Rates for the final phase of rebalancing	% rise cumula-tive		
Rentals (for exchange with capacity of less than 100 lines)	50	160	220%	**220%**	**80%**
Upto 999 lines	75	160	113%	**113%**	**53%**
1,000 to 29,999 lines	100	160	60%	**60%**	**40%**
30,000 to 99,000 lines	137.5	220	60%	**60%**	**29%**
1 lakhs to below 3 lakhs lines	180	310	72%	**72%**	**33%**
3 lakhs and above	190	310	63%	**63%**	**32%**

Note: The monthly rentals for the commercial subscriber category was the level that was the rate in the third year for the general user subscriber category. This rental was implemented only in the third phase of the tariff re-balancing.

Table 2.11 : Peak Charge for Domestic Long Distance Calls

DLD radial distance in kms	Rates before the re-balancing prior to 1.5.1999	Rates according to Telecom Tariff Order 1999 (Rs.; at Rs. 1.20 per pulse)		Cumulative decrease envisaged in TTO from 1-5-99 to 31-3-02	% decrease not implemented by virtue of 9th Amendment to TTO 1999
	Charge per minute in prevailing scheme at Rs. 1.25 per pulse	Rates for the final phase of rebalancing	% fall cumula-tive		
Upto 50	2.08	1.2	**42.3%**	**42%**	**0%**
51-200	9.58	4.8	**49.9%**	**50%**	**13%**
201-500	18.75	10.8	**42.4%**	**42%**	**6%**
501-1000	25	16.8	**32.8%**	**33%**	**5%**
Above 1000	37.5	21.6	**42.4%**	**42%**	**10%**

Table 2.12 : Peak Charge for International Long Distance Calls

ILD Country Categor-ies	Rates before the re-balancing prior to 1.5.1999	Rates according to Telecom Tariff Order 1999 (Rs.; at Rs. 1.20 per pulse		Cumulative decrease envisaged in TTO from 1-5-99 to 31-3-02	% decrease not implemented by virtue of 9th Amendment to TTO 1999
	Charge per minute in prevailing scheme at Rs. 1.25 per pulse	Rates for the final phase of rebalancing	% fall cumulative		
Slab 1	37.5	**21.6**	**42.4%**	**42%**	**10%**
Slab II	62.5	**32.4**	**48.2%**	**48%**	**13%**
Slab III	75	**40.8**	**45.6%**	**46%**	**11%**

2.26 It is pertinent to mention here that while re-balancing did allow for a recalibration of commercial users rentals, none of the service providers have raised these rentals. The Service Providers thus have not re-balanced this element although they had an opportunity to do so and thereby foregone some much needed resources which could have been used to cover, at least, a part of the otherwise high access deficit.

(h) Context of Tariff Rebalancing Today

2.27 The ultimate objective of tariff rebalancing would be to make the access deficit zero by raising the rental/local call charges to their cost based levels. However, when we look at the present teledensity and universal service objectives clearly the stage for complete rebalancing has not yet arrived. Once it is conceded that access deficit has to be provided the question of the source from which the deficit can be met assumes importance. Much, therefore, depends on the flexibilities available in the existing set of tariffs, i.e. those relating to NLD and ILD sectors, to allow for rebalancing. The current consultation paper would need to factor in the changed competitive conditions as well as the feasibility and desirability of using IUC as a means to address the issue of access deficit.

(i) Rate of return and price cap regulation

2.28 Regulators have broadly used two types of methodologies to regulate tariffs, namely rate of return regulation and price cap methodology. Under a rate of return methodology, the cost allocated to any specific service/tariff is estimated and the tariff is fixed by providing a reasonable return on the cost base. The objective is thus to address the concerns of both the consumers and the producers. This method also provides for greater certainty of prices, which is important for investment decisions. However, with this methodology, over a period of time, there was an incentive for the service providers to over-estimate their costs or even over-dimension their facilities. Methods were sought to address this problem.

2.29 One method to address this would be to monitor closely the cost developments and have benchmarks for the costs concerned, reviewing periodically the costs and the tariffs. Another would be to alter the incentive for cost over-estimation by allowing the service providers themselves to choose the tariffs for various services, subject to certain overall constraints. Such an incentive structure is attempted through the price cap methodology.

2.30 Under the price cap methodology, a general cap or limit on the overall price increase is put by specifying that the overall average tariffs/prices of the basket of services (e.g. monthly rental, local call, national long distance calls) should not increase by more than the net increase in costs. The proxy for a net increase in costs is usually captured by "CPI minus X", i.e. change in the consumer price index minus a factor which captures the reduction in costs due to improvement in productivity. In addition to the overall cap of CPI minus X, this methodology also allows for specific caps for sub-baskets, e.g. a sub-basket of monthly rental with the cap that this tariff should not increase by more than a specified per cent per annum.

(j) Conclusion : Inferences for Regulatory Policy

2.31 Based on the analyses of basic service market, it would appear that so far the competition in the local service market has remained insignificant with only a duopoly in 6 telecom circles. However, competitive pressure appears to be more pronounced in the NLD and ILD market, where more than two operators have recently entered the market and are likely to offer significant competition to the incumbent. The extent of competition for basic services may change somewhat with the growth of Wireless in Local Loop with limited mobility (hereinafter "WLL(M)"). Nonetheless, the likely trends continue to show a major dominance of the incumbents for the next few years. Moreover, the teledensity of the country is still low, and the objective of affordability will continue to be of great importance in any regulatory policy regarding telecom tariffs. For both these reasons, it appears that there will continue to be a need to regulate Basic Service tariffs for some more time and that complete rebalancing of PSTN tariff i.e. introduction of cost based rates for both local and long distance services can be achieved only in phases. In the interim, the charges payable for long distance origination and termination may have to provide for what may be called 'Access Deficit Charge' (ADC), which in effect will be a means to subsidize the below cost tariffs, i.e. rental/local call charges.

2.32 To the extent that tariff regulation is required, the exact methodology will remain a critical issue i.e. how best to regulate these tariffs. For example, the regulator will have to consider whether to continue with the specification of tariff levels or a price cap or whether any other methodology be used. Issues regarding asymmetric regulation and whether specific services e.g. certain types of calls (domestic/international long distance) could be subject to different regulatory policies would also assume importance with the changing conditions in the market and merit consideration.

2.33 Based on the discussions of the main issues of basic services tariff regulation, the consultation seeks to address the following issues:

1) **In view of the existing market structure wherein the incumbent has more than 98% of the market share in the access market and almost the same in the local and long distance services, what would be the immediate objectives of regulations, particularly tariff regulation? Is the need for rebalancing between NLD/ILD tariffs and access tariffs as critical today after introduction of competition in all these areas, as it was when it was first undertaken through TTO 1999? Should efforts to rebalance tariff through regulatory intervention continue?**

2) **Has market development reached a stage to warrant a different modality of tariff rebalancing namely a shift from a regulator driven regulation? If the answer to the above question is in the positive, what should be the new pattern of tariff regulation:-**

   (i) **An overall price cap, with or without sub-caps for specified services (please indicate the service to be specified); or only a floor price to be specified for all specified services; or a combination of both ceiling and floor prices; or**

   (ii) **Should a system be followed wherein only some specified services such as local services are regulated?**

3) **With the opening up of NLD and ILD to new players should there be a schedule for these tariffs separate from the basic services tariff schedule?**

4) **Should we continue with the present method of specifying a mandatory standard tariff package, and allowing the service provider to offer alternative tariff packages?**

5) **Does a ground exist for applying asymmetric regulation i.e. regulation applying only to the incumbent who enjoys significant market power and has the ability to control prices?**

6) **Should specific services (e.g. domestic/international long distance) be subject to different regulatory policies, than the local services?**

III. FRAMEWORK AND METHODOLOGY FOR BASIC TARIFF REVIEW

3.1 One of the principal objectives of tariff rebalancing exercise for basic services is to promote efficiency in the supply of telecommunication services and at the same time provide basic telephone service (POTS) at affordable prices, to the consumers. While the former is dictated by considerations relating to efficient utilisation of resources utilised and the network infrastructure created, the latter is dictated by social policy objectives. These often appear contradictory goals and cannot be left entirely to market forces. Regulatory intervention for tariff rebalancing, therefore, continues to be relevant. In the Indian context it is evident that enhancing efficiency and investment in telecom needs application of appropriate regulatory mechanisms so that both investment and consumption of telephone services grow in tandem to attain the goal of fast growth in teledensity. An important objective of tariff policy is to provide incentives for competition while aligning prices towards cost particularly in the local network so that competition may be sustained over time. However, in the Indian context, the issue of affordability is an abiding concern, and tariff policy has traditionally subsidized services for low-end users. To encourage the use of telephones in rural areas, the extent of subsidy given to the rural subscriber has been higher than that for the urban subscriber. To the extent that this policy provides a disincentive for the service provider to invest in rural areas, an Universal Service Obligation (USO) Policy becomes an important complement to the tariff policy. In addition to the funding provided through the Universal Services Fund (USF), a cross subsidy is also provided in the interest of making latter affordable to the common man.

3.2 While examining basic services tariffs, one should consider whether the principles applied to both WLL (M) and Fixed Line tariffs should be the same, and if not, what differentiating factors deserve to be noted. This has to be seen in the background of the interaction of basic service market with the market for cellular mobile services, and the competitive overlap existing and/or developing between the two.

3.3 The Authority has recently decided on forbearance with most of the tariffs relating to cellular mobile services, taking note of the existing level of competition and the likely trend of greater competition in future in the cellular mobile market. The Authority has emphasized cost based tariffs for this sector, and expects market forces to provide such a tariff without undue regulatory intervention.

3.4 In the case of WLL (M), the Authority had specified in its Recommendations to the Government that the monthly rental would be fixed on the basis of Fully Allocated Costs, and that the Authority was not in favour of any subsidy being provided in the tariffs of WLL (M). The principle with respect to WLL(M) tariffs, therefore, is to determine them on cost basis.

3.5 For Fixed Line tariffs specifically for the so called Plain Ordinary Telephone Services (POTS), however, the objective of affordability is not easily overlooked. The principle governing these tariffs may, therefore, have to be different from that applicable to WLL (M). Nonetheless, even for Fixed Line, the starting point for determining tariffs is to ascertain the cost based tariffs for monthly rental and call charges, and then to determine whether these would be affordable. If the conclusion is that cost based tariffs are not affordable, the next step in the exercise would be to ascertain the tariff levels that should be put in place keeping in mind the concern of affordability. This would also give an indication of the extent of access cost deficit that would need to be covered from other revenue sources.

3.6 In this Chapter, we begin with a short discussion of the principles for determining cost based tariffs, and then consider the means of addressing the access deficit that arises on account of the rentals being below the cost based estimate. A more detailed discussion on various tariffs follows, beginning with the monthly rentals. This is followed by a consideration of the local call charge regime, and the tariff regime applicable to national (and international) long distance calls, and to the end users DID franchisees. The tariff levels for local calls would also provide the basis of demarcating origination/termination charge for these calls.

(a) <u>The framework for estimating cost based tariffs</u>

3.7 A determination of the cost based tariffs involves identifying the different elements in the access and the long distance networks and their utilisation in conveyance of local and long distance calls. This requires unbundling of the network and allocation of joint and common costs which are incurred in delivering the service for which cost based tariff is to be determined. In addition, we need to decide on the cost principle to be applied for estimating the costs, i.e. whether it should be historical costs, current costs, or forward looking costs, and whether the amount should be based on Fully Allocated Costs or Incremental Costs or any variant thereof.

3.8 The details of the unbundled network elements are given in Annex-III. The data for these network cost elements as well as operational costs have been obtained using the format given in Annex Table-III. The costs have been taken as current costs reported by service providers for the year 2001-2002. The principle of fully allocated costs has been followed to distribute the relevant cost heads based on cost causality which means that costs should be recovered from the source causing the cost to be incurred.

3.9 The joint and common costs in the network have to be duly segregated and attributed. This needs to be done on the basis of cost drivers that allow for the distribution of these costs. In this exercise, the distribution of Minutes of Use between local and long distance has been used for allocating capital costs and operational costs while estimating cost based call charges.

3.10 It is evident that at the current juncture the cost profiles of BSNL on the one hand and the private BSOs are vastly different. The present exercise derives profiles of rentals and call charges both for the new entrant as well as the incumbent. Cost figures have been calculated for a private BSO operating in a license area categorised as 'A' Circle, a private BSO operating in 'B' Circle and the

incumbent (BSNL). The rationale behind the approach is that it provides a comparison of standalone costs of an Access provider with the costs of the incumbent who has an integrated network and is both an access as well as long distance service provider. However it is noteworthy that rentals and local calls have been derived for both stand alone BSOs i.e., who do not provide NLD service bundled with local service, and the incumbent who is in a position to do so. For inter circle long distance calls, transmission costs as reported by the incumbent have been taken into account.

(b) <u>Various means of addressing Access Deficit</u>

3.11 Once the cost based tariffs are derived and a view about the affordable level for local service (rental/local call charges) taken, a detailed exercise will need to be conducted for ensuring that the access deficit i.e., the difference between cost based tariff and the affordable tariff, is recovered from other revenue sources such as IUC which is part of long distance tariff. If this is not done, the very purpose of keeping the rental low viz an increase in teledensity will be defeated. The presence of access deficit without an alternative source covering the cost element would then be a serious disincentive to the service providers and may hold them both from investing in the network or attracting more and more end customers.

3.12 The alternative sources of revenue to meet the access deficit include local call charge, the NLD and ILD calls, an Interconnection Usage Charge (IUC) received by the access provider from the long distance service provider, and the revenue obtained from the USO Fund. There is a complementarity between the revenues provided by the USO Fund and from other sources of revenue in as much as an additional amount of these revenues (including IUC) would imply a lower amount USO funding required to cover a particular revenue deficit. A noteworthy feature in this regard is also that the target of the USO fund is at present limited to remote and rural areas with greater focus on VPTs, while the access deficit arises in the case of DEL's in general i.e. even in urban SDCAs, because of rentals being less than the level computed by cost based methodology. Therefore, sources of revenue other than the USO fund will have to be found to meet the access deficit

for the basic service operator in general. In Chapter 5, this paper provides a calculation of average estimates of IUC including access deficit that have been prepared by the Authority. It must always be kept in view that any change in the tariff structure will have a bearing on the IUC.

(c) Monthly Rentals

3.13 The previous tariff exercise conducted in 1998/99 had allocated all capital costs of the local network up to but not including the tandem exchange towards the cost of rental charges. For determining the monthly rentals for WLL (M), the Authority had taken into account a similar portion of the network, by considering the capital expenditure up to the Short Distance Charging Centre (SDCC). One outcome of this approach is that the local call charge would be lower, which viewed in the context of major sensitivity of most subscribers to call charges is important.

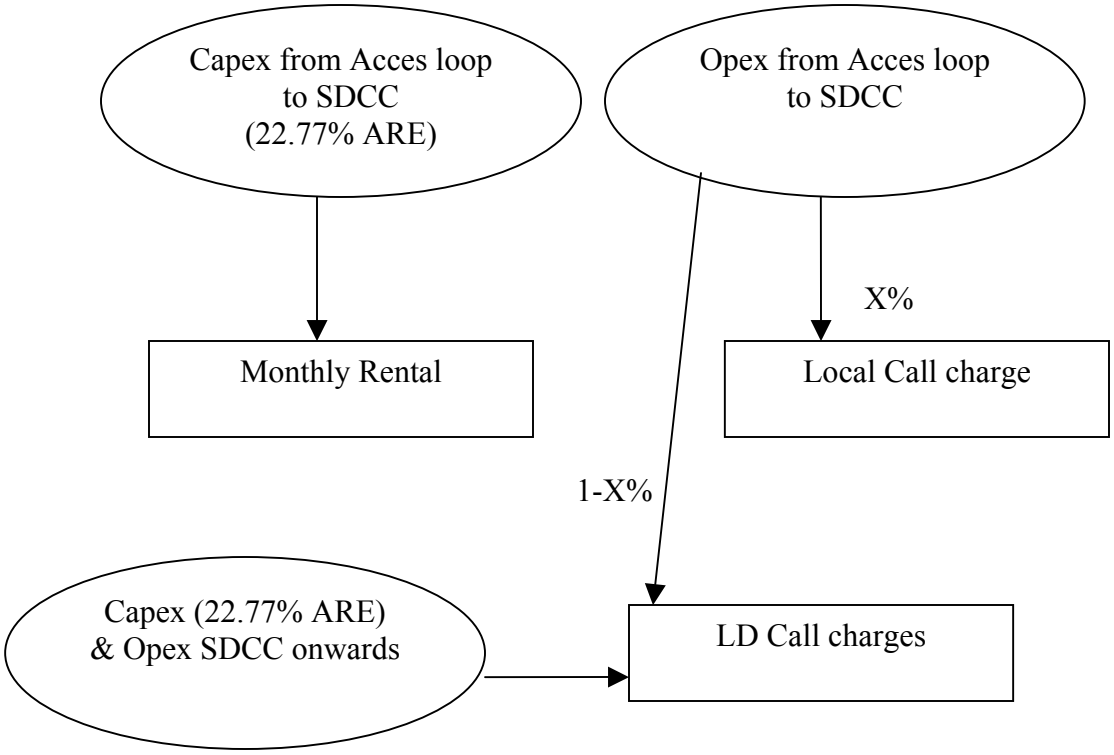
3.14 In the present exercise too, we propose to take the capital costs up to the SDCC (for more details of the network elements and the cost items, please see Annex-III). An important related issue is what portion of the capital stock should be allocated towards rental while determining its cost base. In the previous exercise, the entire capital stock was allocated to monthly rental.

3.15 A possible alternative is that capital costs for this portion of the network be allocated to monthly rental in the ratio of the minutes of use for local calls to the total minutes of use. These two different methods of cost allocation are given in the two scenarios under Chart 1 below. If Scenario I is adopted, then the cost based monthly rental is higher, and the access deficit is likely to be higher too. If the access deficit is allocated to national and international long distance calls in the ratio of their minutes of use as was done in the previous tariff exercise in 1998/99, the effect on the cost based tariffs for these calls would be the same as for Scenario II. However, in Scenario II, we have a lower cost based monthly rental, which would imply a lower extent of tariff re-balancing. However, in both scenarios, the IUC regime would have to ensure that the access provider is able to

recover the amount of access deficit (Scenario I), or the cost based charge relating to the portion of capital stock in the network up to the SDCC (Scenario II).

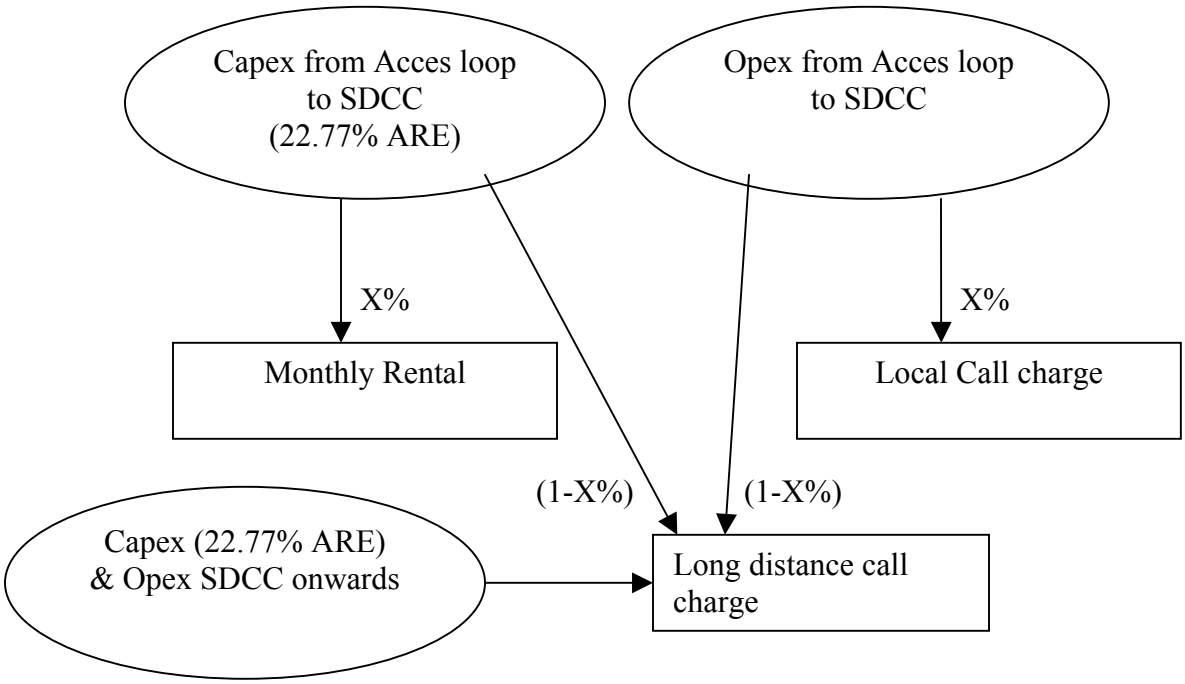
Chart 1. **<u>Allocation of Capital Cost & Operating Cost</u>**

Scenario I



Where X% is the proportion of local minutes in total minutes of use.

Scenario – II



where x% is the proportion of local minutes in total minutes of use.

3.16 In deriving the cost based rentals, an ARE of 22.77% has been used on the basis of the financial analysis carried out for the cost of capital and depreciation rates for basic services. Cost based call charges have been derived from attributable costs for local call charges as per the scenarios described above.

3.17 The issue of affordability will arise if the cost based rental is much higher than what is considered to be an affordable level of rental. While a higher monthly rental could reduce the amount of revenues shortfall which is likely in the case of low-end subscribers, this may also imply a reduction in the number of subscribers particularly low users and thus impact adversely both teledensity as well as the service provider's ability to spread the costs over a larger number of users. For growing networks like ours with a low tele density, a larger number of subscribers would also be desirable to obtain network externalities.

Table 3.1. Estimates of cost based monthly rental (Rs. per month)

	Scenario-I	Scenario-II
Incumbent	455	315
Private Operator "A"	442	296
Private Operator "B"	342	292

3.18 Table 3.1 shows that even with Scenario II, there will be an access deficit for monthly rentals, if we consider the present levels for these tariffs. An important question that arises, therefore, is whether the monthly rentals should be maintained at their current levels or should be increased in order to reduce the deficit and whether for instance this increase be limited by the increase in Consumer Price Index (CPI). A study conducted for TRAI by National Council of Applied Economic Research shows that increase in monthly rentals could adversely affect a rapid growth of subscriber base and the achievement of the teledensity targets. At the same time, there may be some scope to consider an increase, to the extent that average incomes are in general increasing by more than the inflation rate. A policy issue in this regard is whether the monthly rentals may be increased by about the inflation rate, and if so, whether the increase should apply for all monthly rentals or only for specified categories e.g. urban, commercial or any other.

3.19 During the past three years, the cumulative increase in consumer price index for industrial workers has been more than 10 per cent. If we increase the monthly rentals by about 10 per cent, this would imply the following monthly rentals:

- Rs. 250 per month would become Rs. 275 per month;
- Rs. 180 per month would become Rs. 200 per month;
- Rs. 120 per month would become Rs. 130 per month; and,
- Rs. 70 per month would become Rs. 75 per month.

3.20 To the extent that monthly rentals are changed, there will be a decrease in access deficit and this fact should be taken into account in the access deficit that is provided through the IUC payments as part of long distance tariff. A decrease in such access deficit, and hence IUC, would allow the market competition to reduce the tariffs for long distance calls. A noteworthy point to consider when deciding the levels for the monthly rentals for Fixed Line is the interaction that it is likely to have with respect to WLL (M) and cellular mobile, and the monthly rentals for these services so that the changes in monthly rentals are not brought about in a manner which reduces the spread of basic Fixed Line service called 'POTS' which is considered an essential service in developing countries like ours.

3.21 Another policy consideration to bear in mind is that if an overall price cap is decided based on concepts like CPI-X as the appropriate regulatory policy, then whether monthly rentals should be subject to the types of constraints that have been mentioned above or be left to the operators to fix.

(d) <u>Local call charge</u>

3.22 For cost based local calls, the previous Tariff Study had estimated the cost based charges using the operational costs attributable to local calls. This was done by allocating a share of operational costs to local calls, by taking a share that was equal to the minutes of use of local calls in total minutes of use. In effect, this process is similar to the allocation principal used in Scenario II in Chart 1.

3.23 The Authority has calculated the costs attributable to local calls, based on the above methodology. For BSNL, the operational costs taken into account are different from those applicable to Department of Telecom in the previous exercise, because the cost principles applied by BSNL are different, i.e. they are commercial principles. The cost based local charge estimates indicate that if we take call duration of three minutes, then a slight upward revision of call charge may be required.

3.24 The average duration for calls has been estimated at about two minutes in comparison to 2.5 to 3 minutes in the previous exercise undertaken in 1998/99. Taking the local call duration as two minutes, it may be worth considering whether to have a pulse duration of two minutes for the local call i.e., 120 seconds instead of 180 seconds at present. Another point to consider in that event would be whether to reduce the call charge also by some amount for a shorter call duration, and if so how much. Furthermore, would it be appropriate and/or technically feasible to have a fixed call set-up charge for all calls, which may be different from the charge applicable to the metered call units which is based on duration of the call and the applicable pulse rate. Importantly, what should the amount be as the amount in this case becomes a relevant question to address.

3.25 To discuss all the above issues, it is important to have some estimates that could provide a basis for discussion. The estimates of cost per minute for local call have been calculated for two private sector service providers and for BSNL. These estimates (without taking account of revenue share License fee), range from Rs. 0.40 to Rs. 0.51 per minute. The weighted average would be very close to the estimate for BSNL. Taking the License Fee revenue share and a 10% mark up for the BSNL estimate, the cost per minute would come to approx. Rs.0.50. However, if we take a simple average of the estimates shown in Table 3.2 below the corresponding cost per minute would be Rs.0.55. On this basis, if we take a pulse duration of 120 seconds, and a call charge of Re. 1/- to Rs.1.10 per metered call unit, would that be an appropriate charge?

Table 3.2 Per minute cost of local call

	Local call charge per min.
Incumbent	0.40
Private Operator "A"	0.41
Private Operator "B"	0.51

3.26 Alternatively, if a different charge for call set-up can be put in place, then what should that amount be, and how should that affect the charge per metered call unit? For example, would it be appropriate to have a call set-up charge of Rs. 0.20/30 per call and Rs. 0.80 or 0.90 for a pulse duration of 2 minutes.

3.27 Yet another alternative would be a combination of pulse duration and call charge in a situation where a double pulse may be given at the beginning of each call, for instance a double pulse to begin with and a pulse duration of one minute and a charge of Rs. 0.40 or 0.45 per pulse.

3.28 Another point to consider is whether the call charge for WLL (M) should be different from that for Fixed Line, on the grounds that the average minutes of use for WLL (M) may be different from those applicable to Fixed Line service because the latter is likely to be used by a larger number of persons being available at the spot where it has been fixed, and the WLL (M) may be available for a substantial period of time only to the person who carries it out in the area covered by limited mobility. Also, a spectrum charge component needs to be added to the cost base for WLL (M). These and other issues in the form of questions are summarized at the end of the Chapter for consultations.

3.29 If the price cap methodology i.e., CPI – X is adopted as the regulatory regime, then we would need to consider whether any limits should be imposed on the extent of the change in local call charge per se. Also, to the extent that there are changes in the local call regime, the effect of this on the IUC regime would need to be kep in view.

(e) Origination/Termination Charge for Local Calls

3.30 The call charge specified for local call from basic service gives a basis to provide termination charge for the network on which the call terminates. The simplest way to decide the termination charge would be to take it as half of the specified local call charge per minute. In this regard, another aspect to consider would be whether the termination charge should be provided to the cellular mobile network when the calls originating from basic service network terminate in that network, and also whether for calls which originate from the cellular mobile network and terminate in the basic service network the termination charge should be the same as that for termination of calls from one basic service network to another.

3.31 At present for interconnection of two local networks (PSTN) in a local area (SDCA), the originating subscriber pays for the total call i.e., both the local loops and the principle of sender keeps all is followed. However in case of a PSTN to PLMN or PLMN to PSTN call, it can be argued that origination and termination in the PSTN local network involves only one local loop and lesser number of network nodes and that for call termination in a local network the cellular network should pay lesser than the full charge for a local call.

(f) Tariffs for National and International Long Distance Calls

3.32 The prevailing tariffs for both national and international long distance calls are below the ceiling levels specified by TRAI in the third tranche of tariff rebalancing. Market pressure has brought the price nearer the cost of long distance calls thus, substantially achieving one of the objectives of the rebalancing exercise i.e. of lowering long distance charges. However, this would imply another kind of imbalance, given that there is no corresponding increase in rental/local call charges. The present exercise will examine this aspect of tariff rebalancing and try to work out new affordable local tariffs and provide for ADC, to address any imbalance.

3.33 Given that competitive pressures are likely to increase, the following points merit attention. One, there will be considerable pressure on prices on account of the introduction of Voice Over Internet Protocol and Internet Telephony. Two, the Authority has begun a process under which Interconnect Usage Charge will be agreed among the service providers in such a way that the surplus available with either the access provider or the national long distance operator will be more clearly identified than has been possible till now. It is important that some flexibility be retained in this process and that market interplay and competition be allowed to be reflected in the developments regarding these tariffs. It is noteworthy that the access deficit i.e. shortfall in rentals as well as any shortfall in the costs of providing calls are taken into account while determining the IUC to be paid to the access provider.

3.34 Three different policy responses for national/international call charge would appear possible:

i) To let market forces regulate the tariff and bring about the reductions in NLD/ILD charges;

ii) the market be initially left without any constraints, and based on its monitoring of the market price, the Authority intervene if required;

iii) ceiling tariffs be specified for the service, and the market be allowed to operate within the specified ceiling;

- If the third alternative is chosen, some further questions arise, viz. to the extent that the Authority may decide on specific ceiling levels for these tariffs, what should be the basis for determining these ceilings;
- Also, should a ceiling be specified as a one off level, or should there be a transition over a period of time, e.g. 2-4 years, towards a lower level from the existing level of the ceilings.

3.35 If ceilings for call charges have to be specified, then we would need to estimate cost based charges for these calls. In view of the indicative estimates of IUC for national long distance calls that have been calculated by the Authority, we already have a basis to consider the ceilings for these charges. A reasonable mark-up on these costs could, for example, give us the requisite ceilings.

3.36 Likewise, further work on the cost of providing international calls could give us a basis for the ceilings, with the costs calculated for stand alone service provider of these services. However, these ceilings may not be worthwhile if the market develops with Internet telephony, and the market price stays substantially lower than the cost based ceilings calculated for these tariffs. ILD sector is likely to be the most competitive of the three segments of the PSTN (Access/NLD/ILD).

(g) <u>Free calls</u>

3.37 At present, the standard tariff package specified by the Authority provides 60 metered call units (urban) and 75 metered call units (rural) per month as free calls. It is worth noting that if the option of call set up charge is to be implemented for local call charge, then there will be no entirely free calls. For each so called free call, there will be a call set up charge.

3.38 Another approach to free calls may be that a reduction in the number of free calls may be considered, subject to suitable adjustments in regard to rental. Yet another possibility is to consider a reduction in free calls, irrespective of the approach adopted in respect to monthly rentals. In any case, if a lower number of free calls is to be permitted, the issue for discussion would be how to determine the appropriate number of such calls.

3.39 To the extent that there is any reduction in the free call allowance, the implication of this for the IUC regime has also to be kept in mind.

(h) <u>Tariffs for end users of DID Franchisees</u>

3.40 The Authority has emphasised the possibility of cheaper access being available to low users through DID franchisees. That is an important reason for specifying a lower monthly rental and call charge for these end users. Given the emphasis on encouraging access to these services, the Authority would like to maintain a low monthly rental, such as Rs. 100/- per month, per extension for these services. However, with a change in call charge for basic service calls, it would be necessary to take another look at the charges for these calls too. To encourage these services, it would be necessary to provide a suitable discount for call charges for DID end users in comparison to the call charges for regular phone lines. Important policy considerations in this regard would include:

- what should be the extent of discount that should prevail for the call charges for DID franchisees;
- should the Regulator specify such a discount, or should this be left to be specified by the franchiser.
- Should the Regulator specify the call charges on the junction lines connecting the DID PABX to the local network in view of the linkage between retail tariff charged from extension users and wholesale tariff i.e, on junction calls.
- Should DID Franchisee tariffs be totally deregulated and left to market forces.

3.41 In the light of the discussions in pre-paras, the following question are brought up for consultation:

1. Which are the network elements whose costs should be taken into account for fixing cost based rental? Should only the non-traffic sensitive portion of the network such as local loop be taken into account or other elements which are traffic sensitive such as local exchange, junction network etc. should also be accounted for, as done in the previous tariff exercise?

2. What level of rental is considered affordable and such that it will not affect demand adversely?

3. **What cost model should be adopted for determining cost-based rentals? For example, is long run incremental cost an appropriate methodology for determining cost-based prices at this stage of our market development?**

4. **What rate of return of funds employed should be considered reasonable and used for determining a cost based price? How should common or joint costs be allocated to specific services such local, NLD and ILD?**

5. **Should monthly rentals be increased for certain category of subscribers such as commercial? If rentals may be increased, can some objective criterion be developed for deciding the extent of such increase and the consumer segments to whom such increase may be made applicable (e.g., for all subscribers; for certain user-groups such as business subscribers, residential subscribers, rural subscribers, non-rural subscribers)? What criteria should be used for determining subscriber categories whose rentals should increase?**

6. **Does the methodology of determining tariffs for local calls need to be changed e.g., should there be a change in the pulse duration, the number of pulses at the beginning of a call, or a combination of call set up charge and reduced pulse rate? If yes, then what should be the pulse duration and the call charge therefor that should be introduced so as to cover all costs, including license fee. Or may the cost of a local call not be fully covered from local call revenue?**

7. **Should the call charge for WLL (M) be the same as for Fixed Line call charge? If yes, why? If not, why not?**

8. **If a regime of origination/termination charge is introduced for local calls, should the same termination charge as in the case of a basic-to-basic call be applied in the case of an incoming call into basic service network from cellular mobile service?**

9. **Should the current number of free calls continue to be provided, or should the free calls not be provided at all? If free calls were not to be provided, then should a specified number of initial calls be charged a lower/higher price than subsequent calls? What should be the basis of specifying any such number and what should be the link between the price of these initial calls and the subsequent calls? Should there be any link between the monthly rental and the number of free calls?**

10. **What is the likely effect of the developments in the NLD market such as entry of new players on the STD tariff? Do we have enough competition in this segment of the PSTN to let market force determine the tariff? In such a scenario how do we meet the access deficit of the local network?**

11. **If the national STD distance-based tariff system were to be changed to better reflect costs, should the discrete distance-slabs as in the present structure of tariffs be retained, e.g. should there be a single distance slab "Above 500 kms". Is there any view about there being an optimum number of distance slabs for an objective criteria based NLD tariff structure. If so, what would be desirable objective criteria to be used for deciding on number of distance slabs and the distances these should cover?**

12. **What should be the regime for call charges for end users of DID Franchisees? Should the Authority specify the charge or should this be left to the franchiser? If the call charge has to be fixed, what should it be? Should it have any linkage with the call charges of the junction linking the DID PABX and the local network of the franchiser? Should both be left to market forces?**

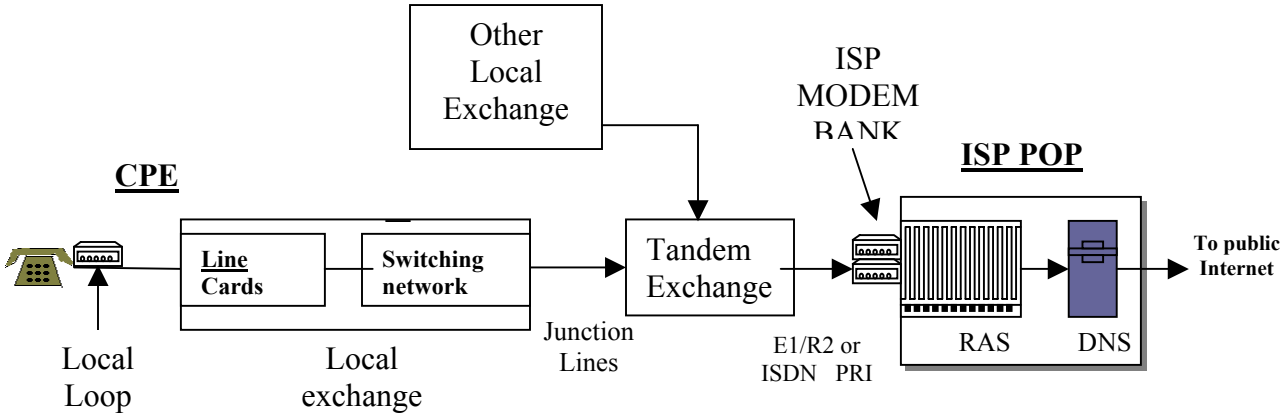
IV CALL CHARGES FOR DIAL UP INTERNET ACCESS OVER PSTN

4.1 Dial up Internet access over PSTN has been the most popular means of accessing the Internet. Market research widely predicts that dial-up access will remain the dominant method of accessing the Internet among residential users and small businesses in the foreseeable future. Notwithstanding the developments in broadband access, dial-up customers will continue to account for a substantial share of the Internet service market.

(a) The issues

The schematic diagram of a dial-up Internet access set up is given below:

Chart 4.1 Schematic Diagram of a Dial Up Internet Access Setup



The various resources required for a dial-up Internet access are the following:

1. Local Loop to customer premises (dedicated to the customer)
2. The line interface card in the local exchange (dedicated to the customer)
3. The switching network part of the local exchange used on the basis of call duration (traffic sensitive part).

The cost of a dial up call for internet access will be a function of the duration for which switching network part of the exchange is utilized.

4.2 A Customer Survey conducted by TRAI showed that a largely held view favoured a reduction in the dial-up call charges since these constitute a major part of expenditure on Internet access and are thus seen as inhibiting the growth of Internet in the country. More recently, a Task Force set up by the TRAI, consisting of eminent experts to provide policy suggestions for accelerating the growth of the Internet services in the country has also emphasised, inter alia, a need to reduce call charges for internet dial up access to stimulate the higher usage of Internet. This is, therefore, an issue which the TRAI wishes to address by seeking ways of implementing lower call charges applicable to dial up Internet access.

4.3 The TRAI has been considering the possibility of implementing a reduced call charge for dial up Internet access in consultation with BSOs. In discussions relating to this issue, several Basic Service Operators (BSOs) felt that a reduction in this call charge would be detrimental to them as it would lead to network congestion and loss of revenue accruing from high value calls (e.g. STD calls). They also mentioned that the resources utilized for Internet access calls are more than those utilized for voice calls because of higher holding time in case of the latter. According to BSOs, the local call charges are below cost and the resources utilised for setting up of a dial-up internet call is the same and thus there is no scope for any further reduction.

4.4 In this regard, it is noteworthy that the cost basis used to determine the cost of a local call charge is operational cost attributable to local call minutes. This cost consists mostly of cost items which are not variable with usage i.e. the costs that are predominantly not linked to usage of the network, e.g. staff salaries, wages and marketing expenses. Thus, the per minute cost for local call could come down over time because the Minutes Of Use (MOU) are likely to increase at a faster rate than operational costs. This trend will be further strengthened due to an increased usage of Internet if the dial-up call charges are reduced.

4.5 Nonetheless, the issue raised by BSOs would still remain relevant, namely the switching network getting congested due to the longer holding time for internet calls, and that in situations of capacity constraints these calls may block-out the more lucrative national/international long distance calls. Some BSOs have also mentioned that cheaper dial up call charges may lead to greater usage of Internet telephony, and thus to a larger fall in the revenues from International Long Distance calls.

(b) International situation

4.6 There is a wide variation in the dial up charges for internet access among different countries. For example, Table 4.1 shows a range for selected countries where the ratio between the highest and lowest costs is about four to one. The charges in India are in the upper end of the estimates shown in Table 4.1. At current tariffs, the average for a 20 hours package in India is about US $ 7.

Table 4.1 Dial-up Call Charges for Indicative 20 hours package of Internet access for Selected Countries (based on ITU data for 2000)

Country	Dial Up call charges for 20 hours package (US$)
Argentina	6.0
Brazil	6.0
Chile	3.45
Indonesia	2.85
Israel	4.39
Malaysia	9.47
Singapore	4.94

Source: ITU

4.7 In some other countries like USA, Canada, France, Hong Kong, Luxemburg, New Zealand, Philippines, Russia, Pakistan, Korea, Mexico and Portugal either free local calls are offered for unlimited Internet usage, or a flat charge is levied together with the line rentals. An example of a country which has recently adopted a flat rate reduced charging scheme for internet access is the United Kingdom.

4.8 The OFTEL (UK Telecom Regulator) reviewed the extent of effective competition in the dial-up Internet access, including the markets for call origination, call termination, wholesale internet call origination and retail Internet service provision. Most residential consumers in UK use the dial-up as the standard facility available. The dial-up access of internet was defined in terms of using bandwidth up to and including 128 kbit/s. Call origination and termination was defined from the perspective of a consumer making the call and as there was no substitutability in the case of dial-up, it was found that some cost investments would need to be incurred by the supplier of origination if a flat reduced rate charging was to be adopted. Regulatory intervention in the UK in the dial-up access market was affected through a direction which required BT (the incumbent Basic Service Operator) to provide an un-metered wholesale service that enabled ISPs to supply un-metered internet access using BT's network for call origination (called Flat Rate Internet Access Call Origination, or FRIACO). It is understood that this arrangement called for substantial additional investments on part of British Telecom (BT), the incumbent, to get over congestion.

(c) <u>Alternative solutions to the issues</u>

4.9 The solutions to the above issues can be sought in the technical and/or the tariff area.

4.10 There are now technical solutions available which may be able to address the concerns of those BSOs who feel that reduced dial up call charges may result into congestion in their network and hence adversely impact their revenues from voice services. In this context it is worth mentioning that now new access technologies like Direct Internet Access System (DIAS), corDECT wireless access, Internet Lease Access Line Doubler (ILALD), DSL etc. are available which enable the simultaneous voice and Internet call over the same access loop and thereafter offloading the Internet traffic to ISPs node without loading the core network such as local exchange, functions, tandems, etc. In addition, these new access technologies can help to provide better data rate to the Internet users and offer the possibility of 'Always-on' Internet. Instead of charging for dial-up access calls, a flat charge on the monthly basis may have to be levied to recover the capital cost of the additional equipment required in the exchange for this purpose.

4.11 Certain tariff options provided by the basic service operators suggest some flexibility in their ability to reduce the dial up call charge. There have been some instances of the established basic service providers giving cheaper Internet services on the assumption that the increased usage of internet would increase their dial up revenues. To the extent that the revenue from dial-up calls presently would cover more than the costs of the dial-up calls, this would provide an opportunity to offer cheaper dial up calls. It may be important to consider such a policy in the national interest of growth of Internet services in the country.

4.12 The issue of an adverse revenue effect would arise if there is a capacity constraint and the system would either carry both the 172xxx and STD ('0' & '00') traffic during the same busy hour. In this regard, it is also worthwhile to consider whether the busy hours of Internet Dial-up access and STD coincide. In case they are different, the Internet dial-up calls i.e., 172xxx may not cause any congestion as far as STD traffic is considered. During off-peak hours i.e. there may be adequate capacity available for both the Internet access dial-up calls and the higher revenue STD calls. Generally, busy hours of Internet usage have been indicated between 7.00 A.M. to 10.00 A.M. and 5.00 P.M. to 11.00 P.M.

4.13 It may also be worth considering as an option that dial-up call charges i.e. on level 172xxx may be suitably reduced for off-peak hours (11.00 P.M to 7.00 A.M.) during which the switching resources of the local exchange may be idle. International best practices specially in developed and developing countries also support this differentiation for making optimum utilisation of resources, at different hours, due to non coincidence of busy hours for different types of traffic streams..

4.14 Another view could be that tariffs for dial up access need to be lower in order to encourage the use of internet in the country, and with such a tariff reduction there will also be a need to increase capacity so that both the local dial up calls and the STD calls may be handled together by the network, without one adversely affecting the other's revenues.

4.15 Based on the above discussion, the following issues are brought out for consultation:

a) Is there a case for reduction of dial-up call charges for Internet usage based on the cost?

b) Based on the lean usage pattern during off-peak hours can the call charges for internet access i.e., on level 172xxx be reduced during off-peak hours as is done in case of STD calls?

c) Whether the reduction in dial-up access charges for Internet will result in increase in usage and hence more revenues for the BSOs?

d) What are the barriers for BSOs to exploit new technologies to provide simultaneous voice and Internet calls and offloading the internet traffic from the core switching network to avoid network congestion, if such a congestion is really apprehended?

e) Do we have any other engineering solutions i.e., based on the technology already deployed to solve the problem of congestion due to excessive holding time of a dial-up Internet calls?

V. INTERCONNECTION USAGE CHARGES (IUC)FOR NATIONAL LONG DISTANCE CALLS

5.1 In terms of the Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002 (2 of 2002) issued on the 12th of July 2002, Telecommunication Service Providers holding significant market power are required to publish Reference Interconnect Offer (RIO) based on the model RIO annexed to the Regulation. The RIO will stipulate the concerned Service Provider's terms and conditions on which it will agree to interconnect its network with the network of any other service provider seeking interconnection. The RIO issued by the service provider will prescribe the technical and commercial conditions for interconnection, which will be based on the model RIO and the guidelines annexed to the regulation. The charges for interconnection are expected to be agreed between the seeker and the provider mutually.

5.2 Interconnection Usage Charges (IUC) are required to be paid by one operator to the other(s) involved in carrying a call for originating, terminating and carriage of traffic. The manner of their payment has been indicated in Article 13 and Schedule 6 to the model RIO. The usage charges payable for originating and terminating access will have to be derived taking into account the costs of the network elements from the subscriber station up to the Short Distance Charging Centre (SDCC). For recovering these costs, reliance is placed on the monthly rentals. However, when the rentals are below cost, there will be an access deficit cost i.e. the amount by which the rentals are below cost. This will need to be recovered from other sources.

5.3 An effort has been made in this paper to estimate cost based IUC including a license fee revenue share, taking into account the present regime of monthly rentals. The estimates in this Chapter include the cost of a call, the access deficit reflecting the difference between the cost based rental and the tariff that is charged as monthly rental, and the cost of providing 60 metered call units as free calls. As and when the tariff regime is altered/modified by regulation, there would be a need to amend the estimates of IUC. A comparison of the estimated IUC

with the prevailing tariffs shows that these two are not the same for different distance categories applied for national long distance calls. When the estimated IUC is compared with the prevailing tariffs, the results depend on with whom is the surplus from the tariff retained. In so far as NLD tariff is concerned one view can be that the tariff belongs to the NLD operator who has to be left with the surplus/deficit after paying IUC for origination and termination. It is important that the access providers be given incentives to invest in the capital intensive portion of the network, and to attract as many subscribers as possible. This would also be useful to achieve the objective of rapid tele-density growth.

5.4 This Chapter begins with a summary of the results of the three different methods used to assess the average charges required to cover the cost of long distance calls. This is followed by a discussion of the detailed exercise conducted to estimate the IUC based on cost data from BSNL, using a bottom up approach. The methodology and the average estimates for the IUC are provided, with the IUC estimates being specified in terms of both the Schedule 6 that is given in the model RIO as well as in a framework of the origination, carriage and termination cost based charges for the distance categories for which NLD tariffs are presently offered in the market. The Authority is also seeking the opinion of stakeholders on the issue that if certain IUC are to be specified by the Regulator as Guidelines then whether a range instead of a single estimate would be the appropriate benchmark for each distance category. The Chapter also raises the issue of the method with which to determine the range, so that the Regulator may specify consistent and tenable benchmarks for IUCs.

(a) <u>Three approaches to determine IUC</u>

5.5 For the derivation of IUC, the following three approaches have been applied:

- <u>Top down</u> : Beginning with the actual overall cost of the entire network and then breaking it downwards following the allocative method. Costs are allocated to different services and then downward to the different levels of the network and functions in providing the services.

- Bottom-up : Based on optimal network engineering model, a proxy model, capable of meeting the service requirements of a given subscriber and traffic profile is developed. Since it is a proxy model, while estimating the capital cost of the network is not so difficult, assessment of operational expenses is always a challenge. This problem can be addressed by adopting and working with the ratio of capital to operating expenses, which represents the industry best-practice in this regard.
- Outside-in: "best current international practice" based on benchmarks of other countries with somewhat similar demographic and economic situations. It does not reflect actual costs and operating conditions but certainly provides fair benchmarks and efficient models to compare with. The task of developing these cost figures and benchmarks was assigned by the TRAI to the internationally well known firm 'OVUM' of U.K. who are reputed experts in matters relating to Telecom interconnections and charges in respect thereof.

(b) Summary results of the three approaches

5.6 Tables 5.1 and 5.2 below compare the main results of the IUC estimates from the three approaches. The total estimate for IUC has been calculated under the bottom up and top down approach, taking account of the access deficit as well as the cost of free calls. The top down approach considers the annual data on traffic and its distribution, cost of transmission network as furnished by BSNL and the corresponding cost per line figures. Data on traffic, investment, DELs and TAX lines have been taken from the information provided by BSNL and the Annual Report 2000-2001 of the Department of Telecom. The information on operational costs is from the Annual Report of BSNL for 1999-2000.

5.7 Of the three approaches, those pertaining to the bottom up approach are the most relevant for this exercise, because they are based on a detailed analysis of the cost figures for a range of different operating conditions, and have closely followed the methodology that relates to the framework of the model RIO.

Table 5.1. Comparison of Average IUC estimates for origination/termination obtained by the three approaches for National Long Distance Calls

(Rs./minute)

Type of charge	Bottom-Up Approach			Top-down Approach			Best International practice (OVUM Benchmark study)
Origination / Termination	Cost	ADC	Total	Cost	ADC	Total	
	0.23	1.19	**1.42**	0.55	1.16	**1.71**	**0.93**

Note: "ADC" is the estimate of access deficit charge and includes both the excess of cost based rental over the rental specified and the cost of free calls. The estimate for cost in the bottom up approach includes revenue share License Fee of 12 % but not any mark up.

Table 5.2. Comparison of Average IUC estimates for carriage of National Long Distance calls obtained by the three approaches for National Long Distance Calls

(Rs./minute)

Type of charge	**Bottom-Up Approach**			**Top-down Approach**			**Best International practice (OVUM Benchmark study)**
	Carriage	Termination	Total	Carriage	Termina -tion	Total	
Transit (1 TAX)	0.17	1.42	**1.59**	0.61 (average for all)	1.71 (average for all)	**2.32 (average for all)**	**1.83**
Transit (2 TAXs)	0.32	1.42	**1.74**				**2.35**
Transit (3 TAXs)	0.73	1.42	**2.15**				**2.54 (average for last two categories)**
Transit (4 TAXs)	0.90	1.42	**2.32**				

Note: The cost of termination is the same as the total cost of origination/termination shown in Table 5.1. The amounts for carriage in the bottom up approach include revenue share License Fee of 12 % but not any mark up.

5.8 The IUC figures obtained from the three approaches are broadly consistent for NLD calls that would cover relatively longer distances, e.g. distance slabs above 50 Kms. This is significant in view of the share of calls in the last two distance categories (i.e. above 200 kms.) accounting for a large portion of the total long distance calls. Table 5.2 shows that the benchmark estimates from the OVUM study are somewhat higher than those from the bottom up approach, but this is because while the former are in the nature of tariffs or wholesale prices which include a mark up, the latter are only cost based estimates without mark up. Including a mark up in the bottom up cost estimates would result in reducing the difference.

5.9 For origination/termination (Table 5. 1), the estimates of IUC obtained using the top down and bottom up approach show a variation mainly because of the different data base used. The top down approach used operating expenses for the year 1999-2000 for which audited accounts for the entire year were available from the incumbent. Capital costs were used from the earlier information obtained from the incumbent and used in the Authority's consultation paper on the Universal Service Obligations. The bottom up approach has used more recent data.

5.10 The estimate of IUC for origination/termination from the OVUM study are lower than those obtained from the bottom up and top down approach. A major reason for this is the high access deficit that arises due to the relatively lower Indian tariffs for rentals and the cost incurred in providing free calls, in comparison to the benchmark countries. The lower Indian rentals and the provision of free calls reflect the objective of socially desirable tariffs to promote affordability.

(c) <u>Detailed IUC estimates using the Bottom Up approach</u>

5.11 As mentioned above, the bottom up approach has used detailed estimates of costs from a number of Circles covered by BSNL, and thus represents the type of exercise that would be relevant in the context of the framework that has been

provided in the model RIO. The average estimates have been derived based on the data from seven circles namely, Gujarat, Jharkhand, Kerala, North East–II, Orissa, Punjab and Rajasthan. The capital cost data available from the BSNL for the unbundled network elements have been used, applying a fully allocated cost principle.

5.12 The bottom up approach uses a proxy network model with location and number of lines remaining as at present but employing the optimal contemporary techno-economic switching and transmission technology options based on traffic considerations. The transmission systems between a local exchange and SDCC Tandem have been considered as employing 8/34 Mbps systems or STM 1 OFC systems based on traffic carried on the link. Similarly, between SDCC Tandem and Level II TAX, transmission systems could be 34 Mbps or STM 1 OFC systems. Inter-Circle and Intra-Circle transmission networks between TAXs are designed on STM 4 / STM 16 OFC rings.

5.13 For estimating the IUC, network elements have been sufficiently unbundled so that the IUC relates to the costs relevant to the network elements used. For shared network resources, the relevant costs considered are those that are attributable to each service in proportion to their respective minutes of usage. Cost of software has been included in the equipment cost and not considered separately. The costs that are directly attributable to carriage of a call between a subscriber and the Point of Interconnect (and vice versa) viz. costs of provisioning, maintenance and operation of associated switching and transmission plant, common costs like power plant, and overhead costs that include personnel, finance, administration and IT support costs have been considered. As the Operating expenses are not available individually for the seven Circles considered, the national weighted average has been used in determining IUC figures in each of them. The access deficit and cost of free calls have been allocated in a manner that full costs are recovered but no cost is appropriated more than once.

5.14 As the data on costs are based on the inputs received from the BSNL, the incumbent, the entry fee for award of a license is not included in the capital cost. Costs of unbundled Signalling and Call-related databases have also not been considered since the incumbent's plan for introduction of unbundled signaling links and signal transfer points on stand-alone basis, and providing access to Toll free calling database, Number portability database, Advanced Intelligent Network (AIN) databases, etc., are not yet known. Administration and finance costs for billing have not been added to the originating access charge, as these may be determined by mutual negotiations between the Access Providers and National/International long distance Operators. For the payment of IUC, cascade mode of operation has been assumed.

5.15 The costs have been calculated in the framework that is provided in Schedule 5 of the model RIO (please see Annex IV for this schedule). Since this data is operator specific it is considered commercially sensitive and is not provided in this paper.

5.16 The capital costs per line have been specified in the various categories given in schedule 5. The capital cost for the access loop and building costs were adjusted to reflect an efficiency factor taking account of the costs of efficient private sector operators. For the optical fibre cable (OFC), average costs were calculated to reflect the relatively longer life of the asset and the likely increase in usage over time. For OFC, therefore, an average usage was determined on the basis of the average usage over a ten year period, and the minutes of use were derived on this basis to calculate the per minute costs.

5.17 Operational costs were derived on the basis of the BSNL's balance sheet for the year ending 2001 which contains data for 6.5 months, i.e. mid-September 2000 to March 2001. The operational costs were projected for a twelve month period and divided into two categories, namely bad debt and others. The latter category of operational costs were allocated to the different items in schedule 5 in the same

ratio as for capital costs. The bad debt were allocated over the different revenue categories in the proportion of the total revenues that they account for. Thus, 20 per cent of the bad debt was allocated to rental. Of the residual bad debt costs, local calls account for 44 per cent (i.e. their share in total metered call units) and the rest is allocated to long distance calls.

5.18 An annual recurring expense equivalent of capital expenditure was derived using an ARE of 22.77 per cent. The cost based monthly rental was derived taking the capital costs of the unbundled network elements up to the short distance charging center (SDCC). This includes the access loop, local exchange, SDCC Tandem (except for digital interface for long distance connectivity to long distance charging center TAX), and the LE-SDCC Transmission system and Link/medium. An average cost based rental was derived by taking a weighted average of the costs for the seven circles used as sample.

5.19 An estimate of access deficit was obtained by deducting the prevailing weighted average rental from the cost based rental (including bad debt). The average estimate of the prevailing rentals takes into account the fact that the TRAI has allowed a higher monthly rental for the commercial customers. The estimate of access deficit is Rs. 244/- per month per DEL. Such access deficit in the past was covered by the incumbent from the long distance calls. In the changed multi-operator, multi-service scenario too, for covering this deficit, alternatives are difficult to find and one may have to rely on the same source, i.e. long distance call revenue.

5.20 The per minute cost of origination/termination has been calculated on the basis of the operational costs (including bad debt) allocable to the local calls. The total operational cost was taken for the same network element categories as those applicable to monthly rental. This operational cost was allocated to local calls and long distance calls on the basis of the minutes of use (MOU). The resultant costs were divided by the MOU of local calls to give the per minute local call

cost. Since origination and termination charges were both being considered in the exercise, the MOU used were for both incoming and outgoing calls.

5.21 The following figures of total incoming and outgoing call minutes were used to calculate the per minute charges for origination/termination:

Outgoing Minutes/day	15.00 Minutes
Incoming Minutes/day	15.15 Minutes

Break-up of the above:

Traffic minutes within the Exchange	2.60 Minutes
Total Inter-exchange & Intra_SDCA	18.00 Minutes
Total Inter-SDCA (1 TAX)	1.80 Minutes
Total Inter-SDCA (2 TAXs)	1.80 Minutes
Total Inter_LDCA (3 TAXs)	3.40 Minutes
Total Inter_LDCA (4 TAXs)	2.55 Minutes

5.22 The costs for the various long distance call categories in Schedule 6 were derived taking the unbundled network elements corresponding to the different types of calls covering one or more TAXs. In this case, the cost base includes both the capital cost as well as the operational costs. The per minute costs were derived based on the minutes of use for these different types of calls.

5.23 The cost based estimates derived using the above methodology need to be augmented to take account of the prescribed license fee (revenue share). A revenue share of 12 per cent is used for origination/termination, and 15 per cent for carriage of national long distance calls.

5.24 In addition, the IUC is a wholesale price and would include a margin over the cost. A mark up of 10 per cent was given for this purpose. With these elements, the cost based charges calculated in the framework of Schedule 6 (without

including access deficit) are shown in Annex IV. Corresponding to these cost estimates, the IUC for long distance calls have been considered for four different distance categories, which correspond to the present tariff structure for long distance calls prevailing in the market, which are distance based i.e. up to 50 kms, 50 to 200 kms, 200 to 500 kms, and above 500 kms. These estimates are shown in Table 5.3 below.

Table 5.3 **Average IUCs (including 10 % mark up and revenue share License Fee) For Origination, Carriage, and Termination For National Long Distance Calls (Rs./minute)**

Distance Slab	Originating access	Carriage	Terminating access	Total IUC per minute
1. Upto 50 Kms.	0.25	0.19	0.25	0.69
2. 50 to 200 Kms.	0.25	0.35	0.25	0.85
3. 200 to 500 kms.	0.25	0.81	0.25	1.31
4. Above 500 Kms.	0.25	0.99	0.25	1.49

5.25 To this amount, the estimate of access deficit and cost of free calls have been added. The charge due to access deficit (including revenue share License Fee) has been calculated at Rs. 0.97 per minute on account of rental, and Rs. 0.22 per minute to cover the cost of free calls. The cost of free call was taken on the basis of their being local calls, each local call having an average holding time of two minutes. The average holding time was derived from the traffic data available with the Authority.

5.26 Taking account of the above costs, the average IUC estimates come to those shown in table 5.4 below.

Table 5.4. Average IUCs (including 10 % mark up and revenue share License Fee) For Origination, Carriage, and Termination For National Long Distance Calls, Plus Access Deficit For Origination and Termination (Rs./minute)

Distance Slab	Originating access	Carriage	Terminating access	Total IUC per minute
1. Upto 50 Kms.	1.44	0.19	1.44	3.07
2. 50 to 200 Kms.	1.44	0.35	1.44	3.23
3. 200 to 500 kms.	1.44	0.81	1.44	3.69
4. Above 500 Kms.	1.44	0.99	1.44	3.87

5.27 The effect of Access Deficit on the estimates of IUCs for the two lower distance categories (i.e. up to 200 kms.) is evident since the present tariff for short distance trunk calls would be below cost, especially taking account of the access deficit that is to be obtained from the national long distance call charges. In a multi-operator multi-service scenario for origination, carriage and termination, two or more service providers are likely to be involved in completing a call necessitating a fair sharing of the call revenue. The present tariff structure is, however, such that the call charges for distances up to 200 kms i.e. in the first two of the four categories do not cover the estimated IUC. In the two higher distance categories, however, the charges are much higher. In the single operator scenario these high charges have traditionally covered the cost of lower distance calls, in other words subsidised them. A revenue structure such as this is based on the principle of affordability, it being the assumption that the consumers who make longer distance calls have higher levels of affordability. We may have to continue with this kind of tariff structure for some time more and keep long distance calls priced comparatively higher on considerations of affordability. In this context, it is also noteworthy that national long distance operators are likely to

carry inter-circle calls which would generally fall within the two higher distance categories i.e. above 200 Kms. In a multi-operator, multi-service scenario a methodology for sharing call revenues among the different players would need to be evolved which enables each of the participating service providers to recover its costs incurred in completing the call and also provides it with a reasonable return. The surplus needs to be divided in a manner so that all the operators involved can sustain their services and the telecom network can be extended rapidly over time.

(d) Other issues

5.28 To the extent that certain monthly rentals, e.g. Wireless in Local Loop with limited mobility (WLL (M)), have been fixed on a cost basis, the amount to be provided would not include any access deficit nor would it include the amount calculated for free calls, as no such calls are permitted.

5.29 The estimation of whether or not there is a surplus in the IUC regime would involve calculating a weighted average of the surplus/deficit for different distance categories. This would need information on the distribution of call minutes across these categories and on the peak and off peak call distribution under each of these distance categories. Table 5.5 gives this, based on the data discussed earlier in this Chapter. Information from BSNL indicates that the distribution of peak and off-peak metered call units is in the ratio of about 60:40.

Table 5.5. Distribution of the Minutes Of Use Per day for the Different Categories of Long Distance Calls (incoming and outgoing)

Distance categories	Average Long Distance Minutes of Use Per Day	Percentage share in Total Average Long Distance Minutes of Use
0 to 50 kms.	1.8	18.85%
50 to 200 kms.	1.8	18.85%
200 to 500 kms.	3.4	35.60%
Above 500 kms.*	2.55	26.71%

* Includes 0.25 minutes on account of international traffic.

5.30 Where more than one long distance service provider is involved in carrying the calls, the revenues would need to be shared. This sharing may take place, for example, in the same proportion as the IUC shown in Schedule 6 given in Annex IV. Mutual negotiations will be another alternative but it would always be more desirable to decide upon any sharing pattern based on objective and verifiable data.

5.31 The Regulator may consider providing a range for IUC to facilitate negotiations. So long as the IUC quoted by the interconnection provider is within the given range the seeker may find it acceptable. By giving a range the Regulator could take care of the following concerns.

- a difference in the cost base in different conditions/places.
- the possibility of a change in the pattern of the Minutes of Usage that has been used for the underlying estimates.
- to provide a flexible basis for a negotiating framework since the actual IUCs are expected to be reached through a negotiated solution.
- provide a basis for giving different charges for national long distance call origination/termination in rural areas.
- provide buoyancy for competitive pricing to take place in the market.

5.32 If provisioning of a range for IUC by the Regulator is considered desirable the span of the range and the basis on which the range can be built will be an issue.

5.33 Based on the discussion in this Chapter, the following questions are raised for consultations:

(a) Can the average estimates of IUC given in this Chapter form basis for introduction of a new IUC regime? If some changes are considered desirable what should these be and what should be the basis for effecting those changes in the given estimates?

(b) Is it desirable that the Regulator provides a range for the IUC within which the concerned service providers may conclude their negotiations at a mutually agreed point?

(c) Should the applicable IUC be relatively higher for rural and remote areas?

(d) Should there be linkage between long distance tariff and the IUC?

(e) It is proposed to use element based costing to work out the basic tariffs, i.e. rental and local as well as long distance call charges. What alternative methodologies for both or any of these can be considered as appropriate in the conditions currently prevailing in the Indian Telecom Sector? What, if any, will be the main advantage of such alternative methodology?

Annex Table I Comparative Chart of Internet Telephony Rates by various Service Providers

Sl. No.	Service provider	Rate per minute in Rs. (Range)						
		Calls to SAARC & other neigh-bouring countries	Calls to other Asian countries	Calls to European countries	Calls to Australian continent	Calls to African Countries	Calls to North American countries	Calls to south American countries (central America)
TRAI ISD call rates		**21.60**	**32.40**	**32.40**	**32.40**	**32.40**	**40.80**	**40.80**
Existing ISD tariffs – Peak Off Peak		**21.60 18.00**	**24 21.60**	**24 21.60**	**24 21.60**	**24 21.60**	**24 21.60**	**24 21.60**
1.	A	25 – 77.52	8 – 74.45	5 – 30 U.K.- 5	5 – 8	20 – 53.67	5 – 15 USA – 5 Canada –5	8 – 50.14
2.	B	31.36 – 99.50	7.37 – 229.11	3.05–36.55 U.K.- 5.39 London - 4.3	6.4 – 8.81	23.27 – 146.08	4.95 – 5.86 USA– 4.95 Canada– 5.19	8.02 - 209.48
3.	C	48.20 – 58.70	5 – 90.40	5 – 21.70 U.K. – 5	5	21.70-75.50	5 USA - 5 Canada –5	5- 87.60
4.	D	12 -30	12.00 – 273.24	9.90 – 30.74 U.K. – 8	13.10	16.17– 92.58	8 USA – 8	10.73 – 297.61
5.	E	19.95 – 40.50	3.50 – 78.68	2.50 – 16.50 U.K. – 5	3-15	13.60 – 52.13	2.50 USA - 2. 5 Canada - 2.5	10.58 – 46.50
6.	F	66.92-117.37	7.21 – 227.03	4.38 – 45.04 U.K.– 5.28	9.00 (Australia)	25.23 – 95.24	4.49– 6.44 USA- 4.49 Canada - 4.62	14.41 – 79.28
7.	G	49.60-88.23	9.61-224.61	5.06-37.12 U.K. – 6.24	7.73 - 8.51	22.27-143.77	5.21 – 10.36 USA – 5.21 Canada – 5.79	10.54 – 205.52

Sl. No.	Service provider	Rate per minute in Rs. (Range)						
		Calls to SAARC & other neigh-bouring countries	Calls to other Asian countries	Calls to European countries	Calls to Australian continent	Calls to African Countries	Calls to North American countries	Calls to south American countries (central America)
8.	H	20 18	29 26	29 26	29 26	29 26	37 33	37 33
9.	I	N.A.	4.25-8.00 (China, .Japan, Hongkong,Singapore, Taiwan)	4.25 (Belgium, Denmark, France, Germany, Italy, Sweden, UK)	4.25 (Australia)	N.A.	4.25 (USA and Canada)	N.A.
10.	J	N.A.	5.95 – 19.95	5.95-7.95 U.K.- 5.95	7.95	N.A.	5.95-7.95 USA – 5.95 Canada – 7.95	N.A.
11.	K	18	Asia pacific - 11 Middle East – 18 Others- 25	6	11	25	6	25
12.	L	N.A.	7 - 13	7 – 10 U.K. – 7	7	13 (South Africa and Zimbawe)	7 –10 USA – 7 Canada – 7	7- 16
13	M	20	8 – 22	4.8 – 18 U.K. – 4.8	4.8 – 8	18 – 22	4.8 USA – 4.8 Canada – 4.8	12 - 22

Sl. No.	Service provider	Rate per minute in Rs. (Range)						
		Calls to SAARC & other neigh-bouring countries	Calls to other Asian countries	Calls to European countries	Calls to Australian continent	Calls to African Countries	Calls to North American countries	Calls to south American countries (central America)
14.	N	14 (Dhaka)	4.5 – 19	4.5 – 17 4.5 – U.K.	6	10 – 21	4.5 – 7 4.5 – USA 4.5 – Canada	6 - 20

Source: Tariff Submissions to TRAI

Annex Table II **List of Amendments to TTO, 1999 related to Basic Tariff.**

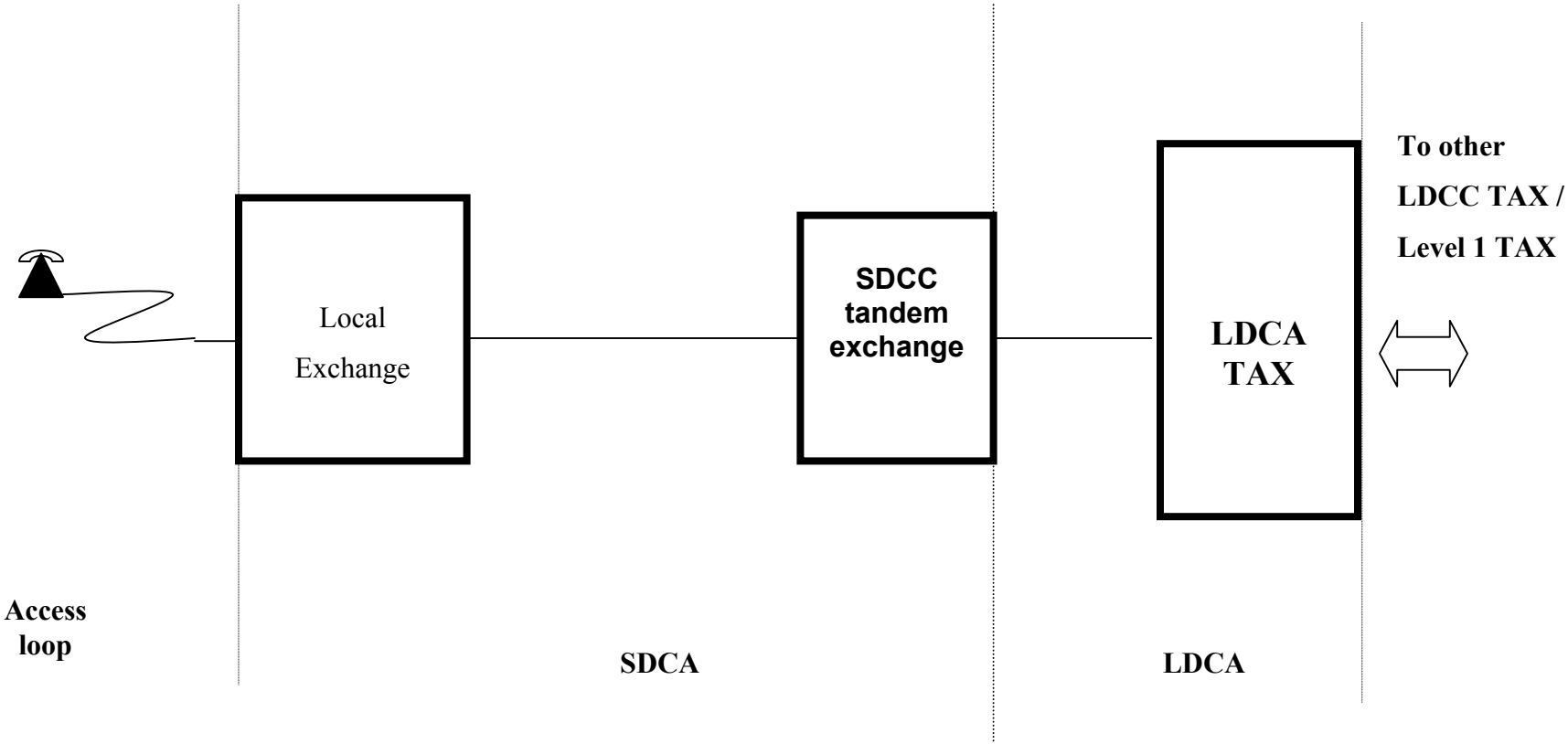
Sl.No.	Name of the Order	Date of Issue	Main Objective
1.	The Telecommunication Tariff (First Amendment) Order , 1999	30.3.1999	To postpone the date of implementation of new tariff in respect of Schedule I, II and IV of TTO, 1999 from 1.4.1999 to 1.5.1999.
2.	The Telecommunication Tariff (Second Amendment) Order, 1999	31.5.1999	To clarify coverage of certain tariff and also to address misprints in TTO,1999.
3.	The Telecommunication Tariff (Third Amendment) Order, 1999	31.5.1999	To allow Basic service Providers the flexibility of providing alternate tariff packages.
4.	The Telecommunication Tariff (Sixth Amendment) Order, 1999	30.9.1999	A new tariff category titled 'Centrex' was added.
5.	The Telecommunication Tariff (Seventh Amendment) Order, 2000	30.3.2000	To postpone the date of implementation of 2nd phase of tariff rebalancing by four months i.e. up to31.7.2000.
6.	The Telecommunication Tariff (Eighth Amendment) Order, 2000	31.7.2000	To post pone the date of implementation of 2nd phase of tariff rebalancing by another one month i.e. up to31.8.2000.
7.	The Telecommunication Tariff (Ninth Amendment) Order, 2000	28.8.2000	To introduce 2nd phase of tariff change w.e.f.1.10.2000.
8.	The Telecommunication Tariff (Tenth Amendment) Order, 2000	9.11.2000	Tariff for extension users of DID Franchisees was revised.
9.	The Telecommunication Tariff (Eleventh Amendment) Order, 2001	25.1.2001	To enlarge the scope of BSNL's revised pulse rates for distance categories 50-200 Kms in respect of inter-network calls also. This has been set aside by TDSAT

10.	The Telecommunication Tariff (Fourteenth Amendment) Order, 2001	24.5.2001	Tariff for Limited Mobility (WLL) Service.
11.	The Telecommunication Tariff (Fifteenth Amendment) Order, 2001	20.7.2001	To enlarge the scope of BSNL's revised pulse rates for distance categories 50-200 Kms in respect of inter-network calls also.
12.	The Telecommunication Tariff (Seventeenth Amendment) Order, 2002.	22.1.2002	Regarding Reporting Requirement for filing of tariff proposals by the service providers.
13.	The Telecommunication Tariff (Twentieth Amendment) Order, 2002	14.3.2002	Implementation of third tranche tariff.
14.	The Telecommunication Tariff (Twenty First Amendment) Order, 2002	13.6.02	To review the reporting requirement for filing of tariff plans by service providers.
15.	The Telecommunication Tariff (Twenty Second Amendment) Order, 2002	4.7.02	Revision of tariff for Limited Mobility (WLL) Service.

Annex-III

Formats
for
Unbundling of Cost of Network Elements

PSTN Network Topology



A. Access Loop from Customer Premises to Local Exchange

1. Customer Premises

Elements of Cost	Upto 200 lines	200 to 1.5 k Lines	1.5k to 10k Lines	10k to 30k Lines	30 k to 1 lakh Lines	More than 1 lakh Lines
Customer Premises Equipment i.e., Telephone set						
Internal wiring						

2. User Network Interface (UNI) to Service Node Interface (SNI)*

Elements of Cost	Upto 200 lines	200 to 1.5 k Lines	1.5k to 10k Lines	10k to 30k Lines	30 k to 1 lakh Lines	More than 1 lakh Lines
Lines & wires						
Distribution Point (DP)						
Pillar / cabinet						
UG Cable						
Cable laying						
Cable Jointing and Termination						
Installation Cost						

3. Local Exchange

Elements of Cost	Upto 200 lines	200 to 1.5 k Lines	1.5k to 10k Lines	10k to 30k Lines	30 k to 1 lakh Lines	More than 1 lakh Lines
MDF						
Line Card						
Land & Building						

Assumptions

1. Average access loop distance from Customer Premises (UNI) to Local Exchange (SNI) to be taken as 4 Km for Urban areas and 6 Kms for Rural areas.
2. For Hilly area, the distance is to be taken as 8 Kms for upto 500 line exchanges.
3. A fill factor for Cable utilization can be taken into account. It could be 80% for Urban Areas and 50% for Rural areas.
4. Mix of New Technology and C-DOT exchanges (20:80 for local area having capacity less than 30 k lines, 50:50 for local area having capacity between 30 k to 1 lakh and 80:20 for local area having more than 1 lakh capacity).
5. In Rural area, exchange upto 1400 lines SBM can be taken. Presently Rural exchange areas below 200 lines can be served by CDOT 256 P exchanges.

B. Local exchange to SDCC tandem link

1. Local Exchange (except line card and MDF)

Elements of Cost	Upto 200 lines	200 to 1.5 k Lines	1.5k to 10k Lines	10k to 30k Lines	30 k to 1 lakh Lines	More than 1 lakh Lines
Local Exchange (except line card, MDF and Digital Trunk Interface for Long Distance)						

2. Transmission Link (Optical Fibre) related cost elements (variable with distance)

Elements of Cost	Upto 2 Mb	2 Mb to 8 Mb	8 Mb to 34 Mb
Optical Fibre cable including ducts, laying, trenching and backfilling			
Route Survey			
Right of way			
Project Management and coordination			

2.A Cost related to Terminal equipment (Fixed cost)

Elements of Cost	Upto 2 Mb	2 Mb to 8 Mb	8 Mb to 34 Mb
Terminal equipment (8 Mbps Optimux including DDF)			
Spares			
Power Plant			
Battery			
Engine Alternator			
Electrical Items			
Test Instruments			
Earthing			
Air-conditioning			
Digital Trunk Interface at Local and SDCC Tandem Exchanges			

Assumptions:

1. Given that LE to SDCC average distance is "X" Kms, it can be assumed that out of “X” Kms, 10 Kms is within municipal limits. Out of the 10 Km within municipal limits, GI pipes can be assumed in 3 Km length and in balance 7 Kms half round RCC pipe can be assumed. This is in addition to the HDPE Pipe normally used for OFC. Beyond the Municipal area, only HDPE Pipe may be assumed for OFC.

2. Rocky: Plan area, ratio varies from circle to circle.

C. SDCC Tandem

	SDCC Tandem requirements for a switching capacity in the SDCA Network of Capacity			
Elements of Cost	Upto 1.5 k Lines	1.5k to 10k Lines	10k to 30k Lines	30 k to 1 lakh Lines
Tandem Exchange (except Digital Trunk Interface) per circuit termination in Tandem.				

D. SDCC to LDCC link (as apportioned on per DEL basis)

1. Transmission Link (Optical Fibre) related cost elements (variable with distance)

Elements of Cost	Upto 8 Mb	Upto 34 Mb	Upto 140 Mb	STM 1
Optical Fibre cable including ducts, laying, trenching and backfilling				
Route Survey				
Right of way				
Project Management and coordination				

2. Cost related to Terminal equipment (Fixed cost)

Elements of Cost	Upto 8 Mb	Upto 34 Mb	Upto 140 Mb	STM 1
Terminal equipment (STM1 or 8/34/140 Mbps Optimux)				
Line Control Terminal (in case of STM1)				
Spares				
Network Manager (in case of STM1)				
Digital Distribution Frame				
Power Plant				
Battery				
Engine Alternator				
Electrical Items				
Test Instruments				
Earthing				
Air-conditioning				
Digital Trunk Interface at Local and SDCC Tandem Exchanges				

Regenerator cost (every 40 Km)

Elements of Cost	Upto 8 Mb	Upto 34 Mb	Upto 140 Mb	STM 1
Regenerator equipment (STM1 or 34 Mbps Optimux)				
Spares				
Power Plant				
Battery				
Engine Alternator				
Electrical Items				
Earthing				
Air-conditioning				

LDCC TAX

Elements of Cost	Upto 1000 lines	> 1k and upto 5 k Lines	> 6 k and upto 20 k Lines	20 k to 50k Lines	Above 50 k Lines
Trunk Automatic Exchange (except Digital Trunk Interface) Cost per line of TAX equipment					

Assumptions

1. Given that SDCC to LDCC average distance is "X" Kms, it can be assumed that out of "X" Kms, 10 Kms is within municipal limits. Out of the 10 Km within municipal limits, GI pipes can be assumed in 3 Km length and in balance 7 Kms half round RCC pipe can be assumed. This is in addition to the HDPE Pipe normally used for OFC. Beyond the Municipal area, only HDPE Pipe may be assumed for OFC.

2. Rocky: Plan area, ratio varies from circle to circle.

E. LDCC to LDCC link

1. Transmission Link (Optical Fibre) related cost elements (variable with distance)

Elements of Cost	565 Mb lines	140 Mb Lines	STM 4 Lines	STM 16 Lines
Optical Fibre cable including ducts, laying, trenching and backfilling				
Route Survey				
Right of way				
Project Management and coordination				

2. Cost related to Terminal equipment (Fixed cost)

Elements of Cost	565 Mb lines	140 Mb Lines	STM 4 Lines	STM 16 Lines
Terminal equipment (STM4/16 or 140/565 Mbps Optimux)				
Line Control Terminal (in case of STM16)				
Spares				
Network Manager (in case of STM16)				
Digital Distribution Frame				
Power Plant				
Battery				
Engine Alternator				
Electrical Items				
Test Instruments				
Earthing				
Air-conditioning				
Digital Trunk Interface at Local and SDCC Tandem Exchanges				

Regenerator cost (every 40 Km)

Elements of Cost	565 Mb lines	140 Mb Lines	STM 4 Lines	STM 16 Lines
Regenerator equipment (STM16 or 140 Mbps Optimux)				
Spares				
Power Plant				
Battery				
Engine Alternator				
Electrical Items				
Earthing				
Air-conditioning				

Assumptions

1. Given that LDCC to LDCC average distance is "X" Kms, it can be assumed that out of "X" Kms, 10 Kms is within municipal limits. Out of the 10 Km within municipal limits, GI pipes can be assumed in 3 Km length and in balance 7 Kms half round RCC pipe can be assumed. This is in addition to the HDPE Pipe normally used for OFC. Beyond the Municipal area, only HDPE Pipe may be assumed for OFC.

3. Rocky: Plan area, ratio varies from circle to circle.

TRAFFIC SENSITIVE INPUTS

BSNL to provide data for all Circles and other BSOs for their licensed Service Area

I. Number of Metered Calls within a representative SDCAfor 1000 DELs (Atleast 2 SDCAs to be covered in each Circle)

Circle	First SDCA	Second SDCA

II. Number of metered calls in the Intra-Circle Network for the following slabs for 1000 DELs (At least one Level I and two Level II TAX stations in each Circle to be covered).

Slab Distance	Metered Calls		
	Level I	Level II	Level II
Upto 50 Kms			
51 to 200 Kms			
201 to 500 Kms			
501 to 1000 Kms			
Above 1000 Kms			

III. Number of metered calls in the Inter-Circle Network for the following slabs for 1000 DELs

Slab Distance	Metered Calls
Upto 50 Kms	
51 to 200 Kms	
201 to 500 Kms	
501 to 1000 Kms	
Above 1000 Kms	

FORMAT FOR DATA REQUIRED FROM BASIC OPERATORS						
Note: Explanations for terms are at the end of the Table						
	Actuals			**Latest Projections**		
	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
1. NETWORK CAPACITY (DELs)						
Equipped Capacity						
Number of Working DELs						
2.NUMBER OF SUBSCRIBERS						
Opening Subscribers						
Closing Subscribers						
Average Subscribers						
3. CAPACITY UTILISATION (%)						
Subscriber						
4. SOURCES OF FUNDS						
Debt (Rs. Lakhs)						
Equity						
Others (Please specify)						
5. Slab-wise Tariffs						
Peak hours						
0 to 50 Kms						
>50 to 100 Kms						
>100 to 200 Kms						
>200 to 500 Kms						
>500 to 1000 Kms						
> 1000 Kms						
Off-Peak hours						
0 to 50 Kms						
>50 to 100 Kms						
>100 to 200 Kms						
>200 to 500 Kms						
>500 to 1000 Kms						
> 1000 Kms						
6. REVENUE (Rs. Lakhs)						
Rental Revenue						
Call Revenue						
Installation Fee						
STD & ISD Revenue						
Revenue from supplementary and value added services						
Revenue from Pass Thru from Basic						
Revenue from Pass Thru from Cellular						
Anyother Revenue (please specify)						
ARPU (Rs.)						

	Actuals			Latest Projections		
	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
7. BASIC Service (including WLL)						
No. of subscribers in Standard Package(STP)						
No. of ATPs filed with TRAI						
No. of ATPs on offer.						
Total No. of subscribers.						
Total MCUs (local/long distance/ international calls.						
Average Revenue per user (ARPU)						
Total revenue (Rentals+Call Revenue+Others.)						
8. Wireless in Local Loop (Fixed) [WLL(F)]						
No. of subscribers in Standard Package.						
No. of plans filed with TRAI						
No. of plans on offer.						
Total No. of subscribers.						
No. of MCUs						
Average Revenue per user (ARPU)						
No. of waitlisted subscribers.						
Total revenue (Rentals+Call Revenue+Others.)						
9. Wireless in Local Loop (Mobile) [WLL(M)]						
No. of subscribers.						
Total MCUs						
Average Revenue per user.						
Pass through revenue in the ratio 5:95						
Total revenue (Rentals+Call Revenue+Others.)						
10. Public Call Offices (PCOs)						
No. of ATPs filed for PCOs						
No. of ATPs on offer.						
No. of PCOs installed						
Average Revenue per PCO.						
No. of pending applications for PCOs.						

	Actuals			Latest Projections		
	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
11. Village Panchayat Telephones (VPTs)						
No. of VPTs installed.						
Average revenue from VPTs						
No. of pending applications for VPTs						
12. Coin Collection Boxes (CCBs).						
No. of CCBs installed.						
Average revenue from CCBs						
No. of pending applications for CCBs						
13. DID/Centrex						
No. of tariff plans filed for DID/Centrex.						
No. of franchisees/subscribers/service providers owned DID EPABXs.						
Average revenue per extension user.						
14. Value Added Service (VAS)						
Total number of VASs offered. Provide details						
Details of tariff plans on offer (to be appended).						
15. CAPITAL EXPENDITURE (Rs.lakhs)						
Network Setup Costs						
Network Expansion Costs						
Preoperative Expenses as Capitalised						
Shared assets if any(% of its utilisation						
attributable to this network)						
License fee capitalised						
Others (Please specify)						
16. REAL ESTATE COSTS (Rs. Lakhs)						
Company Owned Premises-Capital Expen.						
Leased Premises-Annual Lease Rent						
Shared assets if any(% of its utilisation						
Attributable to this network)						
Others (Please specify)						
17. LICENCE FEE (Rs. Lakhs)						
Penalties paid (if any)						
Others (Please specify)						
18. PSTN PASS THROUGH CHARGES (Rs. Lakhs)						

	Actuals			Latest Projections		
	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
19.OPERATING COST AS PER P&L ACCOUNT (Rs. Lakhs)						
Salary, wages and other allowances #						
Non salary expenses #						
Human Resources development - Recruitment, training etc.						
Network Management/Network Maintenance						
Directory and operator services						
Rent of buildings #						
Insurance #						
Service Tax						
Electricity and Fuel charges #						
- Office #						
- Network Equipment						
Repair and Maintenance						
- Plant and Machinery						
- Office premises #						
- Vehicles #						
- Others (please specify) #						
Spare inventory						
Telephone charges						
Printing and stationery #						
Postage #						
Travel Expenses #						
Freight #						
Billing and customer care						
Business promotion and marketing, exhibitions #						
Bad debts						
Licence Fee						
Interconnection charges						
- Port charges						
- Leased line charges						
- other interconnection charges						
Meetings/Entertainment #						
Other operating Expenses (Please specify)						
20. PREPAID OVER THE COUNTER						
VCC / ITC CARDS						
Number sold						
Value (Rs. Lakhs)						
Other Income (please specify sub heads)						
21. INTEREST # (Rs. Lakhs)						

	Actuals			Latest Projections		
	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
22. DEPRECIATION # (Rs. Lakhs)						
23. PROFIT BEFORE TAX						
24. PROFIT AFTER TAX						
NET PROFIT(Rs. Lakhs)						
25. MARKET SHARE						
(% in area of operation)						

Explanatory Notes:

1. Closing capacity refers to the capacity at the end of the accounting period
2. ARPU is the average revenue per user per year. Please specify the elements of revenue included in the calculation of ARPU.

Annex Table -IV **Framework of Schedule 5 and the cost based average estimates for IUC (without access deficit) as per Schedule 6 of the model Reference interconnect offer**

SCHEDULE 5

Interconnect Usage charges (IUC) for use of Unbundled Network Elements (UNEs) involved in carriage of various types of calls

No.	Network Elements	Total OPEX per DEL	Mean Capital Employed per DEL	Cost of Capital (%)	Annual CAPEX	Annual CAPEX+OPEX per DEL	Minutes of Usage	Av. Cost per minute
1.	Wireline/ Wireless Access Loop							
2.	Local Exchange							
3.	SDCC Tandem							
4.	TAX Switch							
5.	Local Exchange – SDCC transmission Link							
6.	Local Exchange – SDCC transmission Length in steps of 1 km each.							
7.	SDCC – TAX transmission Link							
8.	SDCC – TAX transmission Length in steps of 10 km each.							
9.	Inter-TAX transmission Link (Intra-Circle)							
10.	Inter-TAX Transmission Length (Intra-Circle) in steps of 50 km each.							
11.	Inter-TAX transmission Link (Inter-Circle)							
12.	Inter-TAX Transmission Length (Inter-Circle) in steps of 50 km each.							

NOTES:

1. **Based on the above average cost per minute/per unit indicated in the table, it should be possible to calculate carriage/ access charges involving various types of switching and transmission elements such as Double TAX call for transit, Single TAX/ILT call for originating and termination.**

2. The element costs may be different for different network sizes/ configurations.

3. This Schedule shall be submitted by both the Parties to the Authority and will be treated as confidential.

SCHEDULE 6
Interconnect Usage Charges Derived From Schedule 5
(Rs.; includes a 10 per cent mark up and revenue share License Fee)

Type of Access / Carriage	**Network Elements involved**	**Charge / Minute**
Originating	Local Loop-Local Exchange-Tandem Exchange plus Transmission Link & Length	0.25
Transit	Single TAX-Transmission Link & Length (Intra-Circle)	0.19
Transit	Two TAXs-Transmission Link & Length (Intra-Circle and Inter-Circle)	0.35
Transit	Three TAXs-Transmission Link & Length (Intra-Circle and Inter-Circle)	0.81
Transit	Four TAXs – Transmission Link & Length (Inter-Circle)	0.99
Terminating	Tandem exchange plus Transmission Link & Length – Local Exchange – Local Loop	0.25

ANNEX 3

24th Amendment to Telecommunications Tariff Order, 1999 dated January 24, 2003 (the "TT Order").

http://www.trai.gov.in/torders.htm

Telecom Regulatory Authority of India
Notification

New Delhi , the 24th January, 2003

No. 306-2/2003-Econ

In exercise of the powers conferred upon it under sub-section (2) of section 11 of the Telecom Regulatory Authority of India Act, 1997 as amended by TRAI (Amendment) Act, 2000, the Telecom Regulatory Authority of India (TRAI) hereby makes the following order by an amendment to the Telecommunication Tariff Order, 1999 by notification in the Official Gazzette, in respect of tariffs at which Telecommunication Services within India and outside India shall be provided :

The Telecommunication Tariff (Twenty Fourth Amendment) Order 2003 (1 of 2003)

Section I
Title, Extent and Commencement

1. Short title, extent and commencement:

   (i) This Order shall be called "The Telecommunication Tariff (Twenty Fourth Amendment) Order 2003".

   (ii) The Order shall come into force on the date of its notification in the Official Gazette.

Section II
Tariffs for Telecommunication Services

2 Tariffs

Tariffs as contained in Schedules I and II under Section III of the Telecommunication Tariff Order 1999 shall stand deleted and substituted as specified in the Schedules I and II hereto.

Section III

3. Explanatory Memorandum

This Order contains at Annex A, an explanatory memorandum to provide clarity and transparency to the tariffs specified in this Order.

BY ORDER

Dr. Harsha Vardhana Singh,
Secretary cum Principal Advisor,
Telecom Regulatory Authority of India

Schedule I

Basic Services (Other than ISDN)

ITEM	TARIFF
(1) Date of Implementation	1 April, 2003
(2) Registration Charges	Prevailing charges as on the date of this Order as ceilings
(3) Installation Charges **(3.a) Fixed line telephony service using other than wireless in local loop technology** **(3.b) Fixed line telephony service using wireless in local loop technology (Fixed and Limited Mobility)**	 Prevailing charges as on the date of this Order as ceilings Forbearance
(4) Deposits **(4.a) Fixed line telephony service using other than wireless in local loop technology** **(4.b) Fixed line telephony service using wireless in local loop technology (Fixed)**	 Not to exceed twelve month's rentals as specified from time to time Forbearance Provided that, The maximum period for deposit higher than at (4.a) above (i.e. higher than for fixed line telephony other than using wireless in local loop) is one year. At the end of one year of obtaining a wireless in local loop connection, unless the subscriber specifically demands the continuation of that connection on wireless in local loop, the additional deposit involved shall be refunded to the subscriber or interest paid on such additional deposit at the annual rate of interest for one year deposits prescribed by the State Bank of India.

(4.c) Limited Mobility telephony service using wireless in local loop technology **(4.d) Handset for Limited Mobility telephony service using wireless in local loop technology if provided by service provider**	Forbearance Forbearance
<u>(5) Monthly Rentals For Rural Subscribers</u> **(5.a) Fixed line telephony service including wireless in local loop technology (Fixed)**	**Capacity of local Exchange System (Number of Lines)** / **Senior Citizen (Rs)** / **Others (Rs.)** Up to 999 / 70 / 70 1,000 to 29,999 / 120 / 120 30,000 to 99,999 / 180 / 200 1 lakh and above / 250 / 280 Note: The definition of Senior Citizen shall be the same as for the purpose of payment of Income Tax.
(5.b) For Limited Mobility telephony service using wireless in local loop technology **(5.c) For Limited Mobility telephony service using wireless in local loop technology if handset provided by service provider, without a deposit as stipulated in (4.d) above**	Rs.200 per month As in (5.b) above Plus Ceiling of Rs.50.00 per month. This ceiling applies to all other amounts including, for example, depreciation and insurance premium, but excluding deposits.

	Notes: (1) Rural subscribers are those who reside in a rural SDCA as specified in the new Basic Service Licenses. (2) Capacity of the Local Exchange system is the sum of the capacities of all exchanges in a local area. Any augmentation of the local exchange capacity after the date of implementation of this Order shall automatically be taken into account for re-classification for purposes of tariffs. (3) Short Distance Charging Area (SDCA) is one of the 2647 Local Areas whose details are provided in the Basic Service Licenses and also in the Numbering Plan wherein for each SDCA, a unique STD code is provided. Local call charges are applicable on Intra-SDCA traffic and for calls within the distance category "0 to 50 kms.".

(6) Monthly Rentals For Urban (Residential) Subscribers	
(6.a) Fixed line telephony service including wireless in local loop technology (Fixed)	**Capacity of local Exchange System (Number of Lines)** / **Senior Citizen (Rs)** / **Others (Rs.)** Up to 29,999 — 120 — 120 30,000 to 99,999 — 180 — 200 1 lakh and above — 250 — 280 Note: The definition of Senior Citizen shall be the same as for the purpose of payment of Income Tax.
(6.b) For Limited Mobility telephony service using wireless in local loop technology	Rs. 200 per month
(6.c) For Limited Mobility telephony service using wireless in local loop technology if handset provided by service provider, without a deposit as stipulated in (4.d) above	As in (6.b) above Plus Ceiling of Rs.50.00 per month. This ceiling applies to all other amounts including, for example, depreciation and insurance premium, but excluding deposits. Notes: (1) Urban subscribers are those who reside in Semi-Urban or Urban SDCAs as specified in the new Basic Service Licenses. (2) Capacity of the Local Exchange system is the sum of the capacities of all exchanges in a local area.

(7) Monthly Rentals For Commercial Subscribers in Urban Areas	
(7.a) Fixed line telephony service including wireless in local loop technology (Fixed)	**Capacity of local Exchange System (Number of Lines)** — **(Rs)** 30,000 to 99,999 — 220 1 lakh and above — 310
(7.b) For Limited Mobility telephony service using wireless in local loop technology	Rs. 200 per month Notes: (1) "Commercial user subscribers" shall mean and include a person and/or an establishment carrying on any trade, business or profession or any work in connection with or incidental or ancillary thereto. (2) Commercial monthly rentals are not specified separately for the lower exchange capacities.
(8) Tariff per metered call for rural subscribers	
(8.a) Fixed line telephony service including wireless in local loop technology (Fixed)	**First 300 Metered calls per Month of the billing cycle (except for free calls)** — **(Rs.)** 0.80 **Metered calls in excess of the first 300 metered calls per month of the billing cycle** — **(Rs.)** 1.20
(8.b) For Limited Mobility telephony service using wireless in local loop technology	Forbearance subject to no charge for incoming calls

(9) Free calls (or uncharged calls) for rural subscribers	
(9.a) Fixed line telephony service including wireless in local loop technology (Fixed)	50 metered call units per month of a billing cycle
(9.b) For Limited Mobility telephony service using wireless in local loop technology	No free calls shall be provided
(10) Tariff per metered call for urban subscribers	
(10.a) Fixed line telephony service including wireless in local loop technology (Fixed)	**First 300 Metered calls per Month of the billing cycle (except for free calls)** **(Rs.)** ---------- 1.00 **Metered calls in excess of the first 300 metered calls per month of the billing cycle** **(Rs.)** ---------- 1.20
(10.b) For Limited Mobility telephony service using wireless in local loop technology	Forbearance subject to no charge for incoming calls

(11) Free calls (or uncharged calls) for urban subscribers **(11.a) Fixed line telephony service including wireless in local loop technology (Fixed)** **(11.b) For Limited Mobility telephony service using wireless in local loop technology**	30 metered call units per month of a billing cycle. No free calls shall be provided
(12) Pulse Rate for local calls	120 seconds
(13) Domestic Long Distance Tariffs for peak hours **(13.a) For Intra-Circle calls**	**Radial distance between the long distance charging centres as applicable** — **(Rs.)** ---------- — ---------- Up to 50 kms. — Same as local call charge Distance Categories Above 50 kms. — Forbearance subject to a ceiling of Rs. 8.40 per minute

(13.b) For Inter-Circle calls	**Radial distance between the long distance charging centres as applicable** ---------- **(Rs.)** ---------- Up to 50 kms. — Same as Local Call charge Distance Categories Above 50 kms. — Forbearance subject to a ceiling of Rs. 8.40 per minute
	Notes: (1) Charging centres are classified as "Long Distance Charging Centre" (LDCC) and "Short Distance Charging Centre" (SDCC). (2) Charging Centre shall be the SDCCs in case of Long Distance Calls between adjacent LDCAs and within the same LDCA. (3) Charging Centre shall be the LDCCs in case of Long Distance Calls between non-adjacent LDCAs (4) Long Distance Charging Centre is a particular Trunk Automatic Exchange (TAX) in a long distance charging area as presently defined for the purpose of charging for Long Distance calls. Headquarters of a Secondary Switching Area are generally LDCCs. (5) Short Distance Charging Centre is a particular exchange in short distance charging area as presently defined for the purpose of charging trunk calls. Headquarters of Short Distance Charging Areas are generally SDCCs. (6) Country is divided into 322 Secondary Switching Area (SSA) as per the National Switching and Routing plans. It is a territory, whose boundary, generally but not necessarily, is co-terminus with those of one or more revenue Districts. (7) The Authority expects that tariffs for lower distance categories to be substantially below the ceiling. (8) The Interconnection usage charge should be paid by one operator to another as specified in the Interconnection Usage Charge (IUC) Regulation.
(14) Inter-national Subscriber Dialled calls	Forbearance

(15) Calls to Cellular Mobile **(15.i) In Metros**	Call charge of Rs. 1.20 per 90 seconds for calls from Fixed line to Cellular Mobile Tariff forbearance for calls from WLL (M)
(15.ii) In Circles	Call charge of Rs. 1.20 per 60 seconds for call from fixed line to cellular mobile Tariff forbearance for calls from WLL (M)

(16 PCOs/VPTs	
(16.a) Coin Collection Boxes (CCBs)	
(16.a.i) Tariff in rural areas	Re. 1.00 per metered call
(16.a.ii) Tariff in urban areas	Re. 1.00 per metered call
(16.b) Tariff for local call from PCOs/VPTs (other than from STD/ISD PCOs/VPTs)	
(16.b.i) in rural areas	Ceiling of Rs. 1.00 per metered call
(16.b.ii) in urban areas	Ceiling of Rs.1.20 per metered call
(16.c) Tariff for local and STD/ISD calls from STD/ISD PCOs/VPTs	
(16.c.i) in rural areas	Ceiling of Rs. 1.20 per metered call plus Ceiling of Rs. 2 for each STD/ISD call (in addition to applicable Long Distance tariff)
(16.c.ii) in urban areas	Ceiling of Rs. 1.20 per metered call plus Ceiling of Rs. 2 for each STD/ISD call (in addition to applicable Long Distance tariff)

(17) Dial-up Access charges for Internet during off-peak hours	Reduced Dial-up charges for off-peak hours to be provided to ISPs using both access codes 172 XXX through E1/R2 lines and ISDN PRI Access code
(18) All Other Matters Relevant to Tariffs, including billing cycle, and special and supplementary services not elsewhere specified	Forbearance
EXPLANATORY NOTES:	
(a) Rural subscribers	Subscribers residing in SDCAs specified as Rural in the new Basic Service License.
(b) Urban subscribers	Subscribers residing in SDCAs specified as Semi-Urban and Urban in the new Basic Service License.
(c) Standard tariff package(s)	A standard tariff package provides basic services at the tariffs specified in the schedule, and includes the specified number of free calls. Different rentals prescribed for the three categories of subscribers in (a) to (c) above imply that three different standard tariff packages are specified in this schedule.
(d) Alternative tariff packages	Alternative tariff and free call allowance could be offered to subscribers by service providers, in addition to those offered in the standard tariff packages. In the "alternative tariff packages", items for which tariffs are specified in terms of a ceiling will continue to be subject to the specified ceiling. Items for which a specific amount of tariff is shown in this schedule (e.g. rentals and call charges) may have any alternative tariff in the "alternative tariff package". Similarly, an alternative free call allowance could be provided in an "alternative tariff package" subject to a ceiling of 25 on total number of alternative tariff plans on offer.

(e) Mandatory provision of standard packages	Subscribers must have the option of getting basic services (other than ISDN) at tariffs and free call allowance specified in this schedule. In addition, the service provider may offer alternative tariff packages to the subscribers. The subscriber shall be free to choose among various tariff and free call offers available
(f) Capacity of Local Exchange system (SDCA)	The sum of the capacities of all exchanges in a local area. Any augmentation of the exchange capacity after the date of implementation of this Order shall automatically be taken into account for re-classification for the purposes of tariffs.
(g) Short Distance Charging Area (SDCA)	Short Distance Charging Area (SDCA) is one of the 2647 Local Areas whose details are provided in the Basic Service Licenses and also in the Numbering Plan wherein for each SDCA, a unique STD code is provided. Local call charges are applicable on Intra-SDCA traffic and for calls within the distance category "0 to 50 kms".
(h) Charging Centres	Charging centres are classified as "Long Distance Charging Centre" (LDCC) and "Short Distance Charging Centre" (SDCC). For adjacent SDCAs, SDCC is the reference Charging Centre. For non-adjacent SDCAs, LDCC is the reference Charging Centre.
(i) Long Distance Charging Centre (LDCC)	Long Distance Charging Centre is a particular Trunk Exchange in a long distance charging area as presently defined for the purpose of charging for trunk calls. Headquarters of a Secondary Switching Area are generally LDCCs.
(j) Short Distance Charging Centre (SDCC)	Short Distance Charging Centre is a particular exchange in short distance charging area as presently defined for the purpose of charging trunk calls. Headquarters of Short Distance Charging Areas are generally SDCCs.
(k) Secondary Switching Area (SSA)	Secondary Switching Area (SSA) is a territory, whose boundaries, generally but not necessarily, are co-terminus with those of a revenue District and in which normally one Trunk Automatic Exchange is located.

Schedule II
Cellular Mobile Telecom Service (CMTS)

ITEM	TARIFF
(1) Date of Implementation	1 April, 2003
(2) Rental and airtime charge	Forbearance provided that: Every service provider shall specify a monthly rental and airtime charge per minute with a pulse duration of 30 seconds, as a "Reference Tariff Package of the Service Provider". No airtime charge for incoming calls in any of the tariff package i.e. Reference/Alternative.
(3) Refund of deposits.	All deposits (including, inter-alia, STD/ ISD deposits) must be refunded in full to the subscriber at the time of disconnection subject to the condition that outstanding subscriber bills, if any, may be adjusted in the final transaction.
(4) Installation charge	One time installation charge may be levied by a service provider only when a customer initially gets connected to the network of the service provider. No installation charge shall be levied when a subscriber moves from one package to another offered by a service provider.
(5) Roaming **5.a) Regional & National roaming.**	
5.a.i) Refundable Security deposit	Forbearance
5.a.ii) Entry Fee (one time charge)	Nil
5.a.iii) Monthly Access Charge for Regional and/or National Roaming.	Rs.100.00 as ceiling.
5.a.iv) Airtime charge	Rs.3.00 per minute as ceiling.

5.a.v) PSTN charge	As applicable from time to time to the fixed network.
5.a.vi) Surcharge	15% as ceiling on airtime component only
5.b) International Roaming.	Forbearance.
5.c) Other matters related to roaming.	Forbearance.
(6) Tariff for prepaid service	Forbearance; Provided that – a) At least one denomination of pre-paid cards offered by every Service Provider must be for an amount of Rs.300.00 or less with a corresponding validity period of at least one month. b) The charges for replacement of lost/ damaged SIM card shall be based on cost with a reasonable mark-up. c) If there is any amount that is unused at the end of the validity period, this amount should be carried over to the renewed card, if such renewal is done within a reasonable, specified period. d) In the case of each pre-paid card package, the customer should be prominently and clearly informed of the total amount that is available in the pre-paid card package for making calls, i.e. to pay towards usage.
(7) Other matters relevant to tariff including billing cycle.	Forbearance.

Notes:

1) The Reference Tariff Package shall always be available to the customer together with any other tariff offers.

2) The Service Provider shall give wide publicity to its Reference Tariff Package.

3) The Authority shall continue to monitor the tariffs in the market, and if required, shall reintroduce standard tariff package(s) for one or more licensed service areas as may be deemed necessary.

4) From time to time the TRAI will make public a comprehensive list of the Reference Tariff Packages of all CMSOs in the country through its web site and through consumer organisations registered with it to keep the public informed of all Reference Tariff Packages on offer.

ANNEX "A"

EXPLANATORY MEMORANDUM

1. The Twenty Fourth Amendment to the Telecommunication Tariff Order ("TTO"), 1999, the first Tariff Order during 2003, is an outcome of the deliberations carried out by the Authority through its Consultation Papers and its Open House Discussions on Tariffs for Basic Services, Tariff for Cellular Mobile Services, Issues relating to Interconnection between Access Providers and National Long Distance Operators and the Reference Interconnect Offer (RIO). It also synthesizes the various responses and inputs received through the Consultation Papers and suggestions from various quarters.

2. The objective of this Explanatory Memorandum is to provide a clear and transparent exposition of the Order ("TTO 2003") which provides retail tariffs for basic and cellular mobile services. The TTO 2003 builds upon the tariff regime that was earlier put in place through the TTO of 1999. TTO 1999 implemented a phased tariff re-balancing to prepare the market situation for the ensuing competition, so that the adjustment required by the incumbent to the sharp price decline due to competition would be mitigated when such a decrease takes place. The competition in the market, with the entry of additional service providers in both the national long distance and the international long distance segments, has led to a further, large decrease in the prices for these services. While this has led to a drop in the above cost tariffs, the below cost or near cost tariffs could not increase because they were specified at particular levels to take account of the social objectives.

3. The drastic reduction in long distance call charges implies that the source of cross-subsidy that was earlier available to cover the below cost tariffs, has been reduced to a major extent. This implies a need for two types of policy changes. One, to increase the below cost prices so that these cover at least some part of the uncovered costs, and the second that to the extent that costs of access are not covered by the tariffs, an access deficit charge ("ADC") should be given to the access provider who incurs access deficit. In this regard, it is worth noting that the fixed service provider incurs

an access deficit due to the rental being below cost, the provision of free calls, and call charge for certain calls being below cost. On the other hand the cellular mobile and Wireless in Local Loop with limited mobility (WLL-M) services are able to recover all their costs.

4. The Authority has taken account of these factors and has determined an interconnection usage charge (IUC) regime for basic and cellular mobile services service, which is given in a Regulation notified separately. That Regulation also addresses the amount of access charge payment to be made to basic service provider by cellular mobile for its calls within a License area (intra-Metro or intra-Circle), and vice versa.

5. The IUC regime is not independent of tariffs, because the amount of ADC to be covered from various calls depends inter alia on tariffs. Thus, in determining tariffs, the Authority had to consider the objective of affordability as well as not fixing too high an ADC which would become a handicap for the fixed line segment of the market in competing with cellular mobile and WLL-M.

6. Therefore, the tariffs have been determined in such a manner that the objective of NTP 1999 can be achieved while maintaining the sustainability of the fixed line segment of the market, which is and shall continue to be the dominant portion of the market for some time to come. If the ADC is not recovered, the sustainability of the fixed line service will become increasingly difficult.

7. At the same time, if the prices of local call and shorter distance calls are kept at (or close to) the prevailing levels, the shortfall to be covered through ADC will be more and will have to be recovered either through increasing monthly rental or by increasing the call charge for long distance calls. An increase in monthly rentals would have a relatively low impact on reducing the ADC (an average increase in monthly rental of Rs. 4.50 for all subscribers is equivalent to a general increase in call charge of 1 paise per minute), and in addition a large increase in monthly rentals would adversely affect the demand for phone connections. This would lead to inability in achieving the teledensity targets for our country. On the other hand, if rental is not increased at all,

the call charges for long distance calls would have to be increased to a larger extent by the fixed network, making it un-competitive with WLL-M and cellular mobile.

8. Thus, it is necessary to increase local and short distance call charges even as it is ensured that such increases are the very minimum and the recovery of the balance ADC takes place as far as possible from the long distance call charges in a sustainable manner.

9. To the extent that the Authority provides ADC to the service provider, the requirement for USO will be minimized. The USO will, however**,** still be required because while the ADC will cover the costs for SDCAs with average costs, there will be SDCAs with higher costs whose costs will individually not be covered by the ADC payments. It is nonetheless expected that with an increased size of the network, the overall cost and the USO requirements will fall over time.

Tariffs For Basic Service

10. The analysis of the tariffs for basic service notified in Schedule I takes account of the recent developments in the License regime and the competition that has manifested itself in the market for basic service (including WLL-M), national and international long distance services, and the cellular mobile service. These developments need to be combined with several other concerns, including for example:

- the NTP 1999 objective of affordability and an increase in teledensity;
- the extent of competition in the three segments of the telecom market namely access provision, DLD and ILD;
- whether to continue with the existing tariff framework of tariff regulation through standard tariff package (STP) and alternate tariff package (ATP); and
- concerns regarding level playing field among various services.

11. Today, there is a stronger conflict between balancing the social and the commercial objectives of the basic service providers, than was the case at the time of the Telecommunication Tariff Order (TTO) 1999. In order to gain a better perspective on

the issue of affordability, the Authority made detailed studies and commissioned the National Council of Applied Economic Research (NCAER) to carry out studies and submit a report on this issue. Two reports titled 'Telephone Study, 2002' and 'Affordability of Telecommunication Services, 2002' were received from them.

12. The first was a survey of the consumers covered in the overall expenditure survey made by NCAER to determine the levels of monthly rental and call charge that were considered as affordable by the existing as well as the potential subscribers of basic services. The second study carried out an analysis of the data on affordability and income levels of various subscribers, and identified the willingness of various subscribers in diverse urban and rural areas in various States and the metropolitan cities. The results of the study indicated that the monthly rentals and call charges should remain low, with minimal changes being made to the tariff regime, in particular for the rural subscribers.

Monthly rentals

13. TRAI's examination of the issue of affordability suggests that it continues to be critical and the rentals as well as the call charges will need to be regulated to make these affordable to customers at different levels. The Authority has therefore decided that the monthly rentals for exchange capacity of upto 29,999 lines should not increase and even in the higher capacity exchanges increase should be minimal. Most of the rural subscribers are in the categories for which rental has not been increased. In this regard, the Authority has also taken into account the fact that the growth rate for subscribers in these rural areas is low, and an increase in monthly rentals could affect it adversely.

14. The Authority also considered the submissions from various stakeholders on the determination of monthly rentals. As in the case of the previous consultations on basic service tariffs, the views cover an entire spectrum of opinions, ranging from decrease in monthly rental together with an increase in free calls, to an increase in monthly rental and doing away with free calls. The Authority therefore has decided to increase the monthly rentals only in the two largest categories for the purpose of rentals.

15. The Authority had received various submissions from Senior Citizens forum as well as individuals on keeping the rentals lower for Senior Citizens. The Authority therefore has decided to keep the monthly rentals unchanged for Senior Citizens.

16. The Authority then considered whether it should provide separate and higher monthly rentals for commercial subscribers. It took account of the recent experience in the market where the possibility of charging higher rentals from commercial subscribers and of providing lower free calls was not exercised by any of the service providers. The Authority however was of the considered opinion that higher rental for commercial subscribers is eminently justified as they must pay tariffs which are as close to the cost of the service as possible. It has, therefore, decided that commercial rentals would be valid for urban areas as per the levels specified in TTO 1999, for the two highest monthly rental categories. These higher levels have yet not been given effect by the operators.

17. This Order re-iterates for WLL-M, the cost-based monthly rental that has been specified by the Authority after its first review of these rentals, i.e. Rs. 200 per month.

18. In view of the objective of keeping monthly rentals low, there is a need to specify a standard tariff package. The Authority is therefore continuing with such a package as a regulatory mechanism for ensuring a minimum tariff combination being available to the customers.

Local Call Charge

19. The Authority received feedback from various stake holders with respect to their suggestions on local call charges. While some of the suggestions related to reducing the existing duration of local calls from 3 minutes, a few others mentioned that number of pulses at the beginning of calls should be higher and at a later stage should be lower. Yet another genre of suggestions was that the tariff for a local call should be in two steps, viz for call set up and for the duration. This however was not considered by the Authority as the feedback was that it could be difficult to implement in the billing systems employed by different operators.

20. In a large number of cases, the view was that the there was need to bring about cost orientation in local call charges and that the unit of timing should be suitably recalibrated for this purpose.

21. As shown in the Authority's analysis of the IUC, if all of the ADC is to be equally distributed on all the minutes of use, then the local call charge should be Re. 1.00 per minute to cover costs. This charge, however, would be too burdensome on the consumer and would not encourage the usage of telephones. A large portion of the total subscriber base today uses the telephone mainly for local calls, and increasing the local call charge to cover costs would adversely affect affordability for these subscribers. At the same time, with the long distance call charges falling precipitously, the source of cross subsidy to bear the ADC has now gone virtually dry. Thus, some increase in the local call charge is inescapable if the fixed line service has to be made sustainable.

22. The Authority has given considerable thought to the conflicting concerns mentioned above, and has reached the conclusion that it will not alter the existing call charges, but the change in call charge will be brought about by altering the pulse duration, free call limit, and the threshold level above which the call charge of Rs. 1.20 applies.

- The call charge for initial calls will remain the same in both the rural as well as in urban area, respectively at Rs 0.80 and Re. 1.00 for the first 300 pulses, and will be 1.20 thereafter.
- The pulse duration for local calls will be 120 seconds, as a predominant portion of the calls are of a duration less than two minutes.
- The Authority has provided IUC for calls to and from WLL(M) also. Taking account of the competition in the WLL(M) segment, the Authority has forborne with respect to calls from WLL(M). Incoming calls would remain free.

Long Distance Call Charge

23. As mentioned above, competition in the long distance market has led to a sharp fall in prices. This provides a basis for considering forbearance for these tariffs. However,

there are two important issues to consider in this regard. One pertains to the tariffs of STD calls for short distances, and another relates to the sustainability of fixed line service if the long distance tariffs continue to fall. As shown below, the Authority has decided in favour of a partial forbearance for long distance tariffs, namely that the tariffs for certain shorter distance calls have been specified but the tariffs for longer distance calls have not been specified.

24. For long distance call charge, a strong view was presented in favour of tariff forbearance, while there was also a proposal that these tariffs should have a floor and a ceiling.

(a) Distance categories of "0 to 50 kms" Intra-License area and Inter-License area calls

25. At present, the tariffs for "0 to 50 kms." STD calls (both intra- and inter-circle) are the same as that for local calls. These calls therefore are seen by the consumers as if they were local calls, and the consumer reaction to tariffs for such calls would be similar to a change in the local call charge. Moreover, in rural areas, such tariffs have provided a basis for enhanced usage of such calls. It has also led to a greater community of interest being established over these distances. The Authority has, therefore, decided that for these distance categories, i.e. for "0 to 50 kms" Intra-License area and Inter-License area calls, the call charge should be the same as for local calls. This will maintain the ease of calling over relatively shorter distances provided in the present tariff regime, and will be beneficial in particular for the rural subscribers.

26. It should be noted that the Authority is not in favour of the application of local call tariffs for neighbouring SDCAs. Because of compelling economic reasons all such calls are to be clearly categorized and treated as either local calls or long distance calls going by their distance and charged accordingly. Some of these calls involve carriage over long distances, even hundreds of kilometers.

(b) Other Distance categories

27. In recent months, the TRAI has analyzed the costs of providing long distance calls in the context of its IUC exercise. Judging from these results, it is possible that competition in the long distance market may lead to even lower prices for these calls.

While this would in general be good for the consumer in the short run, such a price development would make it more difficult to recover the ADC from long distance tariffs for the fixed line phones. With the imposed below cost tariffs (i.e. prices that do not cover average ADC) for monthly rental and local calls the fixed line service will be unable to recover the ADC from the long distance tariffs. This would make the sustenance of this service even more difficult. In this background the incumbent operator has suggested that TRAI should fix a floor to the long distance tariffs to help the viability of the fixed line service. This suggestion is also to address the possibility of below cost pricing by any long distance service provider.

28. The Authority considers it undesirable to fix a floor on a price in a competitive market, because this prevents the benefits of competition to be passed on to the customer. The IUC charges will implicitly function as a floor to the tariffs. Further, in addition to specifying the tariffs for distance categories "0 to 50 kms." for intra-circle calls and inter-circle calls, the Authority has decided to offer forbearance for long distance calls, subject to a ceiling of Rs. 8.40 per minute.

29. Schedule I addresses intra-circle and inter-circle long distance calls separately. This makes it possible to ascertain the applicable tariffs for the national long distance calls (i.e. those that can be carried only by an NLDO) and other long distance calls which are intra-circle calls.

Inter-network calls made within the License area

30. These are calls made within a metro or within a circle from basic service to cellular mobile.

31. For calls within a circle from fixed line to cellular mobile, the Authority has fixed a charge of Rs. 1.20 per minute. These calls enable the subscriber to access the cellular mobile subscriber over a large area, and they normally involve carriage from the basic service subscriber beyond the SDCA. The cost of carriage therefore has also to be obtained from such a call charge, and Rs. 1.20 per minute has been fixed taking these factors into account. Details on IUC for the various calls are in the Regulation on IUC.

32. For calls from basic service to cellular mobile in metros that are classified as separate License areas for cellular mobile, i.e. Chennai, Delhi, Kolkata and Mumbai, the calls charge will be Rs. 1.20 per 90 seconds. Details on IUC for the various calls are in the Regulation on IUC.

International Calls

33. The tariffs for international calls have also decreased sharply, and are likely to decrease further. The Authority has decided to forbear with respect to the tariffs for these calls.

Free Calls

34. During its consultations, the service providers suggested that free calls should be given up or drastically curtailed, and the consumers were of the view that these calls should be increased. The Authority is of the opinion that similar to the policy of intervention in the case of local call charge, an allowance of free calls should also be maintained, but the extent of the free calls may be recaliberated.

35. The free call allowance is as follows:

- Rural subscriber: 50 metered call units per month of the billing cycle
- Urban subscriber: 30 metered call units per month of the billing cycle

36. For WLL-M, there are no free calls in the standard tariff package.

Peak/Offpeak hours

37. With the drastic fall in long distance tariffs, the difference between peak and off-peak call charge may not remain substantial. In view of the dramatic price developments in the market and the fact that the ADC requires tariffs in line with those prevailing in the market, the Authority has decided to forbear with respect to peak/off-hours and left the decision on this matter to the service provider.

Other issues

38. The Authority have received representations from some ISPs regarding extending the same facility for ISPs using ISDN PRI Access code for dialup access for Internet Service, e.g. 373XXXX. The Authority is of the opinion that the facility of reduced dialup charges for Internet access during off peak period should be available to all the users of Internet services irrespective of the nature of junction lines i.e. E1/R2 or ISDN PRI utilized by ISPs.

Tariffs For Cellular Mobile Service

39. The tariff for cellular mobile are provided in Schedule II. In the case of tariffs for cellular mobile service, the Authority has been guided by the fact that the cellular sector has witnessed substantial growth and tariffs in the cellular sector have also been subject to declining trends due to the competition prevalent in the market.

40. The key consideration in outlining the policy regime for the cellular services was to see the continuance of the market mechanism playing its role in conformity with the dictates of competition. To this end , it was felt that apart from roaming which would still continue to be regulated, as per the provisions of the 23rd amendment to the TTO 1999, the Authority would reiterate continued forbearance for outgoing calls in the sector.

41. To this extent, it was felt that as cellular tariffs, i.e. rental and originating airtime are market driven, there is only the need to fix the mobile termination charge (MTC) on the basis of the costs involved in termination.

42. The Authority has decided that with the payment of MTC, the receiving party shall not pay for any incoming airtime for cellular mobile.

ANNEX 4

Telecommunications Interconnection Usage Charges (IUC) Regulation, 2003 dated January 24, 2003 (the "IUC Order").

http://www.trai.gov.in/Notificationfy.htm

Telecom Regulatory Authority of India
Notification
New Delhi, the 16th June, 2003

No.311-1/2003-Econ
In exercise of the powers conferred upon it under section 36 read with clauses (ii), (iii) and (iv) of sub section (b) of Section 11(1) of the Telecom Regulatory Authority of India Act, 1997 as amended by TRAI (Amendment) Act, 2000, to fix the terms and conditions of interconnectivity between Service Providers, to ensure effective interconnection between different service providers and to regulate arrangements amongst service providers of sharing their revenue derived from providing telecommunication services, the Telecom Regulatory Authority of India hereby makes the following Regulation.

THE TELECOMMUNICATION INTERCONNECTION USAGE CHARGES (IUC) (SECOND AMENDMENT)) REGULATION,2003 (3 of 2003)

Section I
Title, Extent and Commencement

1.Short title, extent and commencement:

(i) This Regulation shall be called "The Telecommunication Interconnection Usage Charges (IUC) (Second Amendment) Regulation 2003". (IUC Regulation).

(ii) This Regulation shall be deemed to have come into force from the date of notification in the official Gazette.

Section II

2.1 Clause 2.3 under Section II of The Telecommunication Interconnection Usage Charges (IUC) (First Amendment) Regulation, 2003 (2 of 2003) dated 27.03.2003 shall be deleted and substituted by the following:

(vi) All existing interconnect agreements/arrangements as on date shall stand amended on 1st May, 2003 so as to conform to the notified framework of the IUC regime and these shall be submitted to TRAI for registration by 30th June, 2003, and for subsequent changes as per reporting requirement.

Section III

3. Explanatory Memorandum This Regulation contains at Annex A, an explanatory memorandum to provide clarity and transparency to matters covered under this Regulation.

By Order

(DR. ROOPA R. JOSHI)
ADVISOR (ECONOMIC)

Annexure- A

EXPLANATORY MEMORANDUM

1. Consequent upon the Telecommunication Interconnection Usage Charges(IUC) (First Amendment) Regulation, 2003 (2 of 2003) dated 27.03.2003, all service providers were required to file all revenue sharing agreements with the Authority latest by 16th May, 2003.

2. The Authority is in receipt of various representations from various service providers expressing their inability to file the revenue sharing agreements by the above-stipulated date and sought an extension of the same.

3. The Authority considered the representations of the service providers and decided that all revenue sharing agreements which have to conform to the IUC Regulation will now need to be filed with the Authority latest by 30th June, 2003 without any delay.

ANNEX 5

Consultation Paper on the Implementation of the IUC Regulation dated May 15, 2003 (the "IUC Consultation Paper").

http://www.trai.gov.in/consultation.htm

Telecom Regulatory Authority of India

Consultation Paper
on
IUC issues

Consultation Paper No. 2003/1 dated 15th May 2003

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PREFACE

1. On 24th January 2003, the Authority notified a new Telecom Tariff Order (TTO) and an Interconnect Usage Charge (IUC) Regulation. The IUC Regulation encompasses also a regime to address the Access Deficit Charge (ADC) that would compensate for the access deficit that arises for the basic services since the monthly rental and local call charges do not fully cover the relevant costs.

2. The new tariff and IUC regime have been implemented from 1st May, 2003. The Authority has provided greater flexibility with respect to the tariff regime, in the form of alternative tariff packages. This has made possible the price changes being witnessed through the ongoing competition in the market which have increased the options available and the reduction in several tariffs. The ADC regime does not envisage alternative means of addressing the issue other than providing alternatives of Uniform and Non-Uniform ADC regimes, and any points raised with respect to this regime have to be seen in that context.

3. The Authority has received several communications with respect to both the tariff regime and the IUC regime. The various concerns, especially with respect to the IUC regime, have also been emphasized to the Authority in its discussions with several stakeholders. These pertain to aspects such as sustainability of the IUC regime over time, consistency among the different Schedules of the IUC Regulation specifying the regime, and the possibility of considering improvements that would encourage a competitive market and discourage growth of grey area traffic.

4. This consultation paper has brought out for public consultation a number of issues based on inputs received from various stakeholders. These issues have been grouped in four main categories i.e.

(i) Interconnect Usage Charges (IUC)

(ii) The Access Deficit Charges (ADC)

(iii) Tariffs

(iv) Calling Party Pay (CPP)

5. The Authority invites written responses from all stakeholders latest by closing hours of 06/06/2003. It would be appreciated if the response is accompanied with an electronic version of the text through Email.

6. For further clarifications please contact, Shri R. K. Bhatnagar, Advisor (FN) - Tel. No. 26166930, Email address trai06@bol.net.in or Dr. (Mrs.) Roopa R. Joshi, Advisor (Economics) - Tel. No. 26160752, Email address: trai01@bol.net.in. The Fax No. of TRAI is 26103294.

1. INTRODUCTION

1. The objective of this Consultation Paper is to put in place a framework for discussion to consider suggestions for improving and streamlining the interconnection regime. Section 2 of this paper provides a brief background to the Authority's IUC Regulation dated 24.1.2003, Telecommunication Tariff Order dated 24th January 2003, and the 'Calling Party Pays' regime for cellular mobile introduced through a consultation process that began with the TRAI's Consultation Paper on the subject, dated 23rd May, 2001 (Consultation Paper No. 2001/1).

2. Section 3 provides a summary of various issues and comments that were highlighted through the feedback received by the Authority from various stakeholders through written communications, representations and other inputs received during the presentations made to the Authority. These points are issues submitted to the Authority for consideration and should not be seen as representing the view point of the Authority. Section 4 raises certain questions that cover the various issues on Interconnection Charge Regime, related Tariff and CPP issues for discussions/ consultation.

Section 2

Background to the IUC Regulation

1. In a Multi-Operator environment, it is important to specify an IUC regime which gives greater certainty to the Inter-operator settlements and facilitates interconnection agreements. Thus, there was a need for specifying cost based Interconnection Usage Charges (IUC) for origination, transit and termination in a Multi-Operator environment. Origination and Termination usage charges include Access Deficit Charge (ADC) payable to the Basic Service Operators which they must get in order to keep the rental as well as local calls affordable.

2. National and International Long Distance markets were opened up for competition and these policy measures resulted in a significant reduction in National and International long distance tariffs due to competitive pressures. Table 1 shows the comparison of STD charges at the end of tariff rebalancing period as per TTO'99 and prevailing market rates. This shows that there has been a drastic reduction in the margin available from long distance calls to fund the Access Deficit incurred by the Basic Service Operators due to rentals being significantly lower than actual costs.

Interconnection Usage Charges, ADC and related Tariffs

3. The exercise to determine IUCs involved an assessment of the various cost items attributable to the different network elements used in setting up of a call in a Multi-Operator environment. Every effort was made to

accurately assess the network element costs based on the inputs provided by various operators including the incumbent.

4. The IUC determination exercise started with detailed discussions with various stakeholders based on TRAI consultation paper 2001/5 dated 14th December 2001. The paper had proposed a number of methodologies for calculating Origination, Transit and Termination charges in a Multi-Operator environment based on International best practices. The paper had also identified the Network elements involved in the carriage of a long distance call from its origin to destination in a Multi-Operator environment.

5. The Interconnection Usage Charges for Origination, Transit and Termination are also the underlying costs of carrying a call from the calling to the called party and are thus closely linked with determination of retail tariffs. The tariff re-balancing effected under the Telecommunication Tariff Order (TTO) 1999 by the Authority was followed by intense competitive price declines in the long distance sector, which brought down the prices substantially. With the initiation of the IUC exercise, the Authority was also in a position to carry out its tariff review which has become essential in the new Multi-Operator Multi-Service telecom scenario which has emerged after opening up of all the segments of telecom service market such as Cellular, Basic and Long Distance. To discuss both Basic Service tariff and IUC, which are closely linked, the Authority released its Consultation Paper No. 2002/3 dated 23rd September 2002. This paper dealt with tariffs for Basic Services as well as the IUC regime including Access Deficit Charge.

6. Framework of the IUC regime was already established by TRAI through its Regulation on Reference Interconnect Offer (RIO). As detailed therein,

IUC has to be determined based on minutes of usage for various Unbundled Network Elements and the cost of these elements. As brought out in the Reference Interconnect Offer (RIO), the IUC for Origination, Transit and Termination are based on the principles of element based charging i.e. one operator charging the other for the resources consumed for carriage of its calls in terms of minutes of use (MOU).

7. The Access Deficit Charge (ADC) as notified by TRAI on 24th January 2003, was derived by comparing the cost based rental and local call charge with an affordable level for rental/ local call charges, special concessionary local call charges in the rural areas, provision of free calls, and any other below cost tariffs to make the Basic telecom services affordable to the common man to promote both Universal Service and Universal access as per NTP'99. These tariffs were specified in the Authority's Tariff Order dated 24th January 2003. In order to reach the final estimates of IUC, the IUC Regulation had taken into account the requirements of Access Deficit Charge arising out of the Tariff Order. The distribution of ADC on different tariffs streams, was notified by the Authority in its IUC Regulation dated 24.1.2003

8. The ADC compensates for the below cost rentals and the free calls provided for Basic Service such as POTS. For other services such as Cellular Mobile and Wireless in Local Loop with limited mobility (WLL-M), the Access Deficit Charge was not applicable as the rentals and call charges in these segments cover costs as these tariffs have been left to market forces and have not been kept below cost by regulation.

9. The feedback from most operators at that stage had indicated that IUC rates should be prescribed and should be based on element based

methods while providing for its linkage with long distance tariff. It was also suggested that the regulatory obstacles to interconnection both in terms of the rationalization of its levels and technical dimensions needed to be seen in respect to the competitive conditions/ bottleneck facilities that exist in the sector.

10. Based on BSNL data and various inputs received from stakeholders, the Authority specified its IUC regulation with various schedules specifying origination, carriage and termination for intra circle and inter circle as well as inter network calls to be implemented by operators w.e.f. 1.4.2003. Service providers were to file IUC compliant tariff plans to the Authority in advance. However, given the late receipt of such plans and the fact that the plans required to be widely publicized and the issues related to settlement of inter operator interconnect charging was also to be resolved, the Authority deferred the date of implementation to 1.5.2003. These issues were settled with the concurrence of the operators through a number of meetings amongst the operators and also their meetings with the Authority and IUC regime has been implemented from 1.5.2003.

11. The total amount of ADC is a large amount, which can be seen from Table 2 which provides an illustrative estimate of the annual Access Deficit based on a subscriber base of 4 Crores Fixed Lines. The large ADC, combined with the fact that call charges for local calls and the relatively short distance calls have to be kept reasonable low for affordability purposes, implies a substantial per minute ADC for different types of calls. Table 3 shows the ADC component, which has been loaded on various type of Inter-Network Calls based on differential (non-uniform) ADC. Table 4 provides the ADC values for the International Long distance service segment. IUC Charges with Uniform and non-uniform ADC Inter-Circle

and Intra-Circle for various types of calls are given in Tables 5 and 6 respectively.

Calling Party Pays (CPP) for cellular mobile

12. Worldwide, the cellular mobile tariff regime in various countries can be divided into the following three categories.

    i) Countries having CPP regime right from the launch of Cellular Mobile Services e.g. all European countries.
    ii) Countries, which migrated from Mobile Party Pays (MPP) to Calling Party Paging (CPP) e.g. a number of Latin American countries.
    iii) Countries, which are continuing in Mobile Party Pays (MPP) regime e.g. USA, China, Singapore, and Hong Kong.

13. Over time, several countries have adopted CPP in place of a Mobile Party Pays (MPP) regime. Some studies have shown that the CPP regimes are likely to increase the growth of cellular mobile services and hence of the telecom sector itself.

14. The TRAI began its Consultation process on CPP with a Consultation Paper in 2001, and discussed the matter with various stakeholders and experts in the area. With the introduction of the IUC regime for various access services, TRAI was of the opinion that it should also introduce the CPP regime for cellular mobile, both for consistency of the regime as a whole as well as the likely contribution that such a change would make to the growth of the telecom sector.

Section 3

Issues raised in the feedback received by the Authority on the IUC Regime

1. The Authority has received a number of written communications from service providers and others on the subject of IUC charges. The Authority also initiated a process of discussions with all the Service Providers to obtain their inputs covering key important issues. During the presentations, a number of references and suggestions related to the Interconnection Usage Charge regime were made. Annex 1 gives the details of these representations.

2. The various issues, viewpoints, comments received have been summarized in this Section. The Authority feels that the issues raised should go through the consultation process.

3. The issues, viewpoints and comments come mainly under four categories. These are :

    - Interconnection Usage Charges
    - Access Deficit Charges
    - Tariffs
    - Calling Party Pay Regime

Section A: Interconnection Usage Charges: Clarifications, Anomalies, and Suggestions

4. Interconnection usage charge are specified as payment for the work done for origination, carriage or termination of a call. In this section, we address the

anomalies or concerns pointed out with respect to the interconnection usage charges :

(a) Greater clarity should be provided in the Schedules of the IUC Regulation, especially the linkages and consistency between the different Schedules and the applicable IUC charges for all kinds of calls. Also, the termination charge for long distance calls from cellular mobile/WLL(M) to Fixed Line should not be less than the termination charge for calls within a local area.

(b). The IUC Regulation specifies identical interconnection charges at both originating and terminating ends of the networks. It has not taken into account the extra costs that are incurred on account of higher Operational Expense (Selling, acquisition, billing and bad debts) at the originating end.

(c) The IUC for termination should be made identical for all Intra-SDCA handovers (e.g. 25 Paisa per minute). This will facilitate easier implementation of the regime. Another suggestion was to have IUC charges of 30 (or 40) Paisa per minute for Metro (or Circle) cellular mobile/WLL (M) networks should be made uniform at say 30 Paisa for Metro as well as Circle Networks. Moreover, the higher termination charges for WLL (M) at 50 Paisa per minute for Inter-Circle calls should also be kept at the above uniform amount.

(d) The IUC regime should take account of the possibility of far-end handover by the fixed line operator to cellular mobile, and provide for relevant IUC in such cases.

(e) The IUC Regulation gives the charges for direct connectivity between Access Providers and between them and NLDOs/ ILDOs. Direct connectivity, if one of the party demands it, needs to be made mandatory through regulations.

Moreover, the IUC regime should specify charges for transit in Intra-SDCA network for overflow and techno-economic reasons. Further, IUC should also be specified for other services, such as SMS.

(f) Carriage Charges of Rs. 0.20 to Rs. 1.10 per minute for Long Distance Traffic are on the lower side and would not cover the costs of a stand-alone or new entrant NLDO, in view of the lower traffic that would be available to such operators.

(g) No termination charges should be provided for intra-circle calls to Cellular Networks. These amounts could be compensated through higher termination charges for Inter-Circle traffic.

Section B : Access Deficit Charges:
Sustainability, Level Playing Field, Alternative Options

5. Several concerns have been raised with respect to the access deficit charge (ADC), which has been specified only for calls involving fixed lines. Thus, the loading of ADC is such that it makes it possible for services other than fixed line to give relatively lower tariffs. These and the other issues raised in this context are summarized below :

(a) The Authority has provided two alternatives for ADC, namely Uniform and Non-Uniform ADC regime. With the choice for ADC (uniform/ differential) being given to individual operators, there will be a chaotic situation when multiple operators in circles start adopting different practice.

(b) The ADC regime should ensure that there is no by-pass of traffic through arbitrage and abnormal routes i.e. at the cost of licensed service providers.

(c) Since the ADC is loaded only on calls involving fixed lines, the tariffs for calls from/to cellular mobile and WLL (M) would be cheaper, with this advantage being most strongly available to calls from cellular mobile to cellular mobile. Further, cellular mobile Service Providers would be able to avoid long distance carriage charge for intra-circle cell to cell calls because they would not need to give the carriage charge which has been received for Intra-Circle calls from fixed line. In the case of calls from fixed line, these carriage charges range from Rs. 0.20 to Rs. 1.10 per minute. Amendments to the ADC regime should be considered to address these situations.

(d) The estimated amount of ADC is large, as shown by Table 2, and if all of it has to be recovered from long distance minutes involving fixed line, then the ADC per minute will become large since the number of such minutes available are likely to be a small share of the total minutes used. Moreover, the ability of cellular mobile and WLL (M) service providers to charge lower tariffs for long distance will imply a churn away from fixed line, which in turn will mean a further increase in ADC per minute if it is collected only from fixed line long distance minutes. Therefore, the Authority should consider a possibility of recovering ADC from a base larger than only the fixed line long distance minutes. Otherwise, there will be an adverse effect on development activities and tele-density objectives for Rural and remote areas

A number of options that have been suggested to address the above-mentioned situation include the following:

- ADC should be imposed on all long distance calls including Cell to Cell, WLL(M) to WLL(M), Cell to WLL(M), WLL(M) to Cell calls of Intra-Circle and Inter-Circle nature. This could be enforced through periodic settlement between operators under the supervision of the

Authority or through the creation of an Access Deficit Contribution Fund.

- The calculation of ADC should also be reviewed to account for the likely developments in the telecom sector, and for this purpose, the Authority should conduct its analysis based on Long Run Incremental Cost, taking account of new cost effective technology options like fiber in the loop, wireless in the loop, switches with high traffic handling capacity, two stage remote switching options, high capacity transmission systems, new equipment deployment options, possible changes in efficient utilization of Numbering resources and traffic handover principles. In this regard, it was also pointed out that most countries have moved to Forward Looking Long Run Incremental Costs (in place of historic costs) for determination of ADC and interconnect charges.

(e) Greater flexibility should be provided in the IUC/ ADC regime with more flexible floors and ceilings

(f) It is necessary to clarify the rationale for specifying a carriage charge of Rs. 0.20 per minute payable for traffic handover to Basic Service Providers within the same Circle while in case of Metros, this component being not payable at all.

(g) The IUC review exercise should ensure that no undue migration of traffic gets encouraged from one network to another network and adequate margins are available for ensuring viability of services with adequate margins. In this regard, it was also pointed out that the ADC for ILD calls is much higher than the maximum ADC for NLD calls. Also, the ADC for ILD calls should be different for different distances that the calls have to travel in the national segment. Higher

ADC especially for Incoming International traffic, as well as differential ADC for calls to cellular mobile and WLL (M), would promote gray market.

(h) It should be ensured that the ADC from long distance calls originating from cellular mobile roamers, is received by the fixed line operator

Section C : Tariff Issues

6. A number of tariff issues were also raised in the context of the IUC regime. These include:

(a) Local call pulse rate for calls from Fixed Line to WLL (M) and Cellular call should be identical since the IUC for such calls is identical.

(b) There is no justification for providing Port Charges subsequent to IUC implementation.

(c) While the tariffs may be on per minute or any other appropriate pulse, the IUC payment should be based on a per second basis.

(d) The number of Tariff Packages need to be restricted to only 4 or 5, for better understanding of the customers and simplicity in implementation.

(e) It is desirable to specify the standard tariffs for cellular mobile and WLL (M) and remove them from the category of tariff forbearance.

(f) The Authority must prescribe the manner in which the customer should be informed about tariffs so that the actual, effective call charge is correctly known to the customer.

Section D : Calling Party Pay (CPP) for Cellular Mobile

7. One of the views submitted to the Authority on CPP is that the introduction of a mobile termination charge increases the tariffs for a basic service subscriber, takes away revenue that is due to the Basic Service Operator, and provides the cellular mobile operator with amounts that should not be given in terms of their overall cost situation in comparison to the Fixed Line.

Section 4

Issues and Questions for Consultation

1. Interconnection Usage Charge

i) What are the anomalies or interpretive difficulties in the various schedules of the IUC regulation and TTO of January 24, 2003.

ii) Transit of calls through a third party network/ switch even for local calls may be required at least as a back up arrangement. Should a transit charge be specified?

iii) Is there an IUC anomaly in the case of long distance calls involving GSM roamers? If so, how is it to be corrected?

iv) Should Cell to Cell and WLL(M) to WLL(M) termination charges be defined for all Intra and Inter-Circle calls?

v) Should the termination charges be made identical for all intra-circle calls across all services?

vi) Should there be any differences in IUC for Origination and termination covering National Long Distance and International Long Distance segments? Is there any justification for different IUC values based on distance?

vii) Is there a need to review the national numbering and long distance charging plans?

viii) Should the carriage charge for long distance calls be revised?

2. Access Deficit

Several comments have been received with regard to the quantum of Access Deficit, the method used for calculating the Access Deficit, the method of compensation proposed for Access Deficit, anomalies with regard to the specific Access Deficit under different situations, etc. Keeping in mind the issues raised in Section 3, following questions have been formulated for consultation:

i) The requirement of Access Deficit has been worked out on the basis of Cost as contained in the published Annual Reports of BSNL and MTNL, being the companies having the largest share of fixed line customers at the moment. In the light of rapidly evolving technology alternatives should the Access Deficit be continued to be calculated based on the concept of replacement and re-creation of the network or on the basis of re-creation of the functionality of the network? This would require a look at various alternative costing methods such as the Current Cost Model, the Historic Cost Model, the Long Run Incremental Cost (LRIC) Model or Forward looking LRIC (FL LRIC). What are your suggestions in this regard?

ii) Which target networks should be provided funds to recover Access Deficit? Should these be identified on average basis covering all customer lines or a distinction should be made between the Access Deficit for Urban and Rural connections?

iii) Should the source of the contribution to the Access Deficit be from calls, which have fixed network either at one end or both ends or the contribution should come from all services? The key issue should be to ensure that no competitive advantage becomes available to any specific services as a result of regulatory intervention.

iv) Whether some or all providers of fixed line services be recipients of Access Deficit Funds ?

v) Should the Access Deficit fund collection be minute based or revenue share based? In case per minute basis is adopted for computation of Access Deficit charge, should this amount be uniform for all these services by working out weighted average across individual services based allocation?

vi) Should the mechanism of transfer of funds be direct operator to operator transfer or through a third party independent administrator?

vii) Should uniform or non-uniform ADC charge arrangement continue or only one be standardized? In that case, which one?

3. Tariffs

i) Should the regulator monitor predatory pricing or should the tariffs be left to market forces after ensuring no regulatory advantage to any one type of service over others?

ii) What should be the principles to ensure that Tariff proposals are consistent with applicable Interconnection Charges.

iii) Whether the tariff for Cellular and WLL(M) which presently are under forbearance, need a revision.

4. CPP Issues

i) Any comments to make implementation of CPP more effective.

ANNEX I

WRITTEN COMMENTS on IUC Issues

Section 1: Comments from incumbent Service Provider

a) ADC has not been made applicable for Cell to PSTN and PSTN to Cell intra-circle calls which are basically long distance calls. If a fixed line customer of a BSO calls from Udaipur to a fixed line customer in Ganganagar of other BSO, the originating BSO pays to the terminating BSO at Ganganagar an IUC of Rs. 1.75 per minute whereas, if a cellular subscriber calls from Udaipur to the same fixed subscriber in Ganganagar, the cellular operator pays an IUC of Rs. 0.80 per minute only to the terminating BSO. The distance between calling and called party and the work done by the terminating BSO is same in both the cases. To remove this anomaly between the two type of calls, it is suggested that ADC applicable for 200-500 kms distance slab for fixed to fixed call should also apply for a cell to fixed call.

b) A mobile subscriber roaming in another circle pays a PSTN termination charge (Rs. 0.80) which is much less compared to a maximum termination charge of Rs. 2.50 if he had made the call from his own circle. This huge difference is being misused by the NLD operators to terminate cell to fixed inter-circle long distance calls through the POIs with other cellular networks in the terminating circle depriving the BSO of genuine termination charge of Rs. 2.50. Even Otherwise, the roamers subscriber belongs to a different service area and cannot claim the same benefit as applicable to the subscribers of the network he is roaming in. In order to prevent such misuse and charge the in roamer subscriber appropriately, it is suggested that the cellular operator shall

pay an IUC to the terminating BSO applicable for highest slab of the inter-circle cell to fixed long distance calls.

c) Non-uniform termination charge due to its dependence on distance slab for fixed/ cellular networks results in the requirement of analysing CLI of the originating subscriber at the terminating end for determining the applicable termination charge. Wherever CDR based interconnect billing system is not there, the segregation of calls requires different trunk groups to be created at the terminating end which results in inefficient utilisation of the interconnect resources.

d) IUC Regulation permits forbearance for termination charges payable in case of Cellular to Cellular or WLL (M) to WLL (M) calls whereas it prescribes the termination charges in case of call from fixed to Cellular/ WLL (M) and also from Cellular to WLL (M) and vice versa. This results in cheaper Cellular-to-Cellular or WLL (M) to WLL (M) long distance calls and is thus causing migration of inter-circle long distance traffic of fixed to fixed networks to cell and WLL (M) networks.

   Therefore, the purpose of prescribing ADC for compensating the BSOs to provide affordable service gets defeated.

e) The tariff and IUC are not matching for implementation in respect of inter circle calls terminating in WLL (M) networks. For inter circle calls terminating in WLL (M) network within a distance slab of 50 km the IUC payable by originating access provider to NLDO is Rs. 0.20 + Rs. 0.50 = Rs. 0.70 per minute. The origination charge is Rs. 0.15 thus making minimum cost of call as Rs. 0.85 per minute. As per TTO 2003 the pulse rate for local call including inter circle call within 50 km is 120s.

Thus tariff per minute charged from customers by originating access provider is only Rs. 0.50 (taking average per MCU rate as Rs. 1/-) while the pay out as IUC is Rs. 0.70 per minute.

Similarly, for the local calls within the same SDCAs the termination charge payable by fixed operator to WLL (M) operator is Rs. 0.40 per minute against its revenue of Rs. 0.50 per minute as per the prescribed tariff. Thus, the share of the originating operator is just Rs. 0.10 per minute i.e. about 20% of the call revenue.

To remove the above anomalies, it is suggested that for local calls the WLL (M) operator should get the same termination charge as applicable for fixed to fixed calls.

f) Termination charges for cellular to PSTN inter circle calls terminating within 50 km is much lower than the termination charge payable for intra circle calls. For intra-circle cell to PSTN calls terminating within the same LDCA, the termination charge payable to the fixed operator is Rs. 0.60 per minute whereas for inter-circle call terminating within 50 km the termination charge prescribed is Rs. 0.15. There is no justification for such a low charge for cell to fixed call. This should be brought at the level of Rs. 0.60.

g) In addition to above, because of the implementation of the CPP regime a call from fixed telephone to cell phone is required to be charged at a higher rate. This will create inconvenience for the customers.

h) It is further submitted that the private basic operators are normally providing telephones in the urban areas. Their average rental from fixed

line telephones is of the order of Rs. 250/- per month. Whereas, the average rental of BSNL is Rs. 155/- per month because of the fact that about 30% of the BSNL's telephones are provided in the rural areas which contribute monthly rental of the order of about Rs. 50/- per month only. TRAI has calculated the cost based rental for fixed line services as Rs. 424/- per month though the justifiable cost based rental as per the cost data submitted by BSNL is much higher. Taking the figure of Rs. 424/- per month as cost based rent for fixed lines, the Access Deficit of the private BSO is only Rs. 174/- per month per DEL whereas, the Access Deficit of BSNL is of the order of about Rs. 269/- per month per DEL. In addition, the private BSOs are generally serving high callers. In conclusion, the Access Deficit per month per line in case of private BSOs is much lower than BSNL, the traffic generated by the customers of private BSOs is much higher than those of BSNL. Therefore, the Access Deficit Charge payable to the private BSOs on per minute of inter-circle long distance traffic should ideally be much lower than that what is payable to BSNL. However, as per the IUC Regulation same ADC has been applied to all the fixed line operators which is not justifiable and is causing undue enrichment of the private basic service operators providing fixed line services and is required to be reviewed urgently.

i) BSNL is forced to provide leased lines to the private BSOs and CMSPs at a very low tariff which was prescribed by TRAI vide its Telecommunication Tariff Order 1999. These leased lines are being used by the private BSOs / CMSPs for delivery of their traffic to various SDCAs/ LDCAs of BSNL. The private operators are normally serving the entire circle from one switch using the leased lines provided by BSNL. These leased lines which have been provided by BSNL at a very

low cost without any profit margin are, thus, being used for converting the long distance calls into the local calls and hence the distance dependent ADC which would have, otherwise, been accrued to BSNL is no more available. It is, therefore, submitted that BSNL should not be forced to provide these leased lines to the private BSOs / CMSPs at the tariff prescribed by TRAI. In case BSNL provides the intra-circle long distance network to any other competing operator, BSNL should be permitted to charge the commercial rates.

j) To remove some of the anomalies, following alternatives are suggested:-

i) For intra-circle calls from fixed to cellular networks, no termination charge should be payable by the fixed line operator to the cellular operator. The cellular operator may be compensated by a higher origination/ termination charge from inter-circle long distance calls as well as International calls.

ii) The ADC payable to the BSOs should be recovered from all long distance calls i.e. fixed to fixed, cell to cell, WLL (M) to WLL (M) and any other combination thereof.

iii) Where at one of the end there is a fixed operator, the entire ADC should be directly payable to the fixed operator.

iv) When there are fixed operators on both the ends, the ADC may be divided amongst the fixed operators in proportion to the network cost of the two fixed operators and the applicable deficit because of the difference between the costs based rental and the actual rental being realised by each BSOs.

v) In case of cell / WLL (M) to cell / WLL (M) inter-circle long distance calls, the same amount of ADC should be made applicable. This ADC should be recovered from the long distance operator by the TRAI and should be distributed amongst the fixed line operators in proportion of their deficit on account of lower rentals and local call charges.

vi) Similarly, ADC should be recovered from incoming and outgoing international calls terminating and originating from Cellular / WLL (M) networks and should be distributed as indicated above.

vii) There should be a floor for inter-circle STD calls and ISD calls for all segments of distances. This should include the origination charge, termination charge, carriage charge and the ADC.

k) While reviewing the IUC, the efforts in the direction of modified IUC should be aimed at:

i) That the fixed line operators are adequately compensated for providing the basic telephone services at affordable rental and lower local call charges with a view to keep them within the affordable limits of a common man and enhance the tele-density in rural and urban areas to achieve the targets as envisaged in NTP-1999.

ii) That there is no undue migration of traffic from one network to another network.

iii) That the tariffs are sustained at certain minimum levels to ensure viability of the telecom service providers.

iv) That the tariffs plans are simpler to implement and understandable by the customers.

v) That the customers are not put to any undue inconvenience because of the differential charges applicable for different type of networks.

vi) That enough margins are available for competition in services.

Section 2: Comments from Association Basic Service Providers

a) Introduction of Calling Party Pays (CPP) Regime

The IUC Regulation has introduced the regime of Calling Party Pays (CPP) and this has been mentioned in the regulation itself. Now, through the IUC regulation the TRAI has given cellular operators a mobile termination charge which will have to be paid by the Basic Service consumers. This not only places an unjustified and huge burden on the basic subscribers but also makes tariffs of basic services less affordable. In effect, this means that basic subscribers are subsidizing cellular subscribers. It is surprising to say the least that in a country like India where maintaining affordability of basic telephony

itself is a complicated and sensitive task, a huge burden is imposed on 4 crore basic subscribers rendering basic services totally unaffordable in the process.

There was strong opposition from consumers and TRAI's first attempt on CPP was subsequently quashed by the Delhi High Court. Two years later, in 2001, the TRAI again issued a consultation paper on CPP attempting to reintroduce CPP. Once again the process of Open House discussions was followed and the last such discussion was held in November 2001. It was evident from the responses in these open houses which was widely reported by the media that the entire country including some of the large cellular operators themselves that introduction of CPP was not desirable.

Already, cellular operators have been registering a growth of 80 - 100% every year and are continuing to grow at an unprecedented rate. Such growth does not require any additional incentive in the form of CPP. Cellular tariffs have come down due to increased competition and reduced costs in the sector. Introduction of CPP/ MTC is therefore an arbitrary decision and has no basis.

Mobile Party Pays (MPP) regime which is in existence in US, Singapore, Australia and China has been successful in India and should be allowed to continue. The concept of CPP /MTC is not just against the objective of NTP'99 but will also have a negative impact on the growth of Basic Services.

Even the tender for Basic and Cellular Services issued in 1995 demonstrated the intent of the licensor that BSOs require access charges to be paid to them whereas CMSPs who have a cost plus tariff model are not entitled to access charges. No justification has been offered as to why this extra burden of calling needs to be imposed on basic subscribers. There is no explanation as to why cellular network continue to charge airtime and yet be entitled to MTC.

b) Applicability for ADC for intra circle long distance calls from Cellular to Fixed line

ADC must be paid to basic operators from every long distance call in order to ensure sustainability and viability of the Basic services. To ensure this, the IUC regime recovers ADC from various types of long distance calls -- both intra circle and intercircle. However, there is no payment of ADC by cellular operators in case of intra circle long distance calls from a mobile network to a basic network. In contrast, a similar intra circle long distance call from a basic network to another basic network attracts ADC. This is a clear anomaly in the IUC Regulation in as much as Schedule - I of IUC regulation prescribes payment of ADC on all long distance calls, yet Schedule - III & IV are diluting it to exempt CMSPs from paying any ADC on calls from cellular networks which originate or terminate in basic network. The above anomaly has a serious impact on the viability of the basic operators and distorts the level playing field in favour of cellular operators.

c) Bypass of intra circle long distance call revenue

The basic operators have made several representations to TRAI on the issue of bypass on long distance traffic by cellular services over the last few years resulting in loss of several thousands crores to Basic Service Operators. This has happened on account of the peculiar numbering plan of cellular operators is not just in non-conformance with the SDCA linked Numbering Plan but is also a serious breach of the National Numbering Plan of the country.

Apart from this, the cellular numbering plan has caused enormous financial damage to basic operators because it permits easy bypass of intra-circle long

distance traffic. We urgently impress upon the TRAI to rectify this very serious anomaly. The bypass issue can be easily addressed by simply adding a "0" before the existing cellular numbers for all calls outside an SDCA.

d) Applicability of ADC for calls by GSM roaming subscribers

The issue highlighted in point "b" above on applicability of ADC for calls from GSM subscribers becomes further complicated when applied to a roaming cellular subscriber. For e.g., when a Delhi mobile subscriber roams to Mumbai and makes call to a land line in Delhi, the termination charge payable to fixed line operators will not include ADC. The reason for this is that the mobile subscriber is roaming freely with the same number and it is not possible to calculate distance based ADC in such a case of roaming. This issue can be addressed by applying uniform ADC for all calls originating from cellular network and terminating into fixed network irrespective of the distance.

e) Cellular to WLL(M) intra circle calls - Enforcement of IUC Regulation

As per IUC regulation, the termination charges for calls terminating into WLL(M) network is Rs. 0.30 per minute (metro) and Rs. 0.40 per minute (circle) for local call and Rs. 0.50 per minute for intra circle calls. However, due to the existing numbering plan of cellular operators, which does not conform to the national SDCA based numbering scheme, it is not possible to differentiate between local and intra circle calls for a cellular originated call. This issue can be addressed by adopting an SDCA based numbering plan for all operators including cellular and applying uniform ADC for all intra circle calls originating from cellular network and terminating in fixed network irrespective of distance.

f) Need for removal of Port Charges

TRAI has stipulated Port Charges for interconnection vide notification dated 28/12/01. These charges are based on the cost for all elements involved in the interconnection. In the present IUC regulation 2003, since the IUC charges are arrived based on all cost elements involved in the calls, payment of port charge impose double charging for the same call. This needs immediate rectification.

g) Pulse rate for reconciliation

The IUC regulation mentions rates on per minute basis. However, there is ambiguity regarding pulse rate for another operator's reconciliation (per minute or per second). This can have a serious impact on the pulse rates charged by access providers in their retail tariff.

h) IUC charges for SMS

Though the IUC regulation does not specify any charge for exchange of SMS between two operators, cellular operators are insisting on payment of IUC charges for SMS. This is absurd since the cellular operators themselves are actually using the CCS7 signalling network of BSNL for exchange of SMS. This needs to be rectified immediately.

i) Uniform ADC versus Differential ADC

The concept of uniform / differential ADC has the potential to cause quite a lot of confusion in the market. Multiple operators in the same circle can start adopting different ADC charging principles. As can be understood, this will result in not just

consumers having to pay different tariffs for same distance calls depending on terminating operators - it will also lead to chaos.

Section 3: Feedback from a standalone Basic Service Provider

- To apply a consistent basis o POI billing for incoming & outgoing calls, either call by call using a uniform pulse value or cumulative time basis.
- To apply a consistent principle of specifying originator's share in domestic and international long distance calls.
- Not to charge the carrier share's in case of intra-circle calls terminating fo its cellular subscriber.
- Where the tariffs are below IUC, the originating, carriage and terminating charge should be reduced on pro rata basis.
- Some permanent solution may be found.
- The long distance traffic pattern is shifting in favor of WLL and cellular as long distance form wire line has become more expensive.
- Favoring rich subscribers at the cost of poor subscribers and also favoring urban at the cost of rural. BSNL and other BSOs will become financially not viable.
- PCO segment has been severally affected.
- ADC fund may be created and NLD,ILD,WLL & CMSP operators contribute to this fund.
- The excess of cost and tariff is contributed to ADC fund by NLDO.
- The contributions of ADC fund to be distributed on equitable basis amongst all BSO based on the number of fixed subscribers.
- An uniform ADC or even differential ADC is not the right solution.
- The bundling of Access and long distance should be disallowed.
- TRAI may fix floor pricing on long distance tariffs uniformly for all operators, which should be IUC compliant. .CMSPs should be allowed to

charge air time extra. TRAI may fix long distance tariffs considering the deficit element for BSO.

Section 4: Feedback from a Cellular Service Providers

- The retail tariff should be equal to or higher than the sum of IUC charges of Origination, Carriage and Termination of a call.
- This principle should apply both for peak and off-peak tariff.
- Service Provider may fix a lower off-peak tariff in consultation with the other Service Providers involved in end-to-end completion of a call subject to the concerned operators mutually agreeing to accept the lower IUC charges payable for origination, carriage and termination.
- TRAI may approve the above tariff only after getting the report from Service Provider who files the tariff regarding the agreed lower share of IUC between the service providers
- Access Providers instead of NLDO should set NLD tariff.
- If the retail tariff is lower than the sum of IUC (due to market competition), Service Provider who sets the tariff should bear the difference between IUC and retail tariff unless mutually agreed between the various Service Providers involved.
- The principle of consistency with IUC, non-predation and non-discrimination must be followed while approving the tariff.

  - In case, where the difference between the IUC cost and the retail price should be absorbed by the concerned NLDO.
  - Off-peak tariffs which are below the IUC cost may be reviewed.
  - The difference between the off-peak tariff and the IUC cost shall be absorbed uniformly by the originator, carriage and terminating network.

Section 5 : Feedback from Association : Cellular Service Providers

- Tariff must be cost based.
- Tariff package should be IUC compliant.
- Any tariff less than –10% of IUC value is below cost.
- Tariff below IUC would affect competition and growth of the telecom industry.
- IUC cost should be included in retail tariff to ensure no service provider could offer predatory prices or have discriminatory network interconnection deals.
- TRAI must ensure that all service providers must file component-wise tariffs.
- The billing of end users vs billing for interconnecting operators may be different. The component-wise should not be billed to consumers. The accounts of interconnecting operators should be unbundled.
- The unbundling, if mandated by TRAI, will provide cushion to those operators who lack market power and are at the mercy of integrated players.
- The principle of cost based, IUC complaint should be applied both to peak and off-peak tariff.
- Service Provider may fix a lower off-peak tariff in consultation with the other Service Providers involved in end-to-end completion of a call subject to the concerned operators mutually agreeing to accept the lower IUC charges payable for origination, carriage and termination.
- TRAI may approve the above tariff only after getting the report from Service Provider who files the tariff regarding the agreed lower share of IUC between the service providers.
- Access Providers instead of NLDO should set NLD tariff.
- BSNL tariff should be IUC compliant.

- Calculation given by TRAI in Annexure-I is based on uniform ADC, but BSNL is actually implementing inter-network calls on the basis of differential ADC.

Section 6: Feedback from an Integrated Service Provider

a)

- Access provider should be allowed to devise its own NLD tariffs.
- NLD tariff should be IUC compliant. If NLDO decides tariff, which is below the floor prescribed by IUC, NLDO should bear the deficit .
- To fix a time limit for finding a regular solution. Interim period should not be longer than three months.
- For the interim period, in those slabs where the tariff is below IUC, the origination, carriage and terminating charges should be reduced on a pro-rata basis.
- The option of uniform ADC may be withdrawn.

b)

- The call tariffs under particular tariff plan should be looked in totality and on call by call charge basis.
- The apprehension that standalone operators will retain less money and in a disadvantageous position as compared to integrated player is baseless.
- The regulator should ensure that all operators to follow the principle of non-discrimination.
- If a integrated player offers the same carriage rates to all access providers as offered to its own access division, the standalone operators have a level playing field
- To ensure that integrated operators including incumbent maintain accounting separation in transparent manner.

- In a situation where tariff is below IUC , various alternative solutions are considered on interim basis.
- Long distance IUC carriage rates, especially for short distance carriage are not cost based.
- Due to cellular subscriber's roaming with the same number, it is not possible to calculate distance based on ADC in case of roaming.
- Need for removal of Port Charges.
- IUC rates are per minute. However there is ambiguity regarding the applicable pulse rate for inter-operator reconciliation(per minute or per second)
- IUC regulation does not cover charges for SMS exchange between two operators.
- IUC regulation takes away the flexibility of negotiating IUC rates by stipulating that spot IUC rates to be within +/-10% for long distance calls beyond 50 kms involving fixed line.
- **c)**
- The principle of cost based tariff should be followed.
- Tariff package should be consistent with IUC.
- The retail tariff should not be lower than IUC.
- For cases where the origination charges are forborne, the termination and carriage charges defined in IUC could be used for determining the floor.
- In most cases interconnection charges do not cover the costs of the operators. The stand-alone operators would find it impossible to exist within the industry and only incumbent operators could continue.
- In case non-IUC compliant tariffs are to be implemented, operators, such as the incumbent, offering such tariffs do not require the additional subsidization through prescribed ADC.
- The recent tariffs announced by BSNL is an example which lead a stand-alone basic operator to run the business on losses in a number of cases.

- In almost all scenarios there is a shortage of recovery of IUC in the tariffs. In some cases the shortage is less than 10% margin for negotiation, while in others it exceeds even this margin.
- An interim measure , which does not fulfill the minimum IUC charges should not be permitted to be implemented as this shall defeat the entire purpose of the IUC Regulation.

Section 8 : Feedback from an ILD Operator

- IUC notification 2003 lays down the foundation of charges for origination, carriage and termination
- IUC is on the basis of cost.
- Tariff orders are aimed at protecting consumers interest and for the growth of Telecommunication industry.
- Margin provided on IUC spot rate would encourage operators to build more efficient network and to become more competitive in the international market.
- Discriminatory interconnection agreements must be discouraged.
- In the telecom value chain of a call, the largest value is provided by the operator in whose network the call originates. The origination of traffic and the growth of revenue for the entire chain is at the hand of originating operator.
- If the originating operator decides to operate at a price lower than the values of IUC, originating operator may be blamed for this. The terminating and carrier operators are no hands in discounting of tariff.
- If the situation of out of pocket payment arises, it is restricted to the operator who decides to lower tariff below cost level on basis of IUC.

TABLE 1

STD call charge for Fixed to Fixed Calls
(call duration of 1 minute and pulse charge Rs.1.20 per metered call)

Distance Category	Peak Tariff envisaged at end of Tariff Rebalancing under TTO 1999 (1st April, 2002)	Prevailing rate at present		%age reduction	
		Intra Circle	Inter Circle	Intra Circle	Inter Circle
Upto 50 Kms	1.2	1.2	1.2	Nil	Nil
51 - 200 Kms	4.8	2.4	2.4	50%	50%
201- 500 Kms	10.8	2.4	4.8	78%	56%
501 - 1000 Kms	16.8	2.4	4.8	86%	72%
>1000 Kms	21.6	2.4	4.8	89%	78%

TABLE 2

Access Deficit Estimation

No. of fixed subscribers	40 million
Average cost based rental	Rs. 425 per month
Average rental actually charged	Rs. 200
Deficit per fixed phone per month	Rs. 225
Annual deficit **Per fixed line**	Rs. 225x12 = Rs.2700
Annual deficit on account of rentals for 40 million Fixed subscribers	Rs. 10,800 Crore
Average number of free calls 30 per subscribers per month	Rs. 1440 Crore
Deficit on this account	
Deficit on account of below cost calls between 0 to 50 Kms (706 calls per subscribers per year. Per call deficit 25 p per call	Rs. 750 Crore
Total Annual Access deficit estimate	Rs. 13,000 crore

TABLE 3

ADC component for various type of Inter-Network Calls

Total ADC in Rs per Minute as per January 2003 notification						
		Intra Circle		Inter Circle		
Type of call	**Local (including upto 50 kms)**	**50 to 200 KMs**	**Above 200 Kms**	**50 to 200 Kms**	**200 to 500 Kms**	**Above 500 Kms**
F to F	0.00	1/00	2.50	1.00	2.50	4.00
F to W	0.00	0.50	1.25	0.50	1.25	2.00
W to F						
F to C	0.00	0.00	0.00	0.50	1.25	2.00
C to F						
W to C	0.00	0.00	0.00	0.00	0.00	0.00
C to W						
W to W						
C to C						

TABLE 4

ADC on International Long Distance Calls

Origination / Termination	ADC for ILD In Rs. Per Min
Fixed	5.00
WLL (M)	0.00
Cellular	0.00

TABLE 5

Illustrative IUC Charges for different type of calls

(INTER CIRCLE)								
	> 500 Kms		200 - 500 Kms		50 - 200 KMs		0 - 50 KMs	
	Uniform ADC	Non uniform ADC	Uniform ADC	Non uniform ADC	Uniform ADC	Non uniform ADC	Uniform ADC	Non uniform ADC
F - F	5.10	6.10	4.75	4.25	4.45	2.45	0.50	0.50
F - W	3.60	4.10	3.25	3.00	2.95	1.95	0.85	0.85
F - C	3.50	4.00	3.15	2.90	2.85	1.85	0.75	0.75
W - F	3.60	4.10	3.25	3.00	2.95	1.95	0.85	0.85
W - W	2.10	2.10	1.75	1.75	1.45	1.45	1.20	1.20
W - C	2.00	2.00	1.65	1.65	1.35	1.35	1.10	1.10
C - F	**3.50**	**4.00**	**3.15**	**2.90**	**2.85**	**1.85**	**0.75**	**0.75**
C - W	2.10	2.00	1.65	1.65	1.35	1.35	1.10	1.10
C - C	1.90	1.90	1.55	1.55	1.25	1.25	1.00	1.00

Note:

1. WLL(Termination) = 50 Paisa/ Min
2. WLL(Origination) = 50 Paisa/ Min
3 Cellular(Origination) = 40 Paisa/ Min
4. Cellular to Fixed termination charge
   = 50 Paisa beyond 50 Km and 15 Paisa up to 50 Km
5. Fixed origination for calls to cellular = 50 paisa
6 WLL(M) to fixed IUC charges are based on IUC Regulation Schedule-I, with Schedule V being applicable only for intra SDCA calls.

TABLE 6

Illustrative IUC Charges for different type of calls

(INTRA CIRCLE)								
	> 500 Kms		200 - 500 Kms		50 - 200 KMs		0 - 50 KMs	
	Uniform ADC	Non uniform ADC	Uniform ADC	Non uniform ADC	Uniform ADC	Non uniform ADC	Uniform ADC	Non uniform ADC
F - F	5.10	4.60	4.75	4.25	2.45	2.45	0.70	0.70
F - W	3.60	3.35	3.25	3.00	1.95	1.95	0.95	0.95
F - C	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
W - F	3.50	3.25	3.15	2.90	1.85	1.85	0.85	0.85
W - W	2.00	2.00	1.65	1.65	1.35	1.35	1.10	1.10
W - C	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C - F	**1.20**	**1.20**	**1.20**	**1.20**	**1.20**	**1.20**	**1.20**	**1.20**
C - W	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C - C	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80

Note:

1. WLL(Termination) = 40 p (For same SDCA) and 50 p (For inter-SDCA)
2. WLL(Origination) = 40 p
3. Cellular(Origination) = 40 p
4. WLL to Fixed termination charge = 60 p (For same SDCA) and 50 p (For Inter-SDCA)
5. Fixed origination charge for calls to Cellular = 60 p
6. WLL(M) to fixed IUC charges are based on IUC Regulation Schedule-I with Schedule V being applicable only for intra SDCA calls.

ANNEX 6

Consultation Paper on Unified Licensing for Basic and Cellular Services dated July 16, 2003 (the "Unified Licensing Consultation").

http://www.trai.gov.in/consultation.htm

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Consultation Paper No. 3/2003

TELECOM REGULATORY AUTHORITY OF INDIA

Consultation Paper

on

Unified Licensing for Basic and Cellular Services

New Delhi

July 16, 2003

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Preface

Owing to technological developments, reduction in cost of wireless technologies, quicker roll out, and growth of wireless subscribers, the present arrangement of separate licensing and regulatory framework for Basic and Cellular Services needs a review. A Unified license for wireline and wireless services (including Cellular Mobile) would provide greater efficiency as a result of optimum sharing of infrastructure and resources. Such considerations of efficiency that would bring down the cost of providing services have arisen the need for consulting the stakeholders on creating a Unified Licensing framework. Internationally, several countries have moved/ are in the process of moving from a service specific license to a Unified License.

In India, Basic and Cellular Mobile Services have been licensed separately. While a significant amount of unification in terms of license conditions has already taken place i.e., in terms of annual license fees, providing mobility (though to different extent), access to Universal Service Obligation Fund etc., there still exist certain differences on issues such as varying amounts of entry fee paid, spectrum allocation etc that needs further discussion. This consultation paper aims to raise such existing issues that arise while considering the framework for migrating from a present service specific to a Unified license framework. It also raises certain policy and regulatory issues that would arise in the future as a result of a unified license.

One immediate need would be to examine the efficiencies as well as the extent of dominance that such a framework would create in the markets. Mergers and Acquisition have been quite common in the industry over the recent years. However, intra-circle Mergers, which are of a horizontal nature have not been permitted. Creation of a unified license would result in a large number of players offering the same basket of services, necessitating consideration of mergers and acquisitions. However, it is extremely important that under no circumstances such events should result in substantial lessening of competition. The paper analyses the issues that arise inter-alia and calls for the comments & suggestions of the stakeholders.

I am quite hopeful that this paper would provide the necessary platform for discussing this important issue of Unified Licensing and would enable us in creating a common framework for offering wireline and wireless services (including cellular mobile services). The consultation paper has already been placed on TRAI's website (www.trai.gov.in).

I request that written comments on this Consultation Paper may please be furnished to Secretary, TRAI by 7th August 2003. For any further clarification on the matter, Secretary TRAI or Adviser (MN) may be contacted at trai07@bol.net.in (Ph No. 26167448) and jsengg@bol.net.in (Ph No. 26106118) respectively.

(Pradip Baijal)

Chairman, TRAI

Chapter 1

1.10 Introduction

1.1.1 The development of technologies, reduction in wireless technology costs and the growth of these services has led to blurring of difference between different conduit systems such as wireline and wireless and has eventually led to the concept of unified licensing for basic and cellular services. The operation of various services are able to use their infrastructure to deliver services reserved for other operators and thus ensure optimum use of infrastructure.

1.1.2 The concept of unified license for wireline and wireless services including cellular mobile services is prevalent in a number of countries including Australia, Singapore, Malaysia and some EU countries. With the implementation of the recent EU directive dated 7th March 2002, most of the European Union countries would be migrating to a unified license for wireline and wireless services including Cellular Mobile Services..

1.1.3 The Objective of this consultation paper is to examine the various licensing, regulatory and level playing field issues in enabling a Unified License for basic and cellular services.

This consultation paper consists of five chapters. Chapter 1 describes the objective of this consultation paper, brief background on licensing issues and the need for unified licensing of basic and cellular services. Chapter 2 discusses the terms and conditions of both basic and cellular service's license agreements, which are to be addressed while deliberating the issue of unified licensing. These terms and conditions include inter alia entry fee, service area, level of interconnection with other networks, roll out obligations, spectrum charges, etc. Chapter 3 discusses the practices on unified licensing in some other countries. In case unified licensing for

basic and cellular services is considered acceptable then in view of larger number of licensees providing the same basket of services, there may be a need of considering merger and acquisition of the service providers in the same service area. This, however, does not imply that without unified licensing, merger within the same service area should not be permitted. This leads to the issues related to merger and acquisitions, which are discussed in Chapter 4. This consultation process raises various issues for consideration and they are listed in Chapter 5.

1.1.3 All the stakeholders are being requested to give their opinion on these issues through this consultation process.

1.2 Background

1.2.1 With the formulation of the National Telecom Policy in 1994, the Basic and Cellular Mobile Services were opened to the private sector participation. Licenses were awarded to private operators through a tendering process for operating in a duopoly for ten years.

1.2.2 2.1 <u>First phase of licensing: Monopoly to Duopoly</u>

In the case of Basic Services, one private operator was envisaged to be licensed in every Circle. However, owing to various reasons such as very high bid amount in some cases and certain legal issues, only six licenses could be granted in Basic Services i.e., for the Service Areas of Andhra Pradesh, Gujarat, Madhya Pradesh, Punjab, Rajasthan and Maharashtra. The annual license fee in these cases was decided through a bidding mechanism.

1.2.2.1 In Cellular Mobile Services, duopoly was introduced through a bidding process and forty-two licenses were awarded to private operators for operating Cellular Mobile Services. In some service areas like, Bihar, West-Bengal and Orissa only single CMSP license could be awarded. In case of CMSPs, four metros (Chennai, Delhi, Kolkatta and Mumbai) were designated as separate service areas and were excluded from the Circles. The policy stipulated that the technology used for Cellular Mobile must be digital GSM standard.

1.2.3 Second Phase of licensing: Duopoly to open competition / Multi-operator

Due to various reasons a need for new telecom policy was felt, and a New Telecom Policy was announced in 1999. The second phase of licensing started with the formulation of the New Telecom Policy in 1999 (NTP '99). The existing Basic and Cellular Service providers were offered a migration package under NTP'99, allowing them to migrate from an annual fixed license fee to a revenue share arrangement. The amount of licence fees due till 31.7.99 were taken as entry fees. Further, it was decided to have more competition in these services, and one of the conditions of acceptance by the licensee of the terms and conditions contained in the offered migration package, was that the licensee had to forego the rights of operating in the regime of limited number of operators after 1.8.1999 and shall operate in a multipoly regime, that is to say that the licensor may issue additional licenses for the service without any limit in the service area. In the area of Cellular, it was also decided by the government to allow BSNL / MTNL to provide Cellular Services as the third operator. Based on recommendation of TRAI, Government decided to allow one more private operator as the 4th Cellular Mobile Service Provider in each Service Area. The number of cellular operators were restricted to four (including BSNL/MTNL) due to limitation availability of the spectrum. The 4th operator was given spectrum in 1800 MHz band. TRAI vide its letter dated February 20, 2003 had opined that it is in favour of open competition in the different segments of Indian Telecom market. Further, TRAI in the same letter stated that induction of additional mobile service providers in various service areas can be considered if there is adequate availability of spectrum for the existing service providers as well as for the new players, if permitted. The salient features of basic and cellular service license agreements are given in **Table 1.**

Table 1.1

The main features of the present guidelines/ license agreements are tabulated as under:

	Basic Service Operators	Cellular Mobile Operators	Comments
Entry fees *			
License before NTP'99	Amount of license fees due till 31.7.99	Amount of license fees due till 31.7.99	
New License	The amount specified in the license varies from Rs 2 Crore to Rs 115 Crores depending on Service Area(see **Annexure I** for details)	Decided on the basis of multi layered bidding process. Varies from Rs. 1 Crore to Rs. 206 Crore (see **Annexure I** for details)	
Annual license fees			
	8% (Category C circle), 10% (Category B circle) and 12% (Category A circle) of Adjusted Gross revenue	8% (Category C circle), 10% (Category B circle) and 12% (Category A circle and Metro) of Adjusted Gross revenue	Initially after the implementation of NTP'99 License fee for CMSOs was 15% of Adjusted Gross revenue but was reduced to the amount mentioned in this table, when BSOs were permitted to provide limited mobility w.e.f. 25.01.01
Number of players	From duopoly to open competition	From duopoly to four players including BSNL/MTNL per Service Area on the basis of bidding for the 4th operator.	
Mobility	Permitted to provide limited mobility within SDCA	Permitted to provide all types of mobile services.	

	Basic Service Operators	Cellular Mobile Operators	Comments
Roll out obligation and Universal Service Obligation			
Old Licenses	License conditions stipulates VPT obligations No. of DELs.	50% of DHQ which was changed to 50% DHQ or any town in lieu of DHQ	Universal Service Obligation to be funded separately through USO Fund and the Service Providers now have an opportunity to obtain a portion of their costs.
New Licenses	Roll out plan SDCA wise including coverage of specified rural/ Semi-urban / Urban SDCAs	In Metros, 90% of the service area shall be covered within one year of the effective date. In Telecom Circles, at least 10% of the District Headquarters (DHQs) to be covered in the first year and 50% of the District Headquarters to be covered within three years of effective date of Licence	
Spectrum Upto			
Allocated Spectrum	5 + 5 MHz for Wireless access	4.4 + 4.4 MHz extendable upto 10+10 MHz	
	Long Distance network in service area permitted. Direct Inter circle interconnection not permitted.	Long Distance network in service are permitted. Direct interconnection across circle is not permitted.	

* BSNL/MTNL have not paid any entry fee

1.3 Need for unified license for basic and cellular mobile services

1.3.1 Convergence of wireline and wireless technologies

Over the last few years owing to technological developments and a reduction in costs, wireless telephony has changed from being a product for the elite to that for a common man. In about 120 countries, the number of wireless phones have already exceeded that of wireline. The cost of establishing a wireless network has become significantly lower than the wireline line, encouraging even the incumbents to adopt roll out strategies based on wireless, as can be seen from the provision of WLL with limited mobility i.e. WLL(M) as well as GSM by both BSNL and MTNL.

Internationally, there is a general move towards convergenceunification of licenses and technology neutrality. In Australia, there is already a common service license for wireline and wireless services including Cellular Mobile Services.. However, for acquiring spectrum, an operator has to undergo an auction process. In the EU countries, there is now an EC Directive that mandates abolishing of Service Licenses and envisages an authorization which would allow provision of any telecom services…... Another example is Malaysia, where the existing Service Specific Licenses have been migrated to a new structure of layered licenses, wherein wireline and wireless services including Cellular Mobile services can be provided by the same license.

1.3.2 In India, prior to liberalization, fixed WLL technologies such as MARR had been deployed in the local loop by BSNL. These technologies did not have the flexibility of providing mobility. Over time, cellular technologies are also being used for local loop. This has happened owing to the economies of scale and rapid decline of cost per line. Most of the BSOs in India deployed IS-95 based WLL systems. Though these systems were capable of providing mobility, this was not allowed as hand held subscriber terminals for WLL were not allowed as a regulatory restriction.

1.3.3 In 2001, the government permitted the BSOs to provide limited mobility. The BSOs have now deployed CDMA 2000 1x technology, which is capable of providing high speed data access as well. Even prior to 2001, Wireless in Local Loop (WLL) was permitted and no specific technology was mentioned in the license conditions.Between the period March 1998 and 2001 Ffour BSOs (M/s Tata Teleservices in Andhra Pradesh, M/s HFCL in Punjab, M/s Shyam in Rajasthan and M/s Bharti Telenet in Madhya Pradesh) had deployed WLL technologies in their network based on MSC architecture. Even on the Switching side, a number of hybrid switches have emerged which can carry out both the tasks i.e. wireline and wireless switching. Such technological convergence has challenged the basis for the two different regulatory frameworks. There is thus a situation based on technological developments where the country needs to prepare for the future and adopt regulatory regimes that are supportive and not obstructive of the change of technologies.

1.4 Overlap of Competition:

1.4.1 Basic (wireline and wireless) and cellular services are now competing with each other. With greater deployment of wireless technologies, competition between Basic and Cellular Mobile Service providers is becoming severe and this market overlap is increasing. Moreover, ongoing technologicial changes are making it possible for wireline technologies to provide value added services which were earlier not feasible. The availability of low price prepaid cards for both services will further expedite the overlap between these two services.

1.4.2 While this competition is increasing, the license and tariff structure is such that a regulatory limit, for reasons of affordability, has been prescribed for local calls and monthly rentals only for Basic Services. Thus a situation is emerging that while competition among services (technologies) is increasing, their applicable tariff regimes have different conditions.

1.5 Consumer benefit

A unified license for Basic and Mobile services could benefit the consumer in a number of ways, as he would be able to:

- subscribe to telecom services at a lower price because of reduction in costs due to economies of scale
- have a single window solution for various kinds of services, including common customer care number.
- receive a common bill,

1.6 Optimum Sharing of infrastructure and generating efficiencies

1.6.1 The experience from the other countries shows that overbuilding of capacities can have an adverse impact on profitability and sustainability of operations. It is extremely important for India to avoid duplication of efforts and build efficiencies through a synergy of the existing networks. The introduction of unified licensing would result in reduction of costs as the operators would be able to optimally utilize available resources. The reduction in cost would in turn lead to improved teledensity. The emerging trend of Mergers & Acquisitions to build such efficiencies can now be seen. A common license for both these services would further enhance these efficiencies.

1.6.2 However, it is important to ensure that such efficiencies do not result in market dominance, which in turn may result in substantial lessening of competition. Adequate safeguards would, therefore, have to be built through competition guidelines.

1.7 Provisions of Limited Mobility Service by Basic Service Operators:

Government has permitted the offering of limited mobility service by basic service operators within the local area i.e. Short Distance Charging Area (SDCA). Cellular Mobile Service Providers (CMSPs) had challenged Government's decision of allowing limited Mobility to Basic Service Operators. CMSPs had already raised issues relating to level playing field between CMSPs and BSOs offering limited mobility services. This issue is under consideration of Hon'ble TDSAT.

Chapter 2

Key issues in implementing Unified Licensing

2.1 Currently, separate licence agreements have been signed by Basic Service Operators (BSOs) and Cellular Mobile Service Providers (CMSPs) for these services. Differences among these two licence agreements arise in terms of entry fee, rollout obligations, spectrum allocation & its charges, and terms and conditions of inter-connection. These differences are given in Annexure II.

2.2 For implementation of a unified licensing framework for basic and mobile services, the key issue would be the migration of existing licensees (presently with different terms and conditions) to a single license with common terms and conditions.

2.3 As per the present Basic and Cellular license Agreement, the licensor reserves the right to modify at any time the terms and conditions of the license, if in the opinion of the licensor it is necessary or expedient to do so in public interest or in the interest of security of the State or for the proper conduct of the Service/telegraphs. The decision of the Licensor shall be final in this regard. Additionally, it could be considered that choice of migration to the unified licensing regime is given to the service providers. The detailed terms & conditions of migration package will be required to be worked out. In making the changes it is important to ensure that the migration to the new regime does not lead to a situation that a licensee is treated less favourably as compared to another licensee.

The license conditions of different licenses have been modified from time to time in public interest and for proper conduct of the telecom services. Beginning 1.8.99, both BSOs as well as CMSPs were migrated to the new regime of licence fee. In 2001 the Basic Service Providers were permitted to use hand held subscriber set within the local areas (SDCA) as WLL-Limited Mobile. The amendment dated 25th September, 2001 to the old CMTS license agreement, permitted the CMSPs to provide “Fixed Phones” based on existing GSM cellular network infrastructure in their Licensed Service area. Under the unified licensing regime, the above mentioned CMTS license conditions need to be modified to the extent that the choice of the

technology is left to the service provider. The Cellular Mobile Service Providers were also permitted to use mobile PCOs. The annual revenue share license fees, which was higher for mobile services, was brought down to level of Basic Services i.e., at 8%, 10% and 12% for Category C, Category B and Category A Circles respectively. Also, the CMSPs were allowed to retain 5% of the long distance call charge.

2.4.1 In addition to Basic and Cellular services, licenses of other services have also been modified from time to time, in order to ensure effective competition so that the benefit of technological developments flows down to consumers. For example, in the case of Internet services, the Internet service providers were permitted to provide Internet telephony services. Similarly the access providers were permitted to handover the calls directly to the ILD service providers.

2.4.2 Regarding tariffs, tariffs are forborne for Cellular Mobiles and call charges are forborne for WLL(M). The Interconnection Usage Charges Regulation, dated 24th January 2003, has specified the same termination charges between calls terminating in WLL (M) and CMSPs, except for long distance calls. With the establishment of the USO Fund, both Basic as well as Cellular Mobile Service Providers has the possibility to carry out Universal Service and claim reimbursement from the USO Fund in respect of the obligations carried out.

2.5 Although there exists parity on most issues, there are a number of issues such as difference in entry fees paid by the two types of licensees, and differences in their license roll out obligationsand entitlement of spectrum in access network that require to be addressed.

2.5.1 Removing the concept of limited mobility:

With unified licensing basic service operators would also be permitted to offer cellular mobile services. The CMSPs would also be permitted to offer basic service without any technological restriction. However, it does not mean that a company holding license is permitted to directly interconnect across the service areas. This shall remain the exclusive right of the NLDO license in line with the prevailing licensing regime.

2.5.2 Entry Fee:

2.5.2.1 Annexure-II shows the entry fees paid by different service providers. Three different categories of entry fees may be considered. One, for the firstthe first six Basic Service Operators and the initial forty-two private CMSPs. The entry fees paid by them before migration to revenue sharing arrangement, w.e.f. 1.8.1999 has been separately indicated. Second, for other basic service providers, the entry fees paid as per DOT's guidelines have been indicated. For other CMSPs (4th Cellular Operator), the entry fee as decided through a multi-layer bidding process has been indicated. In order to a level playing fieldintroduce a unified licensing regime, we need to take account of the various differences in the terms and conditions among basic and cellular license agreements.

2.5.2.2 In this context, a relevant factor is that the licensing process for 4th Cellular Operator was completed after the limited mobility was allowed to Basic Service Operators. It is, therefore, pertinent to note here that 4th cellular operators participated in the bidding process knowing fully well that basic service operators have been allowed to offer limited mobility service. Also, while the entry fee paid by CMSPs is higher, the BSOs have more stringent roll out obligations. However, the extent to which these roll out obligations have been met is also a point of consideration. Another important aspect to be kept in mind is the large difference in the growth rate for cellular and basic services, which would play a role in spreading the cost of entry fee over the operations of these service providers over time.

2.5.2.3 Another view could be that, even if there is a disparity in the entry terms and conditions, the existing operators have been in operation for almost seven to eight years, which gives them a first mover advantage over new service providers. In general the license fee paid by the fourth cellular operator is much less than that paid by the earlier cellular operators. This may lead to the argument that the operators have already created a niche market for themselves and for that they had paid a premium by way of a higher license fee when compared to a newcomer.

2.5.2.4 Based on the above, the issue for consideration could be whether basic service operators under unified licensing regime should pay higher entry fee.

2.5.3 Service Areas:

The service areas for Basic and Cellular Mobile Service differs to some extent. In the case of Basic Services, three metros, i.e., Mumbai, Kolkata and Chennai are respectively part of Maharashtra, West Bengal and Tamil Nadu circles, but these Metros have been licensed as separate service areas for cellular mobile services for historical reasons. Cellular mobile services in Metros were the first areas to be opened for private service sector. Under the unified licensing framework, the differences in the definition of service areas of basic and cellular services would have to be removed. The following options could be considered:-

a) The service areas of these three metros are merged with service areas of respective circles, like for basic services.
b) For basic services also the bifurcation is done as for cellular services, i.e., Mumbai, Chennai and Kolkata be made separate circles.
c) Maintain the status quo for service areas.

2.5.4 Network Layout:

The Network layout/hierarchy is different for cellular mobile and basic services. The concept of local call does not exist in cellular and the level of handover of calls to another networks is also different. This leads to different types of tariffs/charges being applicable to their intra-circle calls.

2.5.5 Roll out Obligations:

BSOs have different roll out Obligations when compared with CMSPs, both in terms of roll out as well as Performance Bank Guarantee. While a BSO in a Service Area is required to provide POPs in all SDCAs within 7 years and that too in an identified ratio of Urban, Semi-Urban and Rural SDCAs, the roll out obligation of CMSPs is to cover 10% of DHQs in the first year and 50% of Districts head quarters in first three years. CMSPs are allowed to cover any town in lieu of DHQ in that District.IIn the Unified-licensing regime, we will need to address how these obligations should be incorporated? Should the roll out obligation be also imposed on CMSPs? Should the existing roll out obligation be carried over to the new licensing regime.

2.5.6 Performance Bank Guarantee:

Performance bank guarantee for basic service operators is 4 times the entry fee paid by service providers and is linked to roll-out obligations spread over 7 years period. For basic service operators the minimum Performance Bank Guarantee (PBG) is Rs.4 crore for the A&N circle and goes up to Rs.460 crores in Maharastra circle. For CMSPs the performance bank guarantee is Rs.20 crore, Rs.10 crore and Rs.2 crore for category 'A', 'B' and 'C' circles (Please see Annexure III for details). This issue of significantly high differential in PBG amount and its validity period needs to be addressed while framing the terms and conditions of unified license.

2.5.7 Spectrum Policy:

In CDMA, spectrum available is 1.25 MHz. Spectrum charges are 2% of AGR for upto 5+5 MHZ spectrum for WLL Services and upto 4.4 + 4.4 MHZ for cellular services. For cellular services additional 1% of AGR is charged for spectrum beyond 4.4 + 4.4 MHZ and upto 6.2 + 6.2 MHZ spectrum and 1% more is charged upto 10 + 10 MHZ. Under Unified licence regime the spectrum allocation and charging for spectrum will be another matter to address in the context of unified licensing.

2.5.7.1 Issue of Spectrum Allocation

Presently, BSOs and CMSPs have been allocated spectrum based on their requirements. These allocations vary from one operator to the other. While in case of CMSPs, policy has been specified for allocation upto 10 +10 Mhz, in case of BSOs the license stipulates provisioning of spectrum only upto 5+5 MHz.

One important issue is whether to allow the existing operators to carry their spectrum to the new regime and what would be the new terms and conditions? In Malaysia and Singapore, at the time of migration, the existing operators were permitted to retain their allocated spectrum. If the unified licensing regime were made technology neutral, then how would the future spectrum allocations be carried out? Some of the spectrum that is used for CDMA today may also be used for GSM Services in the extended GSM band. In a converged scenario, should the operators be permitted to use the technology of their choice. What should be the basis for allocation of new spectrum? Should it be

through an open competitive mechanism such as auction or on a first cum first serve basis.In the European Union, the present policy for allocating spectrum e.g. 3G, is through an auction. In Australia as well as Singapore, auction has been used even for 2G spectrums. In Malaysia, however, a beauty contest is used for the purpose.In the event that the spectrum originally allocated for one type of technology users (such as CDMA) is allocated to the other then we need to address the issue of spectrum allocation for those operators who at the time of migration would not have got the maximum permissible amount of spectrum reserved for that license.

2.5.8 Level of competition:

Basic Services have open competition while there is a restriction on the number of cellular operators due to availability of Spectrum. Under Unified Licensing regime both the service providers may offer wireline as well as wireless services, and the issue to be considered would be whether the opening of this service sector for further competition is necessary or the number of existing service providers (fixed and cellular both combined together) is sufficient to achieve the required level of competition. It is expected that after introduction of unified licensing regime, consolidation among service providers may take place. The viability of existing service providers, growth of telecom services, conditions of merger and acquisitions, benefits of competition to the consumers are some of the factors which may be considered while deciding this issue. The subject of merger and acquisition has been dealt in more detail in Chapter –4.

2.5.9 Interconnection with other service providers:

Basic and Cellular operators have different network configurations and the level of inter-connection between basic and cellular, and basic and fixedbasic service providers is also different. The termination charges as prescribed in IUC Regulation, 2003 are also different for different type of services. In the Unified Licensing regime this differential in interconnect terms & conditions will have to be addressed because such distinctions may not be sustainable or desirable under unified licensing. Due to the difference in level of interconnection for an intra circle call from fixed to cellular subscriber, an issue of traffic bypass has been raised by BSOs. This too would need

addressing while prescribing interconnection terms and conditions among various service providers under Unified Licensing Regime. There would also be a need to clarify, which service operator is the interconnection provider and which is the interconnection seeker.

2.5.10 Selection of NLD operator by the Subscriber:

Another important differential is that for basic service intra circle calls, wherein the subscriber may select another BSO as NLD operator. The same flexibility has not been defined in the existing CMSPs licence agreement. This issue needs to be addressed under the Unified Licence Regime.

2.5.11 Validity of Licence period:

Both basic and cellular service license agreements have validity period of 20 years, extendable by 10 years. In a unified licensing regime, we would need to consider the validity period of the unified license agreement and its starting point.

2.5.12 Numbering Plan:

If for all services, "Calling Party Pays" regime is applicable and there is a single licence for all services, then is it necessary to retain the existing numbering plan that distinguishes different type of subscribers or should we remove this distinction of number scheme among different type of subscribers, viz. Fixed, cellular and WLL (M). Numbering plan for basic is SDCA based and for CMTS is circle based. This distinction may have to go under a unified license notwithstanding that Government of India has recently issued the revised numbering plan.

2.5.13 Different Mobile technologies:

The existing basic service providers are using CDMA technology for offering WLL including limited mobility services. Though CMSPs are allowed to use any digital technology, they are using GSM technology. Under the Unified License various types

of technologies would be used for offering cellular mobile services. Compatibility of these technologies may be an additional issue to consider.

Chapter 3

International Practises on Unified licenses for wireline and wireless services including Cellular Mobile Services

3.1 A number of countries are migrating towards the concept of unified / converged licensing for wireline and wireless services. This has been encouraged due to technological developments, consumer demands, long term sustainability of telecom service providers, and optimum utilisation of resources. The scenario of converged licenses in some countries from Asia-Pacific and Europe is discussed below. Many of these markets have high mobile and wireline penetration rates, and converged services are being driven by a very competitive marketplace.

3.2 Malaysia

In Malaysia, the licensing framework is formulated to be both technology and service neutral. The framework permits that communications infrastructure can be used to provide any type of communications service that it is technically capable of providing. Recognizing the fact that the legislation governing the communications industry was outdated and no longer representative of the merging market realities, the Government of Malaysia enacted a new convergence legislation, which comprises the Communications and Multimedia Act, 1998 **(CMA) and the** Malaysian Communications and Multimedia Commission Act 1998 **(MCMCA).** The introduction of CMA and MCMCA goes beyond the issue of unified licensing but in this paper this issue has been considered only to the extent of addressing unified licensing of fixed and mobile services.So far as unified licensing for wireline and wireless services in Malaysia is concerned, there are four categories of licenses viz. Network Facilities Providers, Network Service Providers, Application Service Providers and Content Application Service Providers. The details of which are as follows:

3.2.1 **Network Facilities Providers (NFP)** - are the owners of facilities such as satellite earth stations, broadband fibre optic cables, telecommunications lines and exchanges, radiocommunications transmission equipment, mobile communications

base stations, and broadcasting transmission towers and equipment. They are the fundamental building block of the convergence model upon which network, applications and content services are provided.

3.2.2 Network Services Providers (NSP) - provide the basic connectivity and bandwidth to support a variety of applications. Network services enable connectivity or transport between different networks. A network service provider is typically also the owner of the network facilities. However, a connectivity service may be provided by a person using network facilities owned by another.

3.2.3 Applications Service Providers (ASP) - provide particular functions such as voice services, data services, content-based services, electronic commerce and other transmission services. Applications services are essentially the functions or capabilities, which are delivered to end-users.

3.2.4 Content Applications Service Providers (CASP) - are special subset of applications service providers including traditional broadcast services and newer services such as online publishing and information services.

Further, there are Individual, Class and Exempt categories depending upon the type of activity / importance of the individual activity. Malaysia does not have any distinction between mobile or fixed, as the licensing regime is technology neutral. In order to provide these services, there is a need to obtain three licenses (NFP, NSP and ASP). However there are providers such as MVNOs (Mobile Virtual Network Operators) who can have ASP license and can provide mobile services by using the network and services of existing NSP/ NFP licensees.

3.2.5 License Fee :

The applicable license fees for each type of licence are as follows:

a) Application Fee - RM10,000.00 (non refundable)

b) Approval Fee - RM50,000.00

c) Annual Fee - 0.5% of Gross Annual Turnover or RM50,000 - whichever is higher

There are rebate clauses in License Fee for R&D and other activities.

3.3 Australia

Upto 1997, three operators (Telstra, Optus and Vodafone) were offering mobile services on GSM networks. The Telecommunications Act 1997 opened the Australian market to further competition, placing no limits on the number of general carrier licences. In 1998, the 800MHz and 1800MHz spectrums were auctioned. General competition laws in Australia prevent a company from using the position in a market in which it has a substantial degree of power to gain an advantage in a more competitive market. In Australia, there is an open licensing regime for telecommunications with no distinction being drawn on the basis of the technology used. The Regulatory framework encourages Fixed-mobile convergence. Licenses are general telecoms licenses. There is no distinction between fixed and mobile services. The incumbent operator is not required to provide separate accounting for fixed and mobile services. The Australian Communications Authority (ACA) administers the regime that licenses telecommunications carriers. A carrier license allows the owner(s) of a network to supply carriage services to the public subject to obligations set out in its license, the Telecommunications Act 1997, and any additional conditions imposed by the Minister. Carriers are individually licensed and pay application and ongoing licence fees that recover the costs of regulating the industry. There is an application charge of $ 10,000 which is payable before the application can be processed. Carriers are required to pay an annual license charge. This comprises a $ 10,000 fixed component and a variable component based on carrier's eligible revenue. Service providers are not subjected to any licensing requirements but are required to comply with a range of obligations including the standard service provider rules set out in Schedule 2 of the Telecommunications Act. One.Tel was the first Australian telephone company to offer users the opportunity to merge mobile, long-distance, fax and Internet services on one bill. Instead of having to make multiple payments every month or quarter, only one payment per month is required. Most new entrants into the telecommunications market can now offer a full range of fixed and mobile services. Some of these companies act as resellers of mobile network capacity for one of the three mobile operators. Generally all mobile operators offer mobile VPN services.

3.4 Singapore

In Singapore, a Unified-licensing framework has already been implemented. The basic intention of the framework is to have a single license for all networks / services the operator intends to operate / offer. The licensees have been categorised into Facilities based Operators (FBOs) and Service Based Operators (SBOs).

The Facility based operators (FBOs) can build telecommunications network for the carriage of telecommunications and broadcast traffic. The guidelines[1] state

"The range of telecommunication services to be provided over the licensees' facilities can include backbone/wholesale bandwidth capacity and interconnection/access services to other licensed telecommunication operators, or other domestic and international services such as the following.

- *Public Switched Telephone Services*
- *Public Switched Message Services*
- *Public Switched Integrated Services Digital Network (ISDN) Services*
- *Leased Circuit Services*
- *Public Switched Data Services*
- *Public Radio-communication Services*
- *Public Cellular Mobile Telephone Service (PCMTS)*
- *Public Radio Paging Services (PRPS)*
- *Public Trunked Radio Services (PTRS)*
- *Public Mobile Data Services (PMDS)*
- *Public Mobile Broadband Multimedia Services*
- *Public Fixed-Wireless Broadband Multimedia Services*
- *Terrestrial Telecommunication Network for Broadcasting Purposes*
- *Satellite Uplink/Downlink for Broadcasting Purposes"*

The entry fees and the license fees depends upon the service to be provided and is generally expressed as a percentage of Annual Gross Turnover (AGTO) subject to a (Footnotes)

[1] Available at http:// www.ida.gov.sg

minimum in some cases. Table 3.1 provides the details of entry fees, license fees and duration of license for each service.

Table 3.1: Entry fees, Annual fees and license duration in Singapore

Licence	Licence Fee
• FBO designated as PTL	Initial Fee: None Annual Fee: 1% AGTO, subject to a minimum of S$250,000 per year Licence Duration: 20 years, renewable for a further period as IDA thinks fit
• Terrestrial telecommunication networks for telecommunication purposes	Initial Fee: None Annual Fee: 1% AGTO, subject to minimum of S$100,000 per year Licence Duration: 15 years, renewable for a further period as IDA thinks fit
• Public cellular mobile telephone services • Public mobile broadband multimedia services • Public fixed-wireless broadband multimedia services	Due to limited frequency spectrum, the licence fees and licence duration will be specified together with the approach to award the respective spectrum rights and licences, via a comparative selection exercise and/or an auction exercise.
• Public radio paging services • Public mobile data services • Public trunked radio services	Initial Fee: None Annual Fee: 1% AGTO, subject to minimum of S$1,200 per year Licence Duration: 10 years, renewable for a further period as IDA thinks fit
• Terrestrial telecommunication network for broadcasting purposes only • Satellite Uplink/Downlink for broadcasting purposes	Initial Fee: None Annual Fee: S$5,000 Licence Duration: 10 years, renewable on a 5-yearly basis

Source: http://www.ida.gov.sg, FBO guidelines

However, in addition to these there are other charges such as spectrum, Number Allocation Charges, etc.

3.5 European Union

Single Regulatory framework as a result of EU Directive

The European Parliament and the Council gave a set of five directives to its Member States so as to provide for a single Regulatory framework for all transmission network and services. These directives are

a) Directive 2002 / 21 / EC which provides a common regulatory framework for electronic communications network and services;

b) Directive 2002/20/EC on the authorization of electronic communications network and services

c) Directive 2002/19/EC on access to, and interconnection of, electronic communications network and associated facilities;

d) Directive 2002/22/EC on universal service and user's rights relating to electronic communications network and services

e) Directive 97/66/EC on the processing of personal data and the protection of privacy in the telecommunications sector

3.5.1 The Authorization directive recognizes that

" (2) Convergence between different electronic communications networks and services and their technologies requires the establishment of an authorization system covering all comparable services in a similar way regardless of the technologies used."

The directive requires

"2. The provision of electronic communications networks or the provision of electronic communications services may, without prejudice to the specific obligations referred to in Article 6(2) or rights of use referred to in Article 5, only be subject to a general authorization. The undertaking concerned may be required to submit a notification but may not be required to obtain an explicit decision or any other administrative act by the national regulatory authority before exercising the rights stemming from the authorization. Upon notification, when required, an undertaking may begin activity, where necessary subject to the provisions on rights of use in Articles 5,6 and 7."

3.5.2 The Service specific licenses will be replaced by authorizations in the EU Countries. The Member States are however, permitted to impose a set of conditions to the general authorizations, for example financial contributions to funding Universal Service, Administrative charges to cover costs which will be incurred in the management, control and enforcement of the general authorisation scheme and of rights of use and of specific obligations as referred to in Article 6(2), (which may include costs for international cooperation, harmonisation and standardisation, market

analysis, monitoring compliance and other market control, as well as regulatory work involving preparation and enforcement, of secondary legislation and administrative decisions, such as decisions on access and interconnection) accessibility of numbers, interoperability of services etc.

3.5.3 For the use of Radio Spectrum, grant of numbers and rights to install facilities the relevant authorities may impose separate fees. Specifically, in case of spectrum Member States can grant such rights on the basis of selection criteria, which must be objective, transparent, non – discriminatory and proportionate. In Denmark, Executive Order No. 786 of 19th September 2002 does not require a service provider to obtain a licence. He need not take any action or await a decision from the National IT- and Telecom Agency before launching the service, and no specific payment on the part of the service provider is required. Interconnection to other networks is subject to the telecommunications regulation on competition and interconnection. A separate authorisation for frequencies is, however, required. Details for selected European countries are given below.

3.6 Finland

3.6.1 There are more than 90 telecommunications service providers in Finland including local, long distance, international and mobile operators. The annual telecommunications turnover is about FIM 16,000 million (about USD 2,800 million). As a result of continuous telecommunication liberalization new licensing procedure was adopted as of June 1 1997. A license is now mandatory only if an operator provides mobile telecommunications service, which requires frequencies, i.e. effectively a unified license is available if frequency spectrum is obtained.

3.6.2 Before 1994, local and long distance services in Finland were provided by different companies. Forty-five locally based operators (later known as Finnet Group) provided local services. Telecom Finland (now called Sonera) was the traditional monopoly long-distance and international operator. It also provided local services in remote areas of the country. The Finnish market was fully liberalised at the end of 1994, enabling the Finnet Group and Sonera to compete in each other's markets. In the mobile market Sonera, Radiolinja, Finnet group and Telia Finland were the key players. Sonera and Radiolinja have GSM and DCS1800 licenses. Telia Finland

and Finnet group have DCS1800 licenses. Sonera used its DCS capacity to enhance the GSM market and to offer homezone service. Telia also offered a homezone tariff on its GSM 1800 network at a level that put it into competition with fixed line services. In terms of convergent services, no other market in the world is as advanced. Finland was one of the first countries where convergent services became available. The first DECT-based public access service and the first mobile centrex solutions were introduced in Finland, and a mobile VPN service was launched in 1991. In the beginning of 1999, almost 60% of the population had a mobile phone. This rate was higher than the wireline penetration rate in Finland.

3.6.3 Helsinki Telephone Company, the largest local telephone company within Finnet group, had launched a unique flat-rate low mobility DCS1800 service, called Cityphone. This was integrated within the PSTN numbering plan and offers single billing and a single voicemail box. Calls to fixed line number are automatically diverted when the fixed phone is not answered. Calls between the fixed number and related mobile numbers are also cheaper than standard PSTN rates.

3.7 Germany

Germany has been slow to liberalise its telecoms markets. Mobile competition was first introduced in 1992 and fixed markets were fully deregulated in 1998. The Regulatory Authority for Telecommunications and Posts (RegTP), was established in January 1998. It has been a strong and effective body in maintaining fair competition. RegTP encourages convergent services, and most of the German mobile operators have fixed licensee as a shareholder and they can provide integrated fixed and mobile services.Unfied licensing has been actively promoted in Germany by the service providers. Viag Interkom, one of the key players in Germany, is using an integrated network to offer fixed and mobile services. Most converged services in Germany are based on mobile VPN services and on personal numbering. Mobile tariffs have tended to be high in Germany, but price wars havecompetition has led to tariff reductions and several initiatives in new pricing structures, including homezone tariffing. German operators are already on course to offer a wide range of fixed and mobile convergent services viz. personal numbering and homezone services.

3.8 U.K.

In U.K, OFCOM the new telecom and broadcasting regulator has been set up and the communication bill is likely to be passed by British Parliament by the end of this year. The draft communication bill abolishes the requirement for licensing the new framework in the draft bill is consistent with the EU directive concept, which states that persons wishing to provide electronic networks and services should be free to do so without having to obtain prior permission, subject only to giving notification to the regulatory Authority and subject to compliance with applicable obligations.

3.9 Summary

A growing International trend is either to abolish the requirement for licensing or to consider the possibility of convergence. In fact, countries like Denmark have already abolished the licensing regime. Ultimately, a situation will come where the concept of service wise license will not be relevant. For example, Directive 2002/21/EC of the European Parliament and of the Council of March 7, 2002, the convergence of the Telecommunications, Media and Information Technology sectors means that all transmission networks and services would be covered by a single regulatory framework.

Chapter 4

Consolidation in the Indian Telecom Services Sector

4.1 The Indian Telecom Sector has seen substantial some consolidation through Mergers & Acquisitions, especially in the Indian Cellular Industry. The License also mentions that TRAI should be consulted in matters of M&A by the licensor

4.2 The present licensing framework defines separate market for basic and cellular services and at a broad level, the policy permits acquisitions subject to competitive safeguards mentioned in the Basic and Cellular Licenses, such as:

4.2.1 No single company/legal person, either directly or through its associates, shall have substantial equity holding in more than one Licensee Company in the same service area for the same service. 'Substantial equity' herein will mean 'an equity of 10% or more'. A promoter company cannot have stakes in more than one licensee company for the same service area

4.2.2 Management control of the licensee company shall remain in Indian Hands transfer of equity inter-se between existing Indian promoters may be permitted, provided the majority Indian promoter continues to hold at least the present shareholding for a period of five years from the EFFECTIVE DATE of LICENCE AGREEMENT.

4.2.3 The merger of Indian companies may be permitted as long as competition is not compromised

4.3 Further, De-merger has been permitted by a recent amendment dated 2/6/2003 of the Clause 'Transfer of License' in the respective licenses, which allows a company operating in a number of circles, to separate out their operation in one of thea single circle, and then this separate company can be acquired without affecting the other circles where the pre-acquired (parent) company had has its operations.

4.4 Under the unified licensing regime, with the emergence of a single entity for basic and mobile service providers, the definition of the market will get widened to include both these services. Also, in the unified licensing regime based on present Licensees, there could be up to 7 eight service providers offering both Basic and Mobile Services in any service area; the number could be higher given that basic service has open competition without any restriction on the number of operators. The detailed guidelines for Merger and Acquisition would have to be prepared for examining the Merger and Acquisition proposals under unified licensing regime.

4.5 Under these circumstances, there might be market requirements for Mergers & Acquisitions amongst the licensees in the same Service Area providing the same service so as to increase the efficiency of Service Providers and improve their financial viability. Internationally, the number of mobile operators are around 3 to 4 in a service area barring a few exceptions such as Hong Kong (6 operators). International practices in this regard are given in Annexure IV The numbers of licensees in the Indian scenario are mentioned in Annexure V.

4.6 Drawing from international practices, one would comment that consolidation amongst the existing operators through horizontal mergers would be likely in a unified license context. Such Horizontal Mergers in the same service area, which are not permitted till date may perhaps be required for the sustainability of the telecom sector. However, a closer look and much tighter controls will need to be observed so as to ensure that competition is not adversely affected.

4.7 Merger can yield significant benefits such as economies of scale or scope and would also provide easy exit policy to inefficient players. There could also be cases that two inefficient competitors may become one effective competitor.

4.8 Guidelines

4.8.1 Many regulators / Competition Authorities have come up with a set of guidelines for permitting Mergers. The various steps taken by the Competition Authorities in the USA while considering Mergers are as under:-

4.8.1.1 Defining the market

4.8.1.2 Identifying market participants

4.8.1.3 Determining market concentration

- Herfindahl-Hirschman Index (HHI), which provides a yardstick of market concentration

4.8.1.4 Determining the likelihood of coordination

- (Cartel formation, ability to deter growth of other entities)

4.8.1.5 Conducting a market entry analysis

4.8.1.6 Analyzing internal efficiencies

4.8.2 A need for similar regime / conditions would be relevant also for India. One benchmark for analysing the necessity of Mergers is that the efficiencies resulting from the merger should not be available through just interconnection

4.9 It is very important in this context to clarify that the TRAI shall continue to take the necessary steps that would ensure level playing field amongst licensees and across licenses.

4.10 <u>Availability of Spectrum:</u>

4.10.1 Individually, most of the cellular operators are facing the constraints of available spectrum. The international practice on the amount of spectrum generally available with the Cellular operators is mentioned in Annexure VI. The cost of rolling out the network and meeting the QOS Standards is a function of available Spectrum also. Efficient utilization of Spectrum is a must for growth of telecom services.

4.10.2 With the merger of service providers in the same service area, the spectrum available with merged entity may accommodate larger number of subscribers as more efficient planning could be carried out.

4.10.3 An important issue for consideration is whether the Spectrum available with individual entities would also be merged, or should the government examine the frequency requirements at the time of takeover.

4.11 International Practices on mergers and acquisitions :

4.11.1 Internationally, the Regulators and Competition Authorities evaluate consolidation in the industry with a viewpoint that it should not result in 'Substantial lessening of competition'. Practices from some of the countries are mentioned below:

4.11.2 South Korea:

Following the economic crisis in 1997 the Korean mobile industry underwent a period of consolidation with five mobile operators merging into three within a three-year period.

"In December 1999, the largest market operator, SK Telecom, initiated a merger with Shinsegi Telecom by acquiring a controlling share of stakes in Shinsegi Telecom. This proposal was approved in April 2000 by the KFTC, subject to the condition that the total market share of the merger entity be reduced to below 50 per cent by June 2001 and the volume of mobile handsets SK Telecom would be allowed to procure from its subsidiary was limited to 1.2 million sets over a period of five years (2000-2005). At the end of June 2001, SK Telecom (Shinsegi Telecom included) satisfied the KFTC's conditions by reducing its share of subscribers—partly accomplishing this by not engaging in active marketing in what is a fast-growing market—to 49.7 per cent at the end of June 2001, enabling its merger and acquisition (M&A) with Shinsegi Telecom. On 14 January 2002, the Ministry of Information and Communication gave its final approval of the merger with 13 attached conditions including the opening of the company's wireless Internet network to competitors, and equal network access rights to content providers and ISPs (Internet service providers).

4.11.3 United States of America

4.11.3.1 In USA, Mergers are generally overlooked by three entities, Department of Justice (DoJ), Federal Communications Commission (FCC) and Federal Trade Commission (FTC).In USA, while examining Mergers, FCC also examines the balance

of other potential benefits or harms. In a unilateral effects context, marginal cost reductions may reduce the merged firm's incentive to elevate price. Efficiencies also may result in benefits in the form of new or improved products, and efficiencies may result in benefits even when price is not immediately and directly affected.

The merging firms must substantiate efficiency claims so that the Agency can verify by reasonable means the likelihood and magnitude of each asserted efficiency, how and when each would be achieved (and any costs of doing so), how each would enhance the merged firm's ability and incentive to compete, and why each would be merger-specific. The Agency considers whether cognizable efficiencies likely would be sufficient to reverse the merger's potential to harm consumers in the relevant market, e.g., by preventing price increases in that market. Only mergers that would be likely to have the effect of substantially harming or reducing competition should be prohibited.The steps that are taken by FCC and Competition Authorities are already mentioned earlier. A yardstick for measurement of market concentration used in FCC is Herfindahl-Hirschman Index (HHI).

Test for market concentration: **The HHI: A Gauge of Market Concentration**

The Herfindahl-Hirschman Index (HHI) for any market is the sum of the squares of all the companies' market shares. If the HHI of a market is less than 1,000, the market is considered "unconcentrated." If the HHI is between1,000 and 1,800, the market is held to be "moderately" concentrated. Any HHI above 1,800 is thought to denote a highly concentrated market.

- **Market HHIs below 1,000.** If the proposed merger would result in an HHI below 1,000, the Department would perceive the market as still unconcentrated and likely would **not analyze the merger further.**
- **Market HHIs between 1,000 and 1,800**. Where the post-merger HHI would be between 1,000 and 1,800, **any merger that increased concentration by less than 100 HHI points would still be considered as having minimal impact** and would not be analyzed further.
- **Market HHIs above 1,800**. Similarly, in highly concentrated markets (those above 1,800 HHI) any merger that **would increase the already high HHI by 50 points or more would lead to further merger review.**
- **Source: Competition Policy in Telecommunications, ITU**

4.11.3.2 As per the US guidelines,A merger is not likely to create or enhance market power if the following circumstances are met:

a) the allegedly failing firm would be unable to meet its financial obligations in the near future;

b) it would not be able to reorganize successfully under Chapter 11 of the Bankruptcy Act;

c) it has made unsuccessful good-faith efforts to elicit reasonable alternative offers of acquisition of the assets of the failing firm that would both keep its tangible and intangible assets in the relevant market and pose a less severe danger to competition than does the proposed merger; and

d) absent the acquisition, the assets of the failing firm would exit the relevant market.

4.11.4 Australia

4.11.4.1 In Australia, Mergers & Acquisitions are covered under Trade Practices Act 1974. While it is not compulsory for the companies to inform ACCC before Mergers, Mergers if carried out without seeking opinion of ACCC once found to be in contravention of the Trade Practices Act 1974 is subject to penalty. The role of ACCC is to advise the companies on their compliance with the Section 50 and 50 (1) of the Act, and in event of non-compliance stop the Merger, by asking the parties failing which by approaching the court. The following are recognized as the possible anti-competitive effects of Mergers

a) Horizontal acquisitions may reduce competitive zeal between rivals, e.g BSO to BSO;

b) Acquisitions in one market by parties, which are rivals in another market, may facilitate coordinated conduct in second or third market;

c) Vertical acquisitions may result in foreclosure of rival suppliers;

d) Horizontal and vertical acquisitions may provide access to commercially sensitive information in relation to competitors; (e.g. holdings in vendors)

e) Horizontal and vertical acquisitions may block potentially pro-competitive mergers and acquisitions

4.11.4.2 Competition concerns are unlikely to arise, where

a) Unless the parties compete in the same market or vertically related markets, competition concerns are unlikely to arise;

b) If combined market share of the companies is small or if there is strong import competition or low entry barriers,

4.11.4.3 ACCC also assesses

a) What is the relevant market?

b) Is the market substantial;

c) Will the acquisition be likely to substantially lessen competition?

4.11.4.4 The following merger factors are analysed by the ACCC in Australia:

(a) Actual and potential level of import competition in the market;

(b) Heights of Barrier to entry;

(c) Level of concentration in the market;

(d) Degree of countervailing power in the market;

(e) Likelihood that the acquisition would result in the acquirer being able to significantly and substantially increase prices or profit margins;

(f) Extent to which substitutes are available or likely to be available;

(g) Dynamic characteristics of the market including growth, innovation and product differentiation;

(h) Likelihood that the acquisition would result in removal from the market of a vigorous and effective competitor;

(i) Nature and extent of vertical integration in the market

Chapter 4

Issues For Consideration

5.1 Should there be a unified license for basic and cellular mobile service in India?

5.2 If a unified license is to be implemented, what changes in the license terms and conditions should be made to bring about such a license, both in terms of entry conditions as well as other conditions during the term of the License?

5.3 How should consistency be achieved within a regime of unified License for basic and cellular mobile regarding the differences in:

a) definition of service areas;
b) roll out obligations;
c) performance bank guarantees;
d) spectrum availability and charges;
e) interconnection between services,
f) call carriage/charging;
g) termination charge regime applicable to different types of calls;
h) definition of interconnection seeker/provider;
i) numbering;
j) mobile technologies used
j) any other.

5.4 What is the implication of a unified licensing regime for sustainability of the market?

5.5 Unified License may imply a need to facilitate mergers and acquisitions. What conditions should apply for this purpose in respect of:

a) spectrum available with the merged entities
b) definition of "market" in order to determine whether a merged entity has significant market presence;
c) conditions that should be specified to ensure that competition is not compromised.

5.6 Should the regulator evolve some specific principles with respect to the number of operators that are desirable to be present in the market;

5.7 What should be the validity period and the effective date of the unified License.

Annexure I: Comparison of BSO and CMSO license

	BSOs	CMSOs
Service Area	Circles and Delhi	The country is divided into 23 Service Areas comprising of 19 Telecom Circle Service Areas and 4 Metro City Service Areas for grant of licenses for Cellular Mobile Telephone Service (CMTS).
Mobility and V 5.2 interface	The LICENSEE is allowed to provide mobility to its subscribers with Wireless Access Systems but limited to the local area i.e. Short Distance Charging Area (SDCA) in which the subscriber is registered Further such system shall be engineered to be connected to Telephone Exchange of Short Distance Charging Area (SDCA) on Access Network protocol based on National Standards for V5.2 as prescribed by Telecom Engineering Centre or an approved improved version with latest technology. Service covers collection, carriage, transmission and delivery of voice and non-voice MESSAGES by use of any type of network equipment including circuit and/or packet switching.	The licensee shall be permitted to provide, in its area of operation, all types of mobile services including voice and non-voice messages, data services and PCOs utilizing any type of network equipment (however, the technology must be digital), including circuit and/or packet switches, that meet the relevant International Telecommunication Union (ITU)/Telecommunication Engineering Center (TEC) standards. Provided that a pilot project may also be approved and licensed for any period by the Licensor for inducting a new Technology.
Intra Circle equal access	The subscriber of the intra-circle long distance calls, shall be given the choice to use the network of another Basic Service Provider in the same service area. The LICENSEE can also make mutual agreements with National Long Distance Operators for carrying intra Circle Long Distance traffic	No such provision in CMSPs license.
Interconnection with other networks	LICENSEE shall interconnect with Cellular Mobile Telephone SERVICE PROVIDER at the station of Gateway Mobile Switching Centre (GMSC) or Mobile Switching Centre (MSC), unless mutually agreed otherwise	Point of Inter-connection (POI) between the networks of cellular mobile Telephone service providers and fixed service providers shall be only with Level-I TAXs and Tandem exchanges in the Metros. In Telecom Circles the interconnection shall be with level I TAX/interconnection with level II TAXs may also be allowed, however, transiting of traffic to other LDCAs at POIs on level II TAX is not permitted

ii) Entry Fee

	BSOs	CMSOs
Entry fees	Depends on Service Area. Entry Fee for Category 'A' circle varies from Rs. 35-115 Crores, for Category 'B' circle varies from Rs. 10-25 Crores and for Category 'C' circle varies from Rs. 1-10 Crores. Details given at Annexure II.	Through Bidding. Varies from 0.38 – 512 crores approximately. Details given at Annexure II.

iii) License fees & Bank Guarantee

	BSOs	CMSOs
Spectrum charges	An additional revenue share of 2% (Two per cent) of ADJUSTED GROSS REVENUE earned from Wireless Local Loop (WLL) subscribers shall be payable as spectrum charge for allocation of up to 5 plus 5 Mhz. This will include royalty for spectrum of 5+5 MHz as well as the LICENCE Fee for the base station and SUBSCRIBER terminal (handheld or fixed).	The cellular licensees are to pay spectrum charge in addition to the License Fee for CMTS with effect from 1.8.1999 on revenue share basis at the rate of 2% of Adjusted Gross Revenue (AGR) for spectrum upto 4.4 MHz + 4.4 MHz and 3% of AGR for spectrum upto 6.2 MHz + 6.2 MHz. Further, for additional spectrum of 1.8 MHz + 1.8 MHz, if assigned for any one or more places in a service area, beyond 6.2 MHz + 6.2 MHz, an additional charge of 1% of AGR will be levied. Thus, the total spectrum charge to be paid by such operators would be 4% of AGR would also cover allocation of further spectrum, which may become possible to allocate in future subject to availability, to add up to a total spectrum allocation not exceeding 10 MHz + 10 MHz per operator in a Service Area. Such additional allocation could be considered only after a suitable subscriber base, as may be prescribed, is reached.

Performance Bank Guarantee & Financial Bank Guarantee

	BSOs	**CMSOs**
Performance Bank Guarantee	Performance bank guarantee equal to 20%, 30% and 50% of total BG linked with roll out after 3 yrs, 5 yrs and 7 yrs. The details are enclosed at Annexure III. PBG for Basic is 4 times of entry fees and varies from 4 crores (A&N) to 460 crores (Maharashtra) PBG for Category 'A' varies from Rs. 140 - 460 Crores, for Category 'B' varies from Rs. 40 - 150 Crores and for Category 'C' it varies from Rs. 4 -20 Crores.	PBG of 20, 10 and 2 Crores for category A, B and C Service Areas respectively before signing of License. The licensee shall be permitted to reduce the value of the PBG by 50% after the coverage criteria prescribed in this license is fulfilled.

iv) Roll out obligations

iv. I) Roll out obligation of BSO

9.3 (a) The LICENSEE undertakes to fulfill the following minimum network roll out obligations:

Phase 1	Time period for completion from EFFECTIVE DATE of LICENCE AGREEMENT 2	Cumulative % of coverage in terms of Point of Presence to be achieved at SDCA level at the end of each phase 3	% of performance guarantee that can be released on fulfillment of obligations shown under column 3 4
I	2 Years	15%	--
II	3 Years	40%	20%
III	5 Years	80%	30%
IV	7 Years	100%	50%

1. However, coverage beyond 80% SDCAs in a SERVICE AREA may be done jointly with an other LICENSEE excluding BSNL/MTNL.
2. The roll out obligations specify the list of SDCAs category-wise in terms of (a) rural; (b) semi urban; & (c) urban, and LICENSEE has to fully ensure that each of the named categories is covered in equal proportion during each phase of the roll out obligations (Note: Number of SCDAs are approximately five times the number of DHQs i.e. 2647 SDCAs and 589 DHQs)

iv. ii) Roll out obligation of CMSOs

The Licensees shall endeavour to cover the entire Service Area at an early date and notify on quarterly basis the areas not covered by the licensee's system. In Metros, 90% of the service area shall be covered within one year of the effective date. In Telecom Circles, atleast 10% of the District Headquarters (DHQs) will be covered in the first year and 50% of the District Headquarters will be covered within three years of effective date of Licence. The licensee shall also be permitted to cover any other town in a District in lieu of the District Headquarters. Coverage of a DHQ/town would mean that at least 90% of the area bounded by the Municipal limits should get the required street as well as in-building coverage. The District Headquarters shall be taken as on the effective date of Licence. The choice of District Headquarters/towns to be covered and further expansion beyond 50% District Headquarters/towns shall lie with the Licensee depending on their business decision.

Penalty

In case the Licensee fails to bring the Service or any part thereof into commission (i.e., fails to deliver the service or to meet the required coverage criteria) within the period prescribed for the commissioning, the Licensor shall be entitled to recover Rs. 5 Lakh (Rupees: Five Lakhs) for each week of the delay or part thereof, subject to maximum Rs. 100 Lakhs (Rupees: One Hundred Lakhs). For delay of more than 20 weeks the Licence shall be terminated under the terms and conditions of the Licence agreement

Annexure II: Entry fees for Basic and Cellular Mobile Service Providers (Page 1 of 2)

CMSPs						BSOs				Difference in entry fees of CMSOs and BSOs	
S.No.	Circle (A)	Licensee (Old) (B)	From Licensees of Pre-Migration(Amt. in Crores) (C)	New Licensee (D)	From 4th Cellular Operators (Amt. in Crores) (E)	Name of the operator (F)	Entry fee from Licensees migrated (Amt. in Crores) (G)	Name of new operator (H)	Entry fee from new operators(Amt. in Crores) (I)	Difference in Entry Fee Paid at the time of migration (C-G)	Difference in license fees paid by the new entrants (E - G)
1	Rajasthan	ADIL	108.99	Escorts	32.25	Shyam Telelink	29.29			79.7	32.25
	Rajasthan	Hexacom	108.32								
2	UP(East)	ADIL	138.26	Escorts	45.25			Reliance Telecom	15		30.25
3	Gujarat	Birla AT & T	511.99	Bharti	109.01	Reliance Telecom	60.83	TTSL	40	451.16	69.01
		Fascel	508.82								
4	Maharashtra	Birla AT & T	473.07	Bharti	189	Hughes	105.54	Reliance Telecom(Inc. Mumbai)	115	456.39	74
		BPL	470.14								
5	North East	Reliance	1.21								
		Hexacom	1.21								
6	Karnataka	Spice	395.04	Barakamba	206.83			TTSL	35		171.83
		Bharti Mobile	375.7					Reliance Telecom	35		
								Bharti Telenet	35		
7	Punjab	Spice	359	Escorts	151.75	HFCL	18.55	Reliance Telecom	20	340.45	131.75
8	AP	Bharti Mobile	285.64	Barakamba	103.01	TTSL	16.85	Reliance Telecom	35	268.79	68.01
		Tata	283.87								
9	Haryana	ADIL	68.45	Bharti	21.46			Reliance Telecom	10		11.46
		Escotel	68.45					Bharti Telenet	10		
10	Kerala	Escotel	147.53	Bharti	40.54			Reliance Telecom	20		20.54

Annexure II: Entry fees for Basic and Cellular Mobile Service Providers (Page 2 of 2)

		BPL	147.53								
11	UP(West)	Escotel	115.9	Bharti	30.55			Reliance Telecom	15		15.55
12	West Bengal	Reliance	12.24					Reliance Telecom(Inc. Kolkata)	25		
13	MP	Reliance	14.56	Bharti	17.45	Bharti Telenet	6.48	Reliance Telecom	20	8.08	-2.55
		RPG	14.56								
14	Assam	Reliance	0.38								
15	Bihar	Reliance	89.49					Reliance Telecom	10		
16	Himachal	Reliance	4.27	Escorts	1.1			Reliance Telecom	2		-0.9
		Bharti Telenet	4.27								
17	Orissa	Reliance	58.48					Reliance Telecom	5		
18	Tamil Nadu	BPL	238.56	Bharti	79			TTSL(Inc. Chennai)	50		29
		Srinivas	44.35					Reliance Telecom(Inc. Chennai)	50		
								Bharti Telenet(Inc. Chennai)	50		
19	Delhi	Bharti	98.15	Birla At & T	170.7			TTSL	50		120.7
		Sterling	70.94					Reliance Telecom	50		
								Bharti Telenet	50		
20	Mumbai	BPL	88.86	Bharti	203.66	Hughes(Inc. MH)	105.54	Reliance Telecom (Inc. MH)	115		88.66
		Hutchison Max	83.33								
21	Chennai	RPG	21.59	Barakamba	154			TTSL(Inc. TN)	50		104
		Skycell	20.95					Reliance Telecom(Inc. TN)	50		
								Bharti Telenet(Inc. TN)	50		
22	Kolkata	Modi Tels	31.9	Reliance	78.01			Reliance Telecom(Inc. WB)	25		53.01
		Usha	25.8								
	Total		**5491.8**		**1633.57**		**343.08**		**1037**	**1604.57**	**1016.57**

ANNEXURE-III ELIGIBILITY REQUIREMENTS AND LICENCE FEE

Telecom Circles	Net worth require-ment (Rs. Crores)	Paid-up Equity required (Rs. Crores)	Entry fee (Rs. Crores)	Performance Bank Guarantee (Rs. Crores)				% of revenue as Licence fee.
				20% BG1	30% BG2	50% BG3	100% 1+2+3	
Category A Circles								
Andhra Pradesh	1000	100	35	28	42	70	140	12%
Delhi	1000	100	50	40	60	100	200	12%
Gujarat	1000	100	40	32	48	80	160	12%
Karnataka	1000	100	35	28	42	70	140	12%
Maharashtra (including Mumbai & Goa)	1000	100	115	92	138	230	460	12%
Tamil Nadu (including Chennai)	1000	100	50	40	60	100	200	12%
Category B Circles								
Haryana	700	70	10	8	12	20	40	10%
Kerala	700	70	20	16	24	40	80	10%
Madhya Pradesh (including Chattisgarh)	1000	100	20	16	24	40	80	10%
Punjab	700	70	20	16	24	40	80	10%
Rajasthan	1000	100	20	16	24	40	80	10%
U.P. (West) (including Uttaranchal)	1000	100	15	12	18	30	60	10%
U.P. (East)	1000	100	15	12	18	30	60	10%
West Bengal (including Calcutta)	1000	100	25	20	30	50	100	10%
Category C Circles								
Andaman & Nicobar	20	2	1	0.8	1.2	2	4	8%
Assam	500	50	5	4	6	10	20	8%
Bihar (including Jharkhand)	500	50	10	8	12	20	40	8%
Himachal Pradesh	200	20	2	1.6	2.4	4	8	8%
Jammu & Kashmir	200	20	2	1.6	2.4	4	8	8%
North-East	200	20	2	1.6	2.4	4	8	8%
Orissa	500	50	5	4	6	10	20	8%

Annexure IV : Number of GSM Operators in EU Countries (Page 1 of 2)

Sl.No.	Name of the Country	No. of GSM Operators
1	Austria	4
2	Belguim	3
3	Czech Republic	3
4	Denmark	4
5	Estonia	3
6	Finland	6
7	France	3
8	Germany	4
9	Greece	3
10	Hungary	3
11	Iceland	6
12	Ireland	3
13	Italy	4
14	Lithuania	3
15	Netherlands	5
16	Poland	3
17	Portugal	3
18	Romania	3
19	Spain	3
20	Sweden	3
21	Switzerland	3
22	United Kingdom	4

Annexure IV : Number of GSM Operators in Asia Pacific Countries (Page 2 of 2)

Sl.No.	Name of the Country	No. of GSM Operators
1	China	2
2	Australia	4
3	Hong Kong	6
4	Indonesia	3
5	Malaysia	5
6	Philippines	3
7	Singapore	3
8	Taiwan	6
9	Thailand	3

Annexure V: Number of CMSPs and BSOs in India
(as on March 2003)

S.No.	Circle	No. of CMSPs	No. of BSOs
1	Delhi	4	4
2	MH	4	4
	Mumbai	4	
3	TN	4	4
	Chennai	4	
4	WB	2	2
	A & N	1	2
	Kolkata	4 (One operator yet to start their service)	
5	Gujarat	4	3
6	AP	4	3
7	Karnataka	4	4
8	Kerala	4	2
9	Punjab	4 (One operator yet to start their service)	3
10	Haryana	4	3
11	UP (W)	3	2
12	UP (E)	3 (One operator yet to start their service)	2
13	Rajasthan	4 (One operator yet to start their service)	3
14	MP	4	3
15	HP	4 (One operator yet to start their service)	2
16	Bihar	2	2
17	Orissa	2	2
18	Assam	2 (One operator yet to start their service)	1
19	NE	2 (One operator yet to start their service)	1
20	J&K	1 (Operator yet to start their service)	1

Annexure VI : Allocation of Spectrum in EU Countries (Page 1 of 2)

Sl.No.	Name of the Country	No. of GSM Operators	Total Frequency made available for GSM Service**	Average GSM Frequency per operator
1	Austria	4	2 x 59.6 MHz	2 x 14.9 MHz
2	Belguim	3	2 x 81.0 MHz	2 x 27.0 MHz
3	Czech Republic	3	2 x 49.8 MHz	2 x 16.6 MHz
4	Denmark	4	2 x 109.6 MHz	2 x 27.4 MHz
5	Estonia	3	2 x 51.6 MHz	2 x 17.2 MHz
6	Finland	6	2 x 70.8 MHz	2 x 11.8 MHz
7	France	3	2 x 74.4 MHz	2 x 24.8 MHz
8	Germany	4	2 x 80.0 MHz	2 x 20.0 MHz
9	Greece	3	2 x 45.0 MHz	2 x 15.0 MHz
10	Hungary	3	2 x 68.6 MHz	2 x 22.9 MHz
11	Iceland	6	2 x 69.6 MHz	2 x 11.6 MHz
12	Ireland	3	2 x 62.4 MHz	2 x 20.8 MHz
13	Italy	4	2 x 71.6 MHz	2 x 17.9 MHz
14	Lithuania	3	2 x 43.4 MHz	2 x 14.5 MHz
15	Netherlands	5	2 x 105.8 MHz	2 x 21.2 MHz
16	Poland	3	2 x 48.8 MHz	2 x 16.3 MHz
17	Portugal	3	2 x 41.8 MHz	2 x 13.9 MHz
18	Romania	3	2 x 32.0 MHz	2 x 10.7 MHz
19	Spain	3	2 x 64.2 MHz	2 x 21.4 MHz
20	Sweden	3	2 x 75.0 MHz	2 x 25.0 MHz
21	Switzerland	3	2 x 79.6 MHz	2 x 26.5 MHz
22	United Kingdom	4	2 x 105 MHz	2 x 26.3 MHz

Average per Country **2 x 67.71**

Average per GSM Operator **2 x 18.8 MHz**

** Includes frequencies in 900 MHz, 1800 MHz & E-GSM bands

Annexure VI : Allocation of Spectrum in Asia Pacific Countries (Page 2 of 2)

Sl.No.	Name of the Country	No. of GSM Operators	Total Frequency made available for GSM Service **	Average GSM Frequency per operator
1	China	2	2 x 45.0 MHz	2 x 22.5 MHz
2	Australia	4	2 x 30.0 MHz	2 x 7.5 MHz
3	Hong Kong	6	2 x 84.1 MHz	2 x 14.0 MHz
4	Indonesia	3	2 x 25.0 MHz	2 x 8.3 MHz
5	Malaysia	5	2 x 90.0 MHz	2 x 18.0 MHz
6	Philippines	3	2 x 25.0 MHZ	2 x 8.3 MHz
7	Singapore	3	2 x 37.8 MHz	2 x 12.6 MHz
8	Taiwan	6	2 x 75.2 MHz	2 x 12.5 MHz
9	Thailand	3	2 x 57.1 MHz	2 x 19.0 MHz

Average per Country **2 x 52.13**

Average per GSM Operator **2 x 13.4 MHz**

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

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INTERCONNECTION DISPUTE RESOLUTION MINI CASE STUDY 2003:

JORDAN

Dispute Resolution and Consensus Building in Interconnection

International Telecommunication Union (ITU)

Jordan Mini-Case Study 2003

Dispute Resolution and Consensus Building in Interconnection

International Telecommunication Union

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This is one of five mini case studies on interconnection dispute resolution undertaken by ITU. Further information can be found on the web site at http://www.itu.int/ITU-D/treg.

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Jordan Mini-Case Study:
Dispute Resolution and Consensus Building in Interconnection

I. Introduction to the Market, Regulatory Regime and Interconnection

Jordan has a population of about 5.3 million and a GDP of about JD 6.6 billion (JD 1.00 = US$ 1.41). It has nearly 675,000 fixed lines, a teledensity of about 12.7%, and about 1,220,000 mobile subscribers, a penetration rate of about 22.9%.

Jordan's telecommunications sector has been undergoing a staged pace of liberalization since its Telecommunications Law (the "Law") was enacted in 1995 and amended in 2002[1]. The Law established the Telecommunications Regulatory Commission (the "TRC") as the regulatory body for the telecommunications sector. Incumbent operator Jordan Telecom was initially partially privatized in 2000. The commencement of mobile services under a license issued to private operator Fastlink in 1995 introduced interconnection as a regulatory matter. The entry into the mobile services market in 2000 by MobileCom, a subsidiary of Jordan Telecom, has increased the focus on interconnection regulation. Jordan Telecom is scheduled to lose its monopoly over fixed line services at the end of 2004 and Fastlink and MobileCom's duopoly is scheduled to end at the end of 2003. New entrants requiring interconnection with Jordan Telecom's network – and the networks of the mobile operators – are expected to make interconnection a crucial priority for liberalization.

The TRC has taken initiatives in 2002 and 2003 which offer interesting insights into the development of interconnection regulation and dispute resolution which will be of interest to other countries whose telecommunications sectors are in the process of liberalization and which are developing dispute resolution processes. Given the importance to dispute resolution of the presence in the regulatory environment of consultative and consensus building processes, this case study describes the consultative process initiated by the TRC for interconnection, the TRC's resulting decision on interconnection as well as the TRC's subsequent interconnection dispute process.

Notable in particular is the clarity and transparency of the TRC's public statements on interconnection, including an Explanatory Memorandum in support of the Decisions of the TRC concerning interconnection charges and related retail prices, dated June 2003 (the "Explanatory Memorandum")[2] and its Interconnection Disputes Process, dated July 2003 (the "Interconnection Disputes Process")[3], both of which are particularly commendable reading. They are Annexes 1 and 2, respectively, to this case study.

The TRC is responsible under the Law for regulating interconnection, although the primary tool for such regulation is the interconnection provision in each of the licenses of Jordan Telecom, Fastlink and MobileCom. Jordan's fixed and GSM license agreements are attached as Annexes 3 and 4, respectively, with this case study. These set forth the core regulatory principles of interconnection, which must be provided:

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[1] Available from the TRC's website at: http://www.trc.jo/Static_English/telecommunications1.shtm

[2] Available from the TRC's website at: http://www.trc.jo/Static_English/New Stuff/TRC Decision 300603 Final.pdf

[3] Available from the TRC's website at: http://www.trc.jo/static_english/new stuff/interconnection disputes process.pdf

"in a timely fashion on terms, conditions (including technical standards and specifications) and cost-based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for network components or facilities that it does not require for the service to be provided. In this context, cost-based rates means rates comprised of the long run incremental costs of providing interconnection plus a reasonable share of the common costs of the Licensee's operations." (License Article 6.2.1.3)[4]

That the licenses themselves already enshrine the principle of using long run incremental costs (LRIC) as the basis for setting rates is in itself interesting since this sets this choice over other approaches, such as fully allocated costs (FAC), for the full period of the licenses. These license provisions, however, only really became developed substantially as the TRC turned its regulatory focus to interconnection in 2002.

II. Consultative Forum for Interconnection

The TRC approved guidelines on interconnection (the "Interconnection Guidelines")[5] in November 2002, which are attached with this case study as Annex 5. In some detail, the Interconnection Guidelines address operators' joint interconnection committees, the provision of interconnection services, technical aspects of interconnection, and commercial aspects such as charges, payments and billing.

Upon issuing the Interconnection Guidelines, the TRC launched a consultative process with sector participants with the purpose of implementing the Interconnection Guidelines, which permitted an implementation period of twelve months. The TRC established an Interconnect Steering Committee (the "ISC"), chaired by the Chairperson and CEO of the TRC and included participants from Jordan Telecom, Fastlink and MobileCom, other licensed operators and the TRC to oversee implementation of the Interconnection Guidelines. The ISC established working groups for: the designation of licensees which would be subject to the Interconnection Guidelines; producing cost and charge methodologies for fixed and mobile networks; reviewing changes to existing licenses; commercial and technical terms of reference interconnection offers ("RIOs"); and legal aspects of RIOs.

The ISC established a plan to set cost-based charges by the end of June 2003 and in December 2002 issued guidance papers to operators as to cost allocation in fixed and mobile networks. The ISC's process was conducted in the context of an on-going interconnection dispute between Jordan Telecom and Fastlink in 2002 and 2003.

III. The June 2003 Decision on Interconnection

As it became apparent that the ISC's working groups were not proceeding in a manner that gave the TRC confidence in meeting the timetable for establishing cost-based interconnection charges, the ISC in March 2003 began contemplating the interim use of benchmarking charges from July 1, 2003 should cost-based charges not be established by then. Consequently, the TRC commenced an international benchmarking exercise, using 16 (unidentified) countries whose interconnection rates were set on the basis of cost-based methodologies. These international benchmark charges were then translated to apply to Jordan, taking into account Jordanian labor costs, for example, resulting in the TRC's own benchmark model results.

When the TRC was not satisfied by the cost models provided by Jordan Telecom, Fastlink and MobileCom – the TRC stated that they were provided late and contained inappropriate cost

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4 Fixed License Agreement available from the TRC's website at http://www.trc.jo/Static_English/doc/Fixed%20Lic1.pdf Jordan Telecommunications Company Public Mobile Telephone (Cellular) License Agreement available from the TRC's website at http://www.trc.jo/Static_English/doc/Mobile%20GSM.doc

5 Available from the TRC's website at: http://www.trc.jo/Static_English/doc/Interconnection Guidelines Final.doc

allocations and assumptions – the benchmarking exercise became the basis for the TRC's decision on June 30, 2003 (the "June Decision"). The June Decision set the domestic and international mobile call termination rates, Jordan Telecom's fixed network termination rate and the discount from Jordan Telecom's retail tariff for international transit rates charged by Jordan Telecom. The box below from the June Decision's Explanatory Memorandum summarizes its conclusions on interconnection charges:

Table 1. Benchmark, Model and Approved Interconnection Charges

Service	Pre 1st July 2003	International Benchmark charges	TRC Benchmark Model Results	Operators Cost Model Results	TRC Decision 1st July 2003
Fixed Termination	25 fils/min peak 20 fils/min off peak	6.5-11 fils/min peak 3-6.5 fils/min off peak	11.5-13 fils/min blended (unique peak and off-peak rate)	CONFIDENTIAL	15.8 fils/min blended
Mobile Termination – Fastlink	120 fils/min peak 95 fils/min off peak	40-134 off peak 78-197 fils/min peak	45-69 fils/min blended	CONFIDENTIAL	70 fils/min
Mobile Termination – MobileCom	70 fils/min peak and off peak	40-134 off peak 78-197 fils/min peak	45-69 fils/min blended	CONFIDENTIAL	70 fils/min
Mobile to Mobile	70 fils/min peak and off peak	78-197 fils/min peak	45-69 fils/min blended	CONFIDENTIAL	70 fils/min
International Transit	5% discount on JT retail rates by route and time of day on a per minute basis	Varies by route-transit and settlement rates are not broken out	5-12 fils/min plus international settlement rate	CONFIDENTIAL	9% discount on JT retail rates by route and time of day on a per second basis
International Incoming	Mobile termination rate	Mobile termination rates	Fixed termination – 11.5-13 fils/min blended Mobile termination – 45-69 fils/min blended	CONFIDENTIAL	Mobile termination rate (70 fils/minute)

Note: (1 fil = U.S. 1.41 cents).

There are a few interesting features worth noting about the June Decision. It was clearly an interim decision, choosing to use international benchmarks applied to the Jordanian operators rather than those operators' own models which, as previously mentioned, the TRC viewed as deficient. The benchmarking exercise was enhanced by TRC's recent substantial institution building, particularly in terms of its human resources. Its experience in conducting the benchmarking exercise likely equips it with the tools to scrutinize operators' cost models on an ongoing basis with the benefit of comparative international indicators. This is likely to improve the TRC's overall decision making in interconnection and could reduce the likelihood of disputes in the sector.

The June Decision was also interim in the sense that it did not result in an adjustment to mobile termination charges and mobile-to-mobile rates even though they were slightly above the TRC's own benchmark results. Further, although reduced, Jordan Telecom's international transit rates remained set by a discount to retail pricing rather than a benchmarked cost-based approach. As is common in countries in early stages of liberalization, Jordan Telecom's international transit rates are substantially above costs since they subsidize low local and national retail prices, access charge deficits and Internet access as a result of historical telecommunications policy and Jordan's existing ambitious Information Society policy. Thus the TRC's decision took advantage of the implementation timetable to allow Jordan Telecom more time in the overall price rebalancing exercise that will likely become inevitable with the introduction of full competition at the end of 2004.

The June Decision, then, illustrated the tensions in the relationship between interconnection and retail pricing in the overall liberalization process. In this context, it is particularly interesting that the TRC conducted a revenue sensitivity analysis of the interconnection rates using different assumptions about growth in subscribers and traffic. The willingness of the TRC to engage with the issue of how regulation will affect the financial viability of operators should be interesting to regulators and policy makers worldwide given the weak financial condition of the telecommunications sector. The TRC's willingness to use, and publish in the Explanatory Memorandum, its revenue impact model scenarios is a significant illustration of a promising regulatory environment.

IV. Interconnection Disputes Process

A second recent development in the Jordanian telecommunications sector has been the adoption in July 2003 of the Interconnection Dispute Process, which sets forth how disputes between operators over interconnection agreements shall be handled. The dispute regime has several notable features, highlighted below, that are likely to produce higher quality decision-making, more efficient processes and a dispute resolution regime which gives substantial responsibility to the parties themselves.

The Interconnection Dispute Process applies to any dispute or difference arising among licensees relating to or arising out of an interconnection agreement. It is thus not so much a resource to support new entrants struggling to negotiate a fair agreement (this is a matter dealt with by the requirement that interconnection agreements be approved by the TRC) as a mechanism addressing the execution and interpretation of interconnection agreements.

The process develops an emphasis on negotiation and mediation present in the Law, which makes the TRC Chairperson and CEO responsible for "drawing up guidelines for negotiations between the parties or disputants in the dispute, and …propos[ing] a solution himself or by means of a mediator or persons appointed for this purpose..." (Law, Article 60) Thus, the Interconnection Dispute Process builds in a requirement that the parties attempt a good faith negotiated solution before bringing the dispute to the TRC and indicates that the TRC will first confirm that there is indeed a genuine dispute and that the parties have sought to resolve the matter commercially (Articles 1.1 and 5.2). Indeed, the Interconnection Dispute Process imposes a timetable requiring that the disputants meet for such negotiations within ten working days of written notice of the dispute and allow at least twenty working days for such negotiations. Such measures may assist in resolving disputes before becoming caught up in the time-and resource-consuming tangle of formal proceedings.

The process gives responsibility for the dispute to the parties in several key ways. The parties may choose to utilize an arbitration process instead of referring the dispute to the TRC. This enables parties to engage experts familiar with the sector other than the TRC, which may not have the same speed of response or confidentiality, or judges in the courts, who may be less familiar with technical and other sector-specific issues. The Interconnection Dispute Process is, moreover, without prejudice of the rights of licensees to pursue remedies in court. There will likely be scope for clarifying

While parties disputing a commercial agreement generally have the right to go to arbitration, the TRC's emphasis on arbitration as an alternative mechanism raises interesting questions about the relationship of an arbitrator's jurisdiction and the TRC's regulatory jurisdiction. Recently enacted arbitration legislation in Jordan will make arbitrators' decisions enforceable in Jordanian courts and, where parties adopt the arbitration route, it remains to be seen how TRC regulatory policy will be treated by arbitrators in reaching awards and by courts in reviewing such arbitral awards. The option of arbitration and a consequent demand for arbitrators with expertise in the telecommunications sector could lead to developing resources – e.g., panels of experts – that could become more widely available on a regional basis.

Where the parties choose to have the TRC adjudicate the dispute, the TRC may use experts and charge the parties for the costs of the professional services used. With the costs covered by the parties, the TRC will be able to engage the level of expertise necessary to ensure high quality decision-making, further improving its overall level of regulation. The ability to engage and rely on experts, together with an efficient (fifteen working days) internal review process pursuant to which objections to a decision are reviewed by the TRC's Board of Commissioners (Law, Article 6.2), will likely reduce the scope of judicial review should the TRC's final decision be challenged in court.

Since the TRC's costs will be covered by the parties, dispute resolution is not a "free public good"; the charging regime thus reduces operators' incentives to make frivolous use of regulatory dispute resolution as a strategic tool. Although the Interconnection Dispute Process does not establish how such costs will be allocated among disputants, it is possible that the TRC would follow the approach of courts in allocating costs to the losing party, or otherwise reflecting the TRC's view of the merits.

With the disputants free to choose their process and bear the costs, the TRC is effectively creating the conditions for a market in dispute resolution with enough flexibility to suit various conditions, giving parties control over optimal processes while ensuring that enforceable regulatory adjudication remains available.

ANNEX 1

Explanatory Memorandum in support of the Decisions of the TRC concerning interconnection charges and related retail prices, dated June 2003

http://www.trc.jo/Static_English/New Stuff/TRC Decision 300603 Final.pdf

Explanatory Memorandum in support of the Decisions of the Telecommunications Regulatory Commission concerning interconnection charges and related retail prices, June 2003

الأردن
JORDAN

المملكة الأردنية الهاشمية
The Hashemite Kingdom of Jordan

هيئة تنظيم قطاع الإتصالات
Telecommunications Regulatory Commission

Telecommunications Regulatory Commission

Ref: TRC Decisions 300603 Final.doc

Explanatory Memorandum supporting the Decisions of the Telecommunications Regulatory Commission concerning interconnection rates charges and related retail prices, June 2003

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Explanatory Memorandum in support of the Decisions of the Telecommunications Regulatory Commission concerning interconnection rates charges and related retail prices, June 2003

1. Introduction

On the 30th June 2003 the Board of the Telecommunications Regulatory Commission (TRC) issued a Decision on interconnection rates. This document sets out the factors and arguments which underpinned the Decision taken by Board. The paper is structured in the following sections:

Section 2 – The Decision made by the Board on the 30th July 2003

Section 3 – The requirements for interconnection

Section 4 – The legal and regulatory framework

Section 5 – Details of the approach taken to the Decisions of TRC

Section 6 – Justification of the Decisions

Section 7 – Summary of interconnection charges

Section 8 – Impact of TRC Decisions

Section 9 – Setting rates on the 1st July 2003

Section 10 – Next Steps

Section 11 – Conclusion

It is noted that whilst these Decisions are primarily concerned with interconnection, certain related retail price matters have also been addressed.

2. TRC Decisions on Interconnection

Pursuant to its responsibilities and powers the TRC Board made the following decisions in relation to interconnection matters:

2.1 TRC Board Decisions – 30th June 2003

On June 30th 2003 the TRC Board made the following Decision.

The Board resolves that the following interconnection rates, basis of charging, and retail rates will apply from the 1st July 2003:

Interconnection Rates

1. *The mobile call termination rate shall be 70 fils per minute*
2. *Jordan Telecom's call termination rate on the fixed network shall be 15.8 fils per minute.*
3. *JT is obliged, in according to the Interconnection Guidelines, to offer International Transit Services originating from mobile phones to the receiving international networks in the receiving countries*
4. *Outgoing international transit rates charged by Jordan Telecom shall be 9% below the Jordan Telecom retail tariff.*
5. *Termination rates of international calls terminating in Mobile Networks should equal termination rates of national origin terminating in Mobile Networks.*
6. *Outgoing international transit rates shall be available to mobile, pre-paid card platform and payphone operators.*

Basis of charging

7. *All interconnection rates between operators shall be based on per second billing from 1 July 2003.*

Retail rates

8. *The fixed to mobile retail tariff will be 93 fils per minute (blended).*
9. *The outgoing international retail tariffs charged by mobile operators shall be greater than or equal to the corresponding Jordan Telecom retail tariffs until 1/1/2005.*
10. *Jordan Telecom will continue to provide national peering to ISPs free of charges.*
11. *Current charges shall remain until January 1, 2004. A further review with the operators in the sector will be undertaken and charges will be adjusted in accordance with the conclusions reached in compliance with Interconnection Guidelines*

2.2 TRC Board Decisions – 26th June 2003

The Board decisions made on the 30th June 2003 built on those made at the Board meeting of the 26th June 2003:

1. *TRC will study the need to adjust the current system of regulating international tariffs.*
2. *The same costing methodology will be used for 2004 costing.*
3. *Retail rates should be decoupled from Interconnection rates for Fixed to Mobile calls.*
4. *By 1st of October 2003, all licensed telecommunications operators should publish interconnection agreements that are approved by TRC*
5. *Interconnection rates offered by JT to ISP's shall not exceed current rates.*

3. The Requirement for interconnection

Interconnection is a vital component in the delivery and availability of telecommunications services in Jordan. Without interconnection there would be island networks, with customers of one network unable to communicate with customers on other networks.

The establishment of an interconnection regime under which public telecommunications operators have an obligation and right to interconnect with each other is the bedrock of a competitive telecommunications environment.

In Jordan, the legal and regulatory environment for interconnection is provided by:

- The Telecommunications Law;
- The Interconnection Guidelines;
- TRC instructions and decisions ;
- The Licences of the PTOs;

The key players in the establishment and operation of an interconnection regime are the TRC and Public Telecommunications Operators and Service Providers.

Due to the duopoly in mobile services and the monopoly in fixed services, it is highly unlikely that the market would produce a fair and competitive interconnection regime; hence the intervention of TRC is crucial.

4. The legal and regulatory regime

4.1 The Telecommunications Law

(a) The overarching requirement

In regulating interconnection, as in other regulatory areas, the TRC has overriding obligations laid upon it in Article 6(a) of the Law thus:

> *"To regulate telecommunications and information technology services in the Kingdom in accordance with the established general policy so as to ensure the provision of high quality telecommunications and information technology services to users at just, reasonable and affordable prices: and by so doing, to make possible the optimal performance of the telecommunications and information technology sectors."*

(b) Specific Requirements

Article 6 (j) requires TRC to:

"To regulate access to telecommunications networks and conditions of interconnection in accordance with instructions issued by the Commission for this purpose and to approve the interconnection agreements mentioned in paragraph (e) of Article 29 of this Law."

Article 29(e) requires that:

"The TRC includes in its licensing arrangements the licensees undertaking to enter into interconnection agreements with other licensees in accordance with paragraph (j) of Article 6 of this Law; in addition, to prepare and publish the conditions required to connect and use any equipment or device to his network, provided that such conditions are in agreement with the instructions or decisions by the Commission in this regard."

(c) General Powers

Under Article 12(a) (2) TRC has the power:

"To prepare programs and issue instructions and decisions, and to take the necessary actions in this regard."

The interconnection regime is not fully developed within the Law. The exposition of the interconnection regime is further set out in other legal and regulatory documents.

4.2 The Interconnection Guidelines

The Interconnection Guidelines were approved by the Board on the 25th November 2002, after a 6-month process of review and consultation with the Telecommunications licensees.

Extracts from The Interconnection Guidelines:

Article 1

> *"These Guidelines form part of the 'Guidance on Interconnection' issued by the Telecommunications Regulatory Commission (TRC) in accordance with*

condition 6.1.1 in the PSTN and Public Mobile Telephone Service Licences which states:

> *"The Licensee acknowledges that interconnection between the Licensee's network and other licensed telecommunications networks in Jordan, is governed by Section 29(e) of the Telecommunications Law, the provisions of this Article 6 and comparable provisions in the licenses of other network operators and any Guidance on Interconnection issued by the TRC from time to time, or as may be amended or replaced from time to time."*

Article 2

"The Chairperson of TRC will take The Guidelines into account in applying the relevant conditions in Licences, and give reasons if the Interconnection Guidelines are departed from. The Chairperson retains the right to depart from the Interconnection Guidelines where the circumstances justify such action subject to clause 3."

Article 3

"The Guidelines will be subject to review and may be amended following consultation with interested parties in the light of experience of their operation, of development in telecommunications markets and of any changes to Jordanian national law."

Article 13

"The TRC understands that implementation of The Guidelines will necessitate Licensees to undertake a number of changes to their systems, processes and contractual arrangements. The TRC will consult with affected parties to agree a schedule for compliance with The Guidelines within twelve (12) months from publication. These may include the agreement of interim arrangements ahead of full implementation."

4.3 PTO Licences

There are several articles in PTO licences, which are relevant to the establishment of the interconnection regime. The following articles are relevant to the setting of interconnection charges:

Article 4.2.1:

"The licensee shall comply with all laws of the Kingdom of Jordan applicable to the service and its operations, including the Telecommunications Law, all decisions rules and instructions of the TRC and, all policies of the government of Jordan. For greater certainty the licensee acknowledges that the TRC is in the process of establishing a general regime for the regulation of the telecommunications sector. The licensee will be subject to that regime when it comes into force to the extent that it applies to the licensee's services."

Article 6.1.1:

> *"The licensee acknowledges that interconnection is governed by…any guidance on interconnection issued by the TRC from time to time, all as may be amended or replaced from time to time."*

Article 6.1.2:

> *"The Licensee will act fairly and without discrimination in accordance with applicable law and the terms of this License Agreement in all business dealings with other Public Telecommunications Service Providers and shall co-operate with other Public Telecommunications Service Providers to facilitate the provision of telecommunications services to all users throughout Jordan and so as to optimize the use of common facilities in the location of network facilities."*

Article 6.2.1.3:

> *"The Licensee shall agree to provide interconnection in a timely fashion on terms, conditions (including technical standards and specifications) and cost-based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for network components or facilities that it does not require for the service to be provided. In this context, cost-based rates means rates comprised of the long run incremental costs of providing interconnection plus a reasonable share of the common costs of the Licensee's operations;"*

Thus licences provide for TRC intervention in interconnection and the licensees acknowledge the role the TRC has to play, in particular in establishing a cost based regime.

4.4 Designation of Licensees

The Interconnection Guidelines call for the Designation of Public Telecommunications Licensees.

Article 4

> *"The Guidelines apply to all Licensees designated by the TRC unless expressly stated otherwise. The TRC will determine which Licensees are required to produce and publish a RIO[1]. Such a determination shall be made known to affected parties following due consultation. The criteria and timescales for designation will be defined in a separate TRC document. A Licensee so determined is referred to, within The Guidelines, as a 'Designated Licensee'."*

TRC undertook an extensive consultation exercise with JT, Fastlink and MobileCom based on the paper headed 'Consultation Document re Designation of Public Telecommunication Operators/Service Providers for the purposes of the Interconnection Guidelines in the Hashemite Kingdom of Jordan'.

On the 6th March 2003 the TRC announced its Decisions on Designation:

> "Jordan Telecom, being a monopolist in the fixed service, Jordan Telecom is Designated with respect to:

[1] Reference Interconnection Offer (RIO)

- Fixed services and network markets;
- Leased lines market;
- National market for interconnection

and the terms of the Interconnection Guidelines shall apply to it.

Drawing on the information supplied by JT, Fastlink and MobileCom, and taking into account market shares and benefits of size TRC determines that:

Fastlink is Designated in the national market for call termination and the terms of the Interconnection Guidelines shall apply to it.

MobileCom is not Designated."

The Interconnection Guidelines require Designated Licensees to produce a RIO and comply with the conditions as set out in the Interconnection Guidelines.

4.5 Interconnection Steering Committee

In order to assist TRC in arriving at its Decisions an Interconnection Steering Committee (ISC) was established. The minutes of the ISC represent the views of the various members and include joint agreements by the operators on the way forward.

This matter is dealt with more fully in Section 5 below: but it is important to state, as part of the regulatory framework an extract of the formal minutes of the ISC meeting on the 6th March 2003 thus:

> *"The current implementation program is set to agree cost based charges by the end of June. If at the beginning of June it appears that the current program will not be met, TRC will issue a set of benchmark charges for interconnection services listed above. These charges will come into force together with per second billing on the 1st of July"*

4.6 Overview of TRC's authority in the matter of interconnection

The TRC is justified in its Decisions on the 30th June based upon the following arguments, namely:

(a) The Law

Article 6(a) requires TRC to make possible the optimal performance of the telecommunication and information technology sectors (this is an overriding obligation which TRC exercised in its Decisions on 30th June).

Article 6(j) allows TRC to regulate interconnection. (TRC exercised its responsibility on July 1st).

Article 12(a) allows TRC to regulate the sector through issuing instructions and decisions (TRC issued a Decision on 30th June).

Article 29(e) provides that licensees should set conditions which are in agreement with the instructions or decisions of TRC (instructions and decisions were issued on 1st July).

(b) The Interconnection Guidelines

Article 1 states that the guidelines form part of the guidance on interconnection (guidance was issued on 1st July by way of the TRC Decision).

Article 13 states that "these may include the agreement of interim arrangements ahead of full implementation" (there was agreement as to these interim arrangements as set out in the minutes of the ISC of 6th March).

Article 298 refers to cost based charges in particular LRIC charges. The Article states, "However in the short term TRC wishes to see interconnection charges which better reflect the costs incurred by designated licensees in providing interconnection services. This could initially be based on a fully allocated costing methodology (FAC)… This Article allows for other solutions beside FAC. (TRC exercised its power under this clause on 1st July).

(c) Licences

Article 4.2.1 of the PTO licences require licensees to obey the decisions, rules and instructions of TRC. Licenses further acknowledge that TRC is establishing a new regulatory regime to which they will be subject (on 30th June a TRC Decisions heralded the establishment of a new interconnection regime).

Article 6.1.1 of the PTO licences state that the licensee will adhere to Articles 29(e) and 6 and *"any guidance on interconnection issued by TRC from time to time"* (TRC issued guidance by way of its Decisions on 30th June).

(d) The Meetings of ISC

In the meeting of March 6th a minute was agreed by all parties: "the current implementation program is set to agree cost based charges by the end of June. If at the beginning of June it appears that the current program will not be met, TRC will issue a set of benchmark charges for interconnection services listed above. These charges will come into force together with per second billing on the 1st of July". (These minutes were agreed by the parties with no disagreement recorded).

(e) Statements of the Chairperson of TRC

The Chairperson of TRC has repeated the 1st of July deadline for arriving at cost based or benchmark charges on a number of occasions without dissent from any party.

5. Approach taken in arriving at the TRC Decisions of the 30th June 2003

5.1 Background

The Interconnection Guidelines were approved by the TRC Board on the 25th November 2002, after a 6-month process of review and consultation with the Telecommunications licensees.

The TRC Board in the decision dated 25/11/2002 authorized the CEO to take the necessary procedures and actions for implementing the interconnection guidelines.

In December, due to a number of requests from the Fastlink, JT and MobileCom, in relation to interconnection rates, the CEO requested that the parties arrive at a set of interim rates pending the completion of the work required to arrive at cost based rates.

However even with the TRC intervention, the parties were not able to reach interim arrangements. Fastlink argued in December 2002 that it would be able to complete its cost models within 90 days to enable the TRC to set cost based rates.

A detailed program of work was established and agreed by all parties. The work program was to be undertaken in the Working Groups, which reported an Interconnection Steering Committee (ISC). The parties agreed to set cost based charges by the end of June 2003.

The minutes of the ISC represent joint agreements by the operators as to the way forward in the implementation program. The TRC board adopted the implementation program.

5.2 Working Groups

Upon issuing the Interconnection Guidelines in November 2002 the TRC established an Interconnect Steering Committee (ISC) chaired by the Chairperson and CEO of the TRC. Participants in the ISC were drawn from JT, Fastlink, MobileCom, TRC and other licensed operators.

The Interconnection Steering Committee (ISC) oversaw all work leading to the full implementation of the Interconnection Guidelines as issued on the 27th November 2002. The ISC had the responsibility to:

- Agree the actions required to fully implement the Interconnection Guidelines and seek TRC approval;
- Approve the Terms of Reference for the working groups;
- Co-ordinate the work of the working groups;
- Appoint the chairs and members of the working groups;
- Agree the work plans and targets of the working groups;
- Monitor the progress of the working groups against the agreed targets.

The working groups that were established as a consequence were:

Working Group	Responsibility	Interconnection Guidelines References	Chairman
Designation of Licensees WG (DLWG)	Produce the criteria whereby decisions as to which licensees will be designated will be taken.	Art 4 – Designation of Licensees Section 1 of Guidelines	Mamoun Balqar
Costing Methodology WG (CMWG)	Produce the methodologies for calculating the interconnection costs in both fixed and mobile networks. Defining the costing models to be used to calculate fixed and mobile interconnection charges.	Art 296 – costing methodology Section 7 of Guidelines	Fadi Kawar
Licences WG (LWG)	For determining the changes required to existing operator licences.		Mamoun Balqar
Interconnect Commercial WG (ICWG)	Debating and Agreeing the Commercial sections of the mobile and fixed licensee reference Interconnection Offers (RIOs).	Sections 3 & 4 of The Guidelines	Muwaffaq Abu Aqola
Interconnect Technical WG (ITWG)	Debating and Agreeing the Technical sections of the mobile and fixed licensee RIOs.	Sections 5 & 6 of Guidelines	Ahmad M Obeidat
Interconnect Legal WG (ILWG)	Debating and Agreeing the legal aspects of the RIOs.	Section 8, 9 & 10	Mohammed Khasawneh

The first ISC on the 18th December 2002 approved the Terms of Reference for the ISC and its Working Groups. Chairmen were duly elected. In accordance with Article 13 of the Interconnection Guidelines the TRC consulted with the affected parties to agree a schedule for compliance with the Interconnection Guidelines. The Interconnection Guidelines permitted (12) months from publication for implementation. It was agreed at the ISC on 18th December 2002 that the work of the ISC

> *"..should be finished as soon as possible and certainly by the end of June 2003."*

Three months after the approval of the Interconnection Guidelines the RIOs and Cost Allocation Models were not progressing in a manner, which gave the TRC, the confidence that the RIOs and cost based charges would be available from the operators by the 1st July 2003. Given this concern the TRC introduced the concept of using Benchmark rates as an interim measure pending the availability of cost based figures from the cost allocation models.

The formal minutes of the ISC meeting on the 6th March 2003 recorded:

> *"The current implementation program is set to agree cost based charges by the end of June. If at the beginning of June it appears that the current program will not be met, TRC will issue a set of bench mark charges for interconnection services listed above. These charges will come into force together with per second billing on the 1st of July"*

The Decisions made by the TRC on the 30th June 2003 followed extensive discussions with Fastlink, JT and MobileCom pursuant to procedures contained in the TRC's Interconnection Guidelines, which were adopted by Decision of the TRC Board in November of 2002.

5.3 Cost models and information from operators

In order for the operators to provide cost based interconnection rates, cost allocation models were required to be developed by the operators. The TRC produced two guidance papers[2] concerning the costs allocation assumptions, which the operators are required to follow in developing their models.

In the event prior to the 1st July 2003 all three operators, JT, Fastlink and MobileCom provided cost models. Whilst TRC could not fully endorse these models, TRC acknowledges that the operators have made significant progress towards reaching authentic cost models.

TRC used the un-audited information supplied by the models from the three operators as one of the indicators in arriving at its Decision. The model outputs were drawn on in the arguments set out in Section 6 below.

5.4 International Benchmark charges

The TRC undertook a review of interconnection evaluation rates in 16 countries which were considered to have set charges based on an evaluation of costs.

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[2] "**Consultation Document re Cost allocation in Fixed networks for the purposes of the Interconnection Guidelines in the Hashemite Kingdom of Jordan" December 2002**

"Consultation Document re Cost allocation in mobile networks for the purposes of the Interconnection Guidelines in the Hashemite Kingdom of Jordan" December 2002

In summary the key findings were that cost based rates were in the following ranges:

- Fixed line Single Tandem termination: between 6.5 and 11 fils/minute peak and between 3 and 6.5 fils/minute off-peak

- Fixed line Local termination: 4 to 10 fils/minute peak and 2 to 5 fils/minute off peak

- International Transit: international rates charged to the other operators by the operator with the international relationship vary per route. Transit charges and international settlement rates are not broken out. The international settlement rates are negotiated on a bi lateral basis and are generally not cost based.

- International incoming calls: the mobile operator receives the national termination rate from the operator with the international relationships. The fixed line operators with the international relationships are increasingly receiving different international termination rates for calls to fixed and mobile destinations.

Progress on moving towards cost-based rates for mobile termination is less advanced. The rates, which obtained in 2002 in the 16 countries reviewed ranged widely:

- Mobile termination: 78 fils to 197 fils peak

- Mobile termination: 40 fils to 134 fils off peak

The lowest off peak rate has been taken from the results of the UK Competition Commission's work on mobile termination rates. The lowest mobile peak rate is offered by Telia.

5.5 Benchmark fixed model

The TRC developed a bottom-up model of the JT network using international benchmark prices for equipment and operational costs (using local labour rates).

In summary the key findings were that cost based rates were in the following ranges:

- Fixed line Single Tandem termination: 11.5 to 13 fils/minute blended (depending on traffic levels)

- Fixed line Local termination: 8 to 9.5 fils/minute

- International Transit: 5 to 12 fils/minute plus the settlement rate

5.6 Benchmark mobile model

The TRC, as documented in the ISC minutes of the 6th March 2003, completed a benchmarking exercise. This work included the development of a mobile network costing model for Jordan with costs for equipment and labour being drawn from international pricing and local labour rates. The model was dimensioned for both Fastlink and MobileCom.

In summary the key findings were that cost based Mobile termination rates were in the following range:

- 45 to 69 fils/minute blended, depending on traffic.

5.7 TRC Revenue impact Model

The TRC recognised that in arriving at new interconnection rates it was important to understand the effects any rate change may have on the revenues of operators and the bills paid by customers. For this reason a revenue impact model was developed which assisted the TRC in understanding the dynamics and sensitivity of changes in interconnection rates.

The revenue impact model takes account of such factors as:

- Impact of JT introducing per second billing;
- Interconnection terminating and originating traffic for national and international calls between JT, FL and MC;
- Average interconnection charges per minute;
- Average JT international retail prices;
- Average receipts for incoming international calls to mobile operators;
- Predicted rates of change in mobile and fixed customers;
- Predicted growth rates for fixed-to-mobile calls, mobile-to-fixed calls, and international calls;
- Predicted impact on traffic due to customer growth rates as well as changes in interconnection rates and fixed to mobile retail rates;

The TRC has run the model with different scenarios of traffic and interconnection charges. Using the charges decided by the TRC Board, estimates of the revenue impacts on each party have been made, based upon a range of growth rate assumptions around a base case.

The revenue impact model is by its very nature approximate as it is not possible to predict accurately the impact that changes will have on the companies' or customers' behaviour.

The findings of TRC are set out below in Section 9.

5.8 Decision

Taking the inputs from the above models and benchmarks and weighing them so as to arrive at a reasonable outcome for operators and customers the TRC has arrived at Decisions which are fully justifiable.

6. Justification for TRC Decision

The Decisions have used as a base the following key principles:

- Non discrimination;
- Cost based charges;
- Overriding interest of the consumer;
- Optimal performance of the telecommunications and information technology sectors;
- Promotion of fair competition.

The following sections provide the rationale for the Decisions on interconnection rates, related retail prices and future policies, made by the TRC Board on the 26th and 30th June 2003.

6.1 Mobile Termination Rate

6.1.1 Decision of the TRC

The mobile call termination rate shall be 70 fils per minute.

Note: This will apply for incoming calls irrespective of origination.

6.1.2 Rationale for the Decision

Fastlink Cost Model

The Fastlink Cost Allocation Model was not fully available to the TRC until 17 June 2003 when the password was supplied enabling the TRC to access the model.

TRC established that costs were being incorrectly allocated to the interconnection termination costs including:

- Costs associated with retail activities, handset subsidies, dealer incentives and bad debt:
- Treatment of revenue share (10% of revenue);
- Circular references and possible formula errors;
- Lack of justification for allocation factors;
- Conversion factors.

Further discussions are required with Fastlink to agree the correct cost allocations and for TRC to complete the audit of the model. TRC has agreed with Fastlink that this activity would be completed by 15th August 2003.

MobileCom Cost Model

The MobileCom Cost Allocation Model was initially sent to TRC on 16 June but the password to unlock it was not provided until 24 June 2003. TRC was concerned about a number of assumptions.

MobileCom recently reduced its mobile termination rate offered to JT (1st April 2003) from 120 fils per minute peak/95 fils per minute off peak to 70 fils per minute at all times.

The issues identified within the model included:

- Use of Gross Book Value of assets
- Uplift of capital asset values
- WACC

TRC has agreed to work with MobileCom to clarify their issues and complete the audit of the model. This is not an Interconnection Guideline issue but one of meeting a licence condition.

International Benchmark Charges

The Benchmark charges have indicated that the mobile termination rate varies from 78 to 197 fils/minute peak and 40 fils/min to 134 fils/min off peak. These rates are paid to the mobile operators independent of whether the call originates from within the country or from an international destination.

TRC Benchmark Model

The Benchmark work indicated that the call termination rate would be in the region of between 45 and 69 fils per minute depending on coverage offered, traffic volume, prices paid for network equipment, WACC rate, etc. Because of Fastlink's greater economies of scale, it is not unreasonable to expect that the cost based tariff for Fastlink will be lower than for MobileCom.

TRC considers it important to hold further discussions with the companies so as to clarify the assumptions and identify any areas of difference.

Decision

The late submission of the cost models, lack of documentation and password protection prevented TRC from fully evaluating the models before the 1st July 2003. Further the issues surrounding the mobile model also meant it would be unsafe to take the figures indicated in their models.

The issue of tariff gradients are seen as important to encourage a more efficient use of infrastructure. However MobileCom has been using a flat rate of 70 fils/min. The TRC took the decision to adopt the 70 fils/min rate flat rate but to hold discussions with JT, Fastlink and MobileCom before the 30th Sept. to agree a traffic gradient for fixed and mobile termination for reintroduction on the 1st January 2004.

In summary a cost based rate of 70 fils/min was set for five key reasons:

- It is in the mid range of charges drawn from the cost models of the companies.
- It is the level currently being charged by Fastlink to MobileCom (and vice versa) for terminating mobile calls.
- It is the level that MobileCom has recently reduced its rate for terminating calls from the JT network.
- By setting this level means that Fastlink brings it in line with its licence condition in the provision of non-discriminatory rates. (Art. 6.1.2)
- As there is uncertainty on all models it was concluded that taking this approach was reasonable pending bottoming out the issues on the cost based models of JT, FL and MC.

Next steps

Over the next six weeks the TRC will work with Fastlink and MobileCom to clear up the issues with the models and determine a new cost based mobile termination rate for each company. Prior to the end of September, TRC will agree a tariff gradient for mobile rates. The new rates will be introduced on the 1st January 2004

6.2 Fixed line termination

6.2.1 Decision of the TRC

Jordan Telecom's call termination rate on the fixed network shall be 15.8 fils per minute.

Note: This is a blended rate as indicated in the presentation on the 1st July 2003 to the operators.

6.2.2 Rationale for the Decision

JT Cost Model

The JT Cost Allocation Model, although apparently functionally sound, contained what TRC believed to be incorrect allocations and assumptions. These included:

- Inclusion of and level of access deficit contribution;
- Use of Gross Book Value (GBV) rather than Net Book Value (NBV) for assets;
- Inclusion of bad debt and delayed payment financing charges;
- Treatment of Government revenue share (5%).

The JT model was originally provided to the TRC prior to the 1st July deadline. The actual value of Single Tandem costs will depend upon the final agreement to the issues that TRC has with the JT assumptions.

The TRC was concerned that the issues surrounding the JT model meant it would be unsafe to take the figures, as indicated in their model, at face value.

International Benchmark charges

The international benchmark charges vary from 6.5 fils/min to 11 fils/min peak and 3 fils/min to 6.5 fils/min off peak.

TRC Benchmark model

The TRC Benchmark model for the JT network has indicated that fixed line Single Tandem interconnection ranges from 11.5 fils/minute to 13 fils/minute blended depending on traffic levels.

Decision

The TRC decided to set the cost based rate at an interim level of 15.8 fils/minute. The level of 15.8 fils/minute (blended) was set by the TRC for three reasons:

- It is in the mid range indicated by the JT model;
- Taking a mid point approximation was the same approach taken with the mobile rate;
- As there is uncertainty on all models it was concluded taking this approach was reasonable pending bottoming out the issues on the cost based models of JT, FL and MC.

Next Steps

6. JT to propose a tariff gradient to be used based upon the 15.8 fils/min blended rate. This should be the same as the long distance JT fixed retail tariff gradient.

Before the 30th September TRC will work with JT to agree the assumptions used in the JT Cost Model and set revised cost based termination rates. The new rates will be introduced on the 1st January 2004.

In the same period the JT model (s) will be completed in order to set rates for other interconnection services, which will be backdated to the 1st July 2003.

6.3 International transit charge

6.3.1 Decision of the TRC

Outgoing international transit rates charged by Jordan Telecom shall be 9 % below the Jordan Telecom retail tariff.

6.3.2 Rationale for the Decision

Definition

The Interconnection Guidelines state:

> *Article 67*
>
> *"A call transit service is defined as a service where a Licensee receives voice band calls from one Licensee and routes them to the network of a different Licensee. The Licensee providing the call transit service does not originate or terminate the call within its own network."*
>
> *Article 68*
>
> *"This service may be separated into two categories:*
>
> *a. National call transit; a call transit service between Licensees within Jordan.*
>
> *b. International call transit; a call transit service provided to Licensees to transit their international calls to network operators in other countries."*

Current situation

For International transit (Article 68 (b)) the charge includes an element, which is agreed not purely on a cost basis but is agreed as an international settlement rate either on a bi-lateral basis or within a region (e.g. Arab League). The transit charge is made up of two elements:

- The cost of providing the service from the point of interconnection with the Jordan Operator e.g. Fastlink through the international gateway to the half way point on the international circuit to the foreign operator.
- The agreed international settlement.

Before the 1st July 2003 JT charged the mobile operators a fee per minute on outgoing international traffic based upon 5% discount on the JT published international retail charges, paid on a per minute basis. (Memorandum of Understanding between Jordan Telecom and Fastlink, signed on 21/12/1999).

Information from JT indicates that on average JT is receiving the same amount for incoming international traffic as it is paying for outgoing traffic.

JT Cost Model

Extensive discussions with JT in relation to the cost allocation model showed that per minute costs associated with international transit services which are under the control of JT are high due to a combination of:

- Investment decisions made which appear are more social/political rather than sound business decisions;
- The number of direct international relationships JT maintains;
- The stated need to maintain access to the Arab Sat network;
- The level of international accounting rates currently agreed.

In addition, the cost modelling exercise has resulted in highlighting:

- A substantial deficit being carried by JT in the access network (Line connection and rental income for the lines less the cost of running the local access from the customer to and including the line circuit);
- A deficit in the costs of delivering calls to the ISPs;
- A deficit in the costs of providing national and international data circuits to ISPs;
- Potentially a deficit in delivering inbound international calls to Fastlink.

Furthermore, JT's revenues and margins have been eroded by:

- Reduction in retail revenues earned by JT in outbound international traffic;
- Progressive migration of international terminating traffic to the mobile networks.

JT recognises that in order to be competitive in the international market after 1st January 2005 it has to take action to improve efficiency and cut the costs of handling international traffic.

Further JT recognises that it has to take action to remove the identified deficits in the services. JT is in the progress of:

- **Rebalancing tariffs**. The TRC approved changes to the retail rates in the March 2003. No further retail changes are expected until the first Quarter of 2004.
- **Increase efficiency**. JT has over the past two years reduced staff from a combination of:
    - voluntary redundancy schemes and
    - retirements and
    - people leaving for other jobs.

The TRC acknowledges the manner in which JT is increasing efficiency in a socially responsible manner and does not want to upset this approach. JT plans to complete this process by 31st December 2004 when they lose their monopoly in fixed and international services.

International Benchmark charges

The review of other operator's rates for outgoing international charges resulted in revealing that operators published a list of wholesale prices by destination and time of day. The rates are a summation of the international settlement rates plus the transit costs of the operators. It was not feasible easily to obtain the information to break out the charges and determine the transit charges.

TRC Benchmark model

The efficient international transit rate costs associated with carrying the call to the half circuit point is estimated to be in the region of 5 to 12 fils/minute in addition to the accounting rate settlement agreed with the international correspondent carries. It was clear to the TRC that JT is a long way from achieving this efficient cost base due to the points raised above.

Decision

The TRC took the decision to set the international outgoing charge to other operators at 9% reduction on the JT retail charge for five reasons:

- JT's actual costs are currently significantly higher than international best practice;

- The profit on international outgoing is subsidising the access deficit and deficit on ISP calls;

- JT should be allowed to bring down the international rates in a phased approach in order to complete tariff rebalancing and improve efficiency. By January 2005 the TRC expects that JT will be offering cost based rates on a competitive basis.

- When added to the effective reduction in payments due to the introduction of per second billing, the overall % discount on the current average retail rate is in the order of 23%.

- JT to propose a discount scheme, based on total volume of interconnect traffic or interconnect expenditure by an interconnecting operator, and which may incorporate route specific discounts. TRC expect to receive the JT proposal by the 15th August. This scheme shall provide discounts, which in total are equal to or exceed 9 % below the Jordan Telecom retail tariff for the same destination and time of day.

The objective of the Decision is to:

- Enable JT to cover the current costs of the international business and make a contribution towards the access deficit;

- Enable JT to promote routes where there is spare capacity and share the resulting increased margins.

This approach provides a phased adjustment space for JT but progressive reductions are needed over the coming 18 months through to reaching cost based rates for international services by 1 January 2005.

6.4 Per second billing

6.4.1 Decision of the TRC

All interconnection rates between operators shall be based on per second billing from 1 July 2003.

6.4.2 Rationale for the Decision

TRC decided that all interconnected calls should be billed on a per second basis for the following reasons:

- To fall in line with national interconnected calls;

- It is the standard international best practice for international traffic;

- To meet with the article 308 of the Interconnection Guidelines.

JT has in fact been charging the mobile operators on a per minute basis for outgoing international calls. This has the effect of increasing the margin that JT keeps on outgoing international calls from the mobile operators.

The introduction of per second charging will reduce the receipts by JT from other operators and hence the margin made by JT by between 14% and 15%. The uncertainty arises due to the fact that the TRC is not in possession of the distribution of call lengths and the average call holding time of outgoing international calls.

6.5 Fixed to mobile retail rate

6.5.1 Decision of the TRC

The fixed to mobile tariffs will be 93 fils per minute (blended).

Note: The fixed to mobile retail tariff will therefore be decoupled from interconnection rates. Any further changes to fixed-to-mobile retail rates must be agreed with the TRC with one month's notice.

6.5.2 Rationale for the Decision

The fixed to mobile retail rate has been separately identified and set at 93 fils blended for the following reasons:

- Fixed to mobile retail services should not be regulated as at present by interconnection regulation but by retail price regulation as JT is dominant in the provision of fixed to mobile retail service;
- Following decoupling for the purpose of certainty TRC considers it necessary at this point to set a retail charge for this service;
- It is equivalent to the current fixed to mobile rate for calls to MobileCom. The TRC accepts the current retail tariff gradient for such calls.
- The customer will gain, by a reduction in the retail rate from fixed to Fastlink from 132 fils per minute to 93 fils per minute blended.

Retail rates for monopoly voice services are currently regulated through an RPI – X formula on a basket of service tariffs.

A retail price regulatory review will be undertaken by the TRC to assess the need for modifying the current retail price regulation.

6.6 Outgoing international retail tariffs charged by mobile operators

6.6.1 Decision of the TRC

The outgoing international retail tariffs charged by mobile operators shall be greater than or equal to the corresponding Jordan Telecom retail tariffs until 1/1/2005.

6.6.2 Rationale for the Decision

The decrease in outgoing interconnect charges paid by the mobile operators provides an opportunity to undercut the retail prices charged by JT. JT's international outgoing retail tariff is regulated in the tariff basket. International traffic is a monopoly of JT through to the 1st January 2005. Through to 1st January 2005 international retail rates

charged by JT are expected to reduce as the prices of other services in the basket increase and JT increases its efficiency;

The TRC has taken the decision to prevent undercutting of the JT international retail prices by the mobile operators to prevent a spiralling down of international tariffs and a loss of ability for JT to manage the rebalancing and funding of the deficit on customer access and services to ISPs.

Pre paid platform operators and payphone operators do not have such a restriction. This provides for an opportunity for these operators to promote international services.

6.7 Prices for International IP Communications Services

6.7.1 Decision of the TRC

Interconnection rates offered by JT to ISP's shall not exceed current rates.

6.7.2 Rationale for the Decision

The cost model of JT indicates that JT has a relatively high unit-cost ATM network because it is under-utilised. The objective is to encourage an increase in traffic to reduce the unit costs. Any increase in cost to the customer or ISP will discourage rather than encourage the required increase in traffic.

The TRC will work with JT to keep the cost of internet access to customers at a reasonable level to encourage the use of internet, therefore the utilization of JT data network. At present JT provides national peering free of charge and has agreed not to charge for this services through to the end of 2004.

7. Summary of interconnect charges

The Table below summarises the rates from the different sources:

Service	Pre 1st July 2003	International Benchmark charges	TRC Benchmark Model Results	Operators Cost Model Results	TRC Decision 1st July 2003
Fixed Termination	25 fils/min peak 20 fils/min off peak	6.5 – 11 fils/min peak 3 – 6.5 fils/min off peak	11.5 – 13 fils/min blended	CONFIDENTIAL	15.8 fils/min blended
Mobile Termination – Fastlink	120 fils/min peak 95 fils/min off peak	40 - 134 off peak 78 –197 fils/min peak	45 – 69 fils/min blended	CONFIDENTIAL	70 fils/min
Mobile Termination - MobileCom	70 fils/min peak and off peak	40 - 134 off peak 78 –197 fils/min peak	45 – 69 fils/min blended	CONFIDENTIAL	70 fils/min
Mobile to Mobile	70 fils/min peak and off peak	78 –197 fils/min peak	45 – 69 fils/min blended	CONFIDENTIAL	70 fils/min
International Transit	5% discount on JT retail rates by route and time of day on a per minute basis	Varies by route - transit and settlement rates are not broken out	5 – 12 fils/min plus international settlement rate	CONFIDENTIAL	9% discount on JT retail rates by route and time of day on a per second basis
International Incoming	Mobile termination rate	Mobile termination rates	Fixed termination - 11.5 – 13 fils/min blended Mobile termination - 45 – 69 fils/min blended	CONFIDENTIAL	Mobile termination rate (70 fils/minute)

The above table indicates outcomes which TRC contends are reasonable and justifiable at this time. The figures derived from the cost models of the operators are confidential.

8. Impact of TRC Decision

The move from the existing interconnection rates to cost based interconnection rates will provide incentives to the sector to improve performance. Expected effects will include:

- Reduction of margin on fixed to mobile retail customer tariffs;
- Pressure on JT progressively to improve efficiency;
- Pressure on Fastlink to remove the subsidy of on-net retail prices by interconnection charges.

The impact should be placed in context with the actual turnover and profitability of the companies

When considering the financial impact of the Decisions of the TRC with all growth rate scenarios (See Appendix A) it can be said that:

- JT receipts reduce the most due primarily to the reduction international in revenues. The reduction predicted for the coming 12 months is estimated to be less than 3% of its total 2002 revenue. TRC notes that, of the three companies, JT, having originated as a state-run monopoly, still has significant opportunities to improve its efficiency.
- Fastlink receipts do not reduce as much as JT primarily due to the reduced mobile termination rate. The reduction predicted for the coming 12 months is estimated to be less than 1% of its 2002 annual revenues. Fastlink is a relatively new company compared to JT however there will inevitably be opportunities for efficiency gains due to the fact that during the time they have been in business the primary focus would have been on business growth.
- MobileCom gains in revenue due to the net reduction in outpayments to JT and the fact that they had already reduced their mobile termination rate to 70 fils prior to the 1st July 2003. The gain predicted for the coming 12 months is estimated to be in excess of 3% of its 2002 annual revenues.
- Customers are predicted to have a net gain equal to approx 2% of the three companies' 2002 annual revenues taken together.

9. Setting rates on the 1st July 2003

The TRC, Fastlink, JT and MobileCom agreed that the new rates would apply from the 1st July 2003 at the ISC on the 6th March 2003.

> *"The current implementation program is set to agree cost based charges by the end of June. If at the beginning of June it appears that the current program will not be met, TRC will issue a set of bench mark charges for interconnection services listed above. These charges will come into force together with per second billing on the 1st of July"*

At the time the TRC recognised that for operational reasons it may take some time to implement and hence recognised that the rates would come into force on the 1st July but be backdated to take account of any operational issues.

The TRC recognised that in addressing changes to the interconnection rates it was desirable that the changes should be made at the same time to both mobile and fixed termination rates. This is indicated in the minutes of the ISC meeting on the 6th March 2003:

> *"There was a discussion concerning the agreement of Interconnect Agreements based on the RIOs and the timings thereof. It is the intention of the TRC that new IAs be agreed as soon as possible after the 1st July. The cost-based rates will be backdated to the 1st of July in order to mitigate any delays in signing IAs.*

The 1st July 2003 is the date agreed by all parties for the implementation of the new interconnection rates.

10. Next Steps

In order to further advance the interconnection regime TRC announced at the 1st July 2003, ISC meeting a series of measure:

10.1 Completion of RIOs

The RIOs of Fastlink and JT will be completed for publication on the 1st August

It is important that the RIOs are accurate. Rather than meet the original date of 1st July the TRC will give the Designated Operators a further fixed period of one month to complete their RIOs.

10.2 Completion of Cost Models

The models provided to TRC, prior to the 1st July 2003, had not reached the required level of completeness.

The cost models of Fastlink, MobileCom & Jordan Telecom will be complete and based charges agreed for interconnection services by the 1st October 2003 for implementation on 1st January 2004. However International transit services will not reach cost base until 1st January 2005.

The cost models of Fastlink, JT and MobileCom are required to be robust and to fully meet the TRC's guidelines on Cost Allocation. The cost models should also cover all interconnection services to be provided by the respective operators in accordance with the terms of their licenses, interconnection guidelines and the demand for their services.

Further charging rates have yet to be set for other interconnection services such as:

- Transmission link services
- Interconnection link services
- Co-location and facility sharing services
- Operator services
- Advanced call services

Rates for these services will be agreed by the 15th August 2003 for back dating to the 1st July 2003.

The costing work will continue to arrive at new rates for all interconnection services by the 1st October 2003 for implementation on the 1st January 2004.

TRC recognises the need for JT to progressively rebalance its retail tariffs and increase efficiency. For this reason TRC accepts that the international interconnection charges will not reach cost base until 31st December 2004.

10.3 Further review

A further review will be undertaken in the 2nd quarter of 2004 for implementation on the 1st July 2004 when new rates will be set based on FAC calculations using 2003 data.

TRC recognises that the industry requires a period of stability. Maintaining the Cost Allocation Methodology over two financial years will assist the industry in financial planning.

11. Conclusions

In setting the 1st July rates, the TRC had to balance the interests of all the parties taking into consideration such factors as:

- Optimal performance of the telecommunications and information technology sectors". (Article 6(a) Telecom Law);
- Outstanding issues surrounding the costing models of JT, Fastlink and MobileCom;
- Ensuring licensees are meeting their licence requirement for non-discrimination;
- Ensuring licensees progressively move towards meeting their licence condition of providing cost based tariffs;

The TRC will continue to work with the Licensees to progressively implement the interconnection Guidelines through to full implementation by the 31st December 2004.

- End of paper –

Appendix A – Scenarios for Revenue Impact Model

Base case assumptions (2H2003-1H2004 compared with 2002):

- 2% growth in fixed lines and traffic
- 5% growth in mobile customers with 5% growth in mobile traffic
- International: 5% growth in traffic
- JT to FL: 20% growth in interconnection traffic due to reduced retail rate (132 to 93 fils/minute)
- JT to MobileCom: 10% growth in interconnection traffic due to reduced retail rate
- FL to JT: 5% growth in interconnection traffic due to reduced termination rate
- MC to JT: 5% growth in interconnection traffic due to reduced termination rate

Low growth assumptions (2H2003-1H2004 compared with 2002):

- 2% growth in fixed lines and traffic, and 5% growth in mobile customers with 5% overall growth in total mobile traffic.
- JT to FL: 5% growth in fixed to mobile traffic due to lower fixed to mobile charges
- JT to MobileCom: 5% growth in fixed to mobile traffic due to lower fixed to mobile charges
- FL to JT: 2% growth in interconnection traffic due to a predicted lowering of mobile to fixed call charges.
- MobileCom to JT 2% growth in interconnection traffic due to a predicted lowering of mobile to fixed call charges.

High growth rate assumptions (2H2003-1H2004 compared with 2002):

- 2% growth in fixed lines and traffic, and 5% growth in mobile customers with 5% overall growth in total mobile traffic.
- JT to FL: 25% growth in fixed to mobile traffic due to lower fixed to mobile charges
- JT to MobileCom: 20% growth in fixed to mobile traffic due to lower fixed to mobile charges
- FL to JT: 10% growth in interconnection traffic due to a predicted lowering of mobile to fixed call charges.
- MobileCom to JT: 10% growth in interconnection traffic due to a predicted lowering of mobile to fixed call charges.

ANNEX 2

Interconnection Disputes Process, dated July 2003

http://www.trc.jo/static_english/new stuff/interconnection disputes process.pdf

Telecommunications Regulatory Commission

Interconnection Disputes Process

1. Scope of disputes:

1.1 In the event of any dispute or difference arising between or among the licensees relating to or arising out of an interconnection agreement, including the implementation, execution, interpretation, rectification, termination or cancellation of the agreement, the licensees shall meet within 10 (ten) working days of written notice of the dispute or difference from one licensees to the other (or such longer time as mutually agreed by the licensees in writing to negotiate in good faith in an effort to settle such dispute or difference, and if the dispute or difference is not resolved to the licensees satisfaction within 20 (twenty) working days of the meeting (or such longer time as mutually agreed by the licensees in writing), the licensees shall proceed as follows:

2. Disputes Resolution Mechanisms:

2.1 Without prejudice to the rights of the licensees to go to the courts, such dispute or difference shall be referred to the TRC in accordance with article 60/b of the telecommunication law no. 13 of 1995 and it's amendments for determination if either or both parties so request, or in the alternative if both parties agree then the matter may proceed to arbitration.

3. Making a Request to the TRC:

3.1 Without prejudice to the rights of the TRC to exercise its power to resolve any complaints within the authority given to it by the telecommunication law, if a licensee refers the disputes to the TRC for resolution the designated commissioner shall propose a solution himself/herself or by mean of experts appointed by the said commissioner for this purpose and shall request to receive the following:

- ? a full explanation of the dispute;
- ? a clear list of all the issues which are in dispute;
- ? proposed remedies ie: state exactly what it is you want the TRC to do;
- ? a short chronology of events;
- ? details of the parties concerned and copies of the relevant parts of an existing agreement, where applicable;
- ? the views of all parties;
- ? reasons why a settlement can not be reached commercially;
- ? copies of all relevant correspondence, notes of meetings etc between the parties, and any other relevant data (cost and technical information) or supporting evidence;

3.2 The request for resolution should be made in writing to:

Chief of the Board/Chief Executive Officer
Telecommunication Regulatory Commission
Attention of:

Address ……..

3.3 The disputant licensee should ensure that it is clear whom TRC should contact to discuss the details of the dispute.

3.4 TRC will need to disclose to the other party to the dispute that it has been asked to intervene in the dispute and, in order to settle the matter effectively, to disclose the representations and views put forward. Accordingly, the request for a dispute resolution should be accompanied by non confidential version of the request which TRC can send straight away, with an additional evidence, to the other party for comment and their views.

4. Expenses:

4.1 TRC will charge the disputants for the cost of actual resources consumed in terms number and cost per man hours per class of profession for resolving the dispute.

5. TRC Procedures:

5.1 TRC aims to record all interconnection dispute resolution requests on the day of receipt and to acknowledge them within five working days from the date of receipt of a request.

5.2 TRC will, first, confirm with the parties involved that there is a genuine dispute, that the parties have sought to resolve matter commercially and what the precise matter on which agreement cannot be reached.

5.3 TRC will request any further relevant information from parties in dispute, and after all the necessary information is received, TRC will then aim to make its decision within two months from the date of receipt the required information and prepare an explanatory document, explaining the reasons for its decision.

5.4 If during the dispute proceedings, the parties settle the dispute, the TRC shall terminate the proceedings and, if requested by the parties, record the settlement in the form of an a ward on agreed terms.

6. Objection:

6.1 The decision rendered by the designated commissioner shall be implemented immediately upon issuance.

6.2 Objections to the decision will be permitted before the Board of Commissioners within thirty days of the date of issuance, otherwise the decision will be considered final.

6.3 The Board of Commissioners shall issue its decision regarding the objection within a period of fifteen working days of receipt thereof unless a longer period is deemed necessary by the Board, in such case the disputants will be informed.

7. Challenging Decision:

7.1 Each party have the right to challenge the decision rendered by the board of Commissioners of the TRC before the competent court.

8. Each party will continue to fulfill its lawful obligations during the pendency of a dispute or any dispute resolution, and shall keep their networks connected for the provision and conveyance of calls between their respective networks. No Party shall disconnect the other party's network without the prior approval of the TRC and any party seeking to bring about such disconnection may make representations to the TRC, the TRC shall give due consideration to the matter and may seek representations from the other party prior to making any determination regarding the disconnection of the said net works.

ANNEX 3

Fixed License Agreement

http://www.trc.jo/Static_English/doc/Fixed%20Lic1.pdf

THE HASHEMITE KINGDOM OF JORDAN

TELECOMMUNICATIONS REGULATORY COMMISSION

LICENSE AGREEMENT

Issued at Amman,

THIS LICENSE AGREEMENT made the

BETWEEN:

TELECOMMUNICATIONS REGULATORY COMMISSION (TRC) of the Hashemite Kingdom of Jordan

OF THE FIRST PART

- and -

a Jordanian company, established under the *Companies Law* (Law No. 1 of 1989) and registered at the Ministry of Trade and Industry under the number on,("the Licensee")

OF THE SECOND PART

WITNESSES THAT WHEREAS:

A. In accordance with the *Telecommunications Law*, as defined herein, the TRC has been established as an independent regulator and the legal successor to the Telecommunications Corporation in all matters relating to the regulation of the telecommunications sector in Jordan;

C. Also in accordance with the *Telecommunications Law* and certain decrees and decisions of the Council of Ministers, the Licensee has been established as operator of telecommunications networks and services in Jordan; and

D. As contemplated by the *Telecommunications Law*, the Licensee and the TRC now wish to record the terms and conditions upon which the Licensee is entitled to be Licensed to install, operate and manage telecommunications networks and services in Jordan,

NOW, THEREFORE, the TRC and the Licensee agree as follows:

ARTICLE 1 - INTERPRETATION

1.1 Definitions

In this License Agreement, unless the subject matter or context otherwise requires, the following capitalised terms shall have the following meanings:

1.1.1 "Affiliate" means, in relation to any one Person, any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person.

1.1.2 "Basic Public Telephone Service" means the telecommunications services comprising technical features which are the minimum necessary to allow the establishing of a telephony channel capable of allowing customers to make and receive local, national and international calls supporting speech, facsimile and data communications.

1.1.3 "Control" means the ownership of more than fifty percent (50%) of the voting interests in the subject Person and/or the ability to control in fact the business and affairs of the subject Person, whether by ownership, contract or otherwise.

1.1.4 "Customer" means any Person who has indicated willingness to the Licensee to receive Services from the Licensee on the Licensee's terms and conditions, or has entered into a contract with the Licensee for the provision of such Services.

1.1.5 "Enhanced Services" means enhanced or value added telecommunications data services that act on the format, content, code or protocol of information in order to provide the user with additional or different information or that involve subscriber interaction with stored information including, computer and data processing services, data information and exchange services, credit card verification services and Internet services, other than transmission services to or over the Internet. However, services such as credit or debit card services or directory assistance services that involve limited subscriber interaction with stored information to assist in the set up, billing or use of Basic Public Telephone Service shall not be considered Enhanced Services.

1.1.6 "Effective Date" means.

1.1.7 "Frequencies" means the radio frequencies allocated to the Licensee for exclusive use in the operation of the Services as specified in Appendix 2, as amended or modified in accordance with the terms hereof.

1.1.8 "License Agreement" means this license agreement and all appendices attached hereto, as amended or modified in accordance with the terms hereof.

1.1.9 "Network Termination Point" means a connection and testing point at which a circuit provided by a Public Telecommunications Service Provider may be connected to telecommunications equipment provided by a subscriber on its premises or interconnected with the telecommunications network equipment of another Public Telecommunications Service Provider.

1.1.10 "Operating License" means the public telecommunications operating license issued to the Licensee pursuant to Section 2.1.1, as amended or modified in accordance with the terms hereof.

1.1.11 "Paging" means non-speech one-way personal selective calling with alert, without message or with defined message such as numeric or alpha-numeric.

1.1.12 "Person" means any individual, company, corporation, partnership, joint venture, consortium, government or governmental entity.

1.1.13 "Public Switched Voice Service" means the provision of fixed voice telephone service to the public regardless of the technology used.

1.1.14 "PTTN" means the public telecommunications transport network in Jordan, now existing and as it may be modified or expanded, consisting of all telecommunications transmission facilities, including any wire, cable, radio, satellite, optical or other electromagnetic systems used for the transmission and switching of intelligence for members of the public for compensation, that are located wholly or partly in Jordan. In particular, it includes:

1.1.14.1 fixed local exchange telecommunications networks;

1.1.14.2 national (long distance) networks; and

1.1.14.3 international networks connecting Jordan with other places in the world.

1.1.15 "Public Telecommunications Service Provider" means any Person licensed or otherwise legally authorized to operate in Jordan a Public Telecommunications Network, as defined in the *Telecommunications Law*.

1.1.16 "Services" means Public Switched Voice Service and other fixed telecommunications services which fall within one or more of the following categories:

1.1.16.1 telecommunications services, other than Enhanced Services, that transport intelligence (including data, video and multimedia) in electronic form between Network Termination Points, including services that utilise such applications as frame relay, packet switching, asynchronous transfer mode (ATM) switching and ISDN and transmission services to or over the Internet;

1.1.16.2 leased circuit services;

1.1.16.3 telex, facsimile and similar recorded message services; and

1.1.16.4 credit or debit card services and directory assistance services that involve limited subscriber interactionn with stored information to assist in the set up, billing or use of Public Switched Voice Service.

1.1.17 "Spectrum License" means the spectrum license issued to the Licensee pursuant to Section 2.2, as amended or modified in accordance with the terms hereof.

1.1.18 "*Telecommunications Law*" means the *Telecommunications Law* (Law No. 13 of 1995) of Jordan.

1.2 Appendices

The following Appendices annexed hereto form part of this License Agreement and are subject to all the terms and conditions set out herein:

Appendix 1 - Operating License
Appendix 2 - Spectrum License
Appendix 3 - License Fees
Appendix 4 - USO and Service Coverage and Quality
Appendix 5 - Price Regulation
Appendix 6 - Limitations on Exclusivity
Appendix 7 - Spectrum Management License Fees

ARTICLE 2 - LICENSES

2.1 Grant of Licenses

2.1.1 In accordance with the *Telecommunications Law* and upon and subject to the terms and conditions set out herein, the TRC hereby grants to the Licensee:

2.1.1.1 the Operating License to install, operate and manage the Services, in the form set out in Appendix 1; and

2.1.1.2 the Spectrum License to use the Frequencies in the operation of the Services, in the form set out in Appendix 2.

2.1.2 The Operating License granted hereunder authorizes the Licensee to install, operate and manage only the Services specified therein and does not authorize the Licensee to install, operate or manage any other public telecommunications service in Jordan. For greater certainty:

2.1.2.1 except as provided in Section 2.2.3, nothing herein authorises the Licensee to install, operate or manage any mobile telecommunications service;

2.1.2.2 the Operating License does authorise the Licensee to own and operate telecommunications facilities forming part of the PTTN and used in connection with the Services; and

2.1.2.3 the Licensee is authorized to engage in such other activities as may be reasonably necessary to the provision of the Services in accordance with applicable laws and this License Agreement.

2.1.3 The Spectrum License authorizes the use of the Frequencies by the Licensee only for the purposes specified therein. The Licensee is not authorized to use the Frequencies for any other purpose.

2.2 Additional Licenses

2.2.1 The TRC agrees that, subject to compliance with the *Telecommunications Law*, the Licensee shall be entitled to install, operate and manage any other telecommunications services licensed under a class license approach by the TRC, provided the Licensee meets the applicable class criteria established by the TRC and agrees to be bound by the terms of the applicable class license.

2.2.2 The TRC shall not unduly discriminate against or grant undue preferences to any similarly situated Public Telecommunications Service Providers, including the Licensee, in the establishment of class license criteria or in the tendering of new operating or spectrum licenses under the *Telecommunications Law*.

2.3 Effective Date and License Terms

The Operating License and the Spectrum License shall come into force on the Effective Date and, subject to Article 8, shall continue in full force and effect until the expiration of the respective license terms specified therein.

2.4 Exclusivity

2.4.1 Subject only to Section 2.5 and Appendix 6, until The Licensee acknowledges that it shall have no rights of exclusivity in respect of any telecommunications service except as expressly provided for herein.

2.4.2 The TRC may not, during the period that the Licensee has the exclusive authority to operate telecommunications services pursuant to Section 2.4.1, grant licenses to other Persons to commence the operation of such telecommunications services prior to the expiry of such period of exclusive authority. For greater certainty, the TRC may issue a license in respect of such telecommunications services prior to the expiry of such period of exclusive authority, provided that no telecommunications service is in fact operated under such a license until after expiry of the period of exclusivity.

2.4.3 The TRC shall, subject to Section 2.5, use reasonable best efforts to ensure that the Licensee obtains the full benefit of the exclusivity rights specified in this Section 2.4 through the enforcement of this License Agreement and licenses issued to other Public Telecommunications Service Providers by TRC.

2.5 Limitation on Exclusivity - Migration Proposals

The exclusive rights granted in the preceding Section 2.4 are subject to.

2.6 Ownership of Facilities

For greater certainty, nothing in this License Agreement grants to the Licensee or any other Person any ownership or other right or interest in or any right to acquire any ownership or other right or interest in any telecommunications or other facilities owned by any Jordanian government entity, including fibre optic facilities, microwave facilities and satellite earth stations, which now or in the future provide telecommunications services or facilities to the Licensee or any other Public Telecommunications Service Provider.

ARTICLE 3 - FEES

3.1 Operating License Fee

The Licensee shall pay to the TRC an annual Operating License fee in an amount intended to represent the Licensee's proportionate share of the reasonable

budgeted annual costs of the TRC incurred in regulatory operations related to the Services and the PTTN, other than radio spectrum management costs. This fee will be payable annually in advance on the dates and in the amounts determined in accordance with Appendix 3.

3.2 Spectrum License Fee

In addition to the fees payable in respect of the Operating License under Section 3.1, the Licensee shall pay to the TRC Spectrum License fees in accordance with the TRC's Spectrum Fees Schedule (Appendix 7), as amended from time to time. Spectrum fees shall be reduced accordingly if the Licensee returns unused spectrum to the TRC for reallocation.

ARTICLE 4 - GENERAL CONDITIONS OF LICENSE

4.1 General

The Licensee shall ensure that it complies with each of the terms and conditions of this License Agreement at all times during the term of the Operating License and the Spectrum License. The Licensee acknowledges that failure to comply with any of such terms and conditions may constitute grounds for termination of this License Agreement, revocation of the Operating License or Spectrum License or the imposition of fines or penalties in accordance with the *Telecommunications Law* and the terms hereof.

4.2 Eligibility

The Licensee shall be a Jordanian company established and in good standing under the *Companies Law* of Jordan, as the same may be amended or replaced from time to time.

4.3 Ownership and Control

4.3.1 The Licensee shall not Control or own, directly or indirectly, any ownership interest in any other Public Telecommunications Service Provider which is licensed to provide any of the Services in Jordan, provided however that no breach of this license condition will result from the ownership, directly or indirectly, by the Licensee of less than ten percent (10%) of the shares of a public company, which owns, directly or indirectly, any ownership interest in a Public Telecommunications Service Provider which is licensed to provide any of the Services in Jordan.

4.3.2 No Person shall Control or own, directly or indirectly, any ownership interest in the Licensee if such Person Controls or owns, directly or indirectly, any ownership interest in any other Public Telecommunications Service Provider which is licensed to provide any of the Services in Jordan, provided however that no breach of this license condition will result from the ownership, directly or indirectly, by any such Person of less than (10%) of the shares of a public company, which

owns, directly or indirectly, any ownership interest in the Licensee or any other Public Telecommunications Service Provider.

4.3.3 Any change in Control of the Licensee shall require the prior written approval of the TRC.

4.4 Standard of Conduct

The Licensee shall not use or knowingly permit the use of its Services for any purpose that violates applicable law. The Licensee shall endeavour to take all action within its control to ensure that its Services are not used for any such purposes. The Licensee shall include this same provision precluding the use of its Services for illegal purposes in its contracts with its Customers.

4.5 Roll-Out and Coverage

The Licensee shall roll out the Services and provide and maintain Service coverage in accordance with the requirements set out in Appendix 4.

4.6 Service Obligation

4.6.1 In all areas required to be served in accordance with the requirements of Appendix 4, the Licensee shall provide Basic Public Telephone Service to any Person wishing to obtain it and willing to pay the Licensee's published prices and abide by other generally applicable terms and conditions established by the Licensee in accordance with this License Agreement.

4.6.2 Except as otherwise permitted by the *Telecommunications Law* or this License Agreement, the Licensee shall comply with Article 29(h) of the *Telecommunications Law* and shall not discriminate unduly in the provision of any of the Services or in the charging of its rates for any of the Services between similarly situated Customers or groups of Customers or grant any undue preferences between them, provided that nothing herein shall prevent the Licensee from engaging in marketing practices, such as the offering of promotional discounts, to the extent such practices do not constitute undue preferences or undue discrimination.

4.6.3 Notwithstanding Section 4.6.2, to meet national security requirements or for occupational, social or humanitarian reasons, the Licensee may propose discriminatory or preferential service offerings that fall within the exceptions provided for in Article 29(h) of the *Telecommunications Law*. Any such proposals shall be made in writing to the TRC which shall then determine whether such proposed discriminatory or preferential offerings are due and lawful. The Licensee shall not implement any such proposal without the prior written approval of the TRC, which shall not unreasonably be withheld or delayed. The cost to the

Licensee of providing exceptional service offerings in accordance with Article 29(h) of the *Telecommunications Law* shall not exceed two percent (2%) of the gross revenues of the Licensee in the fiscal year during which such exceptional service offerings are provided.

4.7 Price Regulation

The prices, which the Licensee may charge its customers in connection with the Services, will be subject to regulation by the TRC as set out in Appendix 5.

4.8 Specifications

All telecommunications facilities and equipment installed by the Licensee in its networks after the Effective Date shall be new when first installed in the Licensee's network in Jordan and shall comprise state-of-the-art technology that complies with internationally recognised standards.

4.9 Equipment

Terminal equipment used by the Licensee or provided by the Licensee to its subscribers must be type approved by the TRC. The Licensee shall permit its subscribers to purchase or lease TRC type approved terminal equipment to be used with its network from the Licensee or any third party. Except as provided for in this Section 4.9, this License contains no restriction on the ability of the Licensee to sell, lease or maintain any telecommunications apparatus, including customer premises equipment, which will be connected to the PTTN for the provision of Public Switched Voice Service.

4.10 Frequencies

4.10.1 The Licensee acknowledges that other countries may authorize or permit the use of their radio frequencies in a manner that interferes with the Licensee's use of the Frequencies and that it is the responsibility of the Licensee to report such interference as soon as practicable, in order that the TRC may take measures to counter such interference. The Licensee shall use the Frequencies in compliance with all national, regional intergovernmental and international arrangements in effect that are designed to reduce radio interference among service providers. The TRC shall defend the rights of the Licensee under the Spectrum License in accordance with the ITU Regulations and the *Telecommunications Law*.

4.10.2 The Licensee may apply to the TRC for the right to use additional frequencies in connection with the Services. The TRC may license additional frequencies to the licensee pursuant to the Spectrum License, subject to availability and based on demonstrated existing or reasonable projected subscriber demand and an assessment of whether or not the Frequencies are being utilized efficiently. At all

times, the Licensee shall implement all commercially reasonable measures to optimize the efficiency and effectiveness of its use of the Frequencies.

4.10.3 The TRC may, in order to comply with international spectrum co-ordination requirements, ITU-R assignments or reassignments, or generally in the course of regulating the radio spectrum in the best interests of Jordan, reassign radio frequencies used by the Licensee or require the Licensee to surrender its rights in respect of radio frequencies which are not reasonably required for the operation of the applicable Service. In such cases the TRC and the Licensee shall consult with each other before any such action is taken and the TRC shall provide the Licensee with adequate time and, where applicable, assign appropriate alternative frequencies or take such other reasonable action as may be necessary, to permit the Licensee to carry on its business without unreasonable costs or disruptions.

4.10.4 The Licensee shall obtain site specific approvals from the TRC in respect of each of its radio transmission sites. The TRC shall issue such approvals as soon as reasonably possible after the Effective Date in respect of each of the Licensee's radio transmission sites in operation on the Effective Date. The Licensee shall comply at all times with all applicable construction and other permit requirements and standards applicable to its business under Jordanian law and ITU standards.

4.11 Books and Records

4.11.1 The Licensee shall at all times keep at its principal place of business within Jordan, all proper books and records accurate and up-to-date in accordance with Jordanian generally accepted accounting principles (GAAP) and good business practices. All financial information submitted by the Licensee to the TRC for any purpose shall be prepared and presented in accordance with GAAP or as the TRC shall direct, provided that such direction does not result in any unreasonable additional costs being incurred by the Licensee.

4.11.2 The TRC shall have reasonable access during normal business hours to the books and records of the Licensee in accordance with the *Telecommunications Law*.

4.12 Annual Reports

As soon as possible, within four (4) months of the end of each fiscal year of the Licensee, the Licensee shall file with the TRC seven (7) copies of an annual report, annual audited consolidated financial statements and, if applicable, separate financial statements for the Services and any other telecommunications services operated by the Licensee, audited where available. This annual report shall include detailed information in respect of the following:

4.12.1 the roll-out or upgrading of the Services achieved during the past fiscal year, including a detailed report on the Licensee's compliance with Appendix 4 and

Section 4.6 and all other applicable universal service, coverage and quality of service obligations;

4.12.2 an explanation of the reason for any shortfall in compliance with the obligations referred to in Section 4.12.1, together with an estimate of when the shortfall will be remedied. If the shortfall is alleged to be caused by a third party, the Licensee shall include any relevant documentation reasonably obtainable from that third party;

4.12.3 an estimate of the roll-out or upgrading anticipated for the Services for the next fiscal year;

4.12.4 the number of subscribers for the Services at the beginning and end of the fiscal year covered by the report;

4.12.5 all material instances in which, so far as the Licensee is aware, the Licensee's obligations under any provisions of this License Agreement have not been met, together with an explanation for such failure; and

4.12.6 any other information reasonably deemed relevant by the Licensee or reasonably requested by the TRC in writing.

4.13 Submission of Reports

Any information or reports provided to the TRC pursuant to this License Agreement shall be in either or both the English language or the Arabic language and signed by a senior officer of the Licensee who shall certify, so far as the Licensee is aware, the completeness and accuracy of the report or information. In the event of any inconsistency between an Arabic language document and an English language document, the Arabic language text shall prevail.

4.14 Other Information

The Licensee shall furnish to the TRC such further or other information as required, periodically and from time to time, for the purpose of exercising the functions assigned to it under the *Telecommunications Law*. Such information shall be furnished at the time and in the format requested by the TRC in writing. In making these requests, the TRC shall ensure that, the Licensee shall not be required to furnish information which would not normally be available to it.

4.15 Confidentiality

All information furnished by the Licensee to the TRC and marked "confidential" shall be held in confidence by the TRC. Such information may be released by the TRC to the extent it is or becomes publicly available through no fault of the TRC

or to the extent its release is required by any applicable law or order, provided that the TRC gives the Licensee prior notice of that release. This requirement of confidentiality shall survive any termination or expiry of this License Agreement or revocation of the Operating License or Spectrum License. The Licensee acknowledges that confidentiality will not apply to any information supplied to the TRC regarding the Licensee's compliance with its obligations hereunder, including the obligations set out in Appendix 4, which information shall be made public by the TRC.

4.16 Access to Licensee Premises

The TRC shall have access to all premises of Licensee in accordance with the *Telecommunications Law*.

4.17 Co-operation with TRC

4.17.1 The Licensee shall at all times co-operate with the TRC and its authorized representatives in the exercise of the functions assigned to the TRC under the *Telecommunications Law* and shall make its facilities available for the implementation of judicial, administrative and security orders relevant to the tracing of telecommunications transmissions, as specified in such orders.

4.17.2 The Licensee acknowledges that the TRC is in the process of establishing a general regime for the regulation of the telecommunications sector in accordance with the *Telecommunications Law*. The Licensee will be subject to that regime in respect of the Services when it comes into force to the same extent it applies to all Public Telecommunications Service Providers licensed to provide the Services. Without limiting any rights or powers of the TRC hereunder or under applicable law, the TRC agrees to establish and comply with open, fair and transparent practices and procedures in the exercise of its regulatory operations and, in particular, agrees, except in emergency situations and subject to its obligations of confidentiality, to issue all its rules, decisions and instructions publicly and in writing following appropriate consultation with interested parties.

4.18 Use of Jordanian Resources

Subject to applicable law and international obligations of Jordan, the Licensee shall maximize the use of Jordanian human and material resources in the installation, operation and management of the Services to the extent reasonably possible in the circumstances and provided that such resources are available.

4.19 Anti-Competitive Practices

The Licensee will not, alone or together with others, engage in or continue or knowingly acquiesce in any anti-competitive practices and, in particular, the Licensee shall:

4.19.1 not engage in anti-competitive cross-subsidization;

4.19.2 not abuse its dominant position;

4.19.3 not enter into exclusive arrangements with third parties for the location of its facilities that are required to provide any of the Services;

4.19.4 not enter into any agreements, arrangements or undertakings with any Person, including any supplier of services that compete with any of the Services and which have as their objective or effect the fixing of prices or any other restraint on competition;

4.19.5 not engage in any anti-competitive tied or linked sales practices; provided that the Licensee may bundle services so long as the bundled services are also available separately;

4.19.6 not use information obtained from competitors if the objective or effect of such use is anti-competitive; and

4.19.7 make available to other Public Telecommunications Service Providers on a timely basis technical information about essential facilities and other commercially relevant information that is necessary for them to provide service.

4.20 Segregation of Services

The Licensee shall operate the Services covered by the Operating License, taken together, and the telecommunications services covered by each additional operating license issued or delivered to it in the future, in each case taken together, through operating divisions or Affiliates and shall maintain fully separate books of account and other business records for each such division or Affiliate. The Licensee shall file with the TRC with its annual report a detailed report on all charges, transfers and other relations between its divisions or Affiliates that are subject to the terms and conditions of this or any other license agreement entered into with the TRC in the future. However, the operating divisions and Affiliates of the Licensee shall be permitted for commercial efficiency to share operating systems and personnel (for example, billing, customer care, marketing), provided that the Licensee maintains separate books of account and other business records in accordance with Section 4.11. At the reasonable request of TRC, the Licensee shall transfer the business of any such division into an Affiliate, provided that the TRC shall allow the Licensee a reasonable time, not exceeding one (1) year, to effect such transfer.

4.21 Compliance with Law

The Licensee shall comply with all laws of the Kingdom of Jordan applicable to the Service and its operations, including the *Telecommunications Law*, all decisions, rules and instructions of the TRC and, all policies of the Government of Jordan. For greater certainty, the Licensee acknowledges that the TRC is in the process of establishing a general regime for the regulation of the telecommunication sector. The Licensee will be subject to that regime when it comes into force to the extent it applies to the Licensees' services.

ARTICLE 5 - RELATIONS WITH CUSTOMERS

5.1 Customer Complaints

The Licensee shall maintain adequate trained personnel to receive and respond promptly to complaints from its Customers. The Licensee shall take all commercially reasonable action to promptly remedy and avoid the recurrence of the cause of all Customer complaints which relate to the quality, availability or delivery of the Services. The Licensee shall also take all commercially reasonable actions necessary to guarantee that amounts due to customers are paid in full if the Operating License is revoked.

5.2 Customer Contract

Except to the extent the TRC exempts the Licensee from the requirements of this Section 5.2, the relationship between the Licensee and the Customers of the Services shall be governed by the terms of a Customer contract which incorporates standard terms and conditions approved in accordance with this Article 5. The Licensee shall not offer the Services otherwise than pursuant to a Customer contract which incorporates approved standard terms and conditions, without the prior written consent of the TRC.

5.3 Content of Terms and Conditions

5.3.1 The standard Customer contract terms and conditions referred to in Section 5.2 shall include, at a minimum, provisions approved by the TRC in respect of the following matters:

5.3.1.1 deposits and alternative methods of providing security for payment where reasonably required, provided that in no circumstances may such deposits or security exceed the charges reasonably anticipated to be incurred by the Customer within a three (3) month period;

5.3.1.2 confidentiality of Customer information;

5.3.1.3 refunds or other rebates for service problems or over billing;

5.3.1.4 payment terms, including any applicable interest or administration charges;

5.3.1.5 minimum contract period;

5.3.1.6 Customer and Licensee rights of termination; and

5.3.1.7 method of settlement of Customer complaints or other disputes, including provision for appeal to the TRC in the event that a dispute cannot be resolved by the parties.

5.4 Approval of Terms and Conditions

5.4.1 The Licensee shall file with the TRC for approval a proposed draft form of standard terms and conditions as required by Section 5.2. Within sixty (60) days of receipt of a draft, TRC shall either approve the draft by notice in writing to the Licensee, or advise the Licensee in writing that the draft is not approved. If the TRC does not advise the Licensee that a proposed draft is not approved within the said sixty (60) day period, the draft shall be deemed to be approved as filed.

5.4.2 If the TRC does not approve a draft submitted under Section 5.4.1, it shall provide a detailed, written explanation of the reasons for such non-approval sufficient to permit the Licensee to revise the draft in a manner which would be approved by the TRC. The Licensee may then file an amended draft for approval and Section 5.4.1 shall again apply. The TRC shall approve such draft unless it is inconsistent with the *Telecommunications Law* or other laws, this License Agreement or other directives or rules of the TRC.

5.4.3 When a form of standard terms and conditions is approved they shall be incorporated by the Licensee in all contracts between the Licensee and its Customers in respect of the Services until such time as amended standard terms and conditions are approved by the TRC under this Article 5. Nothing in any agreement between the Licensee and a Customer shall contradict or modify the applicable standard terms and conditions.

5.5 Availability of Standard Terms and Conditions

A copy of the approved standard terms and conditions shall be provided to any interested party upon request and, after the Effective Date, to any new Customer prior to commencement of service to, or receipt of any payment or deposit from, such Customer. All provisions of any Customer contract shall be typed and provided to each Customer in the Customer's choice of Arabic or English.

5.6 Amendment to Customer Contracts

5.6.1 Approved standard terms and conditions may be amended with the approval of the TRC at the request of the Licensee. Any requests for amendments by the Licensee shall be made by filing an amended draft with the TRC. The provisions of Sections 5.4 and 5.5 shall govern the approval of any such amendment.

5.6.2 Any amendment to a Customer contract shall come into force thirty (30) days after announcement in the media or by delivery of a written copy of such amendment to the applicable Customer, unless that Customer objects to such amendment to the TRC or the Licensee in writing before the expiry of that thirty (30) day period.

5.6.3 In the event that a Customer objects to an amendment to a Customer contract within thirty (30) days after announcement in the media or by delivery of a written copy of such amendment to such Customer, Licensee may continue to serve such Customer according to the terms and conditions under the pre-existing Customer contract. The continuation of Service on such terms and conditions shall not be a breach of the *Telecommunications Law* or other laws, this License Agreement or any directive or rule of the TRC.

5.7 Customer Invoices

5.7.1 All Customer invoices rendered by the Licensee in respect of the Services shall be timely, clear, concise, typed in the Customer's choice of Arabic or English and easy to understand.

5.7.2 All Licensee invoices shall describe in such details as is reasonably possible all charges for the current billing period and the due date for payment. Any Licensee invoices in respect of any outstanding balance and related interest or administration charges, if any, shall also contain in such details as is reasonably possible all amounts payable and the due date for payment.

5.8 Provision of Ancillary Services

5.8.1 The Licensee shall provide a Directory Information Service (DIS) which:

5.8.1.1 based on the information available to the Licensee, includes an up-to-date electronic database of all numbers for the customers of the Licensee and the Customers of all other Public Telecommunications Service Providers that provide such information to the Licensee;

5.8.1.2 is available to all the Licensee's customers and used by the Licensee's DIS operators to provide information to telephone users;

5.8.1.3 includes the provision of paper telephone directories that are available to the general public, subject to a reasonable charge approved by the TRC;

5.8.1.4 protects the privacy of all individuals that request in writing unlisted telephone numbers, addresses, names or other personal information;

5.8.1.5 is made available to other Public Telecommunications Service Providers on terms and conditions to be approved by the TRC in accordance with the applicable terms and conditions of the licenses of those other Public Telecommunications Service Providers;

5.8.1.6 complies with other reasonable requirements imposed by the TRC in accordance with the *Telecommunications Law* and which shall be generally consistent with the types of DIS services provided in comparable countries; and

5.8.1.7 is priced to the Licensee's Customers at rates approved by the TRC which recover the costs of DIS service after taking into account directory advertising revenues.

5.8.2 The Licensee shall provide access to Jordanian government emergency services. This access service shall:

5.8.2.1 provide direct operator assistance or automatic connections to local police, fire and ambulance assistance by means of a simple telephone number with operator standby assistance available in case of automated systems failure;

5.8.2.2 be provided free of charge to all the Licensee's customers;

5.8.2.3 be made available to other Public Telecommunications Service Providers on terms and conditions to be approved by the TRC, based on principles of competitive neutrality and in accordance with the applicable terms and conditions of the licenses of those other Public Telecommunications Service Providers, and

5.8.2.4 comply with other requirements imposed by the TRC in accordance with the *Telecommunications Law* and which shall be generally consistent with the types of emergency services provided in comparable countries.

5.8.3 The Licensee shall, within one year of the Effective Date, provide to the TRC a plan outlining specific detailed plans to improve access to the Services by users

with disabilities. Such plans shall consider the feasibility of installing telecommunications devices for the deaf and other access mechanisms that are available in other countries to facilitate access by disabled users. The plans shall propose a reasonable level of investment and expenditure on access mechanisms relative to the expenditures of other countries. TRC shall review the plans and encourage consultations between the Licensee and representatives of disabled users in order to develop the best possible approach to improving access consistent with the financial constraints of the Licensee and the socio-economic development levels of Jordan. At the end of these consultations, the TRC shall approve, and the Licensee shall implement the approved plan.

5.9 Code of Practice for Consumer Affairs

5.9.1 The Licensee shall prepare and publish a Code of Practice for Consumer Affairs approved by the TRC, giving guidance to the Licensee's Customers and employees in respect of any disputes and complaints relating to the provision by the Licensee of the Services.

5.9.2 The Licensee shall prepare an initial draft of the Code of Practice and submit it for review by the TRC within 6 months of the Effective Date.

5.9.3 The Code of Practice on Consumer Affairs shall contain guidelines on the following issues:

5.9.3.1 complaints;

5.9.3.2 dispute settlement;

5.9.3.3 location of Customer service departments;

5.9.3.4 Customer invoices and billing arrangements;

5.9.3.5 quality of service performance targets;

5.9.3.6 provision of ancillary services;

5.9.3.7 other matters dealt with in the terms and conditions of service of the Customer contract referred to earlier in this Article 5; and

5.9.3.8 guide lines on service termination.

5.9.4 After approval of the Code of Practice by the TRC, the Licensee shall report to the TRC on an annual basis (within one month of the end of the Licensee's accounting period) on the performance of the Licensee in meeting the guidelines

set in the Code of Practice, and on the progress made in implementing the guidelines.

5.9.5 In the event of a dispute relating to the Code of Practice remaining unresolved between the parties in dispute, the TRC shall determine the issues between the parties.

ARTICLE 6 - RELATIONS WITH OTHER OPERATORS

6.1 Interconnection with Other License Holders

6.1.1 The Licensee acknowledges that interconnection between the Licensee's network and the networks of other Public Telecommunications Service Providers is governed by Section 29(e) of the *Telecommunications Law*, the provisions of this Article 6 and comparable provisions in the licenses of other network operators and any *Guidance on Interconnection* issued by the TRC from time to time, all as may be amended or replaced from time to time.

6.1.2 The Licensee will act fairly and without discrimination in accordance with applicable law and the terms of this License Agreement in all business dealings with other Public Telecommunications Service Providers and shall co-operate with other Public Telecommunications Service Providers to facilitate the provision of telecommunications services to all users throughout Jordan and so as to optimise the use of common facilities in the location of network facilities.

6.1.3 The Licensee shall exercise its reasonable best efforts to provide other Public Telecommunications Service Providers in Jordan with leased circuit services and other PTTN services, including international services, that they require without undue delay. If the Licensee does not provide such services promptly and at reasonable rates, the other licensed telecommunications service providers may procure the services from alternative facilities providers authorised by the TRC, in compliance with the Law, or self-provision them in accordance with Section 2.5 and Appendix 6.

6.1.4 The TRC shall exercise reasonable best efforts to cause other Public Telecommunications Service Providers to act fairly and without unfair discrimination or preference in accordance with applicable law and applicable terms of license in all business dealings with the Licensee, including interconnection.

6.1.5 All interconnection obligations of the Licensee shall be interpreted and enforced by the TRC so as to ensure that so far as is reasonably possible in the circumstances they are competitively neutral and non-discriminatory.

6.2 Principles of Interconnection

6.2.1 The Licensee shall interconnect its network with all other Public Telecommunications Service Providers in Jordan for purposes of providing their lawful services. Subject to Section 6.1, in negotiating interconnection and other arrangements with other licensed Public Telecommunications Service Providers, the Licensee shall agree to:

6.2.1.1 provide interconnection at any technically feasible point in the network;

6.2.1.2 provide interconnection under non-discriminatory terms, conditions (including technical standards and specifications) and rates and of a quality no less favourable than that provided for its own like services or for like services provided to non-Affiliated service suppliers or for its Affiliates;

6.2.1.3 provide interconnection in a timely fashion on terms, conditions (including technical standards and specifications) and cost-based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for network components or facilities that it does not require for the service to be provided. In this context, cost-based rates means rates comprised of the long run incremental costs of providing interconnection plus a reasonable share of the common costs of the Licensee's operations;

6.2.1.4 provide interconnection upon request, at points in addition to the Network Termination Points offered to the majority of users, subject to the terms of a written agreement between the Licensee and the party requesting interconnection and at charges that reflect the cost of construction of necessary additional facilities;

6.2.1.5 lease to such other service providers on a non-discriminatory basis, facilities (rooms, towers, ducts, cable etc.) under the control of the Licensee and required for use by such others;

6.2.1.6 allow access to such facilities by such other license holders, upon request, for the purposes of installation, maintenance and repair;

6.2.1.7 provide reasonable notice to such other service providers about any network design, roll-out or upgrade plans or changes which may be expected to affect the arrangements between the parties;

6.2.1.8 take steps to protect such other service providers' systems from interference or other harm caused by the facilities and equipment used by the Licensee; and

6.2.1.6 not enter into any arrangements for access to any service or facility that would preclude the operator of that service or facility or another service provider from entering into similar arrangements with the operator of that service or facility.

6.2.2 The procedures applicable for interconnection to the Licensee's network shall be made publicly available.

6.2.3 The Licensee will make publicly available either its interconnection agreements or reference interconnection offers.

6.2.4 The Licensee shall be entitled to require, as a condition of entering into any interconnection agreement, that:

6.2.4.1 current generally accepted international engineering principles and practices in the telecommunications sector are adhered to in the provision of any interconnection services;

6.2.4.2 due account is taken of the needs of the Licensee's Customers and the needs of other Public Telecommunications Service Providers and private network operators, both current and future, that have made or make requests to interconnect with the Licensee's network;

6.2.4.3 it is not required to interconnect its network if doing so would unduly risk causing damage to the Licensee's property, or the death of, or personal injury to, any person employed or engaged in the Licensee's business.

6.3 Failure to Agree

If the Licensee is unable to reach agreement with another Public Telecommunications Service Provider on the terms and conditions of interconnection or other arrangements within one month after the first request in writing for interconnection by either party, either party may by notice in writing request that the TRC adjudicate between them. The TRC's decision on all matters in dispute shall be binding on both parties.

6.4 Approval Required

All interconnection or other agreements between the Licensee and any other Public Telecommunications Service Provider or private network operator shall be

filed for approval with the TRC. The Licensee shall not give effect to any such agreement until it has been approved by the TRC. The TRC shall be deemed to have approved any such agreement thirty (30) days after it is filed unless it gives written notice of disapproval to the Licensee prior to the expiry of that thirty (30) day period.

ARTICLE 7 - NUMBERING PLAN

7.1 Purpose

For the purposes of this Article 7, numbering is used to identify Network Termination Points of the public switched telecommunications network. These Network Termination Points may be connected to apparatus on a customer's premises, interconnected with networks run by other Public Telecommunications Service Providers, or used to access various telecommunications services.

7.2 Numbering Plan

The Licensee acknowledges that TRC has the primary responsibility for administration of the Jordanian numbering plan in accordance with applicable law.

7.3 Administration

Administration of the numbering plan shall be carried out by TRC in accordance with published rules and procedures, prepared in consultation with interested parties, and cover the following matters:

7.3.1 Identification of licensed operators, service providers and any other parties who may be eligible to apply for an allocation of numbering capacity;

7.3.2 Details of the supporting information that is to be provided with each application for a reservation or for an allocation of numbering capacity;

7.3.3 The criteria to be used by TRC in the assessment of applications for numbering capacity, including target response times, recognizing the importance of non-discrimination and confidentiality in a competitive environment;

7.3.4 The consultation procedures to be followed by TRC where an existing allocation is to be withdrawn or a proposed allocation might create problems for network operators or end users;

7.3.5 Publication of information on the current status of all national destination codes and associated number blocks, including designations and announcements of reservations and allocations;

7.3.6 Publications of annual reports on utilization of capacity; and

7.3.7 Arrangements for periodic review of the plan to ensure that lack of availability of numbering capacity never constrains future development of telecommunications systems and services in Jordan.

7.4 Number Allocation

7.4.1 TRC will allocate blocks of numbers to the Licensee and to other Public Telecommunications Service Providers, who will in turn allocate individual numbers to Customers, Attachment 2 to Appendix 4, maintaining suitable records of utilization of numbering capacity. The Licensee and other Public Telecommunications Service Providers will be required to reprogram or re-engineer their networks to convey calls to numbers in a newly allocated block, either directly to Customers on the same network or via points of interconnection with other operators' networks.

7.4.2 All allocations of numbers shall be made under non-discriminatory terms and conditions by the TRC upon request by the Licensee and other Public Telecommunications Service Providers for services they reasonably anticipate providing in the foreseeable future.

7.5 Calling Line Identity

The Licensee shall co-operate with other Public Telecommunications Service Providers to allow telephone numbers to be associated with an outgoing call to convey the Calling Line Identity (CLI).

7.6 Ownership

The blocks of numbers allocated by TRC, and the individual numbers allocated by network operators, are to be regarded as part of a national resource so that ownership is not transferred when an allocation is made. However, an allocation conveys an ongoing right of use and an expectation of a reasonable notice period should it be necessary to withdraw or to change allocated numbers.

7.7 Number Portability

The Licensee shall co-operate with other network operators in the specification and development of number portability to allow replacement service without a change of number. Subsequent implementation of number portability is to be subject to operational practicability, commercial viability and the development needs of the Kingdom.

7.8 Carrier Selection

The Licensee shall co-operate with other network operators in the specification and development of carrier selection to allow a choice of routing. The choice of method(s) and subsequent implementation is to be dependent on Customer demand, operational practicability, commercial viability and the development needs of the Kingdom.

ARTICLE 8 - MODIFICATION, RENEWAL AND TERMINATION

8.1 Modification

8.1.1 Subject to Section 8.3, this License Agreement and the Operating License and the Spectrum License may be amended or modified only in accordance with the provisions of the *Telecommunications Law*, provided however that no modification or amendment to the following provisions of this License Agreement may be made without the prior written agreement of the Licensee:

8.1.1.1 Sections 2.4, 2.5, and Article 8 of this License Agreement;

8.1.1.2 The term of the Operating License or the Spectrum License;

8.1.1.3 Section 2 of Appendix 3 hereto; and

8.1.1.4 Appendices 5 and 6 hereto.

8.1.2 Subject to Section 8.3, Article 6 and Appendix 4 hereto shall not be modified or amended during the exclusivity period specified in Section 2.4 hereof without the prior written agreement of the Licensee.

8.2 Termination

Before the expiry of their respective terms, this License Agreement may be terminated and the Operating License and Spectrum License may be revoked only in the event of a material breach by the Licensee and in accordance with Section 8.3. For this purpose a material breach means any act or omission or series of acts or omissions which constitute grounds for the revocation of a license under the *Telecommunication Law* and which (i) seriously jeopardize the provision of an adequate level of the Services at reasonable prices to a significant group of customers in Jordan, or (ii) seriously impairs the ability of the TRC to perform its lawful functions in a reasonable manner.

8.3 Procedure

8.3.1 The TRC shall not amend, modify, revoke or terminate this License Agreement or the Operating License or the Spectrum License without first giving the Licensee notice in writing clearly setting out in detail the basis for such proposed action

and giving the Licensee a reasonable opportunity of no less than thirty (30) days to show cause why such action should not be taken or to correct the alleged material breach. If the Licensee shows cause, or corrects the alleged material breach, to the satisfaction of the TRC, the TRC shall allow the Licensee sufficient time, as is reasonable in the circumstances, to remedy any breach that gave rise to the notice and which remains outstanding.

8.3.2 If this License Agreement is terminated and the Operating License and the Spectrum License are revoked by the TRC in accordance with this Article 8 ،(i) the TRC may grant to the Licensee a discretionary extension of the Licensee's authority to operate the Basic Public Telephone Service for up to one (1) year so as to permit the Licensee to wind up its operations, and (ii) the Licensee shall sell or cause to be sold to any Person designated in writing for this purpose by the TRC all of the telecommunications network assets owned by the Licensee or its Affiliates and used in the operation of the Services (excluding, for greater certainty, the benefit of this License Agreement and the Licenses issued pursuant hereto) for an aggregate purchase price equal to the fair market value of such assets. If the person designated by the TRC pursuant to the previous sentence and the Licensee do not agree on the fair market value of the assets within ninety (90) days, then such fair market value amount shall be determined by an arbitration committee according to the Jordan Arbitration Law. The Licensee shall be obligated to complete such a transaction of purchase and sale prior to the expiry of the one (1) year period referred to above by delivery of title to the said assets free and clear of any liens, charges or any other rights of others against delivery of the purchase price in immediately available funds. If the TRC does not designate a purchaser of the Licensee's assets within one (1) year after the License Agreement is terminated, the Licensee may sell such assets to a third party of its choosing.

8.4 Prohibition

If this License Agreement is terminated under this Article 8, except for the Government of Jordan, no Person who Controlled the Licensee at the time of the major default shall be entitled to apply for a license to install, operate or manage a Public Telecommunications Network in Jordan, alone or with others, before the lapse of five years following the date upon which such termination becomes effective.

ARTICLE 9 - GENERAL

9.1 Notice

Any notice or other communication to be given by the TRC or the Licensee to the other in connection with this License Agreement shall be given in writing by personal delivery in Amman to the following address:

To TRC:

Telecommunications Regulatory Commission
7th Circle
Amman

Attention: Director General

To the Licensee:

Jordan Telecommunications Company
Tower Building
3rd Circle
Amman

Attention: Director General

9.2 Law

This License Agreement shall be governed by the laws of Jordan.

9.3 Assignment

This License Agreement and the Operating License and the Spectrum License are personal to the Licensee and may not be sold, assigned or pledged as security without the prior written consent of the TRC. The TRC will consent to the assignment of the Operating License and Spectrum License to an Affiliate of the Licensee provided that (i) such Affiliate becomes a party to this License Agreement and agrees to fulfill and perform all of the obligations of the Licensee, and (ii) no such assignment shall relieve the Licensee of any of its obligations hereunder.

9.4 Interpretation

The use of headings herein and the division hereof into Articles and Sections is for the convenience of reference only and shall not affect the construction or interpretation hereof. References herein to Articles, Sections and Appendices are to Articles, Sections and Appendices hereof, unless expressly provided for to the contrary. The terms "hereof", "herein" and similar expressions refer to this License Agreement in its entirety unless expressly provided for to the contrary.

9.5 Amendment and Waiver

This License Agreement may not be amended, modified or supplemented without the prior written consent of the TRC. No waiver of any breach of any provision

of this License Agreement shall be effective or binding unless made in writing and, unless otherwise specified, any such waiver shall be limited to the specific breach waived.

9.6 Adherence to Terms of Licensing

9.6.1 The Director General of the TRC shall monitor the Licensee's adherence to this License Agreement and shall take appropriate measures to oblige the Licensee to comply with this License Agreement, the *Telecommunications Law*, regulations, the rules, instructions and decisions of the TRC and the policies approved by the Council of Ministers. Any decision of the Director General in exercising these responsibilities shall be final and binding on the Licensee unless and until it is overruled by the Board of Directors of the TRC.

9.6.2 Except for Section 8.3.4, nothing herein is intended to limit in any way any rights of appeal or review which the Licensee may have available to it under the laws of Jordan.

9.6.3 Without limiting any other right or remedy available to the TRC at law, if the Licensee fails to comply with:

9.6.3.1 any of its material obligations under the *Telecommunications Law*;

9.6.3.2 any of its material obligations hereunder; or

9.6.3.3 any of its material obligations under any rules, decisions or instructions of the TRC,

the Licensee shall be subject to a fine payable to the TRC in an amount not to exceed two hundred thousand Jordanian Dinars (JD 200,000) in respect of each such compliance failure. The amount of any sanction imposed pursuant to this Section 9.6.3 shall be determined with reference to the severity of Licensee's non-compliance.

9.6.4 Without limiting any other right or remedy available to the TRC at Law, if the Licensee fails to make payment on any amount of fee, fine or penalty to the TRC pursuant hereto, interest shall accrue and be payable monthly in arrears on the outstanding amount, including accrued interest, at the rate of 9% per annum.

IN WITNESS WHEREOF the parties hereto have executed this agreement.

TELECOMMUNICATIONS REGULATORY COMMISSION

by: _____

Chairman

by: _____

Chairman

APPENDIX 1

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

TRC OPERATING LICENSE – No.

WHEREAS as contemplated by the *Telecommunications Law* (the "Licensee") and the Telecommunications Regulatory Commission ("TRC") have entered into a contract of an administrative nature pursuant to which an Operating License is granted to the Licensee;

NOW THEREFORE this Operating License confirms that the Licensee is licensed to install, operate and manage the Services, upon and subject to the terms and conditions of the License Agreement between the TRC and the Licensee dated .

Subject to renewal or revocation in accordance with applicable law and the above-referenced License Agreement, the term of this License is for a period of twenty-five (25) years, beginning on the Effective Date and terminating on , provided however that the term of this License shall automatically be renewed and extended following the expiry of the initial twenty-five (25) year term unless and until the TRC gives ten (10) years written notice of termination.

Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said License Agreement.

Issued at Amman, this .

TELECOMMUNICATIONS REGULATORY COMMISSION

per: _____
Director General

APPENDIX 2

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

TRC SPECTRUM LICENSE – No.

WHEREAS as contemplated by the *Telecommunications Law* (the "Licensee") and the Telecommunications Regulatory Commission ("TRC") have entered into a contract of an administrative nature pursuant to which a Spectrum License is granted to the Licensee;

NOW THEREFORE this Spectrum License confirms that the Licensee is licensed to use the frequencies listed in Attachment 1 to this Spectrum License on an exclusive basis in the operation of the Services in Jordan, upon and subject to the terms and conditions of the License Agreement between the TRC and the Licensee dated.

Subject to renewal or revocation in accordance with applicable law and the above-referenced License Agreement, the term of this License shall be the same as TRC Operating License No.

Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said License Agreement.

Issued at Amman, the.

TELECOMMUNICATIONS REGULATORY COMMISSION

per: _____
Director General

ATTACHMENT I
TO
TRC SPECTRUM LICENSE No.

(See attached)

APPENDIX 3

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

LICENSE FEES

1. General

This Appendix 3 forms part of the License Agreement dated between the Telecommunications Regulatory Commission ("TRC") and ("the Licensee") and is subject to the terms and conditions thereof. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said License Agreement.

2. Operating License Fees

2.1 Subject to Section 2.4 of this Appendix 3, the amount of the Operating License fees for first year of the Licensee's operations shall be . This amount shall be paid to the TRC on or before the Effective Date.

2.2 Subject to Section 2.4 of this Appendix 3, the Operating License fee for subsequent years shall be paid to the TRC on or before the applicable anniversary of the Effective Date. The amount of the Operating License fee for subsequent years shall be determined by the TRC and published by public notice at least 30 days prior to the date payments are due.

2.3 Changes in the Operating License fee made under the preceding Section of this Appendix 3, shall be made based on actual changes in the TRC's budgeted costs of regulatory operations (excluding spectrum management costs) and a fair allocation of those costs among all Public Telecommunications Service Providers. Subject to Section 2.4 of this Appendix 3, the TRC shall act without discrimination for or against the Licensee with respect to any fees charged to the Licensee and shall not charge the Licensee any fees in respect of the Services that it does not impose on all licensed operators of such services in Jordan.

2.4 In no event shall the Operating License fee payable hereunder by the Licensee in any fiscal year be greater than one percent (1%) of the aggregate gross revenues of the Licensee from the operation of the Services in that year.

APPENDIX 4

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

USO AND SERVICE COVERAGE AND QUALITY

1. General

This Appendix 4 forms part of the License Agreement dated between the Telecommunications Regulatory Commission ("TRC") and ("the Licensee") and is subject to the terms and conditions thereof. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said License Agreement.

2. Universal Service Obligation

2.1 The Licensee shall no later than , provide at its prevailing standard connection and other rates Basic Public Telephone Service to any Person requesting such service in all municipalities and populated areas recognized by the Minister of Municipalities and Environment of Jordan that have a population of or more permanent inhabitants as determined by the census of .

2.2 After the Licensee shall provide at its prevailing standard connection and other rates Basic Public Telephone Service to any Person requesting such service in all municipalities and populated areas recognized by the Minister of Municipalities and Environment of Jordan or its successor that have a population of or more permanent inhabitants as determined from time to time by the Department of Statistics, or its successor.

2.3 After , outside of the municipalities and populated areas referred to in Section 2.2 of this Appendix 4 the Licensee shall provide Basic Public Telephone Service to any Person requesting such service at its prevailing standard connection and other rates, provided however that in such circumstances the Licensee shall be permitted to recover from such customer the full incremental cost of connection over and above the average cost of connection of the Licensee if and to the extent such cost exceeds the Licensee's average cost of man hours work plus JD.

2.4 In the absence of subscriber demand for line connections, the Licensee may satisfy its service coverage obligations under Sections 2.1 and 2.2 by provisioning access lines for use by licensed national public payphone operators. Nothing in this Appendix 4 shall require the Licensee to provide Basic Public Telephone Service to any Person who is unwilling to pay the Licensee's published prices and

abide by the other generally applicable terms and conditions established by the Licensee in accordance with this License Agreement.

2.5 The Licensee shall comply with any regulatory directives that may be established by the TRC to ensure that the universal service obligations (USO) established under this Appendix 4 are administered in a transparent, non-discriminatory and competitively neutral manner, and are not more burdensome than necessary for the kind of universal service required in Jordan. The TRC may require separate accounting of the costs of the USO and may permit or require the Licensee to provide an opportunity to the other service providers to implement the USO upon payment of a subsidy from the Licensee that is similar to the internal subsidy that would otherwise have been paid for the Licensee's performance of the USO.

2.6 Except as expressly contemplated in Section 2.3 of this Appendix 4, until such time as a competitor to any part of the Licensee's Public Switched Voice Service has begun operations pursuant to a license issued by the TRC, the entire cost of the USO of the Licensee as provided for in this Appendix 4 shall be paid for by the Licensee. The TRC shall establish a regime for the sharing of USO costs before the start of operations of any Public Switched Voice Service in competition with the Licensee.

3. Quality of Service Standards

3.1 The Licensee shall operate the Services so as to meet the quality of service and performance standards set out in Attachment 1 to this Appendix 4. After the year , the Licensee shall at all times continue to meet or exceed the quality of service and performance standards set out in Attachment 1 to the Appendix 4 in respect of the year . In addition, after the year , the Licensee shall meet such higher and additional quality of service and performance standards as the TRC may establish after consultation with the Licensee, provided that such standards shall be comparable with international standards.

3.2 The service quality indicators for shall be considered benchmarks only, which the Licensee shall use reasonable best efforts to meet.

3.3 If within one (1) year after the Effective Date the TRC determines that the information presupposed in calculating the quality of service targets set forth in this Appendix 4 was substantially inaccurate, the Licensee and the TRC shall in good faith agree to a proportionate change to the targets for the relevant year and all years thereafter, as applicable. Such a determination by the TRC may be based on evidence from the Licensee which demonstrates the substantial inaccuracy of such information.

4. Force Majeure

4.1 The Licensee shall be excused, on a day-to-day basis, from compliance with this Appendix 4 to the extent it is unable to comply due to faults attributable to another public or private telecommunications service provider or due to other forces beyond its reasonable control.

4.2 If at any time the Licensee is, or projects that it will be, unable to comply with the requirements of this Appendix 4 because of faults alleged to be attributable to another public or private telecommunications service provider in Jordan or because of other forces beyond its reasonable control, the Licensee shall forthwith advise the TRC and, where applicable, the other telecommunications service provider, of the facts and circumstances giving rise to such inability to comply.

4.3 The Licensee shall take any commercially reasonable action necessary to correct any faults or overcome or avoid any other facts or circumstances so as to re-establish compliance with this Appendix 4 as soon as reasonably possible.

ATTACHMENT I
TO
APPENDIX 4

(See attached)

ATTACHMENT 2
TO
APPENDIX 4

(See attached)

APPENDIX 5

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION
PRICE REGULATION

1. General

This Appendix 5 forms part of the License Agreement dated between the Telecommunications Regulatory Commission and is subject to the terms and conditions thereof. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said License Agreement.

2. Application

(a) Prices, which the Licensee may charge customers for the Services, shall be regulated in accordance with the *Telecommunication*s *Law.* Until the regulation of such prices shall be in accordance with Council of Ministers , such prices shall be regulated in such manner as the Council of Ministers may determine in accordance with the *Telecommunications Law.*

(b) The Licensee may apply to the TRC to review the value of the X factor in the price cap formula set in this Appendix, and to establish a new value of X for a period of 5 years, taking into account the following:

(i) evidence of productivity increases experienced in the telecommunications sector in Jordan and other countries;

(ii) a comparison of the Licensee's tariffs with those of other telecommunications operators in like circumstances in the Middle East;

(iii) the extent of competition in the telecommunications sector; and

(iv) the need for further investment by the Licensee in network infrastructure.

3. Price Cap

In accordance with the above referenced Council of Ministers Decree, until , the prices of the Services which fall within the Basket of Services, as defined in Attachment 1 to this Appendix 5, shall be fixed by the TRC in accordance with a price cap method that shall comply with the following principles:

(a) The price cap method shall apply to a Basket of Services consisting of the Services listed in Attachment 1 to this Appendix 5.

(b) The Licensee may apply in writing to TRC to change the prices for one or more of the Services within the Basket of Services. The proposed effective date for such price changes shall be no earlier than 30 days from the date the application is filed. The price changes set out in such an application shall be approved and fixed by TRC no later than 14 days after the filing date of the application, if the price changes comply with the price cap method. The price changes set out in such an application shall only be disapproved by the TRC if the calculations contain mathematical errors or the prices violate the *Telecommunications Laws* or the price cap method in a material respect.

(c) Annual price changes for the Basket of Services shall not exceed the amounts determined for that year in accordance with the formula:

P(current year) = P(past year) + P(past year) x (CPI - X)

where:

P is the price of the Basket of Services (determined in accordance with a revenue weighted index approved by TRC that is consistent with good international regulatory practice calculated on the basis of revenues shown in the latest available accounts of the Licensee at the time of the TRC review of the proposed price changes)

CPI is the most recently published increase in the Jordanian Consumer Price Index, and

X is %.

(d) For the purpose of determining compliance with the price cap method in 1999, the base price of the Basket of Services shall be based on the prices listed in Attachment 1 to this Appendix 5.

(e) No price increase for an individual service which is included within the Basket of Services shall exceed % annually unless such an increase has received the prior written approval of the Council of Ministers. Evidence of such approval shall be filed as part of the application of the Licensee to TRC to approve and fix the price change.

4. Other Services

In accordance with the above-noted Decree of the Council of Ministers, the prices of Services provided by the Licensee that are not included in the Basket of Services may be adjusted by the Licensee in accordance with guidelines issued or approved by TRC based on the prices listed in Attachment 2 to this Appendix 5.

5. Procedures

The details of the price cap method and other price regulation to be implemented in accordance with this Appendix 5 shall be approved by TRC after consultation with the Licensee and other interested parties. TRC shall establish and comply with open, fair and transparent practices and procedures in the implementation and application of price regulation of the Licensee.

6. Tariff Review

If during any fiscal year of the Licensee, the effect of this License Agreement, the *Telecommunications Law*, any other legislation or regulations applicable to the Licensee has or is reasonably likely to have a materially adverse impact on the Licensee or on the Licensee's ability to fulfill its obligations under this License Agreement (a "Material Change"), the Licensee may request by notice to the TRC that the TRC, or the TRC may by notice to the Licensee, review this Appendix 5. The TRC shall notify the Licensee within 10 (ten) days after the notice by or to the Licensee whether it determines that there has been a Material Change. If the TRC determines that there has been a Material Change, it shall institute a review of this Appendix 5. If a review is instituted, the results of the review shall be published and delivered to the Licensee together with the TRC's proposals and modifications (if any) not later than 20 (twenty) days after its determination. A period of 20 (twenty) days from the date of the publication shall be allowed for interested parties, including the Licensee, to respond to the TRC in writing. Following receipt and due consideration of the written responses, the TRC shall issue its decision with respect to any modifications to this Appendix 5 within a period of 20 (twenty) days after the receipt of those responses. The modifications (if any) shall reflect a reasonable balancing of the requirements of the *Telecommunications Law*, interests of the Licensee's customers, the Licensee and the shareholders of the Licensee and shall not prevent the Licensee from earning revenues sufficient for it to meet its obligations under this License Agreement and, provided that the Licensee demonstrates that it is operated in a reasonably efficient manner, due consideration shall be given to the overall financial condition of the Licensee and the reasonable expectations of its shareholders. The modifications shall become effective in the fiscal year immediately following the publication of the TRC's decision. The TRC shall be entitled to appoint an independent, internationally recognised expert (whose reasonable fees shall be met by the Licensee) for the purposes of this Section 6.

ATTACHMENT I
TO
APPENDIX 5

(See attached)

ATTACHMENT 2
TO
APPENDIX 5

(See attached)

APPENDIX 6

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

LIMITATIONS ON EXCLUSIVITY

1. General

This Appendix 6 forms part of the License Agreement dated between the Telecommunications Regulatory Commission and and is subject to the terms and conditions thereof. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said License Agreement.

APPENDIX 7

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

SCHEDULE OF SPECTRUM MANAGEMENT LICENSE FEES

(See attached)

ANNEX 4

Jordan Telecommunications Company Public Mobile Telephone (Cellular) License Agreement)

http://www.trc.jo/Static_English/doc/Mobile%20GSM.doc

THE HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

JORDAN TELECOMMUNICATIONS COMPANY

AMENDED AND RESTATED
PUBLIC MOBILE TELEPHONE (CELLULAR) LICENSE AGREEMENT

Issued at Amman, January

PUBLIC MOBILE TELEPHONE (CELLULAR) LICENSE AGREEMENT

THIS AMENDED AND RESTATED LICENSE AGREEMENT made the day of

BETWEEN:

TELECOMMUNICATIONS REGULATORY COMMISSION
of the Hashemite Kingdom of Jordan ("TRC")

OF THE FIRST PART

and

a Jordanian company established under the *Companies Law* (Law No. 1 of 1989) and registered at the Ministry of Trade and Industry under the number on (the "Licensee")

OF THE SECOND PART

WITNESSES THAT WHEREAS:

A. The Telecommunications Corporation (TCC) was entitled to establish, operate and regulate all kinds of telecommunications networks and services in Jordan in accordance with Law No. 29 of 1971;

B. In accordance with the *Telecommunications Law*, as defined herein, the TRC has been established as an independent regulator and the legal successor to the Telecommunications Corporation in all matters relating to the regulation of the telecommunications sector in Jordan;

3rd. Also in accordance with the *Telecommunications Law* and certain decrees and decisions of the Council of Ministers, the Licensee has been established as the legal successor to all of the rights and obligations of the Telecommunications Corporation in its capacity as operator of telecommunications networks and services in Jordan;

4th. As contemplated by Articles 87 and 88 of the Telecommunications Law, the Licensee and the TRC entered into a License Agreement dated which recorded the terms and conditions upon which the Licensee is entitled to be Licensed to install, operate and manage Public Mobile Telephone (cellular) Services in Jordan;

5th. Pursuant to article 7 of the License agreement and in accordance with the Telecommunications Law the TRC and Licensee have agreed to amend and restate this License agreement as set out below with effect as of 23 January 2000; and

6th. The Licensee has paid to the TRC a License Acquisition Fee in the amount of xxxxxx Million Jordanian Dinars (JD xxxxxxxx);

NOW, THEREFORE, TRC and the Licensee agree as follows:

ARTICLE 1 - INTERPRETATION

1.1 Definitions

In this License Agreement, unless the subject matter or context otherwise requires, the following capitalized terms shall have the following meanings:

1.1.1 "Affiliate" means, in relation to any one Person, any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person.

1.1.2 "Control" means the ownership of more than fifty percent (50%) of the voting interests in the subject Person and/or the ability to control in fact the business and affairs of the subject Person, whether by ownership, contract or otherwise.

1.1.3 "Customer" means any Person who has indicated willingness to the Licensee to receive Services from the Licensee on the Licensee's terms and conditions, or has entered into a contract with the Licensee for the provision of such Services.

1.1.4 "Effective Date" means.

1.1.5 "Frequencies" means the radio frequencies allocated to the Licensee for use in the operation of the Service as specified in Appendix 2, as amended or modified in accordance with the terms hereof.

1.1.6 "License Agreement" means this amended and restated license agreement and all appendices attached hereto, as amended, modified or supplemented in accordance with Section 7.1 or Section 8.5.

1.1.7 "Operating License" means the public telecommunications operating license issued to the Licensee in respect of the Service under Section 2.1 and attached as

Appendix 1 hereto, as amended, modified or supplemented in accordance with the terms hereof.

1.1.8 "Person" means any individual, company, corporation, partnership, joint venture, consortium, government or governmental entity.

1.1.9 "Public Telecommunications Service Provider" means any Person licensed to operate a Public Telecommunications Network, as defined in the *Telecommunications Law.*

1.1.10 "Public Mobile Telephone (Cellular) Service" means a public Radiocommunication service composed of multiple cells of Radiocommunication transceivers, configured so as to permit full mobility of customer terminals (radio stations), with hand-off between adjacent cells and frequency re-use throughout the various cells, and that permits a customer to conduct two-way communications on a fully duplexed basis between the customer's radio station and other similar radio stations, as well as with any apparatus, station or service connected to the Public Switched Telephone Network (PSTN) in Jordan.

1.1.11 "Radiocommunication" means the transmission, emission or reception of signs, signals, writing, images, sounds or intelligence of any nature by means of electromagnetic waves of frequencies lower than 3,000 GHz propagated in space without artificial guide.

1.1.12 "Service" means a Public Mobile Telephone (Cellular) Service operated in the 900 MHz frequency band in accordance with the GSM 900 standard as approved by the European Telecommunications Standards Institute (ETSI), from time to time.

1.1.13 "Spectrum License" means the spectrum license issued to the Licensee pursuant to Section 2.1 and attached as Appendix 2 hereto, as amended, modified or supplemented in accordance with the terms hereof.

1.1.14 "Telecommunications" means any transmission, emission or reception of signs, signals, writing images, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems.

1.1.15 "Telecommunications Facilities" means any transmission facility or other facility, apparatus or other thing that is used or is capable of being used for Telecommunications or for any operation directly connected with Telecommunications.

1.1.16 "Telecommunications Law" means the Telecommunications Law (Law No. 13 of 1995) of Jordan

1.2 Appendices

The following Appendices annexed hereto form part of this License Agreement and are subject to all the terms and conditions set out herein:

Appendix 1	-	Operating License
Appendix 2	-	Spectrum License
Appendix 3	-	Operating License Fees
Appendix 4	-	Service Roll Out, Coverage and Quality
Appendix 5	-	Schedule of Spectrum License Fees

ARTICLE 2 - LICENSE

2.1 Grant of License

2.1.1 In accordance with the *Telecommunications Law* and upon and subject to the terms and conditions set out herein, the TRC hereby grants to the Licensee:

2.1.1.1 the Operating License to install, operate and manage the Service in the form set out in Appendix 1; and

2.1.1.2 the Spectrum License to use the Frequencies in the operation of the Service, in the form set out in Appendix 2.

2.1.2 The Operating License authorizes the Licensee to install, operate and manage the Service only and does not authorize the Licensee to install, operate or manage any other public or private telecommunications service in Jordan, including any fixed telecommunications service.

2.1.3 This License Agreement authorizes the Licensee to construct and operate all telecommunications apparatus or facilities that are used to provide the Service in accordance with this License Agreement. Such apparatus and facilities include transmission links. Transmission links are Radiocommunication and other Telecommunications Facilities such as fibre optic cables used to link the facilities (radio based station sites, switches, etc.) of the Licensee with each other or with the facilities of another Public Telecommunications Service Provider. However, radio based transmission links shall not be used except pursuant to a spectrum license issued by the TRC. The TRC cannot guarantee that suitable radio frequencies will be available for all transmission links, but will use best efforts to make

suitable frequencies available upon request. The Licensee may supply its own telecommunications links by leasing transmission capacity from another Public Telecommunications Service Provider or sharing such capacity with it.

2.1.4 The Operating License does not authorize the Licensee to provide international Telecommunications Services, except by means of the services of an international Public Telecommunications Service Provider licensed to provide international services by the TRC.

2.1.5 The Spectrum License authorizes the use of the Frequencies by the Licensee in the operation of the Service only. The Licensee is not authorized to use the Frequencies for any other purpose.

2.2 Effective Date

The Operating License and the Spectrum License shall take effect and this License Agreement shall come into full force and effect, on the Effective Date.

2.3 Term

Subject to Article 7, the Operating License and the Spectrum License shall continue in full force and effect until the expiration of the respective license terms specified in Appendix 1 or Appendix 2, as the case may be.

2.4 Exclusivity

2.4.1 The TRC and the Licensee acknowledge that, in accordance with Council of Ministers Decree Number 11A-3-1-9412 of October 20, 1997, only two Public Mobile Telephone (Cellular) Services will be licensed to operate in Jordan before January 1, 2004; namely the Licensee and Jordan Mobile Telephone Services Company, which was licensed pursuant to a License Agreement dated 30 October, 1994. The Licensee acknowledges that it has received no assurance that no other licensees will be permitted to begin operation of Public Mobile Telephone (Cellular) Services after that date.

2.4.2 During the period of exclusivity provided for in Section 2.4.1, the TRC may not grant licenses to other Persons to commence the operation of such telecommunications services prior to the expiry of such period. Licenses may be granted to other Persons authorizing the installation and testing of Public Mobile Telephone (Cellular) Service networks and other facilities prior to the expiry of such period of exclusivity, provided that no Public Mobile Telephone (Cellular) Service is in fact operated under such a license until after expiry of the period of exclusivity. For greater certainty, the TRC may issue a license in respect of such telecommunications services prior to the expiry of such period of exclusive authority,

provided that no telecommunications service is in fact operated under such a license until after expiry of the period of exclusivity.

2.4.3 The TRC shall use reasonable best efforts to ensure that the Licensee obtains the full benefit of the exclusivity rights specified in this Section 2.4 through the enforcement of this License Agreement and licenses issued to other Public Telecommunications Service Providers by TRC.

2.5 License Parity

To the extent required to ensure fair competition, all future licenses issued by the TRC authorizing the operation of a Service in Jordan will contain terms and conditions equivalent to those applicable to the Licensee and in accordance with the Telecommunications Law.

ARTICLE 3 - FEES

3.1 Operating License Fee

The Licensee shall pay to TRC an annual Operating License fee in an amount intended to represent the Licensee's proportionate share of the budgeted annual costs of TRC incurred in regulatory operations related to the Service, excluding radio spectrum management costs. This fee will be payable annually on quarterly basis on the dates and in the amounts determined in accordance with Appendix 3.

3.2 Spectrum License Fee

3.2.1 In addition to the fees payable in respect of the Operating License under Section 3.1, the Licensee shall pay to the TRC Spectrum License Fee in an amount of JD 21000 / 1MHz pair for (5+5) MHz until;

3.2.2 The Licensee shall pay Spectrum License Fee for the additional (5+5) MHz, in accordance with the fees determined by the TRC as in Appendix 5 which will apply until; and

An annual frequency fee of JD 1000 / allocated MW bearer (hop).

3.2.3 After the Licensee shall pay Spectrum License Fee in accordance with the fees determined by TRC and applicable to all similar Licensees.

3.3 Revenue Share

The Licensee shall pay to the TRC annually in arrears on each anniversary of the Effective Date 10% of his operational revenues from its Public Mobile Telephone Service (cellular), calculated and payable as stipulated in 3.4, and as amended, modified or replaced by TRC.

3.4 Operating Revenue

The operational revenues shall be net of Service Tax and calculated after the deduction of the balance amounts due to other interconnected Public Telecommunications Service Providers in respect of interconnecting traffic between the Licensee and these operators and in accordance with the following formula:

Operating Revenue = A + (B - C), where

A: Total annual sales of cellular services to the Licensee's subscribers.

B: The annual aggregate receivables from other interconnected Public Telecommunications Service Providers for the traffic originated from their subscribers and destined to subscribers in the Licensee's network.

C: The annual aggregate payables by the Licensee to other interconnected Public Telecommunications Service Providers for the traffic originating from the Licensee's network to the subscribers of the other Public Telecommunications Service Providers.

ARTICLE 4 - CONDITIONS OF LICENSE

4.1 General

The Licensee shall ensure that it complies with each of the terms and conditions set out in this License Agreement at all times during the term of the Operating License and the Spectrum License. The Licensee acknowledges that failure to comply with any such terms or conditions may constitute grounds for termination of this License Agreement, revocation of the Operating License or Spectrum License or the imposition of fines or penalties in accordance with the *Telecommunications Law* and the terms hereof.

4.2 Eligibility

The Licensee shall be a Jordanian company established and in good standing under the *Companies Law*, as the same may be amended or replaced from time to time.

4.3 Ownership and Control

4.3.1 The Licensee shall not Control or own, directly or indirectly, any ownership interest in any other Public Telecommunications Service Provider which is licensed to provide the Service in Jordan, provided however that no breach of this license condition will result from the ownership, directly or indirectly, by the Licensee of less than ten percent (10%) of the shares of a public company which owns, directly or indirectly, any ownership interest in a Public Telecommunications Service Provider which is licensed to provide the Service in Jordan.

4.3.2 No Person shall Control or own, directly or indirectly, any ownership interest in the Licensee if such Person Controls or owns, directly or indirectly, any ownership interest in any other Public Telecommunications Service Provider which is licensed to provide Public Mobile Telephone (Cellular) Service in Jordan, provided however that no breach of this license condition will result from the ownership, directly or indirectly, by any such Person of less than (10%) of the shares of a public company, which owns, directly or indirectly, any ownership interest in the Licensee or any other Public Telecommunications Service Provider.

4.3.3 Any change in Control of the Licensee shall require the prior written approval of the TRC.

4.4 Standard of Conduct

The Licensee shall not use or knowingly permit the use of its Service for any purpose that violates applicable law. The Licensee shall endeavour to take all action within its control to ensure that its Service is not used for any such purposes. The Licensee shall include this same provision precluding the use of its Service for illegal purposes in its contracts with its Customers.

4.5 Service Roll-Out, Coverage and Quality

The Licensee shall roll out the Service and provide and maintain service coverage and quality in accordance with the requirements set out in Appendix 4.

4.6 Service Obligation

4.6.1 In all areas required to be served, the Licensee shall provide its Services to any Person wishing to obtain them and willing to pay the Licensee's published prices and abide by other generally applicable terms and conditions established by the Licensee in accordance with this License Agreement.

4.6.2 Except as otherwise permitted by the *Telecommunications Law* or this License Agreement, the Licensee shall comply with Section 29(h) of the *Telecommunications Law* and shall not unduly discriminate in the provision of its Service or in the charging of its rates for its Service between similarly situated Customers or groups of Customers or grant any undue preferences between them, provided that nothing herein shall prevent the Licensee from engaging in marketing practices, such as the offering of free or subsidized handsets, or promotional or volume discounts, to the extent such practices do not constitute undue preferences or undue discrimination.

4.6.3 Notwithstanding Section 4.6.2, to meet national security requirements, the Licensee may propose discriminatory or preferential service offerings that fall within the exceptions provided for in Article 29(h) of the *Telecommunications Law*. Any such proposals shall be made in writing to the TRC which shall then determine whether such proposed discriminatory or preferential offerings are due and lawful. The Licensee shall not implement any such proposal without the prior written approval of the TRC. The cost to the Licensee of providing exceptional service offerings in accordance with Article 29(h) of the *Telecommunications Law* shall not exceed two percent (2%) of the gross revenues of the Licensee in the fiscal year during which such exceptional service offerings are provided.

4.7 Price Regulation

The prices which the Licensee may charge its Customers in connection with the Service are subject to regulation by the TRC on the basis determined by the TRC in accordance with the *Telecommunications Law* following consultation with the Licensee and other interested parties.

4.8 Specifications

The Licensee shall install, operate and manage the Service in accordance with the specifications for GSM 900 as approved by the European Telecommunications Standards Institute (ETSI) from time to time. For greater certainty, the Licensee is authorized to install and operate in connection with its Service any equipment or other facilities necessary to offer additional features, upgrades or enhancements to its Service, provided such equipment or other facilities and such additional features, upgrades or enhancements are compatible with the GSM standard as approved by ETSI.

4.9 Equipment

Terminal equipment used by the Licensee or provided by the Licensee to its Customers must be type approved by TRC. The Licensee shall permit its Customers to purchase or lease TRC type approved terminal equipment from the Licensee or any third party.

4.10 Frequencies

4.10.1 The Licensee acknowledges that other countries may authorize or permit the use of their radio frequencies in a manner that interferes with the Licensee's use of the Frequencies and that it is the responsibility of Licensee to report such interference as soon as practicable, in order that the TRC may take measures to deal with such interference. Licensee shall use the Frequencies in compliance with all regional inter-governmental arrangements in effect that are designed to reduce radio interference among service providers. TRC shall defend the rights of the Licensee under the Spectrum License in accordance with the *Telecommunications Law*.

4.10.2 The Licensee may apply to the TRC for the right to use additional frequencies in connection with the Service. The TRC may license additional frequencies to the Licensee pursuant to the Spectrum License subject to availability and based on demonstrated existing or reasonable projected subscriber demand and an assessment of whether or not the Frequencies are being utilized efficiently. At all times the Licensee shall implement all commercially reasonable measures to optimize the efficiency and effectiveness of its use of the Frequencies.

4.10.3 The TRC may, in order to comply with international spectrum coordination requirements, ITU-R assignments or reassignments, or generally in the course of regulating the radio spectrum in the best interests of Jordan, reassign radio frequencies used by the Licensee or require the Licensee to surrender its rights in respect of radio frequencies which are not required for the operation of the Service. In such cases, the TRC and the Licensee shall consult with each other before any such action is taken and the TRC shall provide the Licensee with adequate time and, where applicable, assign appropriate alternative frequencies, to permit the Licensee to carry on its business without unreasonable costs or disruptions.

4.10.4 The Licensee shall obtain approvals from the TRC in respect of each of its radio transmission sites. The TRC shall make a decision in respect of any such approvals as soon as possible, but in any event within 30 days, after receipt of an application by the Licensee, setting out the geographic location co-ordinates, radiated power, frequency assignments and any other specifications deemed necessary by the TRC. The Licensee shall comply at all

times with all applicable construction and other permit requirements and standards applicable to its business under Jordanian law.

4.11 Books of Account

4.11.1 The Licensee shall at all times keep at its principal place of business within Jordan, all proper books of account accurate and up-to-date in accordance with Jordanian generally accepted accounting principles (GAAP) and good business practices. All financial information submitted by the Licensee to the TRC for any purpose shall be prepared and presented in accordance with GAAP or as the TRC shall direct, provided that such direction does not result in any unreasonable additional costs being incurred by the Licensee.

4.11.2 On request, the TRC shall have access during normal business hours to the books and records of the Licensee in accordance with the *Telecommunications Law*.

4.12 Annual Reports

Within four (4) months of the end of each fiscal year of the Licensee, the Licensee shall file with the TRC seven (7) copies of the annual report and annual financial statements (audited when available). This annual report shall include detailed information in respect of the following:

4.12.1 the roll-out or upgrading of the Service achieved during the past fiscal year;

4.12.2 an explanation of the reason for any shortfall in the required or anticipated roll-out or upgrading, together with an estimate of when the shortfall will be remedied. If the shortfall is alleged to be caused by a third party, the Licensee shall include any relevant documentation reasonably obtainable from that third party;

4.12.3 all material instances in which, as far as the Licensee is aware, the Licensee's obligations under any provisions of this License Agreement have not been met, together with an explanation for such failure;

4.12.4 a list of all types of terminal equipment, including handsets, used by the Licensee in providing the Service together with TRC type approval references; and

4.12.5 any other information deemed relevant by the Licensee or requested by TRC in writing.

4.13 Submission of Reports

Any information or reports provided to TRC pursuant to this License Agreement shall be in either or both the Arabic language or the English language and signed by a senior officer of the Licensee who shall certify, so far as the Licensee is aware, the completeness and accuracy of the report or information. In the event of any inconsistency between an Arabic language document and an English language document, the Arabic language text shall prevail.

4.14 Other Information

The Licensee shall furnish to TRC such further or other information as required periodically and from time to time for the purpose of exercising the functions assigned to it under the *Telecommunications Law*. Such information shall be furnished at the time and in the format reasonably requested by TRC in writing. In making these requests, the TRC shall ensure that no undue burden is placed on the Licensee in furnishing that information and, in particular, the Licensee shall not be required to furnish information which would not normally be available to it.

4.15 Confidentiality

4.15.1 All information furnished by the Licensee to TRC and marked "confidential" shall be held in confidence by TRC. Such information may be released by TRC to the extent it becomes publicly available through no fault of TRC or to the extent its release is required by any applicable law or order, provided that the TRC gives the Licensee prior notice of that release. This requirement of confidentiality shall survive any termination or expiry of this License Agreement or revocation of the Operating License or the Spectrum License. The Licensee acknowledges that confidentiality will not apply to any information supplied to the TRC regarding the Licensee's compliance with its obligations hereunder including the obligations set out in Appendix 4, which information shall be made public by the TRC.

4.15.2 TRC will endeavour to ensure that documents for which confidential treatment is requested are treated confidentially. Nothing in this Section 4.15.2 shall limit the availability of any remedy otherwise available to the Licensee under Jordanian law and which the Licensee may seek from any private party that receives or uses confidential information as the result of a failure of TRC to protect that information.

4.16 Access to Licensee Premises

The TRC shall have access to all premises of the Licensee in accordance with the *Telecommunications Law*.

4.17 Co-operation with TRC

4.17.1 The Licensee shall at all times co-operate with TRC and its authorized representatives in the exercise of the functions assigned to TRC under the *Telecommunications Law* and shall make its facilities available for the implementation of judicial, security and administrative orders relevant to the tracing of telecommunications transmissions as specified in such orders.

4.17.2 The Licensee acknowledges that the TRC is in the process of establishing a general regime for the regulation of the telecommunications sector in accordance with the *Telecommunications Law*. The Licensee will be subject to that regime in respect of the Service as and when it comes into force to the same extent it applies to all Public Telecommunications Service Providers licensed to provide the Service. Without limiting any rights or powers of the TRC hereunder or under applicable law, the TRC agrees to establish and comply with open, fair and transparent practices and procedures in the exercise of its regulatory operations and, in particular, agrees, except in emergency situations and subject to its obligations of confidentiality, to issue all its rules, decisions and instructions publicly and in writing following appropriate consultation with interested parties.

4.18 Use of Jordanian Resources

Subject to applicable law and international obligations of Jordan, the Licensee shall maximize the use of Jordanian human and material resources in the installation, operation and management of the Services to the extent reasonably possible in the circumstances and provided that such resources are available.

4.19 Anti-Competitive Practices

The Licensee will not alone or together with others, engage in or continue or knowingly acquiesce in any anti-competitive practices and, in particular, the Licensee shall:

4.19.1 not engage in any anti-competitive cross-subsidization;

4.19.2 not engage in the abuse of its dominant position, if any;

4.19.3 not enter into any exclusive arrangements with third parties for the location of its facilities that are acquired to provide the Service;

4.19.4 not enter into any agreements, arrangements or undertakings with any Person, including any supplier of services that compete with the Service which have as their objective or effect the fixing of prices or any other restraint on competition;

4.19.5 not engage in any anti-competitive tied or linked sales practices, provided that the Licensee may bundle services so long as the bundled services are also available separately;

4.19.6 not use information obtained from competitors if the object or effect of such use is anti-competitive; and

4.19.7 Cooperate with other Licensees in order to facilitate the provision of public telecommunications services.

4.20 Segregation of Services

The TRC may issue decisions or instructions directing the Licensee to operate the Service through an affiliated company, established under the Companies Law (the "Cellular Company"). The purpose of such decisions or instructions shall be to segregate the Service from other services provided by the Licensee, and to ensure that the Licensee does not engage in anti-competitive practices of the type described in Section 4.19. The TRC shall monitor compliance with the decisions or instructions, and may issue such further decisions or instructions as it considers necessary to achieve compliance with Section 4.19. If the TRC considers it appropriate, it may instruct the Licensee to transfer the License to the Cellular Company pursuant to Article 47 of the Telecommunications Law. The Licensee shall comply with all decisions or instructions issued pursuant to this Article.

4.21 Compliance with Law

The Licensee shall comply with all laws of the Kingdom of Jordan applicable to its operations, including the *Telecommunications Law*, all decisions, rules and instructions of the TRC issued in accordance with Law and all policies of the Government of Jordan. Notwithstanding the foregoing, the TRC shall not impose any regulatory requirements on the Licensee where such action would constitute a breach of this Agreement.

ARTICLE 5 - RELATIONS WITH CUSTOMERS

5.1 Customers Relations

The Licensee shall maintain adequate trained personnel to receive and respond promptly to complaints from Customers. The Licensee shall take all commercially reasonable action to

promptly remedy and avoid the recurrence of the cause of all Customer complaints which relate to the quality, availability or delivery of its Service. The Licensee shall also take all commercially reasonable actions necessary to guarantee that amounts due to Customers are paid in full if the Operating License is revoked.

5.2 Customer Contract

Except to the extent the TRC exempts the Licensee from the requirements of this Section 5.2, the relationship between the Licensee and the Customers of the Services shall be governed by the terms of a Customer contract which incorporates standard terms and conditions approved in accordance with this Article 5. The Licensee shall not offer the Service otherwise than pursuant to a Customer contract which incorporates approved standard terms and conditions, without the prior written consent of the TRC.

5.3 Content of Terms and Conditions

5.3.1 The standard Customer contract terms and conditions referred to in Section 5.2 shall include, at a minimum, provisions approved by the TRC in respect of the following matters:

5.3.1.1 deposits and alternative methods of providing security for payment where reasonably required, provided that in no circumstances may such deposits or security exceed the charges reasonably anticipated to be incurred by the Customer within a three (3) month period;

5.3.1.2 confidentiality of Customer information;

5.3.1.3 refunds or other rebates for service problems or over billing;

5.3.1.4 payment terms, including any applicable interest or administrative charges;

5.3.1.5 Customer and Licensee rights of termination; and

5.3.1.6 method of settlement of Customer complaints or other disputes, including provision for appeal to the TRC and the courts in the event that a dispute cannot be resolved by the parties.

5.4 Approval of Terms and Conditions

5.4.1 The Licensee shall file with the TRC for approval a proposed draft form of standard terms and conditions as required by Section 5.2. Within sixty (60) days of receipt of a draft TRC shall either approve the draft by notice in writing to the Licensee or advise the Licensee in

writing that the draft is not approved. If the TRC does not advise the Licensee that a proposed draft is not approved within the said sixty (60) day period, the draft shall be deemed to be approved as filed.

5.4.2 If the TRC does not approve a draft submitted under Section 5.4.1, it shall provide a detailed written explanation of the reasons for such non-approval sufficient to permit the Licensee to revise the draft in a manner, which would be approved by the TRC. The Licensee may then file an amended draft for approval and Section 5.4.1 shall again apply.

5.4.3 When a form of standard terms and conditions is approved they shall be incorporated by the Licensee in all contracts between the Licensee and its Customers in respect of the Services until such time as amended standard terms and conditions are approved by the TRC under this Article 5. Nothing in any agreement between the Licensee and a Customer shall contradict or modify the applicable standard terms and conditions.

5.5 Availability of Standard Terms and Conditions

A copy of the approved standard terms and conditions shall be provided to any interested party upon request and, after the Effective Date, to any new Customer prior to commencement of service to, or receipt of any payment or deposit from, such customer. All provisions of any customer contract shall be typed and provided to each Customer in the Customer's choice of Arabic or English.

5.6 Amendment to Customer Contracts

5.6.1 Approved standard terms and conditions may be amended with the approval of the TRC at the request of the Licensee. Any requests for amendments by the Licensee shall be made by filing an amended draft with the TRC. The provisions of Section 5.4 shall govern the approval of any such amendment.

5.6.2 Any amendment to a Customer contract shall come into force thirty (30) days after the earlier of announcement in the media or delivery of a written copy of such amendment to the applicable Customer, unless that Customer objects to such amendment to the TRC or the Licensee in writing before the expiry of that thirty (30) day period.

5.7 Customer Invoices

5.7.1 All Customer invoices rendered by the Licensee in respect of the Services shall be timely, clear, concise, typed in the customer's choice of Arabic or English and easy to understand.

5.7.2 The Licensee shall make available to all Customers full details of their Customer bill should the Customer request this service in advance and pay the applicable fees.

5.8 Provision of Ancillary Services

5.8.1 The Licensee shall provide directory assistance services (including, at least, name and telephone number) to its Customers. This directory assistance service shall include information concerning the Licensee's Customers and, based on the information available to the Licensee, the Customers of other Public Telecommunications Service Providers in Jordan. The Licensee shall cooperate with other Public Telecommunications Service Providers in Jordan so that they may have convenient access to information concerning the Licensee's Customers for inclusion as party of their own directory assistance services. The Licensee shall use any such customer information obtained from other Public Telecommunications Service Providers only for the purpose of offering directory services and for no other purpose. The Licensee shall not be required to disclose Customer information to a competitor or to otherwise cooperate in the provision of directory services with that competitor in accordance with this Section 5.8.1 unless equivalent obligations are also imposed on that competitor.

5.8.2 The Licensee shall implement free three digit calling for police, ambulance and other emergency purposes in accordance with requirements established by the TRC from time to time. The Licensee shall cooperate with emergency organizations in the efficient and prompt handling of emergency calls.

ARTICLE 6 - RELATIONS WITH OTHER OPERATORS

6.1 Interconnection with Other License Holders

6.1.1 The Licensee acknowledges that interconnection between the Licensee's network and other licensed telecommunications networks in Jordan, is governed by Section 29(e) of the *Telecommunications Law*, the provisions of this Article 6 and comparable provisions in the licenses of other network operators and any *Guidance on Interconnection* issued by the TRC from time to time, all as may be amended or replaced from time to time.

6.1.2 The Licensee will act fairly and without discrimination in accordance with applicable law and the terms of this License Agreement in all business dealings with other Public Telecommunications Service Providers and shall co-operate with other Public Telecommunications Service Providers to facilitate the provision of telecommunications services to all users throughout Jordan and so as to optimize the use of common facilities in the location of network facilities.

6.1.3 Without limiting the generality of the previous section, all dealings between the Licensee's operating division or Affiliate which operates the Service and the other divisions or Affiliates of the Licensee shall be carried out on a basis which does not discriminate unduly against other operators of Public Mobile Telephone (Cellular) Services, or place such other operators in an unjustly disadvantageous position.

6.1.4 TRC will endeavour to cause other Public Telecommunications Service Providers to act fairly and without discrimination in accordance with applicable law and applicable terms of license in all business dealings with the Licensee, including interconnection.

6.1.5 All interconnection obligations of the Licensee shall be interpreted and enforced by the TRC so as to ensure that so far as is reasonably possible in the circumstances they are competitively neutral and non-discriminatory.

6.2 Principles of Negotiation

6.2.1 The Licensee shall interconnect its network with all Public Telecommunications Service Providers in Jordan who request interconnection for purposes of providing their lawful services. Subject to Section 6.1, in negotiating interconnection and other arrangements with other licensed Public Telecommunications Service Providers, the Licensee shall agree to:

6.2.1.1 provide interconnection at any technically feasible point in the network, subject to operational practicability and commercial viability;

6.2.1.2 provide interconnection under non-discriminatory terms, conditions (including technical standards and specifications) and rates and of a quality no less favourable than that provided for its own like services or for like services provided to other affiliated or non-affiliated service providers;

6.2.1.3 provide interconnection in a timely fashion on terms, conditions (including technical standards and specifications) and cost based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for network components or facilities that it does not require for the service to be provided, it being understood that no unreasonable and unrecoverable costs will be imposed on the Licensee in connection with any unbundling;

6.2.1.4 lease to such other service providers, on a non-discriminatory basis, facilities (rooms, towers, ducts, cable etc.) under the control of the Licensee and required for use by such others, it being understood that the Licensee shall not be required to construct new facilities for lease to such other service providers hereunder;

6.2.1.5 allow access to such facilities by such other license holders, upon request, for the purposes of installation, maintenance and repair;

6.2.1.6 provide reasonable notice to such other license holders about any network design, roll-out or up grade plans or changes which may be expected to affect the arrangements between the parties;

6.2.1.7 take steps to protect such other license holders' systems from interference or other harm caused by the facilities and equipment used by the Licensee; and

6.2.1.8 not enter into any arrangements for access to any Service or facility that would preclude the operator of that Service or facility or another license holder from entering into similar arrangements with the operator of that Service or facility.

6.2.2 The procedures applicable for interconnection to the Licensee's network shall be made publicly available.

6.2.3 The Licensee will make publicly available either its interconnection agreements or reference interconnection offers.

6.2.4 The Licensee shall be entitled to require, as a condition of entering into any interconnection agreement, that:

6.2.4.1 current generally accepted international engineering principles and practices in the telecommunications sector are adhered to in the provision of any interconnection services;

6.2.4.2 due account is taken of the needs of the Licensee's Customers and the needs of other Public Telecommunications Service Providers and private network operators, both current and future, that have made or make requests to interconnect with the Licensee's network;

6.2.4.3 it is not required to interconnect its network if doing so would unreasonably risk causing damage to the Licensee's property, or the death of, or personal injury to, any person employed or engaged in the Licensee's business.

6.3 Failure to Agree

If the Licensee is unable to reach agreement with another Public Telecommunications Service Provider on the terms and conditions of interconnection or other arrangements

within one month after the first request in writing for interconnection by either party, the Licensee may, by notice in writing, request that TRC adjudicate between them. TRC's decision on all matters in dispute shall be binding on both parties.

6.4 Approval Required

All interconnection or other agreements between the Licensee and any other Person licensed or otherwise permitted to provide public or private telecommunications Licensed Service in Jordan shall be filed for approval with TRC. The Licensee shall not give effect to any such agreement until it has been approved TRC. TRC shall be deemed to have approved any such agreement thirty (30) days after it is filed unless it gives written notice of disapproval to the Licensee prior to the expiry of that thirty (30) day period.

6.5 Roaming

The Licensee shall cooperate, subject to operational practicability and commercial viability, with other licensed providers of the Service to establish and maintain technical and billing arrangements to permit its customers to use their wireless terminal equipment in the service areas of such other service providers, and *vice versa*. The Licensee shall comply with all directives of TRC to promote the establishment and maintenance of such roaming capabilities. However, entering into domestic roaming agreements with other licensees shall be subject to the mutual agreement of the parties concerned; such agreements shall be deposited with the TRC for approval. The obligations of the Licensee under this Section 6.5 shall be interpreted by the TRC so as to ensure that so far as is reasonably possible in the circumstances, they are competitively neutral and non-discriminatory. The Licensee shall participate in relevant international associations that have as their objective the facilitation of roaming by customers of the Licensee and by customers of operators of Public Mobile Telephone (Cellular) Services in other countries that are compatible with the Service.

6.6 Numbering Plan

6.6.1 TRC will allocate a unique three-digit network prefix and corresponding blocks of numbers to the Licensee. The Licensee will in turn allocate individual numbers to Customers and maintain suitable records of utilization of numbering capacity. The Licensee and other Public Telecommunications Service Providers will be required to reprogram or re-engineer their networks to convey calls to numbers in a newly allocated block, either directly to customers on the same network or via points of interconnection with other operators' networks.

6.6.2 All allocations of numbers shall be made under non-discriminatory terms and conditions by the TRC upon request by the Licensee and other Public Telecommunications Service Providers for services they reasonably anticipate providing in the foreseeable future.

6.6.3 The blocks of numbers allocated by TRC, and the individual numbers allocated by network operators, are to be regarded as part of a national resource so that ownership is not transferred when an allocation is made. However, an allocation conveys an ongoing right of use and an expectation of a reasonable notice period should it be necessary to withdraw or to change allocated numbers.

6.6.4 The Licensee shall co-operate with other Public Telecommunications Service Providers to allow telephone numbers to be associated with an outgoing call to convey the Calling Line Identity (CLI), as and when CLI service becomes operationally practicable and commercially viable in Jordan.

6.6.5 The Licensee shall co-operate with other network operators in the specification and development of number portability to allow replacement service without a change of number. Subsequent implementation of number portability is to be subject to operational practicability, commercial viability, and the development needs of Jordan.

6.6.6 The Licensee shall co-operate with other network operators in the specification and development of carrier selection to allow a choice of routing. The choice of method(s) and subsequent implementation is to be dependent on Customer demand, operational practicability, commercial viability, and the development needs of Jordan.

ARTICLE 7 - MODIFICATION, RENEWAL AND TERMINATION

7.1 Modification

This License Agreement and the License may be modified in accordance with the provisions of the *Telecommunications Law*, provided however that no modification or amendment to the following provisions of this License Agreement may be made without the prior written agreement of the Licensee:

7.1.1 Sections 2.4 and 3.3 and Article 8 of this License Agreement;

7.1.2 the term of the Operating License or the Spectrum License; and

7.1.3 Section 2 of Appendix 3 hereto; and

7.1.4 Appendix 4 hereto.

7.2 Renewal

7.2.1 Terms of renewal shall be subject to negotiations. Such negotiations will be called for by either party two years before May 8, 2014.

7.2.2 The License shall always be renewed if the Licensee has operated successfully and in accordance with the laws and the License and if there are no reasons to refuse the renewal after successful negotiations.

7.3 Termination

Before the expiry of their respective terms, this License Agreement may be terminated and the Operating License and Spectrum License may be revoked only in the event of a material breach by the Licensee and in accordance with Section 7.4. For this purpose a material breach means any act or omission or series of acts or omissions which constitute grounds for the revocation of a license under the *Telecommunication Law* and which (I) seriously jeopardize the provision of an adequate level of the Service at reasonable prices to a significant group of customers in Jordan, or (ii) seriously impairs the ability of the TRC to perform its lawful functions in a reasonable manner.

7.4 Termination Procedure

TRC shall not amend, modify, revoke or terminate this License Agreement or the Operating License or the Spectrum License without first giving the Licensee notice in writing setting out the basis for such proposed action and giving the Licensee an opportunity of no less than thirty (30) days to show cause why such action should not be taken or to correct the alleged material breach the License Agreement should not be terminated and the Operating License or the Spectrum License revoked. If the Licensee shows cause, or corrects the alleged material breach to the satisfaction of TRC, TRC shall allow the Licensee sufficient time, as is reasonable in the circumstances, to remedy any breach that gave rise to the notice and which remains outstanding.

7.5 Prohibition

If the License Agreement is terminated, no Person who Controls the Licensee or owns, directly or indirectly, any ownership interest in the Licensee, shall be entitled to apply for a license to install, operate or manage a Public Telecommunications Network in Jordan, alone or with others, before the lapse of five years following the date upon which such termination becomes effective.

ARTICLE 8 - GENERAL

8.1 Notice

Any notice or other communication to be given TRC or the Licensee to the other in connection with this License Agreement shall be given in writing by personal delivery in Amman to the following addresses. TRC or the Licensee may change the address for the giving of notice by notice to the other party given in accordance with this Section 8.1

To TRC:

Telecommunications Regulatory Commission
7th Circle
Amman

Attention: Director General

To the Licensee:

Jordan Telecommunications Company
Tower Building
3rd Circle
Amman

Attention: Director General

8.2 Law

This License Agreement shall be governed by the laws of Jordan.

8.3 Assignment

This License Agreement and the Operating License and the Spectrum License are personal to the Licensee and may not be sold, assigned or pledged as security, in whole or in part, without the prior written consent of TRC. The TRC will consent to the assignment of the Operating License and the Spectrum License to an affiliate of the Licensee provided that: (i) such affiliate becomes a party to this License Agreement and agrees to fulfil and perform all of the obligations of the Licensee, (ii) the Licensee has control over the formation of the Board of Directors of the affiliate, and (iii) no such assignment shall relieve the Licensee of any of its obligations hereunder.

8.4 Interpretation

The use of headings herein and the division hereof into Articles and Sections is for the convenience of reference only and shall not affect the construction or interpretation hereof. References herein to Articles, Sections and Appendices are to Articles, Sections and Appendices hereof, unless expressly provided for to the contrary. The terms "hereof", "herein" and similar expressions refer to this License Agreement in its entirety, unless expressly provided for to the contrary.

8.5 Amendment and Waiver

This License Agreement may not be amended, modified or supplemented without the prior written consent of TRC. No waiver of any breach of any provision of this License Agreement shall be effective or binding unless made in writing and, unless otherwise specified, any such waiver shall be limited to the specific breach waived.

8.6 Adherence to Terms of Licensing

8.6.1 The Director General of the TRC shall monitor the Licensee's adherence to this License Agreement and shall take appropriate measures to oblige the Licensee to comply with this License Agreement, the *Telecommunications Law*, regulations, the rules, instructions and decisions of the TRC and the policies approved by the Council of Ministers. Any decision of the Director General in exercising these responsibilities shall be final and binding on the Licensee unless and until it is overruled by the Board of Directors of the TRC.

8.6.2 Nothing herein is intended to limit in any way any rights of appeal or review which the Licensee may have available to it under the laws of Jordan.

8.6.3 Without limiting any other right or remedy available to the TRC at law, if the Licensee fails to comply with:

8.6.3.1 any of its material obligations under the *Telecommunications Law*;

8.6.3.2 any of its material obligations hereunder; or

8.6.3.3 any of its material obligations under any rules, decisions or instructions of the TRC,

the Licensee shall be subject to a maximum fine payable to the TRC in an amount not to exceed two hundred thousand Jordanian Dinars (JD 200,000) in respect of each such compliance failure. The amount of any sanction imposed pursuant to this Section 8.6.3 shall be determined with reference to the severity of Licensee's non-compliance.

8.6.4 Without limiting any other right or remedy available to the TRC at law, if the Licensee fails to make payment of any amount of fee, fine or penalty to the TRC pursuant hereto, interest shall accrue and be payable monthly in arrears on the outstanding amount, including accrued interest, at the rate of 9% per annum.

8.7 Language

As of the Effective Date only an English language version of this License Agreement has been signed. The parties intend however to prepare and sign an Arabic language version of this License Agreement within six months from the Effective Date. Unless and until both the TRC and the Licensee sign an Arabic language version this English language version shall be the only official version of this License Agreement. After both parties sign an Arabic language version of this License Agreement, both the Arabic language version and the English language version shall be official versions of this License Agreement.

IN WITNESS WHEREOF the parties hereto have executed this agreement.

TELECOMMUNICATIONS REGULATORY COMMISSION

by:

Chairman

Xxxxxxx Company

by: _____

Chairman

APPENDIX 1

HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

TRC OPERATING LICENSE - No. 2 1999

WHEREAS in accordance with the *Telecommunications Law* the Telecommunications Regulatory Commission ("TRC") is authorized to issue to (the "Licensee") a license to install, operate and manage the Service;

AND WHEREAS the Licensee and TRC have entered into a contract of an administrative nature pursuant to which such license is issued;

NOW THEREFORE, this License confirms as follows:

1. The Licensee is licensed to operate the Service in Jordan upon and subject to the terms and conditions of the Amended and Restated License Agreement between TRC and the Licensee dated.

2. Subject to renewal or revocation in accordance with applicable law and the above-referenced License Agreement, the term of this license is for a period of fifteen (15) years, beginning on the Effective Date and terminating on.

3. Capitalized terms used herein but not defined shall have the meanings ascribed thereto in the said Amended and Restated License Agreement.

Issued at Amman, this day of.

TELECOMMUNICATIONS REGULATORY COMMISSION

Per:
Director General

APPENDIX 2

HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

TRC SPECTRUM LICENSE

WHEREAS in accordance with the *Telecommunications Law* the Telecommunications Regulatory Commission ("TRC") is authorized to issue to (the "Licensee") a license for the use of spectrum in the operation of the Service;

NOW THEREFORE, this Spectrum License confirms as follows:

1. The Licensee is licensed to use the following frequencies on an exclusive basis to install, operate and manage the Service in Jordan upon and subject to the terms and conditions of the Amended and Restated License Agreement between the Telecommunications Regulatory Commission and the Licensee dated

   xxx- xxx MHz
   xxx- xxx MHz

2. Subject to renewal or revocation in accordance with applicable law and the above-referenced Amended and Restated License Agreement, the term of this License is for a period beginning on the Effective Date and terminating on.

3. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said Amended and Restated License Agreement.

Issued at Amman, this

TELECOMMUNICATIONS REGULATORY COMMISSION

per:

Director General

APPENDIX 3

HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

OPERATING LICENSE FEES

1. General

This Appendix 3 forms part of the License Agreement dated the Telecommunications Regulatory Commission ("TRC") and (the "Licensee") and is subject to the terms and conditions thereof. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said Amended and Restated License Agreement.

2. Operating License Fee

2.1 The amount of the Operating License Fee for the first year starting from the Effective Date shall be one hundred thousand Jordanian Dinars (JD100, 000).

2.2 For subsequent years the increase in the Operating License Fee, if any, shall represent the Licensee's proportional share of the budgeted annual operating expenses of the TRC, plus amortized amounts of the capital expenditure, incurred by TRC in regulatory operations related to the Service, excluding radio spectrum management costs.

2.3 The said proportionate share shall be in accordance with the following formula:

Gross Revenue of the Licensee over the Gross Revenue of all the Public Telecommunications Service Provider. In the context, Gross Revenue shall be net of Revenue Share and Frequency Fee.

2.4 The Operating License Fee as prescribed herein shall be paid to the TRC on annual quarterly instalments.

2.5 The Operating License fee shall not exceed one percent (1%) of the Gross Revenue of the Licensee as defined in Section 2.3 of this Appendix.

APPENDIX 4

HASHEMITE KINGDOM OF JORDAN

TELECOMMUNICATIONS REGULATORY COMMISSION

SERVICE ROLL-OUT, COVERAGE AND QUALITY

1. General

This Appendix 4 forms part of the between the Telecommunications Regulatory Commission ("TRC") and (the "Licensee") and is subject to the terms and conditions thereof. Capitalized terms used in this Appendix but not defined shall have the meanings ascribed thereto in the said Amended and Restated License Agreement.

2. Roll-out and Coverage

The Licensee shall roll out its Service so as to establish and maintain Service coverage (as required by Section 3 of this Appendix 4) as follows:

Phase I coverage of the central area of Jordan (as shown on the map which is Attachment 1 to this Appendix 4) no later than the first anniversary of the Effective Date;

Phase II coverage of the northern area and the southern area of Jordan (as shown on the map which is Attachment 2 to this Appendix 4) no later than the third anniversary of the Effective Date;

Phase III coverage of the highways connecting the central area to the northern area and the southern area of Jordan no later than the fourth anniversary of the Effective Date;

3. Quality of Service

3.1 In all areas required to be served in accordance with Section 2 of this Appendix 4 the Licensee shall ensure compliance with the following quality of service targets:

1.	Average time required for connection following receipt of a complete application for the Service	less than 1 week
2.	Percentage of Calls failed during busy hour	less than 2%
3.	Reported faults (customer complaints due to network fault) per 100 Customers per year	less than 20
4.	Percentage of reported faults cleared within 24 hours	more than 70%
5.	Number of billing complaints per 100 Customers per year	less than 0.5

3.2 The grade of service of the network should be according to the GSM specifications. Any ETSI modifications or new revisions should be binding upon both parties and achieved within a reasonable time period after any change.

APPENDIX 5

HASHEMITE KINGDOM OF JORDAN
TELECOMMUNICATIONS REGULATORY COMMISSION

SCHEDULE OF SPECTRUM LICENSE FEES

(Please see attached)

SCHEDULE OF SPECTRUM LICENSE FEES

License Type	Annual Fee JD
Aeronautical	
Aircraft with a maximum take-off weight of not more than 3,200kg	30
Aircraft with a maximum take-off weight of more than 3,200 kg but not more than 14,000 kg	250
Aircraft with a maximum take-off weight of more than 14,000 kg	550
Fixed Services	
Bi-directional links	
Bandwidth:-	Per link
Less than 50 kHz	250
50 kHz to less than 7 MHz	450
7 MHz to less than 14 MHz	700
14 MHz to less than 100 MHz	900
100 MHz to less than 200 MHz	1000
200 MHz to less than 300 MHz	1100
More than 300 MHz	1200
One way links are charged at 75% of Bi-directional links	
Frequency Bands above 30 GHz are charged at 50% of above Fees	
Scanning Telemetry link	40 per station
Amateur Radio	15 per person
Land Mobile Radio	

Private Mobile Radio (PMR):-	
For each 12.5KHz national channel	3000
For each 25KHz national channel	6000
For each 5KHz national channel	1500
For other channels:-	
Up to 10 mobiles	100 per channel
11 to 25 mobiles	250 per channel
26 to 60 mobiles	500 per channel
61 to 100 mobiles	1000 per channel
101 to 200 mobiles	1500 per channel
Common base Station Operator	500 for each channel allocated for use by that base station
Land Mobile Radio	
Personal Communications Network (PCN):-	5000
On issue of the license	Per r.f. channel
On each subsequent annual renewal up to 5 years	An additional 1000
National Public Telephone Network (Cellular):-	5000
On issue of the license	Per r.f. channel
On each subsequent annual renewal up to 5 years	An additional 1000
National Public Data Network:-	1000
On issue of the license	Per r.f. channel
On each subsequent annual renewal up to 5 years	An additional 1000
Satellite Services	
Permanent Earth Station	
Stations with a bandwidth not exceeding 100 kHz operating to one satellite	500 per station plus 250 for each additional satellite
Stations with a bandwidth greater than 100 kHz but not exceeding 1 MHz operating to one satellite	2500 per station plus 500 for each additional satellite
Stations with a bandwidth greater than 1 MHz operating to one satellite	5000 per station plus 500 for each additional satellite
Receive only earth stations are charged at 75% of bi-	4000 per station

directional stations Transportable Earth Station Very Small Aperture Terminal (VSAT)	1500
Services Ancilliary to Broadcasting and programme making Low power video links Radio microphone (Stage use) Sound links for mobile units Talk back and sound links for fixed sites (e.g. studio)	 150 60 150 100
Maritime Maritime Business Radio (for communications on the ship owners business)) Maritime Business Radio (Base station only) Maritime radio (Navigational Aid and Radar) Port Operations Radio (e.g. Harbour Master) Ship Radio (commercial, e.g. crew communications, ship to ship and ship to shore) Ship Radio (Pleasure craft)	 180 for each base station using one channel plus 180 for each additional channel 100 for each base station using one channel plus 100 for each additional channel 40 for each navigational aid or radar using one channel plus 40 for each additional channel 100 for each base station using one channel plus 100 for each additional channel 50 25
Paging Local communications (e.g. Hospital paging service) City Wide Area Paging (excluding links) Nation Wide Area Paging	1000 for each base station 2000 for each base station 2000 for each base station

ANNEX 5

Interconnection Guidelines

http://www.trc.jo/Static_English/doc/Interconnection Guidelines Final.doc

INTERCONNECTION GUIDELINES
Final

14 OCTOBER 2002

Approved by the TRC Board of Commissioners on 25 of NOVEMBER 2002

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Telecommunications Regulatory Commission
P.O. Box 850967
Amman 11185

Jordan
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1 Purpose and scope of guidelines

1.1 Background

1. These Guidelines form part of the 'Guidance on Interconnection' issued by the Telecommunications Regulatory Commission (TRC) in accordance with condition 6.1.1 in the PSTN and Public Mobile Telephone Service Licences which states:

> *"The Licensee acknowledges that interconnection between the Licensee's network and other licensed telecommunications networks in Jordan, is governed by Section 29(e) of the Telecommunications Law, the provisions of this Article 6 and comparable provisions in the licenses of other network operators and any Guidance on Interconnection issued by the TRC from time to time, or as may be amended or replaced from time to time."*

2. The Chairperson of TRC will take The Guidelines into account in applying the relevant conditions in Licences, and give reasons if The Guidelines are departed from. The Chairperson retains the right to depart from the Guidelines where the circumstances justify such action subject to clause 3. .

3. The Guidelines will be subject to review and may be amended following consultation with interested parties in the light of experience of their operation, of development in telecommunications markets and of any changes to Jordanian national law.

1.2 Scope

4. The Guidelines apply to all Licensees designated by the TRC unless expressly stated otherwise. The TRC will determine which Licensees are required to produce and publish a RIO. Such a determination shall be made known to affected parties following due consultation. The criteria and timescales for designation will be defined in a separate TRC document. A Licensee so determined is referred to, within The Guidelines, as a 'Designated Licensee'.

5. The Guidelines do not apply to operators of Private Telecommunications Networks or to Users. Such operators shall be entitled to 'connection' services but not 'interconnection'. Connection services are outside the scope of The Guidelines.

6. The Guidelines do not set rates for interconnection services including call conveyance. However, The Guidelines (Section 7) do set out the methodology by which rates shall be determined and the framework under which a move towards cost based interconnection rates should take place.

7. Many of The Guidelines concern the development and publication of a Reference Interconnection Offer (RIO) by Designated Licensees.

8. A Reference Interconnection Offer (RIO) is a publicly available document published by a Designated Licensee defining a standard set of technical and commercial terms (See Annex A) by which the Designated Licensee[1] offers interconnection services to other Licensees. It forms the basis of a transparent offer by the Designated Licensee to contract with another party through a standard interconnection agreement.

9. The publication of a RIO will

a. Ensure transparency by defining the interconnection services offered by the publisher of the RIO, the applicable rates for such services and the applicable conditions of use.

b. Limit the scope of negotiations between Licensees thus ensuring that interconnection is offered on non-discriminatory terms.

c. Advise new entrants what services are offered by certain Designated Licensees and the costs and lead-times for the provision of such services, thus facilitating further investment in the Jordanian market for telecommunications services.

10. All new RIOs shall be subject to consultation and determination by the TRC prior to publication. Consultation will be managed by TRC and TRC determination shall be completed within 90 days from the submission to the TRC of the draft RIO.

11. The publication of a RIO by a Designated Licensee does not remove the need for individual interconnection agreements to be signed between themselves and interconnecting Licensees. These interconnection agreements shall reflect the technical and commercial aspects of the RIO together with all necessary contractual conditions. Interconnect Agreements shall be submitted to the TRC for approval and shall be considered to be approved if no comments are provided by the TRC within 30 days of submission.

12. Designated Licensees shall update their RIOs periodically to reflect changes in the telecommunications sector, including the introduction of new services and the use of new technology. All updates are subject to consultation and approval by the TRC prior to publication. (See clause 11)

13. The TRC understands that implementation of The Guidelines will necessitate Licensees to undertake a number of changes to their systems, processes and contractual arrangements.. The TRC will consult with affected parties to agree a schedule for compliance with The Guidelines within twelve (12) months from publication. These may include the agreement of interim arrangements ahead of full implementation.

1.3 Interpretation

14. Individual guidelines containing the word 'shall' are mandatory requirements and are binding on the Designated Licensees as explicitly expressed.

15. Individual guidelines containing the word 'should' are recommendations to Licensees but are not mandatory.

16. Individual guidelines containing the word 'may' are permissions to Licensees.

1.4 Purpose of The Guidelines

17. The principal purpose of The Guidelines is to clarify the arrangements for interconnection and provision of services between Licensees.

18. The Guidelines provide a formal process for dealing with interconnection disputes.

19. The Guidelines assist in ensuring that all Licensees are treated fairly and in a non-discriminatory manner.

20. The Guidelines have been drafted with the introduction of full competition in the telecommunications sector in Jordan in mind. That is to say the fixed line communications sector after 1st January 2005 (and the mobile sector after 1st January 2004.) Nonetheless the Guidelines apply equally to the sector prior to 1st January 2005.

21. The Guidelines aim to encourage good practice by Licensees and to promote the provision of high Quality of Service to Users, through technical and economic efficiency.

22. A further aim of The Guidelines is to clearly express the policy of TRC with respect to the interconnection of Public Telecommunications Networks in Jordan.

1.5 Structure of The Guidelines

23. The Guidelines are structured along the lines of a typical Reference Interconnection Offer and comprise:

    a. Definitions

    b. Management

    c. Interconnection services

    d. Technical

    e. Processes

    f. Commercial

24. The headings in The Guidelines should be used by Designated Licensees for the development of their RIOs. Annex A provides a sample contents list for a RIO.

25. The application of The Guidelines to Licensees is explained in each case. There are also references to the Telecommunications Law and Licences throughout.

2 Definitions

26. Pursuant to Article 12, paragraph (a), sub-paragraph 15 of the Telecommunications Law of 1995 as amended, the Board has been empowered to define the technical terms used in the telecommunications sector and the meanings assigned to them. Such terms will be published in the Official Gazette.

27. In the event of conflict or ambiguity between the terms defined herein and the terms defined in the Licence or in the Telecommunications Law then the following order of precedence shall apply:

    a. The Telecommunications Law

    b. The Guidelines

    c. The Licence

28. For the purposes of use in The Guidelines, the following terms will have the ascribed meanings:

    a. **'The Guidelines'** means these interconnection guidelines which may be revised from time to time.

    b. **'Licensee'** means legal person granted a Licence by the TRC pursuant to the Telecommunications Law and the terms Licence or Licences shall be construed accordingly.

    c. **'Designated Licensee'** means a Licensee which TRC has determined shall publish a RIO.

    d. **'The Telecommunications Law'** means the Telecommunications Law of 1995 **'**and applying the doctrine of implied repeal this shall be read as – Law No 13 of 1995 and its amendments..

    e. **'Public Network Operator'** means a Licensee being the holder of either a Public Switched Telephone Network Licence or a Public Mobile Telephone Licence.

    f. **'The Board'** means the Board of Commissioners of the TRC.

    g. **'TRC'** means the Telecommunications Regulatory Commission.

    h. **'The Chairperson'** means the Chairperson of the TRC.

    i. **'A User Choice Call'** means a call originated by a User that chooses a different Licensee from the one the User is directly connected to, to convey the call to its destination.

    Acknowledging the fact that the Telecommunications Law, in its original Arabic form does not contain a formal definition of "Connection" or "Interconnection", but uses the word "Rabt" (meaning the act of tying together) to mean both connection and interconnection as may be applicable to the context therein, the following definitions shall be applicable for the purposes of The Guidelines:

    j. **'Connection'** means the physical linking of Telecommunications Terminal Equipment and/or Private Telecommunications Networks to Public Telecommunications Networks in order to allow Users of the Private Telecommunications Network or the Users of the Telecommunications Terminal Equipment to communicate with Users of a Public Telecommunications Network or Users of the same or another Private Telecommunications Network or to access services provided on a Public Telecommunications Network as appropriate.

    k. **'Interconnection'** means the physical linking of the Telecommunications Systems in order to allow the Users of one Telecommunications Systems to communicate with Users of the same or another Telecommunications Systems or to access services provided by another Licensee.

l. **'Interconnect Billing Reconciliation Process'** means the process of two interconnected Licensees analysing the differences between their respective calculations of an interconnect bill from one party to the other and attempting to reach a settlement.

m. **'Person'** means any individual, company, corporation, partnership, joint venture, consortium, government or governmental entity.

n. **'Public Telecommunications Network'** means a telecommunications system or a group of telecommunications systems for the offering of Public Telecommunications Services to Users pursuant to the provision of the law.

o. **'Private Telecommunications Network'** means the telecommunications system operated for the benefit of a single person or a single group of persons under common ownership to serve their own needs.

p. **'Public Telecommunications Service Provider'** means any Person licensed or otherwise legally authorised to operate in Jordan a Public Telecommunications Network, as defined in the Telecommunications Law.

q. **'Public Telecommunications Services'** means a telecommunications service provided for compensation to the general public or any category thereof, in accordance with the law.

r. **'Telecommunications System'** means any transmission or switching device or other device or instrument used to convey, receive or transmit Telecommunications signals for the purpose of providing Public Telecommunications Services.

s. **'User'** means a person who makes use of Public Telecommunications Services using telecommunications means.

3 Management of interconnection

3.1 Account management

29. Licensees offering interconnection services should provide a Technical Account Manager and a Commercial Account Manager to deal with other Licensees seeking to use or using their services, to coordinate communication on interconnection matters.

30. Designated Licensees shall agree to meetings with an interconnected Licensee (Designated or otherwise) within five (5) working days of meetings being formally requested by that Licensee.

3.2 Joint technical committee

31. Interconnected Licensees should establish a joint technical committee.

32. The joint technical committee should be a forum for discussion and agreement on technical, operational, planning, billing and service aspects. The committee should be authorised to take decisions.

33. The composition of the joint technical committee should be agreed between the licensees and may be amended from time to time as appropriate. However, it should consist of equal representatives from both Licensees, and should include technical and commercial staff.

34. The joint technical committee should meet on a regular basis with the meetings planned in advance. There should be an agreed agenda, much of which could be standard. The agenda should include the following items:

    a. Need for new Points of Interconnect

    b. Analysis of traffic levels

    c. Analysis of service quality

    d. Discussion of capacity requirements

    e. Discussion and analysis of faults during the period since the previous meeting

    f. Discussion of billing processes

    g. Provision of relevant information and discussion of changes to either network or to the service

35. The TRC may attend the meetings of such committees if it so desires.

3.3 Provision of information between licensees

3.3.1 General network information

36. Designated Licensees offering interconnection services shall provide information about their network and services to Licensees entitled to use these services. Information provided shall be limited to that which is relevant and sufficient, in order that the Licensee using the services can conduct network planning, financial planning and subsequently operate their network.

37. All information provided between Licensees shall be subject to the confidentiality rules defined in the RIO and Interconnect Agreements, and shall only be used for the purposes for which it is provided.

38. Where there is a Licence requirement for Licensees to deal with other Licensees on a non-discriminatory basis, this shall include the provision of information. A Licensee shall provide the same level of information to all other Licensees entitled to similar interconnection services.

39. In order to fulfil the requirement stated above, for information to be provided on a non-discriminatory basis, designated Licensees should publish a standard set of information, possibly within annexes to their RIOs, rather than supply this specific information on demand.

40. Designated Licensees shall define the rules for routing traffic in normal and abnormal situations in a non-discriminatory manner including dealing with overflow, congestion and network management.

41. In the event of a fault or Major Service Failure, Licensees shall share as much information as is appropriate to resolve the problem and restore service. Licensees shall share as much information as is necessary to enable interconnecting licensees to provide information and services to their customers on an equal and non-discriminatory basis with respect to their own directly connected customers.

3.3.2 Planned changes to networks

42. Article 6.2.1.6 in the Public Mobile Telephone Service Licences and Article 6.2.1.7 in the PSTN Licence of JT, requires these Licensees to:

> *'provide reasonable notice to such other license holders about any network design, roll-out or up grade plans or changes which may be expected to affect the arrangements between the parties'*

43. Interconnected Licensees shall inform each other about all plans and changes which may have an effect on their arrangements. Sufficient time shall be given to allow for Licensees to make necessary adjustments to their systems and networks and ensure continuous service. Unless otherwise agreed this shall be at least one (1) calendar month in advance. Such changes may include:

    a. Changes to physical network, e.g. exchange closure or re-location.

    b. Upgrade of electrical/signalling specification.

    c. Changes to the numbering.

44. Licensees shall notify the other Licensee of any significant changes made in the network that may affect the conveyance of calls and /or the quality of the calls. The changing Licensee should pay the costs of the other Licensee where their alterations cause the other Licensee to change its system to continue to convey calls. Exceptions to this would be in the case where the change is agreed or where the alteration is part of a planned upgrade programme.

3.3.3 Records of interconnect links

45. Designated Licensees shall maintain a database of the interconnect links between their networks and those of other Licensees. This database should contain all relevant information including:

    a. A-end exchange – name, location, manufacturer, software release

    b. B-end exchange – name, location, manufacturer, software release

    c. Transmission path – direction designation, type

    d. Capacity

    e. Associated signalling link(s)

46. This database, although simple, will be useful for both Licensees in agreeing the state of the interconnection between them. The information contained therein shall also be provided periodically to the TRC upon request.

4 Interconnection services

4.1 Overview

47. This Section defines the categories of interconnection service and states guidelines for the provision of the services.

48. Interconnection services are provided by Designated Licensees to other Licensees.

49. There are different categories of interconnection services and each is described within this Section. These are:

Call conveyance services	Services which involve the carriage of voice band calls over an interconnect route between Telecommunications Systems.
Transmission link services	The provision by a Designated Licensee to other Licensees of network capacity links within the Designated Licensee's Telecommunications System.
Interconnection link services	The provision of an interconnect link capacity between the Telecommunications Systems of Licensees.
Data interconnection services	Interconnection services which involve the carriage of packet-switched data between data networks.
Collocation and facilities sharing	The provision by a Designated Licensee of space in its premises or the use of part of its physical infrastructure, such as masts or towers, to other Licensees.
Operator services	The provision of Operator services, for example directory enquiries and emergency services, operated by a Designated Licensee to other Licensees.
Advanced call services	Associated with call conveyance services but with value-added, advanced features such as CLI, Ring Back When Free, Divert on Busy.

50. Designated Licensees shall be required to update the RIO before the introduction of a new interconnection service.

51. Where a new service available to Users requires either changes to the RIO or the introduction of a new interconnect service such changes to the RIO shall accompany the launch of the new User service by the Designated Licensee. Suitable time shall be given to allow for Licensees to make necessary adjustments to their systems and networks and ensure access to the new service. Unless otherwise agreed this shall be at least one (1) calendar month in advance.

52. Designated Licensees shall be required to obtain the approval of the TRC before withdrawing an interconnection service.

53. Designated Licensees shall fully define their interconnection services and charges, including technical and commercial conditions, within their RIOs. (Section 7)

54. Other interconnection services which may be applicable in a future liberalised telecommunications sector include Number Portability and Local Loop Unbundling.

4.2 Call conveyance services

4.2.1 Overview

55. Call conveyance services shall be defined as those services that involve a Designated Licensee conveying (carrying) basic voice band calls on its network (fixed or mobile) originating from, or terminating in, the Telecommunications System of another Licensee or foreign Public Network Operator.

56. Call conveyance services are used by Licensees (in accordance with their Licenses) with any of the following licence types:

    a. Public Switched Telephone Network (PSTN)

    b. Public Mobile Networks

    c. Public Payphone

    d. Telephone Pre-Paid Calling Service

    e. Paging

    f. Datacommunications

    g. Trunking

    h. Global mobile satellite services and VSAT, after the end of 2004.

57. There are a number of different call conveyance services applicable to the current telecommunications sector in Jordan:

    a. Call termination

    b. Call transit

    c. Call origination including carrier selection and carrier pre-selection

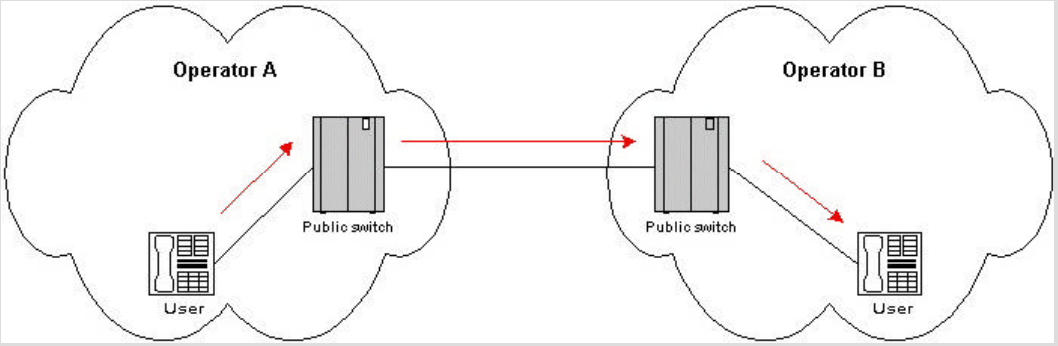
    d. Intelligent Network calls (Non-geographic calls using Number Translation Services)

4.2.2 Call termination service

4.2.2.1 Service definition

58. A call termination service shall be defined as a service where a Licensee receives voice band calls from an interconnected Licensee, and then terminates (or completes) the calls within its own Public Telecommunications Network. An example is shown below.

Call termination



Operator B is providing a Call Termination Service to Operator A. In the example above, the call originates in the network of Operator A and terminates in the network of Operator B. However, the call does not need necessarily to have originated in the network of Operator A.

4.2.2.2 Requirement to provide service

59. Designated Licensees shall be required to offer a call termination service to all other Licensees.

4.2.2.3 Categories of call termination

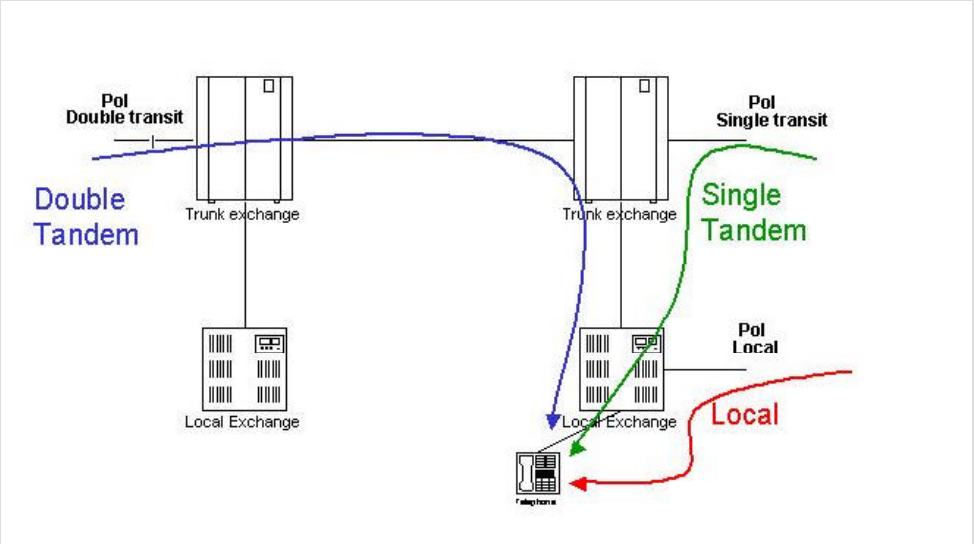
60. There are typically three categories of the call termination service provided on fixed voice networks:

    a. Local call termination: where the calls are delivered on an interconnect link to the local exchange to which the end-User is directly connected.

    b. Single Tandem call termination: where the calls are delivered on an interconnect link to a Tandem (or Transit) exchange which has a direct link to the local exchange to which the end User is directly connected.

c. Double Tandem call termination: where the calls are delivered on an interconnect link to a Tandem (or Transit) exchange which does not have a link to the local exchange to which the end User is directly connected. The

Categories of call termination service



call must be routed over (at least) two Tandem exchanges before being sent to the local exchange.

61. Article 6.2.1.1 of both the PSTN and Public Mobile Telephone Licenses, requires those Licensees to:

> *'provide interconnection at any technically feasible point in the network, subject to operational practicability and commercial viability'*

62. Article 6.2.1.3 of both the PSTN and Public Mobile Telephone Licences, requires those Licensees to:

> *'provide interconnection in a timely fashion on terms, conditions (including technical standards and specifications) and cost based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for network components or facilities that it does not require for the service to be provided, it being understood that no unreasonable and unrecoverable costs will be imposed on the Licensee in connection with any unbundling'*

63. The TRC notes that the network architectures of fixed and mobile networks are fundamentally different. When routing a call to a fixed network, it can be known where the end User is located, i.e. on which local exchange. When routing a call to a mobile network, it is not known where the end User is located at any point in time, i.e. on which MSC. There is no concept of a local exchange within mobile networks, although there may be exchanges used as Tandems.

64. Therefore the application of licence conditions 6.2.1.1 and 6.2.1.3 will vary between the PSTN and Public Mobile Telephone Licensees with regard to the provision of a call termination service.

65. Designated Licensees with a PSTN License shall offer a Local and a Single Tandem call termination service. The TRC recognises that a Double Tandem call termination service is not applicable in Jordan at the present time.

66. Provision of a local call termination service will require Licensees using the service, to interconnect to local exchanges within the network of the PSTN Licensee offering the service.

4.2.3 Call transit service

4.2.3.1 Service definition

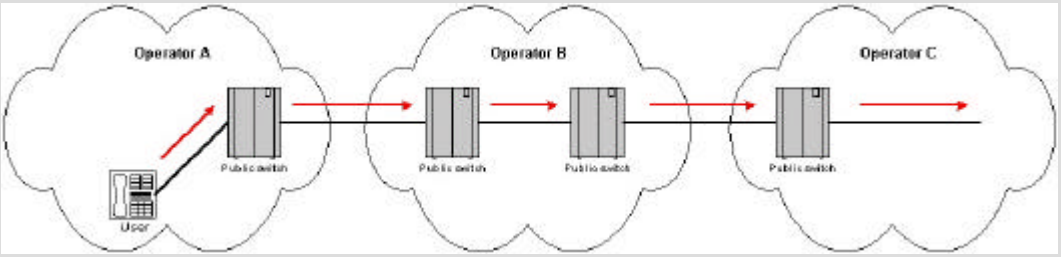
67. A call transit service is defined as a service where a Licensee receives voice band calls from one Licensee and routes them to the network of a different Licensee. The Licensee providing the call transit service does not originate or terminate the call within its own network.

68. This service may be separated into two categories:

    a. National call transit; a call transit service between Licensees within Jordan.

    b. International call transit; a call transit service provided to Licensees to transit their international calls to network operators in other countries.

Call transit



Operator B is providing a Call Transit Service to Operator A. The call originates in the network of Operator A which routes it over an interconnect link to Operator B. Operator B switches the call (in the example above, they switch it twice) and routes the call to another operator (in this case Operator C). Operator C may terminate the call on its network or transit the call to another network.

4.2.3.2 Requirement to provide service

69. The PSTN Licensee (JT) currently has the exclusive right to provide an international call transit service until the end of 2004 and shall provide this service to all Licensees.

70. The PSTN Licensee (JT) shall provide a national call transit service to all Licensees.

71. Other Licensees may provide a national call transit service.

4.2.4 Call origination service

4.2.4.1 Service definition

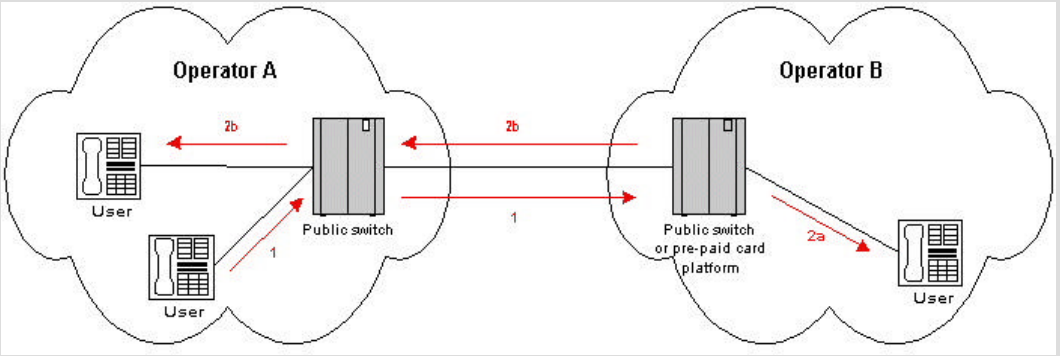
72. A call origination service is defined as a service provided for a User Choice Call. Thus one Licensee provides calls to an interconnected Licensee, and the originating Licensee does not charge the calling User a retail tariff, but instead charges the other Licensee at an interconnection rate for originating the call. The call could be for any destination and will not necessarily terminate on the network of the Licensee who receives the call.

73. There are typically two categories of the call origination service:

    a. Carrier selection; the calling User (or the Customer Terminal Equipment) inserts a prefix in front of the number that they are dialling.

    b. Carrier Pre-Selection; the originating Public Network Operator has been instructed by the User which Public Network Operator should manage their service and calls are routed to that Licensee automatically with no requirement for the dialling User to enter a prefix or non-geographic number. This is sometimes referred to as 'equal access'.

Call origination



Operator A is providing a call origination service to Operator B. The call originates in the network of Operator A which routes the call over an interconnect link to Operator B. Operator B may validate the call on a public exchange or pre-paid card platform and then route the call on for termination in their own network (2a) or to another network, e.g. Operator A (2b).

4.2.4.2 Requirement to provide service

74. Designated Licensees offering PSTN services shall be required to provide a call origination service to all other Licensees.

4.2.5 Intelligent Network call origination

4.2.5.1 Service definition

75. An intelligent network call origination service is defined as a service where the User dials a non-geographic number to a fixed terminating point on another Licensee's network and is charged a fixed fee irrespective of the distance between the originating and terminating User. In some instances this charge to the originating User might be zero.

76. The intelligent network call origination service (sometimes called Number Translation Services) typically covers:

i. "Auto Freefone" services where the caller pays nothing for the call but the terminating User pays.

ii. Local Fee Call services where the originating User pays a local retail call tariff. The terminating User often pays a retail tariff for the service.

iii. National Fee Call services where the originating User pays a national retail tariff.

iv. Premium Rate Services where the originating User pays a retail rate above the standard retail call tariff and receives some additional content. The terminating Licensee often pays a portion of the revenue to the content provider.

4.2.5.2 Requirement to provide service

77. Designated Licensees shall provide an intelligent network call origination service to all other Licensees.

4.3 Transmission link services

4.3.1 Service definition

78. Transmission link services are defined as services where a Designated Licensee provides fixed capacity between two fixed points over its network to other Licensees.

79. This shall include leased line circuits used by Licensees between their own premises and international circuits but shall not include leased lines between a Licensee and its Users.

80. Transmission link services may be provided using any appropriate technology including both fixed and wireless systems.

4.3.2 Requirement to provide service

81. The PSTN Licensee (JT) shall be required to provide transmission link services to all Licensees.

82. Article 2.1.3 of the Public Mobile Telephone Licences permits the Licensees to self-provision transmission links, with the requirement that '*any radio based transmission links shall not be used except pursuant to a spectrum license issued by the TRC*'. This article also permits Licensees to lease transmission capacity from another Licensee or share capacity with it, subject to the permission of the TRC.

83. Article 2.1.3 of the Datacommunications Services Licence requires a Licensee to '*operate its Service using only Transmission Facilities provided by JTC or other Public Telecommunications Service Providers if any, licensed or otherwise authorised to provide such services in Jordan*'.

4.4 Interconnect link services

4.4.1 Service definition

84. Interconnect link services are defined as services where a Licensee provides one or more links over which traffic between its network and the network of another Licensee flows. Each end of an interconnect link is terminated on the network of a different Licensee.

85. Interconnect link services may be provided using any appropriate technology including both fixed and wireless systems.

4.4.1.1 Requirement to provide service

86. The PSTN Licensee (JT) shall provide interconnect link services to all Licensees.

87. Public Mobile Telephone Licensees shall provide interconnect link services in accordance with their Licences for the provision of Transmission Link services.

4.4.2 Data interconnection services

4.4.2.1 Service definition

88. Data interconnection services are defined as services which involve the carriage of packet-switched data between data networks. The termination of dial-up internet calls within the voice band is a call conveyance service.

89. These services may include:

    a. Packet Switching, Frame Relay and ATM services including those using IP Protocols

    b. Data leased lines

    c. International internet capacity

4.4.2.2 Requirement to provide service

90. The PSTN Licensee (JT) has the exclusive right to provide data interconnection services and shall do so for all Datacommunications Licensees until the end of the exclusivity period for JT which expires on the 1st January 2005.

4.5 Collocation and facilities sharing services

4.5.1 Service definition

91. Collocation and facilities sharing services shall be defined as services where one Licensee provides space in their premises and facilities to another Licensee in order for them to install their own network equipment. The facilities provided may include electrical power, air-conditioning and security, cable ducts and space on antenna masts or towers.

4.5.2 Requirement to provide service

92. Designated Licensees shall offer collocation and facilities sharing services. Other Licensees may offer collocation and facilities sharing services.

93. Article 6.2.1.4 in the Fixed Public and Public Mobile Telephone Licences requires the Licensees to:

> *'lease to such other service providers, on a non-discriminatory basis, facilities (rooms, towers, ducts, cable etc.) under the control of the Licensee and required for use by such others, it being understood that the Licensee shall not be required to construct new facilities for lease to such other service providers hereunder'*

4.6 Operator services

4.6.1 Operator assistance

94. Designated Licensees shall offer Operator Assistance services to other Licensees.
95. All Licensees may establish their own operator assistance services but Designated Licensees shall enable other Licensees to offer relevant Operator Assistance Services via their network.

4.6.2 Emergency services

96. Designated Licensees shall provide connection to the Public Emergency Services to other Licensees.
97. Although this service is currently provided free of charge, the tariffs may be changed according to the stipulations of the Designated Licensee' Licence agreement and with the approval of the TRC.
98. Licensees shall cooperate to achieve a technical solution that provides prioritised capacity to connect to public emergency services.

4.6.3 Directory enquiries

99. Designated Licensees shall provide Directory Enquiry services to other Licensees.
100. Although this service is currently provided free of charge, the tariffs may be changed according to the stipulations of the Designated Licensee' Licence agreement and with the approval of the TRC.

4.7 Advanced call services

4.7.1 Service definition

101. Advanced call services shall be defined as value-added services associated with call conveyance services. Examples of such services are:
    a. Calling line identification presentation (CLIP)
    b. Calling line identification restriction (CLIR)
    c. Connected line identification presentation (COLP)
    d. Connected line identification restriction (COLR)
    e. Call transfer
    f. User-to-user signalling
    g. Call notification (or call waiting)
    h. Ring-back on busy
    i. Three-way call

4.7.2 Requirement to provide service

102. TRC recognises that not all these facilities are compatible between fixed and mobile networks but wishes to ensure that, where technically feasible, there is feature transparency for the benefit of Users throughout Jordan.

103. Licensees shall cooperate to achieve feature transparency between interconnected networks of advanced services.

5 Technical aspects

5.1 Introduction

104. This section deals primarily with the interconnection of switched networks designed for the conveyance of voice calls and data calls within the voice bandwidth (dial-up internet access for example).

105. Other forms of interconnection including interconnection to data services and Public Payphone Operators will require supplementary technical aspects which should be included in the RIOs of Designated Licensees.

5.2 Interconnection of public exchanges

106. The Guidelines for the interconnection of public exchanges are applicable only to Licensees using public exchanges, including MSCs to offer call conveyance services as defined in Section 4.2 of The Guidelines.

107. Designated Licensees offering switched interconnection shall provide other Licensees with details of their exchanges that are available for interconnection. Designated Licensees shall provide this information within their RIOs. The information should include, but not be limited to:

    a. Name of exchange

    b. Location (geographic address)

    c. Function (International/Tandem/Local)

    d. Manufacturer

    e. Model (Hardware/Software)

108. To reduce the requirement to update the main body of the RIO in response to network developments, Designated Licensees should maintain details of these exchanges within an annexes to their RIOs which may be available in an up-to-date electronic form.

109. Designated Licensees shall produce a list of exchange hardware and software configurations that they accept for interconnection to their network and define this within their RIOs.

110. Licensees with either a PSTN or Public Mobile Telephone Service Licence have an obligation contained in Article 6.2.1.1 of their Licences to provide interconnection '*at any technically feasible point in the network, subject to operational practicability and commercial viability'*. The TRC considers that all public exchanges fulfil the above criteria as points for interconnection. Designated Licensees operating such public exchanges shall offer interconnection capability at all of their exchanges.

111. The TRC accepts that fulfilment of the requirement to provide interconnection at all exchanges, may require Licensees to make modifications to their network architecture, routing and billing arrangements and that this process will take time and may involve additional costs.

5.2.1 Rules for interconnect links between public exchanges

5.2.1.1 General

112. Licensees providing switched interconnection services may specify technical rules to be followed by other Licensees using these services.

113. Examples of technical switched interconnection rules include (but are not limited to):
    a. Minimum number of interconnect links
    b. Maximum interconnect link capacity
    c. Requirements to interconnect to specific exchanges
    d. Signalling requirements
114. Designated Licensees shall define any technical interconnection rules within their RIOs.
115. Technical interconnection rules shall not prevent the introduction and development of competition nor shall they represent an unreasonable obstacle to interconnection.
116. Designated Licensees may define a set of rules for handling calls routed incorrectly to one of its exchanges within their RIOs. The TRC consider it reasonable for Licensees to reject calls routed erroneously to a local exchange if the called User is not hosted on that exchange.

5.2.1.2 Number of interconnect links

117. In order to protect the interconnection service resilience (i.e availability of sufficient capacity to meet QoS targets), Designated Licensees may require other Licensees to interconnect to more than one of their public exchanges and to specify particular exchanges or levels of switching. Any such minimum requirements shall be justified by reasonable engineering principles to provide network resilience. Licensees shall not define a maximum limit on the number of interconnect links to any other Licensee.
118. In any instance where it might be considered necessary to constrain capacity on either a temporary or permanent basis, the TRC should be consulted immediately and before any constraints would come into force.

5.2.1.3 Link direction

119. Designated Licensees providing interconnection at public exchanges shall enable Licensees using their service, to designate interconnect links as being either uni-directional in either direction, or bi-directional (both-way).
120. Licensees providing interconnection of public exchanges may also encourage the use of uni-directional routes segregated by traffic type. Such an approach can protect certain traffic streams against congestion caused by others and it is possible to provide differing Grades of Service to particular traffic streams. It is also much simpler to manage from a commercial and accounting perspective.

5.2.1.4 Link capacity

121. Designated Licensees shall offer interconnection, to the voice networks of other Licensees, in multiples of 2 Mbps (2048 kbps) E1 transmission links.
122. Licensees providing interconnection of public exchanges may define a minimum and maximum capacity for any interconnect link.
123. Licensees should not place excessive reliance on any particular interconnect link as this may endanger interconnection service resilience. Licensees should endeavour to spread interconnection traffic over a number of diverse interconnect links.
124. Designated Licensees providing switched interconnection should enable Licensees using their service to designate a uni-directional outgoing interconnect from the Licensee's network as being either 'fully-provisioned' or 'high-usage'. This designation may be made either before an interconnect link is brought into service, or at some point during its operation. A fully-provisioned link should be dimensioned such that congestion is rare. A high-usage link may be dimensioned such that a reasonable degree of congestion (or blocking) is expected.

125. Licensees shall publish a target grade of service for each outgoing fully-provisioned interconnect link during the link busy hour. This takes the form of a blocking probability according to the Erlang B calculations.

126. Licensees should provision capacity on fully-provisioned interconnect links so that the congestion remains within the agreed grade of service value during normal busy hour periods.

127. In addition to the grade of service value, Licensees may agree on a utilisation factor for fully-provisioned interconnect links. The utilisation factor is the percentage occupancy of the interconnect link that the parties aim to keep the traffic below. If the utilisation of an interconnect link regularly exceeds the defined utilisation factor, such utilisation should trigger a re-routing of traffic away from that link as part of a re-balancing exercise and/or an increase in the capacity on that link.

128. If a Licensee using switching interconnection services has designated an interconnect link as being high-usage such designation shall be in conjunction with planned overflow via fully-provisioned interconnect links.

129. The TRC notes that some incumbent operators discourage the practice of using routes in this way from both a technical and commercial standpoint. However, high-usage routes are widely employed and may be very efficient.

5.3 Transmission interconnection

130. This Section concerns the technical aspects of the transmission (transport) used to interconnect the networks of Licensees in order to provide interconnection services.

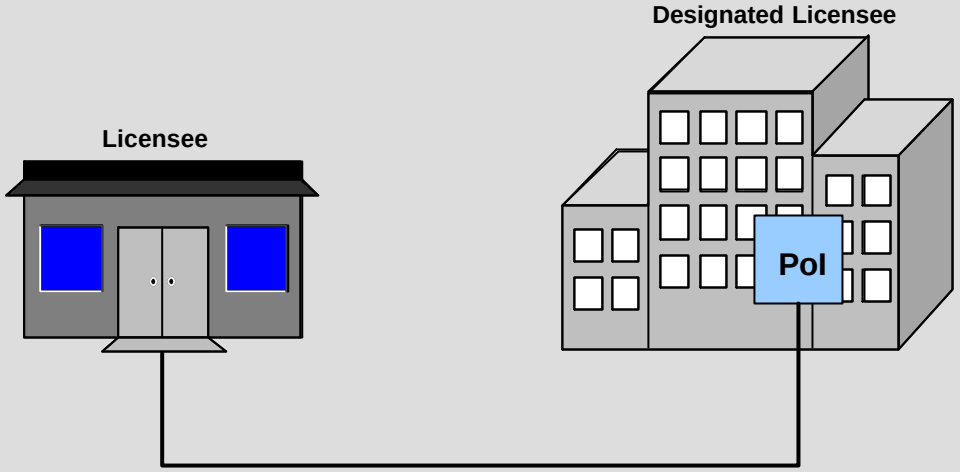
5.3.1.1 Point of Interconnect

131. The Point of Interconnection of a transmission interconnect shall be defined as the boundary between the networks of interconnected Licensees and is located at some point on the transmission interconnect link.

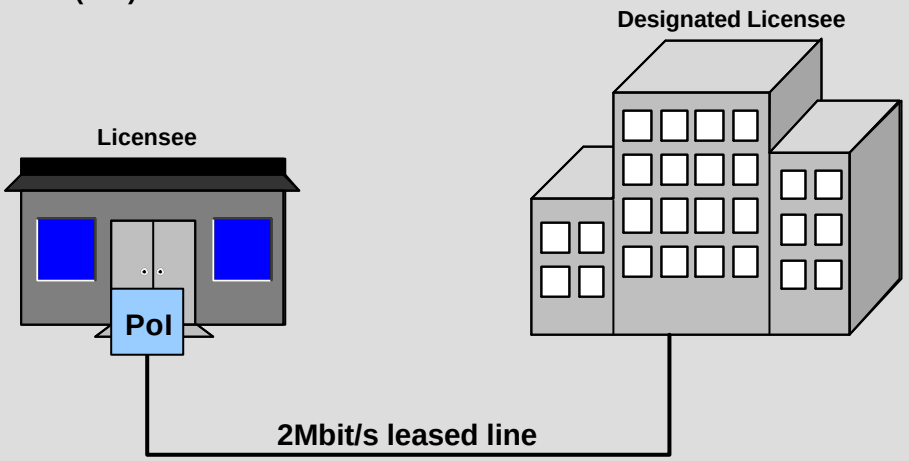
132. The Point of Interconnection may be located at the premises of the Designated Licensee (collocation) within the premises of the Licensee (customer sited interconnect), or at a point in between their respective premises (In-span Interconnect). See diagrams below.

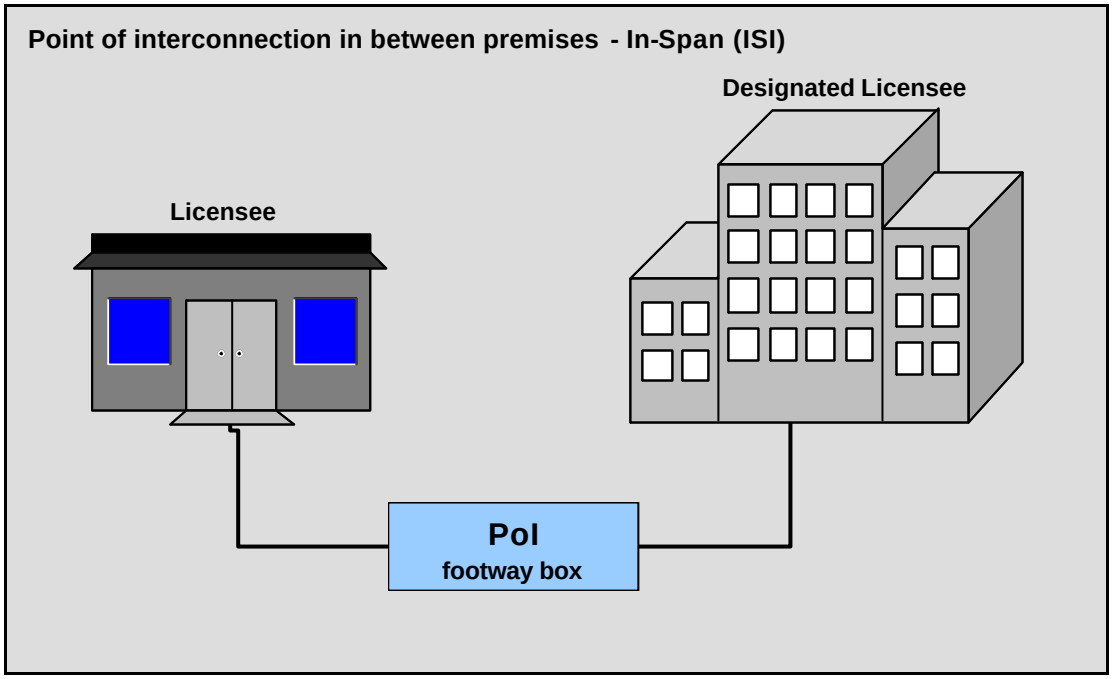
133. In the case of the Point of Interconnection at the premises of either Licensee, the exact Point of Interconnection shall be defined as the line side of the digital (2 Mbps) distribution frame. The Licensee owning the premises shall provide the digital distribution frame as the physical interconnection point where the other Licensee can terminate its transmission systems.

Point of interconnection at Designated Licensee's site - collocation



Point of interconnection at requesting Licensee's site – customer sited interconnect (CSI)





134. Designated Licensees shall fully define the transmission options that Licensees interconnecting to them may use within their RIOs.

135. Licensees shall be responsible for provisioning, operating and maintaining the transmission interconnect up to the point of interconnection. They shall be considered as owning any transmission equipment and infrastructure up to the point of interconnection.

136. Licensees shall be responsible for the traffic carried over their own network up to (for outgoing traffic) or from (for incoming traffic) the point of interconnection. Licensees shall not be responsible for the traffic carried over the other's network.

137. Designated Licensees shall offer the option of placing the point of interconnect at their own premises, at the premises of the Licensees using their service(s) or in between, as an in-span interconnect. The commercial arrangements and provisioning, operations and maintenance processes shall be dependent on the location of the point of interconnection.

138. The Guidelines for the site access to the premises of a Designated Licensee where a point of interconnection is located are contained in Section 6.4.1.

5.3.2 Interconnect extension circuits

139. Designated Licensees shall enable Licensees to whom they are providing a service, to lease interconnection transmission links from the point of interconnection to other points in their network in order to enable switching interconnection to a greater number of exchanges.

5.3.3 Transmission technologies

140. Licensees shall support the use of any appropriate transmission technologies for interconnect links. Technologies could include wireless, fibre-optic cable and SDH transmission with an appropriate range of ring capacities. The TRC discourages the use of Plesio-Synchronous transmission technologies on interconnect links.

141. Licensees should consider the resilience of transmission routes including redundancy, diverse routing, path protection, separation, diversity and ring architectures.

142. Where appropriate, Licensees should provide diverse cable entry points to buildings where a Point of Interconnection is located.

5.4 Interconnection of signalling networks

143. Licensees shall support the ITU Signalling System Number 7, Integrated Services User Part (ISUP) for interconnection signalling.

144. JT shall provide leased circuits routed via the JT's international gateway exchanges to any Signalling Transfer Point outside of Jordan to interconnect with international operators to facilitate roaming with their networks.

145. JT shall provide, to the mobile network operators, the use of SS7 signalling via its international switching centres to international operators for the transit of incoming and outgoing roaming messages with foreign mobile operators.

146. The utilisation of SS7 links shall be maintained within the ITU guidelines:

    a. Critical load per SS7 link: 0.36 Erlangs.

    b. Maximum load per SS7 link: 0.44 Erlangs.

147. Designated Licensees shall specify the signalling configuration to be used on interconnect links within their RIOs.

148. Licensees providing interconnection, shall notify interconnected Licensees of any modification in the adopted ITU signalling system 6 months in advance.

5.5 Interface standards and technical requirements

149. Licensees shall adhere, as far as possible, to the appropriate ITU and ETSI technical standards related to interconnection interfaces.

150. Appropriate ITU-T technical standards may include but are not limited to:

    a. G.111 Loudness Ratings in an International Connection

    b. G.113 Transmission Impairments

    c. G.121 Loudness Ratings of National Systems

    d. G.122 Influence of National Systems of Stability, Talker Echo and Listener Echo In International Connections

    e. G.123 Circuit Noise in National Circuits

    f. G.131 Stability and Echo

    g. G.151 General Performance Objectives Applicable to all Modern International and National Extension Circuits

    h. G.165 Echo Cancellers

    i. G.473 Interconnect of a Maritime Mobile Satellite System with the International Automatic Switched Telephone Service Transmission Aspects

    j. G.703 Physical/ Electrical Characteristics of Hierarchical Digital Exchanges

    k. G.704 Synchronous Frame Structures used at Primary and Secondary Hierarchical Levels

    l. G.706 Frame Alignment and Cyclic Redundancy Check (CRC) Procedures Relating to Basic Frame Structures Defined in Rec. G704

m. G.711 Pulse Code Modulation (PCM) of Voice Frequencies

n. G.712 Performance Characteristics of PCM Channels between 4-wire Interfaces at Voice Frequencies

o. G.811 International Connections Terminating on Synchronous Network Nodes

p. G.812 Section 2.2.3 (Holdover Operation)

q. G821 Error Performance of an International Digital Connection forming part of an Integrated Services Digital Network

r. G.823 The Control of Jitter and Wander within Digital Networks which are based on the 2048 kbit/s Hierarchy

s. G.826 Error Performance Parameters and Objectives for International Constant Bit Rate Digital Paths At or Above the Primary Rate

t. G.921 Digital Sections Based on the 2048kbit/s Hierarchy

u. O.151 Error Performance Measuring Equipment for Digital Systems at the Primary Bit Rate and above

v. O.152 Timing Jitter Measuring Equipment for Digital Systems

w. P.11 Effect of Transmission Impairments

x. P.16 Subjective effects of Direct Crosstalk; Thresholds of Audibility and Intelligibility

y. P.76 Determination of Loudness rating; Fundamental principles

z. Q.522 Section 2.12 Bit Patterns Generated by the Exchange in Idle Channel Time Slots

aa. Q.551 Transmission Characteristics of Digital Exchanges

bb. Q.554 Transmission Characteristics at Digital Interfaces of a Digital Exchange

cc. Q.700 Introduction to ITU-T Signalling System No.7

dd. Q.701 Functional Description of the Message Transfer Part (MTP) of Signalling System No.7

ee. Q.702 Signalling Data Link

ff. Q.703 Signalling System No.7 - Signalling Link

gg. Q.704 Signalling System No.7 - Signalling Network Functions and Messages

hh. Q.705 Signalling System No.7 - Signalling Network Structure

ii. Q.706 Signalling System No.7 - Message Transfer Part Signalling Performance

jj. Q.707 Testing and Maintenance

kk. Q.767 Application of the ISDN User Part of ITU-T Signalling System No.7 for International ISDN Interconnections

ll. Q.780 Signalling System No.7 Test Specification General Description

mm. Q.781 Signalling System No.7 - MTP Level 2 Test Specification

nn. Q.782 Signalling System No.7 - MTP Level 3 Test Specification

oo. Q.784 ISUP Basic Call Test Specification

pp. Q.785 ISUP Protocol Test Specification for Supplementary Services

151. Appropriate ETSI technical standards may include but are not limited to:

a. ETS 300 008 Integrated Services Digital Network (ISDN); ITU-T Signalling System No.7; Message Transfer Part (MTP) to Support International Interconnection

b. ETS 300 121 Integrated Services Digital Network (ISDN); Application of the ISDN User Part (ISUP) of ITU-T Signalling System No.7 for International Interconnection (ISUP Version 1)

c. ETS 300 132 Power Supply Interface at the Input to Telecommunications Equipment

d. ETS 300 019 1-3 Environmental Conditions & Environmental Tests for Telecommunications Equipment, Part I-3: Classification of Environmental Conditions - Stationary Use at Weather-Protected Locations

e. ETS 300 246 ONP Technical Requirements: 2048kbit/s Digital Unstructured Leased Line (D2048U) Interface Presentation

f. ETS 300 247 ONP Technical Requirements: 2048kbit/s Digital Unstructured Leased Line (D2048U) Connection Characteristics

g. ETS 300 248 ONP Technical Requirements: 2048kbit/s Digital Unstructured Leased Line (D2048U) Terminal Equipment Interface

h. ETS 300 303 Integrated Services Digital Network (ISDN); ISDN - Global Systems for Mobile Communications (GSM) Public Land Mobile Network (PLMN) Interface

i. ETS 300 386-1 Public Telecommunications Network Equipment EMC Requirements Part 1: Product Family Overview, Compliance Criteria and Test Levels

152. Designated Licensees offering interconnection services shall state the technical standards used for interconnection, within their RIOs.

153. Licensees offering interconnection services shall provide reasonable notice to interconnected licensees of any modifications to the technical standards related to interconnection interfaces.

154. Licensees offering interconnection services shall collaborate with interconnected licensees to overcome any technical problems.

155. Licensees should synchronise their networks from time slots on E1 interconnect links to JT as JT currently has the only caesium synchronisation clock in Jordan.

5.6 Numbering

156. Designated PSTN Licensees shall provide details of the number ranges which are hosted on each of their local exchanges. Licensees using the service shall then route calls to those number ranges directly on the interconnect link to the local exchange.

157. Designated Mobile Licensees shall provide, upon request, details of active number ranges to other Licensees and to the TRC.

5.7 Quality of Service

158. Designated Licensees providing call conveyance services shall do so with the same quality of service as for calls carried wholly on their own networks. This is required under Article 6.2.1.2 of the Licences which requires Licensees to convey interconnection calls at '*a quality no less favourable than that provided for its own like services*'.

159. Licensees shall work jointly to ensure the overall quality of the calls which are made via an interconnection point and their own networks. Licensees shall adopt general principles regarding standards, techniques and methods in order to guarantee the quality on telecommunication networks and in services, as stipulated in ITU and ETSI recommendations as listed in Section 5.5 of The Guidelines.

160. Licensees shall have the capability to define a target Grade of Service for each interconnect link between their network and other Licensees' networks described in more detail in Section 6.1.3.4 on interconnect link capacity provisioning processes.

161. Designated Licensees shall be capable of monitoring all interconnect links at all times and shall, at all times, be able to report on the actual Grade of Service. This is discussed further in Section 6.2.2.2.

162. Designated Licensees shall define a number of Quality of Service measures that they shall provide to and expect from, interconnected Licensees within their RIOs. These QoS measures shall be included in the Interconnect Agreement as Service Level Agreements (SLA).

163. The Quality of Service measures shall include the Grade of Service during busy hour (blocking probability), either applied to individual interconnect links, or across all interconnect links, and may include the following:

    a. Answer-Seize Ratio

    b. Transmission delay as defined in ITU-T Recommendation G.114

    c. Transmission loss (loudness) as defined in ITU-T Recommendation P.76

    d. Noise and distortion as defined in ITU-T Recommendations Q.551-554, G.123, G.232, G.712 and P.11

    e. Echo and loss of stability as defined in ITU-T Recommendation G.122

    f. Cross-talk as defined in ITU-T Recommendation P.16

6 Interconnection processes

6.1 Interconnect provisioning processes

6.1.1 Definition

164. Interconnect provisioning processes are defined as those processes that are used to enable one Licensee to establish interconnection to other Licensees and to modify the physical interconnection. These processes shall be categorised as either planning, formal request for service or implementation processes.

165. The planning processes shall include:

    a. Planning of new points of interconnection
    b. Changes to interconnect link capacity
    c. Changes to the transmission capacity
    d. Changes to the signalling network
    e. Changes to call routing
    f. New numbering blocks
    g. All processes for requesting services

166. The implementation processes shall include:

    a. All civil engineering work
    b. Construction
    c. Installation
    d. Testing
    e. Commissioning

167. Designated Licensees providing interconnection services shall fully define the interconnect provisioning processes to be used by Licensees taking interconnection services from them within their RIOs.

6.1.2 Lead-times

168. The provisioning processes of Designated Licensees shall include defined lead-time requirements and information exchange requirements for specific provisioning activities. For example, the lead-time to establish a new transmission interconnect will be longer than adding capacity to an existing interconnect link.

169. Article 6.2.1.3 of the Public Mobile Telephone Service and Fixed Public Licenses requires the Licensees to '*provide interconnection in a timely fashion*'. This requirement implies that any published lead-times shall be reasonable and it should be possible for Designated Licensees to justify these to the TRC.

170. When defining lead-times, Designated Licensees should aim to be as realistic as possible and provide sufficient time to overcome unforeseen implementation difficulties.

171. Designated Licensees shall provide lead-times to other Licensees that are comparable with internal provisioning time-scales.

172. Lead-times may, for example, be given for the following:

    a. Connection of a new Licensee exchange or other network equipment

b. Implementation of a new transmission interconnect

c. Implementation of a new interconnect link

d. Provision of additional capacity on an existing interconnect link

e. Removal of capacity on an existing interconnect link

f. Removal of an interconnect link

g. Routing changes within the Licensee's network to interconnects to the interconnected licensee

173. Any proposed changes to lead-times of Designated Licensees shall be subject to the approval of the TRC and shall be justified by the Designated Licensee.

6.1.3 Planning processes

6.1.3.1 Interconnection of a new public exchange

174. Licensees shall define procedures to be followed by other Licensees wishing to interconnect a new public exchange to their network.

175. Designated Licensees should define any such processes within their RIOs.

176. The procedures are likely to be more detailed in the event that the new exchange model, hardware build or software build is not one that has previously been interconnected to the Designated Licensees network.

177. Licensees should consider developing an 'Exchange questionnaire' to be completed by Licensees wishing to interconnect new exchanges to their network.

178. The TRC shall have the responsibility of assigning the SS7 Point Code(s) to new exchanges of Licensees.

6.1.3.2 Transmission interconnection

179. Designated Licensees offering transmission interconnection services shall define a planning process for new transmission interconnects within their RIOs. This shall describe the processes to be followed by Licensees when planning new transmission interconnects.

180. The TRC encourages Licensees to share, on lease basis terms and conditions agreed between both parties, the use of existing cable ducts owned by any other Licensee.

181. Planning of transmission interconnections, including civil engineering works shall be the responsibility of the Licensee providing the transmission. However, both Licensees should collaborate in such planning exercises. In the case of in-span interconnection as described in Section 5.3.1.1, the planning shall be considered to be a joint responsibility.

6.1.3.3 Planning of interconnect links

6.1.3.3.1 Planning of new links

182. Designated Licensees offering interconnection should define a formal process for the establishment of a new interconnect link within their RIOs. This process may then be supported by electronic forms attached to the RIO.

183. New interconnect links should normally be requested by the Licensee that plans to use the interconnection services provided by the other Licensee.

184. The information that a Licensee providing interconnection requires from a Licensee requesting a new link may include the following:

a. Licensee A exchange

b. Licensee B exchange

c. Transmission path(s)

d. Initial capacity

e. Link direction (Incoming/Outgoing/Both-way)

f. Link configuration - Fully-provisioned/High-Usage

g. Utilisation Factor

h. Grade of Service

i. Purpose of link

6.1.3.3.2 Removal of interconnect links

185. Designated Licensees offering interconnection should define a formal process for the removal of an existing interconnect link within their RIOs. Such processes may then be supported by electronic forms attached to the RIOs.

186. Such a process should include agreement on how to migrate traffic off the link which is to be removed.

187. Licensees offering interconnection may define a minimum period for which an interconnect link will be operational, especially if they have had to incur costs in establishing an interconnection link.

6.1.3.4 Capacity planning on interconnect links

6.1.3.4.1 Interconnect traffic forecasts

188. Licensees offering interconnection may require Licensees using these interconnection services to provide forecasts of traffic over each interconnect link between their networks.

189. Traffic forecasts should be given in terms of Erlangs during the peak and off-peak 'Busy Hours' for a period of not more than 2 years in advance. The forecast may then, for example, be updated every quarter.

190. Designated Licensees which choose to require traffic forecasts, shall explicitly define the exact requirements in the RIOs. Furthermore, it is recommended that the process should be managed by electronic forms to be used by the Licensee providing the traffic forecasts.

191. Licensees providing traffic forecasts shall make such forecasts as accurate as possible. However, it is clearly understood that forecasting traffic is extremely difficult. Licensees shall not be penalised for any inaccuracy in their traffic forecasts.

192. Licensees providing interconnection services shall have the right to refer Licensees using the service to the TRC if traffic forecasts are either not provided or are believed not to have been provided in good faith.

6.1.3.4.2 Interconnect capacity forecasts

193. Licensees offering interconnection may require interconnected Licensees using their interconnection services to provide forecasts of capacity requirements over each interconnect link between their networks.

194. These forecasts should be given in terms of E1s for a period of not more than 2 years in advance. This forecast may then, for example, be updated every quarter.

195. Licensees may require capacity forecasts without requiring traffic forecasts as described above in Section 6.1.2. However, if both capacity forecasts and traffic forecasts are required, the capacity forecasts should be based on the traffic forecasts and the design Grade of Service.

196. On interconnect links designated as being fully-provisioned, both Licensees shall provision, in advance, sufficient capacity to achieve the target Grade of Service.

197. Licensees may define a set of rules linking forecasts of required capacity to the capacity orders. For example, Licensees may require interconnected Licensees to order capacity within a certain percentage of their forecast capacity within 6 months.

6.1.3.4.3 Reactive capacity planning

198. Given it is the aim of interconnected Licensees to maintain the target Grade of Service, the process described in this Section should be applied even if the pro-active planning processes outlined in Sections 6.1.2 and 6.1.3.4.2 are being used, in the case that the capacity requirements have been under-forecasted.

199. Both interconnected Licensees shall measure traffic regularly on all interconnect links as described in Section 6.2.2. Both Licensees will be able to identify congestion and shall act to prevent it.

200. A period of the specified Utilisation Factor or Grade of Service being breached on a particular interconnect link shall not automatically trigger an increase of capacity on that interconnect link but should trigger a review of the network routing and interconnection capacity by both Licensees.

201. Licensees shall take all reasonable steps to prevent congestion through the 're-balancing' of interconnection traffic. This means that either or both Licensees shall adapt the exchange routing in order to re-direct traffic away from a congested interconnect link onto an interconnect link(s) with adequate spare capacity. Such a re-balancing process should be coordinated, in advance, between both Licensees.

202. If one or both Licensees considers that it is necessary to increase the capacity on one or more interconnect links in order to avoid or remove congestion, they shall have the right to call a meeting between the two Licensees.

203. A meeting shall be held within 5 working days of it being called by either Licensee. The Licensee calling the meeting shall inform the TRC and may invite a representative of the TRC to attend the meeting.

204. At such meetings, both interconnected Licensees shall present their traffic measurements to each other.

205. The traffic measurements provided shall be as comprehensive as possible and should cover at least a seven day period with the traffic profile over each day, in 15 minute intervals.

206. Both Licensees should be able to reach agreement on the requirement for an increase in interconnection capacity and on the details of the number of E1 links and the type of interconnect links.

207. If agreement cannot be reached during this meeting, either Licensee shall have the right to ask the TRC to intervene and make a determination on the requirement for additional capacity.

6.1.3.5 Transmission link services planning

208. Designated Licensees offering transmission link services shall define a formal process for the planning of such services, within their RIO. This process may be supported by electronic forms attached to the RIO.

209. The definition shall include the charges, provisioning, operations and maintenance processes and an SLA for the quality of the service. The SLA shall include delivery and repair performance criteria and penalty payments for failure to meet the service levels.

210. Designated Licensees offering transmission link services shall use identical processes to provide such services to all Licensees.

6.1.4 Collocation and facilities sharing processes

211. Designated Licensees shall cooperate in all aspects of providing collocation and facilities sharing services. Adoption of such practices aids economic, environmental and social benefits.

212. Designated Licensees shall maintain a list of their sites where collocation space is available and should include an indication of how much space is available on a long-term basis. This list shall be made available to other Licensees and the TRC.

213. Designated Licensees shall publish their space allocation policies within their RIOs. This may be based on a simple first-come, first-served principle but should take into account the following factors:

    a. Amount of space required

    b. Urgency of requirement

    c. Alternative options available to the requesting Licensee and the cost of these options

214. Licensees should maintain a list of facilities that they are prepared to share and the prices that they will charge others for doing so.

215. In circumstances where a Designated Licensee rejects a Licensee's request for collocation space on the grounds of insufficient space, the Designated Licensee should propose an alternative solution. In case of dispute, the TRC shall make a determination.

6.1.5 Request for service processes

216. Designated Licensees offering interconnection services shall define clear request for service processes to be followed by Licensees when requesting services. These processes shall be defined within their RIOs.

217. The request for service process should be supported by forms contained within, or attached, to the RIO.

218. As discussed above in section 6.1.2, the defined request for service process shall include lead-times. When requesting an interconnection service, the Licensee shall have a clear understanding of the maximum time that they could reasonably expect to wait.

219. Designated Licensees offering an interconnection service may stipulate that all, or some, types of request for service are binding on the Licensee placing the request for service. Any such stipulations shall be fully defined within their RIOs. Any such stipulations shall be reasonable and should reflect the costs that the Licensee has incurred in responding to a request for service. Reasonable flexibility should be permitted, especially in the early stages of a request for service.

220. Designated Licensees offering an interconnection service shall define the formats upon which requests for service will be accepted, e.g. letter, emailed attachment, fax, etc., within its RIO and within individual Interconnect Agreements, as appropriate.

221. The request for service should contain the date when the capacity is required. In some cases, this may simply be stated as 'as soon as possible'.

222. Designated Licensees shall respond to any request for service within 5 working days stating whether the request for service is to be accepted or rejected.

223. Designated Licensees rejecting an request for service, in whole or in part, shall respond, in writing to the Licensee, giving them the reasons for this rejection. This letter shall also be copied to the TRC.

224. In the event of a Designated Licensee rejecting a request for service, in whole or in part, the requesting Licensee shall have the right to refer the matter to the TRC. The TRC shall then investigate with the cooperation of both Licensees and may make a determination on the subject.

225. Designated Licensees accepting a request for service, shall provide, within 15 working days of the request for service being received, a date by which the request for service will be implemented. This date shall be within the published lead-times, from the receipt of the request for service, as described in Section 6.1.2.

226. Licensees should consider the urgency of the requirement in deciding the capacity provision date. If the request for service is for interconnection capacity and is required to overcome congestion, Licensees should make every effort to expedite the provision of this capacity.

227. Designated Licensees providing interconnection services shall implement a documented process for tracking the progress of capacity orders. The requesting Licensee and the TRC shall have the right to request a progress report within 3 working days at any time following the notification of the delivery date.

6.1.6 Implementation

228. Licensees offering interconnection services should have detailed internal implementation procedures to ensure that the services are provided in a timely manner and that the resulting services fulfil quality requirements.

229. In the case where both Licensees are involved in the implementation process, they should work constructively and in a cooperative manner. In such situations, there should be a pre-agreed schedule of testing which is defined in the RIO of the Designated Licensee offering the service.

230. There shall be a formal sign-off procedure for both the offering Licensee and the requesting Licensee to agree that the service has been provided.

6.2 Interconnection operations processes

6.2.1 General principles

231. Interconnection operations processes are defined as those processes that are used to enable interconnected Licensees to operate interconnection services.

232. The operations processes shall include:

    a. Network Traffic Management

    b. Quality measurement

    c. Traffic controls

    d. Routing management

    e. Fault reporting and resolution

233. Designated Licensees offering interconnection services shall define the procedures used between themselves and Licensees using their services, to operate the interconnection services.

234. Designated Licensees shall define the interconnection operations processes within their RIOs.

235. Licensees with a PSTN or Public Mobile Telephone Service Licence have an obligation to maintain and operate their networks to a targeted Quality of Service as defined in Appendix 4 of their Licences and to report on their performance against these targets.

6.2.2 Network traffic management

6.2.2.1 General

236. Network Traffic Management (NTM) is defined as the real-time surveillance and control of traffic flow on a telecommunications network. Its aims are to maximise the effective use of available capacity for call completion and to maintain an acceptable Grade and Quality of Service for Users of all Licensees.

237. Designated Licensees should establish Network Management Centres (NMCs) to monitor and control the flow and routing of traffic to maximise the effective use of available capacity.

238. Designated Licensees should provide 24-hour contacts for dealing with NTM queries and problems and should recognise the necessity for co-operation to achieve efficient NTM relating to the traffic routes linking their respective networks.

239. Licensees shall notify other Licensees in a timely manner when major problems occur which are likely to affect interconnected traffic.

240. Licensees should communicate as necessary to achieve a co-ordinated NTM effort.

241. The TRC recognises that congestion can be created in one network, and have an impact on a competitor's network due to network interconnection. If steps are taken in the affected network to reduce the impact of excessive traffic, typically by call-gapping, it is conceivable that another network operator may have cause to complain that its ability to carry revenue-earning traffic is restricted. If no action is taken the affected network could fail. Effective network traffic management actually maximises the effective (i.e. revenue-generating) call capacity of the network. The TRC therefore expects that:

    a. Designated Licensees shall document what congestion protection measures will be used (for example: call gapping, alternative routeing and priority techniques) and in what circumstances. Any such documentation should be made available to other Licensees with a legitimate interest;

    b. Designated Licensees shall also document what measures will be used to ensure the priority of emergency services traffic (currently 190), particularly during congestion periods; and

    c. Signalling links shall be dimensioned to avoid congestion and will in general have much lower occupancy than traffic links. The lower occupancy is important to minimise the risk of losing signalling messages and the need to reduce signalling latency. The number of signalling links should be established for normal and failure conditions.

6.2.2.2 Traffic and Quality of Service measurement

242. Interconnected Licensees shall both be responsible for measuring and monitoring the traffic and Quality of Service on the interconnect links between their networks, and shall be able to do so at all times in ‘real-time’ or as close to it as possible.

243. Designated Licensees shall be responsible for measuring and monitoring the traffic and Quality of Service within their networks and shall be able to do so at all times in ‘real-time’ or as close to it as possible.

244. Designated Licensees shall ensure that they have adequate traffic and Quality of Service measurement systems, trained staff, procedures and any required resources in order to fulfil these two requirements.

245. Designated Licensees shall provide traffic and Quality of Service measurements to the TRC upon their request, pursuant to Article 4.14 of the Public Mobile Telephone Service and PSTN Licences or Article 4.7 of the Data Communications Licences.

246. Licensees should provide NTM information relevant to an existing or perceived problem to other Licensees on request. Under no circumstances shall Licensees be required to provide commercially sensitive information, nor shall the information supplied be used for any other purpose than NTM.

6.2.2.3 Traffic controls

247. There are two main types of traffic control; 'Expansive', typically re-routes, and 'Protective', typically call-gapping:

    a. A re-route control may mean that the traffic affected will be carried over a Licensee's network for a greater distance than normally expected before being offered to the interconnected Licensee's network. Providing contractual agreement has been reached, re-routes may be 'set-up' in data at all interconnect units. The NMC will activate and remove the re-route option for each incident.

    b. Overflow from the primary route(s) should only be to pre-designated interconnect alternative routes. These calls would normally be given a lower priority than primary routed calls but the same priority as calls alternatively routed within the original network.

248. Protective controls prevent switching units being put in jeopardy due to excessive call attempts, problems and overloads in the other Licensee's network. The protective call-gapping control should mean that traffic destined for the interconnected Licensee's network may be restricted by the application of the control which would normally be applied on the receipt of a formal request.

249. Licensees may request a control from Designated Licensees in instances where it is necessary to reduce the traffic offered to the Licensee's network. Designated Licensees shall define the availability of such controls and degrees of selectivity and possible speed of implementation within their RIOs.

250. Licensees may implement controls within their own networks in response to perceived problems detected in another Licensee's networks. When such action is taken they should advise the other Licensees of the scope, cause, impact and likely duration of the problem. Advice of removal of the control should also be given.

251. If a Licensee considers that the use of NTM controls by another Licensee is acting to the detriment of its own network's performance, both Licensees should consult on the matter.

6.2.2.4 Routing management

252. Licensees shall manage the routing of outgoing calls up to the Point of Interconnection and incoming calls from the Point of Interconnection to their destination.

253. Licensees shall make every effort to ensure that calls are routed to the other Licensees' networks, using overflows to alternative routing paths if necessary.

254. Licensees shall be able to require interconnected Licensees to deliver incoming traffic to their networks on specific interconnect links and to request the use of proportional routing and other routing techniques.

255. When an interconnect link has been defined as being High Usage, the interconnect link(s) where calls will overflow should be defined.

256. Licensees should consider the formal agreement of routing plans between themselves and other interconnected Licensees. This could also include an agreed change process (referred to in the UK as 'Data Management Amendments').

257. Licensees shall pass onto other Licensees, the full CLI and CLIR for all calls, to the extent that the CLI and CLIR are available.

258. Licensees should agree advanced contingency routing plans to be used to alleviate different levels of NTM problems.

6.2.2.5 Mass call events

259. A 'Mass Call Event' is defined as a planned period of high call volumes to a specific set of destinations, e.g. a 'phone-in' to a 'telethon' type of event.

260. Licensees should establish procedures to coordinate Mass Call Events with their large Users who may host them.

261. Licensees with a User planning a Mass Call Event shall provide interconnected Licensees with reasonable advance notice. Such procedures shall be described in the RIO or Interconnect Agreement and may be accompanied by a form containing the relevant details.

262. Licensees should cooperate to ensure that, either additional capacity is provided on a temporary basis, or that routing controls are applied in order to maintain the service.

6.2.3 Fault management

6.2.3.1 Contact points

263. Designated Licensees shall be required to provide 24-hour contact points for fault reporting (24-hours a day, 7 days a week and all days a year). All initial contacts on faults affecting the other Licensee shall be between each Licensee's nominated contact points.

264. Arrangements should be made for direct person-to-person connection between fault resolution functions of all interconnected Licensees.

6.2.3.2 Fault detection

265. Licensees detecting a possible fault which may affect interconnection services shall inform interconnected Licensees immediately (within 15 minutes). This shall be done whether or not it is believed that the fault is within the detecting Licensee's network.

266. The Licensee that detects a possible fault shall process the fault report internally before requesting the assistance of interconnected Licensees in providing diagnostic support. Licensees shall make every effort to determine whether the fault is genuine and to identify the location of the fault.

267. Licensees should request an interconnected Licensee to process a fault, only when they are sure that the fault does not lie within their own network and is not their responsibility.

268. Following a fault report, interconnected Licensees shall agree ownership of the fault. The fault owner shall then assume responsibility for restoration including possible roll back to initial configuration when fault comes from a change and the eventual report back of service restoration.

6.2.3.3 Fault processing

269. A Licensee shall provide sufficient information to the other Licensees to enable both to carry out diagnostics and then progress the fault to restoration.

270. It is recommended that Licensees implement a fault management system as part of their Operational Support Systems.

271. Licensees should number fault reports in order to facilitate the management of individual faults, especially across two (or more) Licensees.

272. When either Licensee believes that a fault has been cleared, it shall give positive confirmation to the other Licensee immediately.

273. Licensees should prioritise the clearance of faults affecting service over the clearance of faults not affecting service.

274. A fault shall be considered to be cleared when the Licensee that reported the fault, has accepted the fault clearance information or confirms a successful test (e.g. traffic has been restored).

275. Designated Licensees shall include indicative response times, restoration times and procedures for different fault conditions within their RIOs. These shall be subject to the approval of the TRC. The RIO shall also define the escalation procedures for fault management.

6.3 Interconnection maintenance processes

6.3.1 General principles

276. Interconnection maintenance processes are defined as those processes that are used to enable interconnected Licensees to maintain the interconnection and interconnection services.

277. The maintenance processes shall include:

    a. Operational testing

    b. Planned Engineering Works

    c. System protection and safety

278. All Licensees offering interconnection services shall define the procedures used between themselves and the Licensee who uses their services, to maintain the interconnection services.

279. Designated Licensees shall define these processes within their RIOs.

6.3.2 Operational testing

280. Any testing which might affect traffic flows should be scheduled after midnight or during the low traffic period during the weekends and holidays with the prior approval of the joint technical committee of both Licensees.

6.4 Planned Engineering Works

281. Planned Engineering Work is defined as any foreseen work, necessary to be carried out within either Licensee's network, which may affect the interconnect arrangements or standards of performance between the networks, as perceived by the Licensees or their Users.

282. Licensees should provide interconnected Licensees with sufficient advance notice of any Planned Engineering Works. This notice should be at least ten (10) working days in advance.

283. It is further recommended that the notification should contain the following information:

    a. The Licensee's name, address, telephone and fax numbers

    b. Planned work reference number

    c. Date, time and duration of the planned work

    d. Type of planned work

    e. Type of disturbance the planned work will cause

    f. Date and time when the planned work will be completed

g. Any other information which will add value to the advice of interruption

284. Licensees should endeavour to minimise disruption when making tests, expansion or maintenance works. Any activity which might affect the service should be performed after midnight or during weekends and holidays supported with prior approval from the other Licenses.

6.4.1 Site access procedures

285. Site access procedures are defined as the procedures used to arrange and control access by one Licensee to their network equipment collocated in the premises of a different Licensee.

286. Designated Licensees providing collocation space and shared facilities shall define the site access procedures within their RIOs.

287. Designated Licensees providing collocation space should be able to provide access, by prior notice, on a 24 hour, seven days a week basis for planned work, and with no prior notice in the case of unplanned work for service restoration, resulting from network failure.

288. The procedures for planned access may be different according to the purpose of the planned access including:

    a. Delivery and installation of equipment

    b. Software or hardware upgrades

    c. Planned maintenance

289. Site access procedures may include escort arrangements whereby staff of the Licensee owning a site, escorts the staff of the Licensee collocating their equipment at the site. Such procedures should be reasonable and not excessively onerous. The Licensee owning the site shall bear all costs of escort. Where separate entrance and secure areas are provided, site escort may not be required.

290. Licensees using collocation space shall ensure that their technicians (or sub-contractors) have adequate training for working on equipment collocated at a site belonging to another Licensee, and that these staff comply with all reasonable safety and security requirements of the Licensee owning the site.

291. It is the responsibility of each Licensees' member of staff to ensure that they work in a safe environment. The Licensee owning the site shall be prepared to accept any questions or comments regarding safety from Licensees using the site, and to take the appropriate action.

292. Licensees providing collocation space should offer the representative of the licensee using the site, access to on site facilities e.g. facilities, power, lighting, water and toilets.

6.5 System protection and safety

293. Licensees should define their respective obligations to protect each others' networks and define measures to protect the safety all personnel and users.

294. Network integrity is a question of network management and the ability of the network to maintain certain characteristics with regard to performance and reliability. In order to maintain network integrity:

    a. the interfaces between the networks shall conform with recommendations from international standards bodies and/or international standards. Those standards should be open and monitored by the TRC.

    b. compatibility measures should ensure that networks or systems with different levels of performance work together correctly.

c. testing procedures should be carried out before interconnection and possibly after interconnection but before bringing equipment into service. Documentation of validity/conformity and interoperability should be submitted before the system is brought into operation.

d. special national and/or international technical solutions might be introduced for the interconnection of networks. For instance, the signalling networks could be separated by a signalling inter-network between the respective gateways. These solutions may be made available to all potential interconnecting Licensees in a non-discriminatory manner.

e. all testing should be carried out within a reasonable period of time and subject to mutually-agreed principles, so as not to delay interconnection.

295. Licensees shall be responsible for the safety and operation of their own systems.

7 Commercial aspects

7.1 Charges and payments

7.1.1 Principles of charging

296. The methodology for determining cost based rates shall be contained in detail in a separate document published by the TRC. The implementation of this methodology shall be subject to a separate consultation. This section of The Guidelines contains the policies of the TRC in respect to the derivation of cost based charges.

297. Both the PSTN and the Public Mobile Telephone Service Licensees shall offer interconnection charges that have "*cost based rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the interconnecting party does not pay for network components or facilities that it does not require for the service to be provided, it being understood that no unreasonable and unrecoverable costs will be imposed on the Licensee in connection with any unbundling*".

298. It is TRC's policy to move to a charging system based on Long Run Average Incremental Costs. However, TRC recognises that such an approach is not immediately applicable to Jordan and, as in European countries, will take several years to implement. However in the short term TRC wishes to see interconnection charges which better reflect the costs incurred by Designated Licensees in providing the interconnection services. This could initially be based on a Fully Allocated Costing (FAC) methodology which recovers direct costs for the services provided with applicable overheads and a reasonable return on capital employed. The assessment and calculation of costs shall be based on "Cost Causation" principles.

299. Cost based charging shall apply equally to all interconnection services.

300. Designated Licensees shall undertake to fully analyse their costs of providing interconnection services. This shall initially use a Fully-Allocated Costing methodology (FAC) with the results presented to TRC within 6 (six) months of the publication of The Guidelines.

301. Designated Licensees shall cooperate with the TRC in any service costing exercise that the TRC may decide to undertake.

302. Interconnection services include all services as defined in Section 4 of The Guidelines.

303. Designated Licensees shall, following the determination by TRC, give a minimum of 28 (twenty eight) days notice of any changes to interconnection charges including charges for the introduction of any new interconnection services.

304. Designated Licensees shall notify TRC of their intention to introduce new interconnection services in accordance with the terms of their Licenses.

305. Designated Licensees may publish charges on their web site but shall publish the charges as annexes to their RIOs.

306. Designated Licensees shall define any penalties for cancellations of requests for service within their RIOs.

7.1.2 Call conveyance

307. Charges shall only be made for successful calls – those calls receiving an answer signal in the backward direction.

308. The charging unit for all successful calls shall be one second of conversation time.

309. Designated Licensees shall charge all interconnected Licensees the same per-second rates for the same call conveyance services.

310. There shall be no minimum charge for successful calls.

311. Call conveyance charges shall reflect the amount of network infrastructure used in the conveyance of each call. Designated PSTN Licensees must therefore offer different interconnection charges for local, single tandem, double tandem and transit (including international) calls.

312. Mobile licensees shall offer a single charge for call termination based on the average utilisation of network infrastructure by incoming calls in mobile networks.

313. Designated Licensees may offer peak and off peak interconnection rates, providing the overall cost recovery does not exceeded the total average cost of providing the service.

7.1.3 Transmission link costs and charges

314. The costs of transmission links shall be met by the Licensee requesting the service.

315. Charges shall be the same for all requesting Licensees.

316. Minimum contract periods shall not exceed 1 (one) year but discounts should be offered if longer commitments are made.

7.1.4 Interconnection link costs and charges

317. The costs of the interconnection links shall be shared between the Licensees on the basis of the proportion of traffic which each originates on each link. This shall be shared on the basis of traffic volumes measured in call minutes over the preceding 3 months. Bills should be retrospectively adjusted.

318. The costs for the interconnection links shall include the ports on trunk side of exchanges on which they are terminated. This may include the cost of establishing and testing the link and associated equipment.

319. Minimum contract periods shall not exceed 1 (one) year but discounts should be offered if longer commitments are made.

320. Costs shall be separated into circuit set-up costs and ongoing leasing costs.

321. These charges shall be cost based but geographically averaged.

7.1.5 Data interconnection services

322. Data interconnection services shall be charged for through a combination of call conveyance and transmission link charges.

7.1.6 Collocation and facilities sharing services

323. The prices charged by Designated Licensees for the running costs of collocation and facilities sharing services shall be, as far as is practicable, cost based. Leases for the space within buildings should reflect local market values.

7.1.7 Operator services

324. Designated Licensees shall offer operator assistance services at cost based charges.

7.2 Billing

7.2.1 Call conveyance billing

7.2.1.1 General

325. Designated Licensees shall fully define their billing processes within their RIOs. These shall include timescales for:
    a. Billing period (start and end dates)
    b. Delivery of invoice from billing party
    c. Queries related to invoices from billed party
    d. Time to reach a reconciliation agreement
326. Interconnect billing shall be based on call recording in the interconnected exchanges using Call Detail Records (CDR).
327. Licensees on each side of an interconnect shall have the capability to measure the call seconds. If only one of the Licensees has the capability to measure such calls, then their measurements shall be considered to be definitive. If both Licensees have the ability to measure such calls, then the reconciliation process should be contained in the Interconnect Agreement and defined in the RIO of Designated Licensees.
328. For charging and accounting purposes, calls shall be considered in principle to fall entirely within the charge period in which they start, regardless of the fact that they may end in another charge period.
329. The traffic unit used by Designated Licensees for charging and settlement of call conveyance bills shall be one second of Conversation Time. Conversation Time shall be measured according to the relevant ITU standards for R2 and SS7 signalling.
330. Designated Licensees shall define the format of the invoice and the method of transmitting the invoice within their RIOs.
331. Except for disputed amounts being processed in accordance with the billing disputes process, if a party fails to pay five (5) working days after the Due Date (Specified in the RIO) any amount due under the interconnect agreement, the party shall pay automatically interest at the default interest rate (specified in the RIO) on the due amount, as from the due date.
332. The billing party shall store billing data in such format as shall be sufficient to recalculate the amounts due from one party to the other. The billing party shall archive such data for at least two years.

7.2.1.2 Interconnect billing reconciliation

333. Designated Licensees shall define their interconnect billing reconciliation process within their RIOs.
334. Some discrepancy in billing values should be expected. Designated Licensees providing the interconnection service should define a specific percentage difference in both parties calculation of a bill, below which there shall be no Interconnect Billing Reconciliation Process.
335. During an Interconnect Billing Reconciliation Process, Licensees should work together in good faith, taking more frequent measurements and exchanging detailed information if necessary.
336. In the case of unresolved disputes, Licensees should work together in order to improve the accuracy of the bills and the comparison of records shall be made more frequently until the fault is identified and resolved.

337. If the specific reason(s) for billing discrepancies cannot be found, the Licensees should agree on an estimate for the correct value based on either historical data or an average of calculated bills of both parties.

338. Interconnected Licensees should arrange audits of billing records and processes on a quarterly or biannual basis.

8 Disputes process

339. In the event of any dispute or difference arising between or among the Licensees relating to or arising out of an interconnection agreement, including the implementation, execution, interpretation, rectification, termination or cancellation of the agreement, the Licensees shall meet within 10 (ten) working days of written notice of the dispute or difference from one Licensee to the other (or such longer time as mutually agreed by the Licensees in writing) to negotiate in good faith in an effort to settle such dispute or difference, and if the dispute or difference is not resolved to the Licensees' satisfaction within 5 (five) working days of the meeting (or such longer time as mutually agreed by the Licensees in writing), the Licensees shall proceed as follows:

340. Within 2 (two) working days, the dispute or difference shall be referred to a joint committee of the Licensees' respective chief executive officers or alternates appointed by them. The chief executive officers or appointed alternates shall use their best endeavours to settle or resolve the dispute or difference as expeditiously as possible, but in any event within a period 15 (fifteen) working days of the matter being referred to them (or such longer time as mutually agreed by the Licensees in writing);

341. Such dispute or difference shall be referred to the TRC for determination if either or both parties so request or in the alternative if both parties agree then the matter may proceed to arbitration.

342. During any dispute or difference the parties shall keep their networks connected for the provision of services and conveyance of calls between their respective networks. No party shall disconnect the other party's network without the prior approval of the TRC and any party seeking to bring about such disconnection may make representations to the TRC. The TRC shall give due consideration to the matter and may seek representations from the other party prior to making any determination regarding the disconnection of the said networks.

9 Arbitration

343. Notwithstanding the provisions of Section 8 above, the Licensees shall forthwith meet to attempt to settle such dispute or difference and failing such settlement within a period of 10 (ten) working days, the said dispute or difference may be submitted to arbitration by an arbitrator or arbitrators appointed as follows:

344. If the matter in dispute is principally:

    a. a legal matter, an impartial practising lawyer(s) of not less than 10 (ten) years standing;

    b. an accounting matter, an impartial practising chartered accountant(s) of not less than 10 (ten) years standing;

    c. a technical matter, an impartial telecommunications expert of not less than 10 (ten) years standing;

    d. any other matter, an independent person(s) agreed upon between the parties;

    e. If the parties fail to agree on an arbitrator within 10 (ten) working days after the arbitration has been demanded, the arbitrator shall be nominated at the request of either of the parties by the TRC.

345. Any Licensee may request that a dispute or difference in terms of Section 8 be referred to arbitration by giving written notice to that effect to the other Licensee.

346. The arbitration shall be held immediately and with a view to its being completed within 15 (fifteen) working days after it is demanded.

347. The arbitrator shall make an award in respect of the costs of the arbitration having regard to the substantial success of each party in the outcome of the proceedings.

348. The decision of the arbitrator shall be binding on the parties to the arbitration after the expiry of a period of 30 (thirty) working days from the date of the arbitrators ruling and provided that no appeal has been lodged by any party to a competent court as provided for under the Jordanian Arbitration Law.

10 General contract provisions

10.1 General

349. There are a number of legal contractual issues that should be considered by each Licensee and shall be included within the RIOs of Designated Licensees. These should be adapted from international 'best practice' in line with Jordanian law.

10.2 Specific clauses

10.2.1 Provision of information

350. Designated Licensees should include a clause in their RIOs, stating that certain network information will be supplied to interconnected Licensees in order to enable them to plan their networks and interconnection. However, the clause should also state that this information is not to be divulged to third parties.

10.2.2 Service Level Agreement

351. Designated Licensees shall include within their RIOs a statement of the Service Level Agreement which they offer. This shall include, at least, measures for times to provide new services, availability and repair times. The RIO shall contain the details of financial penalties that will be paid to other Licensees if the Designated Licensee fails to meet the commitments defined within the Service Level Agreement.

10.2.3 Duration

352. The Interconnect Agreement shall not have a defined fixed duration. The agreement should be an ongoing one with periodic reviews and opportunities for renegotiation.

10.2.4 Review

353. There shall be a process for re-negotiation of defined issues e.g. changes in law or regulation. This process shall have defined timescales, e.g. minimum times for negotiation, review notices, etc. There shall also be an option to use arbitration to resolve disputes.

10.2.5 Confidentiality

354. Licensees should require other Licensees to sign a confidentiality agreement to protect its information from being divulged to any other party, subsidiary or partner. In particular there will be a need for data protection in respect of User details. However, this will have to enable provision of information to the TRC if required.

10.2.6 Intellectual Property Rights

355. Licensees should ensure that they safeguard their Intellectual Property Rights (IPR). This will include controlled use of its trademarks. However there is still a need to ensure 'open' interfaces between interconnected Licensees.

10.2.7 Liability

356. Licensees need to define events of liability and limits of liability (direct loss), together with any threshold below which claims will not be made.

10.2.8 Additional Provisions

357. There are a number of other contractual issues that must be considered:

    a. Force Majeure
    b. Assignment
    c. Contract variation
    d. Breach of contract
    e. Termination
    f. Governing Law

Annex A: Contents of a RIO

- Definitions
- Management of interconnection
  - Account management
  - Joint technical committee
  - Provision of information between licensees
  - General network information
  - Planned changes to networks
  - Records of interconnect links
- Interconnection services
  - Call conveyance services
    - Call termination service
    - Call transit service
    - Call origination service
    - Intelligent Network call origination
  - Transmission link services
  - Interconnect link services
  - Data interconnection services
  - Collocation and facilities sharing services
  - Operator services
  - Operator assistance
  - Emergency services
  - Directory enquiries
  - Advanced call services
- Technical aspects
  - Interconnection of public exchanges
  - Rules for interconnect links between public exchanges
    - Number of interconnect links
    - Link direction
    - Link capacity
  - Transmission interconnection
  - Point of Interconnect
  - Interconnect extension circuits
  - Transmission technologies
  - Interconnection of signalling networks
  - Interface standards and technical requirements
  - Numbering
  - Quality of Service
- Interconnection processes

- Interconnect provisioning processes
- Lead-times
- Planning processes
  - Interconnection of a new public exchange
  - Transmission interconnection
  - Planning of interconnect links
  - Planning of new links
  - Removal of interconnect links
  - Capacity planning on interconnect links
    - Interconnect traffic forecasts
    - Interconnect capacity forecasts
    - Reactive capacity planning
  - Transmission link services planning
- Collocation and facilities sharing processes
- Request for service processes
- Implementation
- Interconnection operations processes
  - General principles
  - Network traffic management
    - Traffic and Quality of Service measurement
    - Traffic controls
    - Routing management
  - Mass call events
  - Fault management
    - Contact points
    - Fault detection
    - Fault processing
- Interconnection maintenance processes
- General principles
- Operational testing
- Planned Engineering Works
- Site access procedures
- System protection and safety

Commercial aspects

- Charges and payments
  - Call conveyance
  - Transmission link costs and charges
  - Interconnection link costs and charges
  - Data interconnection services
  - Collocation and facilities sharing services

Operator services
Billing
Call conveyance billing
Interconnect billing reconciliation
Disputes process
Arbitration
General contract provisions
Provision of information
Duration
Review
Confidentiality
Intellectual Property Rights
Liability
Additional Provisions
Annex A: Charges
Annex B: Facilities available for collocation and sharing
Annex C: Network documentation
Annex D: Service Level Agreement

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INTERCONNECTION DISPUTE RESOLUTION MINI CASE STUDY 2003:

MALAYSIA

The Malaysian Access Forum as an Initiative in Self-Regulation and Consensus Building

International Telecommunication Union (ITU)

Malaysia Mini-Case Study 2003

The Malaysian Access Forum as an Initiative in Self-Regulation and Consensus Building

International Telecommunication Union

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This is one of five mini case studies on interconnection dispute resolution undertaken by ITU. Further information can be found on the web site at http://www.itu.int/ITU-D/treg.

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Malaysia Mini-Case Study:
The Malaysian Access Forum as an Initiative in Self-Regulation and Consensus Building

I. Introduction

Located in South East Asia, Malaysia has a population of about 24 million and GDP of about RM 360,000 billion (US$1.00 = RM 3.8). Its cellular subscribers amount to about 10 million, an approximate penetration rate of 40%. Fixed line penetration is lower, at about 19%, with a total of about 4.6 million lines. With five fixed line operators and eight mobile operators (many expect the market to consolidate), the market is led by mobile provider Maxis and fixed line operator Telekom Malaysia Berhad.

In 1998, as a consequence of a comprehensive review process undertaken by the Malaysian Government, a far-reaching new legal framework focused on the convergence of the telecommunications, media, and information sectors was put in place in Malaysia following the enactment of the Communications and Multimedia Act 1998 (CMA). A separate law created the new Malaysian Communications and Multimedia Commission (MCMC) which began operation in November 1998 with the appointment of a Chairman and two other members of the MCMC. The new Acts were based on principles of transparency and clarity, and on less rather than more regulation.

The regulatory regime is characterized by its focus on transparency, technological neutrality, self-regulation, universal service and its pro-competition approach. The MCMC's technologically neutral approach licenses four main service markets: network facilities, network services, application services and content service providers.

The new regime introduced with the 1998 Act established an access regime, as opposed to an interconnection regime.[1] The access regime seeks to ensure that all network facilities providers (NFP), network service providers (NSP) and applications service providers (ASP) can gain access to the necessary facilities and services on reasonable terms and conditions in order to prevent the inhibition of the provision of downstream services. Section 6 of the Act defines "Access" as access to a network facility and/or network service listed in an "Access List." The Access List is a list of facilities and/or services determined by the MCMC as essential to the provision of network services and application services. The facilities and/or services which are on the Access List are subject to "Standard Access Obligations."

The concept of industry self-regulation was also an important part of the overall approach in the CMA and the Act creating the MCMC. In this vein, the Malaysian Access Forum Berhad (MAF)[2] was designated in March 2003 of as the "Access Forum"—ie. the industry forum for access issues under the CMA. The MAF is an innovative initiative to develop a new mechanism for consensus building and self regulation – with interesting implications for other countries. While independent from the MCMC (as explained below) the MAF was recognized in the legislation as having an important role in developing an "Access Code", although the Access Code would have to meet certain legislative criteria. The Access Code is a voluntary industry code with model terms

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[1] As a comparison, the European Union (EU) concept of *interconnection* means "the physical and logical linking of public electronic communications networks used by the same or a different undertaking in order to allow the users of one undertaking to communicate with the users of the same or another undertaking, or to access services provided by another undertaking. Services may be provided by the parties involved or other parties who have access to the network." The EU concept of *access* means "the making available of facilities/and or services, to another undertaking, under defined conditions, on either an exclusive or non-exclusive basis, for the purpose of providing electronic communications services."

[2] See http://www.mafb.com.my/.

and conditions for the provision of access to facilities and/or services in the Access List by an "access provider" to an "access seeker".

The MAF may recommend to the MCMC the facilities and services that should be included in the Access List, as well as an Access Code, and the MCMC is encouraged to defer to such proposals. Thus while self-regulation involves considerable involvement from market participants, it is subject to regulatory oversight or standards in various ways.

The MAF, which is a consultative body and was incorporated as a corporate entity separate from the MCMC, is not entirely unprecedented in that it has some important similarities with the Australian Telecommunications Access Forum, a self-regulatory body that encourages consensus building and private dispute resolution in Australia. Although the MAF is independent of the MCMC, it is the MCMC that has the final responsibility for dealing with interconnection policy and regulatory issues. However, the care and attention with which the new entity has been documented is likely to mean that the MAF will warrant very careful scrutiny by regulators in many emerging markets. This mini-case study discusses some of its basic features.

II. MAF and its Objectives

The Malaysian Access Forum Berhad was incorporated as a company limited by guarantee on April 17, 2001 with its registered office in Kuala Lumpur. The first subscribing members to the Memorandum and Articles of Association were incumbent fixed line operator Telekom Malaysia Berhad and Maxis Broadband Sdn Bhd, an affiliate of Malaysia's leading mobile operator. At the end of August 2003, the MAF had eight members from various parts of the industry.

Under the CMA, the primary functions of the MAF are:

- to make recommendations to the MCMC to include or remove facilities and/or services from the Access List; and
- to develop and recommend to the MCMC the Access Code.

Among the key objects of the MAF as provided in its Memorandum and Articles of Association are:

- to develop, formulate and recommend the Access List and the Access Codes to the MCMC for determination, including revising, modifying and updating the Access List and Access Codes from time to time and to seek the registration of the Access List and Access Codes with the Commission;
- to promote (on its own initiative or through third parties) research and to conduct research on matters or issues relating to access and interconnection issues arising in the communications and multimedia industries;
- to establish and maintain flexible and transparent organizational arrangements to deal with the national and international aspects of interconnection and access issues;
- to facilitate the development and growth of the Malaysian communications and multimedia industry by encouraging industry self-regulation and ensure effective coordination with government and non-governmental entities concerned with access and interconnection issues; and
- to support the national policy objectives set out in the CMA in undertaking its activities.

III. The Access Framework under the Communications and Multimedia Act 1998

(a) Access List

In March 2001, under Section 55 of the CMA, MCMC published a report on Access List Determination summarizing the network services and facilities included in the Access List, along with its justifications for its approach. Sections 4 and 5 of the report outlined the network services or network facilities involved, utilizing the then existing interconnection and access regime as the starting point. The facilities and services included in the existing Access List are set forth in Annex 1 hereto. The MCMC decided to take an incremental approach that would build on past and existing policies. The MCMC decided that it would then examine if, on a cost-benefit analysis, there is an economic case for expanding the Access List to include other network facilities or network services. Following the issuance of the aforementioned report, the Access List Determination was issued by the Commission and came into effect on April 1, 2001.

(b) Access Code/Mandatory Standard on Access

Under the CMA, the MCMC may determine a mandatory standard on access if it is subject to a Direction by the Minister that requires it to do so. Such a Direction was received by the Commission. Consequently, in April 2003, the MCMC commenced a public inquiry on the matter with the release of a consultation paper on the Draft Mandatory Standard on Access (the Standard). In July 2003 the MCMC published a Report on a Public Inquiry under Section 65 of the Communications and Multimedia Act 1998 of Mandatory Standard on Access.[3] Subsequently, in August 2003, the MCMC issued the Commission Determination on the Mandatory Standard on Access, Determination No. 2 of 14 August 2003[4]. The Standard is intended to be an interim measure pending development of an Access Code by MAFB and registration of the same by MCMC. This is captured in the Standard whereby it outlines some of the circumstances under which the Standard may be reviewed by the MCMC. Specifically, it may warrant a review "where an industry forum submits a new voluntary code to replace an existing one for that industry." (Standard 6.5.3(f))

(c) Access Disputes

Appendix A to the Standard sets forth the dispute resolution procedure, which, consistent with the Malaysian approach explored in this mini-case study, emphasizes the responsibility of operators and service providers, including making them responsible for the costs of the arbitration. Indeed, the arbitrator of the dispute may determine not to decide the dispute if the arbitrator considers that the dispute is trivial, frivolous or a vexatious case and may award costs against a party that has brought such disputes—thus discouraging abuse of the procedure. (Standard, Annexure A, section 2.7 and 2.8)

The procedures also encourage negotiation between the parties through the establishment of working groups between the disputants before resorting to the procedure. (Standard, Annexure A, section 3) The procedures require an escalation process whereby failure to resolve the issue at the working group level is then referred to an interconnection steering group comprised of an equal number of representatives from each party to the dispute. (Standard, Annexure A, section 4) Only thereafter, the parties may refer the matter to a technical expert, who need not be a Malaysian citizen, chosen by the parties (or failing which the MCMC), or to the MCMC for "final arbitration". (Standard, Annexure A, section 5) The procedure excludes court proceedings while the dispute

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[3] Available on the MCMC's website at: http://www.mcmc.gov.my/mcmc/Admin/FactsAndFigures/PublicEnquiryReport/PI-MS-access.pdf

[4] Available on the MCMC's website at: http://www.mcmc.gov.my/mcmc/Admin/Instruments/CommissionDeterminationPDF/MS-Access.pdf

resolution procedures are in force. (Standard Annexure A, section 2.1) Billing disputes are dealt with separately.

IV. Key Aspects of the Malaysian Access Forum

The MAF provides useful insights into the key constituent elements of an industry-oriented consultative body. The following discussion summarizes a few of the key elements of the Memorandum of Association and Articles of Association of the MAF, attached on Annexes 2 and 3 of this case study.

(a) Overview

As a corporation without share capital, the MAF is structured around its members, who are representative of four categories of entities licensed or exempt from license as (1) network facilities provider, (2) network service provider, (3) applications service provider, or (4) content application service provider under the Communications and Multimedia Act.

The members of the MAF elect a Board of Directors which is broadly representative of the different categories of membership, as well as a Chairman. The Chairman, who may be a member but shall not be a Director on the Board,[5] must have relevant industry experience but is neither eligible to vote on the Board nor has a casting vote. The Board may appoint a Chief Executive Officer who is responsible for developing a working plan for the MAF and for overseeing the activities of the MAF.

(b) Committees

The work of the MAF will primarily be undertaken by three standing Access Forum Committees comprising the Network Facilities and Network Service Access Forum Committee (NFNSC), the Applications Service Access Forum Committee (ASC), and the Content Applications Service Access Forum Committee (CASC). The NFNSC is currently regarded as one Access Forum Committee but may be split into two distinct Access Forum Committees at a later date by the Board. The Board or the Access Forum Committee may appoint from time to time Working Committees to address issues on a project-by-project basis.

(c) Governance Principles and Practices

MAF is carefully structured to operate on the basis of the principles of consensus and unanimity. Its constituent documentation provides an interesting template for the formal codification of such principles. Though a detailed understanding of these provisions requires analysis beyond the scope of this brief summary and review of the actual documentation, a few key points might be highlighted.

For example, Article 101 of the Articles of Association, which are attached hereto as Annex 2, provides that where one Access Forum Committee reaches a consensus on any matter pertaining to the Access List or Access Code, those matters shall also be referred to the other Access Forum Committees. Only when all the Access Forum Committees have reached consensus is the matter referred to the Board. Article 105 actually defines the meaning of consensus for purposes of Article 101 in the following way:

"Consensus" is established when those participating in the consideration of the subject at hand have reached substantial agreement (which is defined to be more than 67%) and it requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

[5] At the time this report was prepared, the Director of the Board had been appointed by incumbent Telekom Malaysia.

Under some circumstances, consensus is achieved "when the minority no longer wishes to articulate its objection and no major interest maintains a negative stand."

Once an issue reaches the Board, other safeguards protect the interests of those with divergent views. Any matter relating to the approval and evaluation of the Access List is considered to be an extraordinary matter under Article 88 of the Articles of Association. In the case of such matters a unanimous vote of all directors is required. A unanimous vote is interestingly defined as one where there is an affirmative vote of more than 90% of the Directors present. Once an extraordinary matter is approved, the views of dissenting director(s) are forwarded to the MCMC.

At the membership level, the Articles require that each member be entitled to one vote and that no resolution may be approved unless approved by an affirmative vote of more than 85% of the total number of votes of the members present and entitled to vote. In the case of "Reserved Matters" including any changes to the Articles relating to voting procedures of the membership or the Board, a vote of more than 90% of members is required.

(d) Operational Concerns

The MAF will evidently substantially depend for its effectiveness both on the time commitments of its members as well as on the efforts of the CEO, the Secretary, and other support staff. The CEO is able to retain outside experts and assistance. However, the scope of the MAF's budget and resources are determined by membership fees paid. These fees involve an initial subscription fee and annual membership fee, the schedule for which is attached hereto in schedule 1 of Annex 3. Under the Articles of Association, these fees are related to the annual revenues of members.

(e) Relationship with the MCMC

Although the MAF is designated as the Access Forum by the MCMC, the MAF is entirely separate from a legal standpoint from the MCMC. It is not in a formal sense a committee or subdivision of the MCMC. However, by virtue of being the Access Forum, the MAF is authorized under the CMA to make recommendations on matters pertaining to the Access List and Access Code for the MCMC's consideration.

V. Issues for Discussion Relating to the Future Operations of the MAF

The MAF is still in the initial phase of its evolution as a consensus building and self-regulatory entity within the Malaysian regulatory framework. Its ongoing experience is likely to provide useful guidance for efforts in other countries to develop similar institutional capabilities. Highlighted below are a number of potential areas in which the Malaysian arrangements might further evolve, or issues that might need to be faced in the future.

(a) Organizing Consensus

While geared towards a principle of consensus, the MAF may face challenges due to its structure and procedures, which could offer scope for behaviour obstructive to progress. Although the fact that the MAF has been voluntarily established by its members who participate on a voluntary basis, its ability to function as a constructive player in developing the access and the interconnection regime and implementing its principles will depend largely on cooperative attitudes of the members. These may be sufficiently present in the business culture, but it remains to be seen how the process of reaching consensus will play out as it becomes evident how methodologies for setting interconnection charges could affect the financial operations of the operators.

(b) Relationships with Consumer Bodies

There is no formal representation of consumer groups in the organizational structure of the MAF. Nevertheless, there is a consumer forum that has the same status as the MAF within the overall regulatory purview of the MCMC. The representatives of the consumer forum will be involved in the ongoing activities of the MAF. Ultimately, of course, it will be an obligation of the MCMC to address any consumer-related concerns that might emerge as a result of the operations of the MAF.

(c) Relationships with Competition Authorities

There is presently no specialized competition authority in Malaysia and the MCMC is the only sector regulator which looks into competition issues, doing so under specific competition provisions in the CMA. However, efforts to establish a Competition Authority are currently underway. It is possible that Malaysian officials with responsibility for oversight of competition policy could have a general concern about any institutionalized arrangement for competitors to meet together as a group. Such concerns might be addressed, however, by ensuring the openness and transparency of all activities of the MAF.

(d) Ongoing Relationship with the MCMC

Since the MAF is independent of the MCMC, the MCMC functions as a regulatory safeguard for dealing with regulatory and interconnection policy issues. Having said that, the MCMC has adopted a more open approach in terms of its relationship with a consensus building entity compared with some other independent regulatory bodies that have considered proposals for private consensus-building mechanisms. It does not appear to view the existence of the MAF as involving a delegation of authority. Nor does it appear to regard the MAF as a consultative committee or appendage to its own procedures. The Chairperson of the MCMC observed in a recent discussion that she did not foresee any need to attend or oversee meetings of the MAF or view the entity as subject to direct oversight of the MCMC. However, the MCMC's reports do refer to the MAF and its activities and take them into account in developing the nation's access regulatory framework.

The interaction, then, between the MCMC and the MAF will be interesting. How much scope the MAF will have to initiate significant regulatory initiatives will depend upon how strongly the MCMC has already taken the lead. For example, the recent issuance of the detailed Mandatory Standard on Access, intended by the MCMC as an interim measure, will likely have a significant influence in framing the MAF's activities in developing the Access Code.

(e) Resources

It will be interesting and significant to follow how the MAF develops its own resources and capabilities. The MAF might, for example, find itself in a position to address scenarios in which conflicts emerge among members or categories of members over proposed access arrangements. Under the Articles of Association, the MAF cannot act in response to a significant breakdown of consensus. Informally, of course, there may be ways for agreement and consensus to be developed with or without the intervention of the MCMC. An issue that may need to be addressed in the future is whether the MAF will develop its own resources for mediation or private dispute resolution.

ANNEX 1

Network Facilities and Network Services in the Access List (for which licensees are subject to Standard Access Obligations)[6]

The network facilities or network services to be included in the Access List and the rationale for their inclusion are as follows:

(a) Fixed Network Origination Service and Mobile Network Origination Service.

This offering is targeted as the markets for 1800 number, 1300 number and other similar services which require any-to-any connectivity.

(b) Equal Access (Fixed Network) Service

The offering is aimed at markets for domestic long distance and international fixed calls. The MCMC generally accepts that the local loop exhibits strong natural monopoly characteristics.

(c) Fixed Network Termination Service and Mobile Network Termination Service

Fixed network termination services ensure that end users who choose to be directly connected to a given network (fixed or mobile) will continue to enjoy any-to-any connectivity with end users connected to other fixed networks. Similarly, mobile network termination services provide similar assurances that users connected to fixed or mobile networks will be able to have any-to-any connectivity with end-users connected to other mobile networks.

(d) Private circuit completion service

End-to-end private circuits are important for the development of further downstream communications services such as Internet access, private networks and other multimedia applications. Local loop and junction networks are difficult to reproduce on a widespread basis for leased lines because of the high sunk costs involved. The provision of private completion services can be expected to facilitate competition in the market for end-to-end private circuits by enabling competing operators to provide end-to-end private circuits to end users between locations where services are provided by different operators.

(e) Domestic Transmission Service

Although there may be parts of the transmission network which can be, and has been, duplicated, in other parts of the network it is still unfeasible for there to be duplication. The relevant markets for such services include markets for end-to-end local permanent circuits, narrowband digital end-to-end transmission, broadband digital end-to-end transmission, e-business, and dial-up domestic long distance calls.

(f) Interconnect Link Service (Physical Co-location, Virtual Co-location and In-span Interconnection)

Co-location enables potential cost reductions and quality improvements in the provision of interconnection services, including fixed network termination and origination, mobile network termination and origination, equal access and private circuit completion.

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6 See the MCMC website at http://www.mcmc.gov.my/mcmc/registers/cma/comdeter/pdf/acclist.pdf.

(g) Internet Access Origination Service

The Commission has decided to include an Internet Access Call Origination Service in the Access List. If included in the Access List, this service would require a network service provider to originate calls made by end users directly connected to the network of that service provider in order to access the services of Internet access providers. There are only a limited number of Internet access service providers in Malaysia at present. The Commission considers that an origination service for Internet access is unlikely to be provided to Internet access service providers on a competitive basis because the local access network (over which the origination service for Internet access would be provided) exhibits strong bottleneck characteristics. It is not economical for the local access network to be duplicated. Given the Commission's findings that the local access network is not economical to duplicate, it is unlikely that mandating access to an origination service for Internet access would have an adverse effect on optimal investment incentives in the local access network. Furthermore, the Commission expects that the access price would be set at a level which takes into account a reasonable commercial return on investments in the local access network.

(h) Other Services

Apart from the Internet Access Call Origination Service, the MCMC has not formed a view on whether Malaysia's national policy objectives would be promoted or supported if the Access List is expanded to include other services and facilities. The MCMC believes that further consultation through the MAF is required before the Commission is in a position to form a view on the inclusion of other facilities and services. Amongst others, it anticipates holding further consultation on the following matters as regards their inclusion on the Access List:

(i) payphone conveyance service;

(ii) DSL services; and

(iii) unbundled local loop service.

ANNEX 2

COMPANIES ACT, 1965

COMPANY LIMITED BY GUARANTEE AND NOT HAVING A SHARE CAPITAL

MEMORANDUM OF ASSOCIATION

OF

MALAYSIAN ACCESS FORUM BHD.

1. The name of the company is Malaysian Access Forum Bhd.

2. The registered office of the Company will be situated in Malaysia.

3. Interpretation:

3.1 In this Memorandum of Association the following definitions apply unless the context otherwise requires:-

"**access**" means access to a network facility or network service listed under Chapter 3 of Part VI of the CMA.

"**access codes**" means a voluntary industry code prepared under section 153 of the CMA.

"**access list**" means the list of facilities or services established under Chapter 3 of Part VI of the CMA.

"**Act**" means the Companies Act, 1965 as amended from time to time and any re-enactment thereof.

"**Articles**" means the Articles of Association of the Company.

"**Board**" means the Board of Directors for the time being of the Company.

"**CMA**" means the Communications and Multimedia Act 1998.

"**Commission**" means the Malaysian Communications and Multimedia Commission established under the Malaysian Communications and Multimedia Commission Act 1998.

"**Company**" means the company limited by guarantee and called the Malaysian Access Forum Bhd.

"**Industry codes**" means the rules, guidelines and model terms and conditions relating to standard access obligations or arrangements between licensees or potential licensees under the CMA that are either seeking access or providing access to the necessary facilities and services governing particular aspects of the communications and multimedia industry.

"**Member**" means the members of the Company who shall consist of those persons admitted under Article 3 and whose names are entered on the Register of Members.

"**Memorandum**" means the Memorandum of Association of the Company.

"**Register of Members**" means the register of Members to be kept pursuant to the Act.

"**Voluntary industry code**" means a voluntary industry code prepared under Chapter 9 of Part V of the CMA.

3.2 In this Memorandum of Association unless the context otherwise requires:-

(a) Words or expressions defined in the Act have the same meaning in this Memorandum.

(b) References to statutes include statutes replacing them.

(c) Words importing the singular include the plural and vice versa.

(d) Words importing a gender include all genders.

(e) Words importing persons include corporations.

4. The objects for which the Company is established are:-

(a) To develop, formulate and recommend the access list to the Commission for determination and the access codes for the Malaysian communications and multimedia industry, including revising, modifying and updating the access list and access codes from time to time and to seek the registration of access codes and access list with the Commission; to promote the dissemination of relevant information on the access list and access code to the public and the education thereof; to collate statistics of complaints made by Members pertaining to breaches of the access code**;** to monitor code compliance and administer sanctions for breaches of the access code by members, and to promote (either by itself or by others) research and to conduct such research as may be necessary into matters which affect or arise out of, the issues involving access and interconnection for the communications and multimedia industry; and to do all such lawful things incidental to the development and attainment of the matter thereof;

Amended on 1/10/2002

(b) To establish and maintain flexible and transparent organisational structure to address national and international issues relating to access codes, access list and any other relevant matter for the Malaysian communications and multimedia industry and to promote and represent the interest of the Members of the Company by all means and methods consistent with the laws and constitution of Malaysia; and to do all such lawful things incidental to the development and attainment of the matter thereof; and

(c) To facilitate the development and growth of the Malaysian communications and multimedia industry by inter alia promoting industry self-regulation and liaising with governmental and non-governmental bodies in relation to access and interconnection issues; and to support the national policy objectives as set out in the CMA in relation to the communications and multimedia industry in carrying out the objects stipulated under this Clause; and to do all such lawful things incidental to the development and attainment of the matter thereof.

5. The Company has all the following powers to carry out and promote the objects of the Company:-

(a) To purchase, take on lease or otherwise acquire and maintain for the purposes of the Company and to hold any estates, land, buildings, easements or other interests in movable or

immovable property which may be deemed necessary or convenient for any of the purposes of the Company PROVIDED that the Company shall not acquire, charge, mortgage or dispose of any land without the consent of the Minister charged with the responsibility for companies.

(b) To sell, dispose of, or transfer any property and undertaking of the Company or any part thereof, for any consideration which the Company may see fit to accept.

(c) To engage, appoint and pay such professional advisers and consultants to advise and address any issues relating to access codes, access list, voluntary industry codes or such other matters relating to the Malaysian communications and multimedia industry.

(d) To engage, appoint and pay such officers, clerks, agents, servants or persons to perform such duties or services for the proper administration and management of the Company and to remove and suspend the same.

(e) To pay all costs, charges and expenses incurred or sustained in or about the promotion and establishment, and administration and management of the Company and to remunerate any person or persons for services rendered thereof in cash or in any other manner allowed by law.

(f) To draw, accept and make, and to endorse, discount and negotiate, bills of exchange, promissory note, and other negotiable instruments.

(g) To borrow and raise money in such manner as the Company may think fit.

(h) To do all or any of the matters hereby authorised in any part of Malaysia either alone or in conjunction with, or as trustees or agents, for any company association or person, and by or through trustees or agents.

(i) To apply for and hold any patent rights, copyrights, trade marks, licence, other intellectual property rights as to any name, logo, corporate identifier or representations and the like, conferring any exclusive or non-exclusive or limited right to use, which may seem capable of being used for any of the purposes of the Company,

(j) To deposit the money of the Company not immediately required into such savings and fixed deposit accounts with financial institutions, and banks as the Board may from time to time determine.

(k) To obtain, collect and receive monies and funds by way of contribution, donation, affiliation fees, subscription, legacies, grant and any other lawful method, and accept and receive gifts of property of any description (whether subject to any special trust or not).

(l) To take all necessary steps as may from time to time be deemed expedient for the purpose of procuring contributions to the Company in any form including but not limited to donations and annual subscriptions. Amended on 1/10/2002

(m) To take such action as may be necessary to enforce the Articles and any rules and regulation against any Member.

(n) To carry out all or any of the objects of the Company and to do all or any of the above things in any part of the world and either as principal, agent, contractor or trustee, or otherwise, and by or through trustees or agents or otherwise and either alone or in conjunction with others.

(o) Generally to do all such lawful things as are incidental to the attainment of the objects and the exercise of powers of the Company:

PROVIDED that:

(i) the provisions of the Third Schedule of the Act shall not apply to the Company and the foregoing provisions of this Paragraph shall be read and construed without any reference to the provisions of that Schedule; unless expressly included in this Memorandum and Articles of Association with the approval in writing of the Minister charged with the responsibility for companies; and

(ii) the Company shall not support with its funds any political organisation or society or endeavour to impose on or procure to be observed by its Members or others any regulations, restrictions or conditions which, if any were included in the objects of the Company would make it a Trade Union within the meaning of the Trade Union Ordinance.

6. There shall be a Board of Directors for the management of the affairs of the Company.

7. The income and property of the Company whencesoever derived shall be applied solely toward the promotion of the objects of the Company as set forth in this Memorandum of Association and no portion thereof shall be paid or transferred directly or indirectly by way of dividend bonus or otherwise howsoever by way of profit to the Members of the Company PROVIDED that nothing herein shall prevent the payment, in good faith, of:-

(a) remuneration to any officer or servant of the Company, in return for any professional services rendered to the Company;

(b) interest at the current bank rate on any loan advanced by the Members of the Company to promote the object thereof;

(c) reasonable and proper rent for premises demised or let by any Member of the Company,

but so that no member of the Board shall be appointed to any salaried office of the Company paid by fees and that no remuneration or the benefit in money's worth shall be given by the Company to any member of the Board except repayment of out-of-pocket expenses of the members of the Board as aforesaid.

8. Where an addition, alteration or amendment is made to the Memorandum or Articles of Association for the time being in force, the Company shall notify the Commission of the addition, alteration or amendment as the case may be.

9. A special resolution of the Members of the Company altering or amending the Articles of Association will not have effect unless (in addition to the requirements prescribed by the Act and the Articles of Association), the following requirements are complied with:-

(a) in the case of Articles 35, 36, 37, 86, 87 and 88, there is the unanimous vote of all the Members representing all four categories of Members who are present and entitled to vote. For the purposes of this Clause 9(a), a unanimous vote is achieved where there is an affirmative vote of more than ninety percent (90%) of the total number of votes of the Members present and entitled to vote at the meeting; and

Amended on 1/10/2002

(b) in the case of all other Articles

there is an affirmative vote of more than eighty five percent (85%)of the total number of votes of the Members.

10. The liability of the Members is limited.

11. In the event that:-

(a) the Commission does not designate the Company to be an access forum in accordance with sections 94 and 152 of the CMA by 31st December 2003 ("expiry date"); or

Amended on 31/07/2002

(b) the Company's designation as an access forum pursuant to sections 94 and 152 of the CMA is subsequently withdrawn by the Commission effective from the date of registration or a later date specified ("withdrawal date") and the Company is not reinstated as an access forum within six (6) months after the withdrawal date ("termination date"),

Amended on 15/10/2001

the Company shall be wound up within one hundred and twenty (120) days from the expiry date or the termination date, as the case may be.

12. If upon the winding up or dissolution of the Company there remains, after the satisfaction of all its debts and liabilities, any property or assets whatsoever, the Members may decide that the same be paid to or distributed:-

Replaced on15/10/2001

(a) among the Members of the Company in accordance with the proportion of the initial subscription fee and annual membership fee paid by each Member in the calendar year in which the company is wound up or dissolved;

Replaced on 15/10/200

(b) to some other institution or institutions or organisations having objects similar to the objects of the Company and having been approved by the Director-General of Inland Revenue, Malaysia at or before the time of dissolution; or

Replaced on 15/10/2001

(c) to such other persons or in such other manner as the Members may decide.

Replaced on 15/10/2001

13. Every Member of the Company undertakes to contribute to the assets of the Company in the event the Company being wound up during the time that he is a Member or within one year after he ceased to be a Member for payment of debts and liabilities of the Company contracted before he and for the adjustment, of rights of the contributories amongst themselves such amount as may be required not exceeding Ringgit Malaysia One Hundred (RM 100.00) Only.

14. True accounts shall be kept of the sums of money received and expended by the Company and the matter in respect of which such receipt and expenditure takes place, and of the property, credits and liabilities of the Company and subjects to any reasonable restrictions as to the time and manner of inspecting the same that may be imposed in accordance with the regulations of the Company for the time being, shall be open for the inspection of the Members. Once at least in every calendar year the accounts of the Company shall be examined and the correctness of the balance sheet ascertained by one or more qualified auditor or auditors.

We, the several persons whose names, addresses and descriptions are subscribed, are desirous of being formed into association in pursuance of this Memorandum of Association.

Name, address and description of subscribers	Signature of subscribers
TELEKOM MALAYSIA BERHAD (COMPANY NO.: 128740-P) TINGKAT 2, IBUPEJABAT TELEKOM MALAYSIA JALAN PANTAI BAHARU 50672 KUALA LUMPUR	Nama : DATO' DR. ABDUL RAHIM BIN HAJI DAUD Designation: DIRECTOR
	Name : WANG CHENG YONG Designation: COMPANY SECRETARY
MAXIS BROADBAND SDN. BHD. (COMPANY NO.: 234053 -D) LEVEL 18, MENARA MAXIS KUALA LUMPUR CITY CENTRE OFF JALAN AMPANG 50450 KUALA LUMPUR	Name : TAN POH CHING Designation: DIRECTOR
	Name : AMDAN MAT DIN Designation: COMPANY SECRETARY

Dated this 16th day of March 2001

Witness to the above signatures:

Name : DARREN KOR YIT MENG
NRIC : 730827 –14 –5289
Address: Zul Rafique & Partners
Suite 17.01, 17th Floor,
Menara Pan Global,
8 Lorong P. Ramlee,
50250 Kuala Lumpur

Lodged by : Zul Rafique & Partners
Address : Suite 17.01, 17th Floor, Menara Pan Global, 8 Lorong P. Ramlee, 50250 Kuala Lumpur
Tel. No. : 03-2388228

ANNEX 3

COMPANIES ACT, 1965

COMPANY LIMITED BY GUARANTEE
AND NOT HAVING A SHARE CAPITAL

ARTICLES OF ASSOCIATION

OF

MALAYSIAN ACCESS FORUM BHD.

INTERPRETATION

1.1 In these Articles of Association the following definitions apply unless the context otherwise requires:-

"**access**" means access to a network facility or network service listed under Chapter 3 of Part VI of the CMA.

"**access code**" means a voluntary industry code prepared under section 153 of the CMA.

"**Access Forum Committee**" means a committee comprising of Members of the Company established pursuant to **Article 98**.

"**access list**" means the list of facilities or services established under Chapter 3 of Part VI of the CMA.

"**Act**" means the Companies Act, 1965 as amended from time to time and any re-enactment thereof.

"**Annual Revenue**" means the gross annual revenue of the applicant or Member whose business is related to and derived within the communications and multimedia industry based on the last audited accounts of the applicant or Members, whereby the financial year of the last audited accounts shall not be more than two (2) years prior to the current calendar year. For clarification, if the current calendar year is 2003, then the latest audited accounts shall be for financial year 2001 or 2002, whichever is later. Amended on 17/02/2003

"**Applications Service**" means a service provided by means of, but not solely by means of one or more Network Services.

"**Applications Service Provider**" means a person who provides an Applications Service.

"**Articles**" means the Articles of Association of the Company.

"**Associated Company**" means in relation to a Member ("**First Company**"),

(a) a company which holds or controls directly or indirectly twenty percent (20%), or more of the voting rights attaching to the issued shared capital of the First Company; or

(b) a company where twenty percent (20%) or more of the voting rights attaching to the issued capital of which are held or controlled by:

(i) the First Company; or

(ii) another company (not being owned or controlled by the Government or any of its agencies) which also holds or controls directly or indirectly twenty percent (20%) or more of the voting rights attaching to the issued share capital of the First Company.

"**Board**" means the Board of Directors for the time being of the Company.

"**Business Day**" means a day on which banks are open for general banking business in Kuala Lumpur, other than Saturday or Sunday or a public holiday.

"**Chairman**" means a person appointed by the Members as the chairman of the Board pursuant to **Article 57**.

"**Chief Executive Officer**" means a person appointed by the Board pursuant to **Articles 92**.

Amended on 17/04/2002

"**CMA**" means the Communications and Multimedia Act 1998.

"**Commission**" means the Malaysian Communications and Multimedia Commission established under the Malaysian Communications and Multimedia Commission Act 1998.

"**Company**" means the company limited by guarantee and called Malaysian Access Forum Bhd.

"**Content Applications Service**" means an Applications Service which provides content.

"**Content Applications Service Provider**" means a person who provides a Content Applications Service.

"**Corporate Member**" means a Member which is a corporation.

"**Director**" means the director for the time being of the Company appointed pursuant to **Article 48**.

"**Executive**" means employees appointed by and responsible to the Board, whether directly or through the Chief Executive Officer. The Chief Executive Officer will be deemed part of the Executive.

"**Members**" means the members of the Company who shall consist of those persons admitted under **Article 3** and whose names are entered on the Register of Members.

"**Memorandum**" means the Memorandum of Association of the Company.

"**Minister**" means the Minister of Energy, Communications and Multimedia.

"**Network Facilities**" means any element or combination of elements of physical infrastructure used principally for, or in connection with, the provision of Network Services, but does not include customer equipment.

"**Network Facilities Provider**" means a person who is an owner of any Network Facilities.

"**Network Services**" means a service for carrying communications by means of guided and/or unguided electromagnetic radiation.

"**Network Services Provider**" means a person who provides Network Services.

"**Office**" means the registered office for the time being of the Company.

"**Operations Manual**" means the manual prepared or caused to be prepared by the Board relating to:-

(a) the procedure for establishment of the Access Forum Committee and the Working Committees;

(b) the operations practices and processes required for the undertaking and allocation of work by the Company, the Access Forum Committee, the Executive, the Working Committees and the Board; and

(c) such other matters as the Board deems relevant from time to time and set out in the Operations Manual.

"**Register of Members**" means the register of members to be kept pursuant to the Act.

"**Representative**" means an employee of a Corporate Member who is nominated and authorised to act as the representative of the Corporate Member.

"**Seal**" means the common seal of the Company.

"**Secretary**" means any person or persons appointed to perform the duties of a secretary of the Company and shall include an assistant or deputy secretary.

"**Voluntary industry codes**" means a voluntary industry code prepared under Chapter 9 of Part V of the CMA.

"**Working Committee**" means the committee comprising of Members and individuals appointed by the Board or the Access Forum Committee, as the case may be, as provided in **Article 94**.

"**Working Plan**" means the plan promulgated by the Board in accordance with **Article 71**.

1.2 In these Articles of Association unless where the context otherwise requires:-

(a) Words or expressions defined in the Act have the same meaning in these Articles.

(b) References to statutes include statutes replacing them.

(c) Words importing the singular include the plural and vice versa.

(d) Words importing a gender include all genders.

(e) Words importing persons include corporations.

1.3 The Company is established for the purposes set out in the Memorandum of Association.

MEMBERS

2. The subscribers to the Memorandum of Association and other individuals or corporations as the Board may admit to membership in accordance with these Articles are eligible as Members. The number of Members to which the Company proposes to be registered is not more than one thousand five hundred (1,500), however, the Company may from time to time register an increase or reduction in the number of members.

3. The Board will admit to the membership of the Company any person which meets the following eligibility criteria:-

(a) (i) the applicant is a licensed or being exempted from being licensed as a:-

(A) Network Facilities Provider;

(B) Network Services Provider;

(C) Applications Service Provider; and/or

(D) Content Applications Service Provider,

(whether class or individual licensee) under the CMA; or

(ii) the applicant being the owner or provider of facilities and/or services under a licence issued under the Telecommunications Act 1950 or the Broadcasting Acts 1988 ("**old licence**") which has been registered with the Commission but:-

(aa) has not been issued a licence under the CMA in substitution of the old licence; or

(bb) does not intend to seek a licence under the CMA and intends to operate under the old licence; and

(b) the applicant has indicated the category of membership to which it wishes to be admitted as a Member; and Amended on 17/04/2002

(c) the applicant has provided the Company with a properly completed application form prescribed by the Board, from time to time, together with the information pertaining to the applicant, the applicant's group of companies and any company which is deemed to be associated with a director of the applicant by virtue of section 122A of the Act, and such other particulars, information and undertakings as the Board may determine from time to time; and

(d) the applicant has paid the initial subscription fee; and

(e) the applicant has not previously been refused or terminated membership from the Company unless waived by the Board. Amended on 17/04/2002

4. (a) The initial subscription fee and/or annual membership fee payable by the applicant is determined by reference to the Annual Revenue of the person concerned which is more particularly described in the **Schedule** . The annual membership fee is payable annually in advance during the month of January in each year by each Member provided that the Board may permit a Member who joins after the month of January in any year to pay a proportionate part of the annual subscription.

(b) In the event of the cessation a membership of any member ("**Ex-Member**") for any reason whatsoever, any subscriptions, levies, charges or other sums previously paid by the Ex-Member to the Company shall not be refundable to the Ex-Member notwithstanding that the sums were paid in advance.

5. There shall be four categories of membership based on the four types of facilities or services which are required to be licensed or exempted from being licensed (whether individual or class license) under the CMA, as follows:-

(i) Network Facilities Provider;

(ii) Network Services Provider;

(iii) Applications Service Provider; and/or

(iv) Content Applications Service Provider.

6. On receipt of a properly completed membership application form, the Board may assign in a manner consistent with the licensing structure of the CMA, each applicant to the relevant category(ies) of membership depending on the type of facilities and services provided or to be provided or on the type of licence (whether individual or class licence) issued or registered by the applicant under the CMA. Where a Member has been admitted to membership of the Company pursuant to **Article 3**, the Member shall, for the purposes of voting and participation in the Company in accordance with these Articles, be assigned into the relevant category(ies) of membership determined by the Board subject to **Article 16**. For the avoidance of doubt, such assignment by the Board shall not be construed as attempting to designate a Member into a particular category of licence for the purpose of the CMA.

Replaced on 17/04/2002

7. Each Member may be assigned to more than one category of membership subject to **Article 16**.

8. If the classification of a category of membership is made by the Board:-

(a) prior to the issuance or registration of a licence under the CMA and upon the issuance or registration of such a licence, it is discovered that the classification is not in accordance with the licence issued pursuant to the CMA; or

(b) the classification is erroneous for any reason,

then the Board will forthwith reclassify the Members accordingly.

9. If an application for membership is accepted, the Secretary must send to the applicant written notice of its acceptance and enter the eligible applicant in the Register of Members as a Member.

10. Admission to membership of any person who makes an application to the Company shall be at the sole discretion of the Board and the Board may reject any application for membership without assigning any reason thereof.

11. The Member shall notify the Company immediately:-

(a) where it has applied for a licence under the CMA, upon granting of the said licence or modification thereof by the Commission; or

(b) if any of its licence or any part thereof granted or registered under the CMA is terminated or expired and it is not immediately granted another licence of that type; or

Amended on 17/04/2002

(c) where the exemption granted for the provision of its facilities or services under the CMA is no longer applicable and the Member is required to obtain a licence for the same.

Amended on 17/04/2002

CESSATION OF MEMBERSHIP

12. A Member may resign from membership at any time by giving notice in writing to the Secretary.

13. A Member shall cease to be a member of the Company and its name shall be removed from the Register of Members in any one of the following events:-

(a) when notice in writing is given to the Secretary to resign from membership; or

(b) if he or she is bankrupt or makes any arrangement or compromise with his creditors generally or it is dissolved or wound up or ceases to carry on activity for more than six (6) months; or

(c) if its licence granted or registered under the CMA is terminated or expired and it is not immediately granted another licence of that type; or

Amended on 17/04/2002

(d) where any exemption granted to a Member for the provision of facilities or services under the CMA is no longer applicable and the Member is not granted a licence for the same (where a licence is required); or

Inserted on 17/04/2002

(e) where a Member has merged with another entity, in the circumstances set out in **Article 17**.

Amended on 17/04/2002

14. Any Member whose annual membership fee remains unpaid shall not be entitled to vote at the meetings. However, such Member is still entitled to voice its concerns and have the right to be heard at the meetings.

15. In the event the annual membership fee remains unpaid for four (4) calendar months from the date the membership fee is due, the Board may terminate such membership.

16. For the purposes of participation and voting, the Secretary may, unless otherwise determined by the Board, deregister a Member from a category of membership if:

Amended on 17/04/2002

(a) the licence of a Member in respect of that category of membership is revoked and it is not immediately granted another licence of that type; or

(b) the exemption granted to a Member for the provision of facilities or services under the CMA is no longer applicable and the Member is not granted a licence for the same (where a licence is required); or

Inserted on 17/04/2002

(c) upon notification by a Member that the licences obtained were not of the kind envisaged by or applied for by the Member; or

Amended on 17/04/2002

(d) upon discovery by the Company that the classification of category was erroneous for any reason whatsoever.

17. Where one or more Members have merged with another Member (collectively or individually known as the "**Pre-existing Member**") wherein the merged entity comprises of one of the Pre-existing Members (whether by the same name or with a new name) obtains or maintains a licence pursuant to the CMA ("**Merged Entity**") then where the Merged Entity is not an existing member, the Merged Entity shall apply and if thought fit by the Board, become a member at the date determined by the Board ("**said Date**") and the Pre-existing Members shall automatically cease their membership as at the said Date. Where the initial subscription fees and/or the annual membership fees required to be paid by the Merged Entity is higher than that paid by the Pre-existing Member, the Merged Entity shall pay the difference. However, where the initial subscription fees and/or annual membership fees paid by the Pre-existing Member is higher than that required to be paid by the Merged Entity, the Pre-existing Member shall not be entitled to any refund of the difference.

GENERAL MEETINGS

18. The Company shall in each year hold a general meeting as its annual general meeting in addition to any other meeting in that year, and not more than fifteen (15) months shall elapse between the date of one annual general meeting and that of the next, but so long as the Company holds its first annual general meeting within eighteen (18) months of its incorporation, it need not hold it in the year of its incorporation or in the following year.

19. All general meetings other than annual general meetings shall be called extraordinary general meetings.

20. The Secretary must whenever required by:-

    (a) the Act;

    (b) the Board; or

    (c) on requisition made in writing by Members holding at the date of deposit of the requisition not less than one-tenth (10%) of the total voting rights of all Members having at that date a right to vote at general meetings,

    convene an extraordinary general meeting to be held not less than twenty one (21) days after the date of the requisition at such time and place as the Board may determine. Any requisition made by Members must state the object of the meeting proposed.

NOTICE OF GENERAL MEETING

21. An annual general meeting and a meeting called for the passing of a special resolution shall be called by twenty-one (21) day's notice in writing at least, and a meeting of the Company other than an annual general meeting or a meeting for the passing of a special resolution shall be called by fourteen (14) day's notice. The notice shall be exclusive of the day on which it is served or deemed to be served and of the day for which it is given, and shall specify the place, the date and the hour of meeting, and in case of special business, the general nature of that business and shall be given, in the manner hereinafter mentioned or in such other manner, if any, as may be prescribed by the Company in general meeting, to such persons as are under the Articles of the Company, entitled to receive such notices from the Company:

Provided that a meeting of the Company shall, notwithstanding that it is called by shorter notice than that specified in these Articles, be deemed to have been duly called if it is so agreed-

(a) in the case of a meeting called as the annual general meeting, by all the Members entitled to attend and vote thereat; and

(b) in the case of any other meeting, by a majority in the number of Members having a right to attend and vote at the meeting, being majority together representing not less than ninety-five per cent of the total voting rights at that meeting of all Members.

22. The accidental omission to give notice of a meeting to, or the non-receipt of notice of a meeting by, any person entitled to receive notice shall not invalidate the proceedings at that meeting.

23. A notice convening a meeting to consider a special or ordinary resolution shall specify the intention to propose the resolution as a special or ordinary resolution as the case may be.

REPRESENTATIONS AT GENERAL MEETINGS

24. Each Member is entitled to exercise its vote at general meetings by its Representative or by proxy. A Corporate Member must appoint a Representative and such appointment must be in writing addressed to the Secretary containing the name, address, status and specimen signature of the Representative. Any such appointment may be terminated by the Corporate Member by notice, in writing, addressed to the Secretary and the Corporate Member is entitled at the same time to appoint another person in place of the individual whose appointment was terminated.

PROCEEDINGS AT GENERAL MEETINGS

25. All business that is transacted at an extraordinary general meeting, and at an annual general meeting shall be regarded as special, with the exception of the consideration of the accounts, balance sheet, and the report of the members of the Board and auditors, the election of members of the Board in the place of those retiring and the appointment of, and fixing of the remuneration of, the auditors.

26. No business shall be transacted at any general meeting unless a quorum of Members is present at the time when the meeting proceeds to business. Save as hereinafter provided, a majority of Members present in person or by proxy or by Representative, holding not less than fifty percent (50%) of the total voting rights of all Members having at the date of the meeting a right to vote thereat, shall be a quorum.

27. If within half an hour from the time appointed for the meeting, a quorum is not present, the meeting, if convened upon requisition of Members, shall be dissolved. In any other case, it shall stand adjourned to the same day in the next week, at the same time and place as the Board may determine, and if at the adjourned meeting a quorum is not present within half an hour from the time appointed for holding the meeting, a majority of Members present in person or by proxy or by Representative, holding not less than forty percent (40 %) of the total voting rights of all Members having at the date of the meeting a right to vote thereat, shall be a quorum.

28. The Chairman of the Board is the chair of every general meeting of the Company, or if he is not present within fifteen (15) minutes after the time appointed for the holding of the meeting,

or if the chairman has notified the Secretary in writing that he will not be present, then the Members present may appoint one of the members of the Board to be the Chairman of the meeting.

29. The Chairman may, with the consent of the majority of the Members present at any meeting at which a quorum is present (and if so directed by the meeting), adjourn the meeting from time to time and from place to place, but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which adjournment took place. When a meeting is adjourned for thirty (30) days or more, notice of the adjourned meeting shall be given as in the case of an original meeting. Save as aforesaid, it shall not be necessary to give notice of adjournment or of the business to be transacted at an adjourned meeting.

30. At any general meeting, a resolution put to the vote of the meeting shall be decided on poll.

31. Subject to the provisions of the Act a resolution in writing signed by all Members for the time being entitled to receive notice of and to attend and vote at general meetings shall be as valid and effective as if the same has been passed at a general meeting of the Company duly convened and held.

VOTES OF MEMBERS

32. Each Member shall be entitled to one (1) vote only in any general meeting notwithstanding that the Member may be assigned to one or more categories of membership by the Board. Amended on 17/04/2002

33. A Member may vote in person, by Representative or by proxy.

34. No Member shall be entitled to vote at any general meeting if there are any monies due and payable by the Member to the Company.

35. Any resolution of Members shall not be taken to be carried unless the majority comprises the following:-

    (a) subject to **Article 35(b)**, in the case of any resolution, including special resolutions, of Members, there is an affirmative vote of more than eighty five percent (85%) of the total number of votes of the Members present and entitled to vote ; or

    (b) in the case of Reserved Matters, the unanimous vote of all the Members representing all four categories of Members who are present and entitled to vote. For the purposes of this **Article 35(b)**, a unanimous vote is achieved where there is an affirmative vote of more than ninety percent (90%) of the total number of votes of the Members present and entitled to vote at the meeting. Amended on 17/04/2002

36. For purposes of clarification, the following matters require a resolution of Members in meeting:-

    (a) the promulgation, adoption and variation to an Operations Manual;

    (b) any increase to the fees in the **Schedule** ;

    (c) the sale, transfer, lease, assignment or disposal of any substantial portion of the assets of the Company, save where the said transaction is covered under the approved annual budget;

(d) the entering into of any agreement for the management of the Company or the incurring of any management charges;

(e) the making of any composition or arrangement with creditors;

(f) changing the Company's auditors;

(g) the changing of any accounting principles or conventions of the Company, otherwise than as required by law or in order to comply with any applicable statement of standard accounting practice;

(h) any capital expenditure to be incurred which is:

(i) not incurred in the Company's ordinary course of business save where the said transaction or series of transactions is covered under the approved annual budget.; or

(ii) not budgeted for in any financial year of the Company and which is equal to or more than Ringgit Malaysia Two Hundred Thousand (RM 200,000),

(i) change in the Company's name;

(j) alteration or amendments to the Memorandum and/or the Articles subject to **Article 37**;

(k) to approve the assignment of office by a Director;

(l) winding up of the Company;

(m) to approve the exercise of certain powers by the liquidators in a member's voluntary winding up;

(n) to empower the liquidator, in a members' voluntary winding up, to transfer or sell assets for shares in another corporation;

(o) to remove any Director before the expiration of his period of office and appoint another person in his stead.

37. The following matters are classified as Reserved Matters:-

(a) the alteration amendments or modification of **Articles 35, 36, 86, 87, 88** or this **Article 37**.

(b) increasing or reducing the quorum and number of Directors to be appointed to the Board.

38. The instrument appointing a proxy must be in writing under the hand of the appointor or his attorney duly authorised in writing or, if the appointor is a body corporate, either under seal or under hand of the officer or attorney duly authorised. A proxy need not be a Member of the Company PROVIDED that the proxy is an advocate or solicitor, an approved company auditor or a person approved by the Registrar of Companies. Amended on 17/04/2002

39. Any corporation which is a Member of the Company may by resolution of the directors of that corporation or other governing body authorise such person as it thinks fit to act as its representative at any meeting of the Company, and the person so authorised shall be entitled

to exercise the same powers on behalf of the corporation which he represents as that corporation could exercise if it were an individual member of the Company.

40. An instrument appointing a proxy shall be in the following form or as near thereto as circumstances admits:-

I..... of ..... being * the Representative of / a Member of the abovenamed Company, hereby appoint .....of ..... or failing him, ... of ..... as my proxy to vote for me on my behalf at the * annual/extraordinary general meeting of the said Company to be held on the.....day of.....20..... , and at any adjournment thereof.

Signed this .....day of.....20.....

.....
(Signature of appointor)

* Delete whichever is not desired

41. The instrument appointing a proxy shall be deemed to confer authority to demand or join in demanding a poll.

42. The instrument appointing a proxy must be deposited at the Office or such other place as is specified for that purpose in the notice convening the meeting not less than twenty-four (24) hours before the time appointed for the taking of the poll and in default of the above, the instrument of proxy is invalid.

43. A vote given in accordance with the terms of an instrument of proxy shall be valid notwithstanding the previous death of the principal or revocation of the proxy or of the authority under which the proxy was executed, provided that no intimation in writing of such death, insanity or revocation of aforesaid shall have been received by the Company at the registered office before the commencement of the meeting or adjourned meeting at which the instrument is used.

44. A Member, Representative or proxy who is of unsound mind or whose person or estate is liable to be dealt with in any way under the law relating to mental health may not vote. No objection shall be raised to the qualification of any voter except at the meeting or adjourned meeting at which the vote objected to is given or tendered, and every vote not disallowed at such meeting shall be valid for all purposes. Any such objection made in due time shall be referred to the Chairman of the meeting, whose decision shall be final and conclusive.

45. All resolutions passed by the Members are binding notwithstanding that there has been a reclassification of category of membership for a Member after the date of the resolution or it is discovered that a person is not entitled to be a Member or is not entitled to vote by virtue of **Article 16** unless mala fides is proven. The burden of proof that a person was entitled to be a Member or entitled to vote, rest with such Member or person.

BOARD OF DIRECTORS

46. The Board is vested with the management of the Company and will consist of ten (10) Directors and the Chairman. Amended on 01/10/2002

APPOINTMENT OF DIRECTORS

47. The first Directors of the Company shall be:-

(a) Mohd. Zakri Bin Hasan;

(b) Dato' Jamaludin Bin Ibrahim;

(c) Flora Jesily A/P S J Rajadurai;

(d) Mek Yam Bte Jusoh; and

(e) Badrul Hassan Bin Mohamed Kassim.

48. Appointment of Directors other than the Chairman shall be by nomination and election by the Members. Subject to **Article 52**, the Board may determine the number of Directors eligible for election or re-election in any year, consistent with the following:-

(a) the Chairman is to be elected pursuant to **Article 57**;

(b) there shall be two (2) Directors appointed by Members from the Network Facilities Provider category of membership; Amended on 17/04/2002

(c) there shall be two (2) Directors appointed by Members from the Network Service Provider category of membership; Amended on 17/04/2002

(d) there shall be two (2) Directors appointed by Members from the Applications Service Provider category of membership; Amended on 17/04/2002

(e) there shall be two (2) Directors appointed by Members from the Content Applications Service Provider category of membership; and Amended on 17/04/2002

(f) there shall be two (2) Directors appointed by the Members from any category of membership. Amended on 17/04/2002

49. The Members will vote by category of membership to determine the Directors to be appointed by the requisite category of membership, in accordance with the procedures determined by the Board which shall be consistent with the requirements of the Act. The nomination of the Directors shall be as follows:-

(a) (i) subject to paragraph (f):- Amended on 17/04/2002

(A) only Members from a particular category of membership shall be entitled to vote to determine the Directors to be appointed from that category of membership; and Amended on 17/04/2002

(B) where a Member is in one or more category of membership, that Member shall have one (1) vote in each category of membership.; and

Inserted on 17/04/2002

(ii) with respect to the open category in paragraph (f), any Member and its Associate Companies may nominate its representative for only one (1) directorship position notwithstanding such Member and its Associate Companies may already have a directorship position under paragraphs (b), (c), (d) and (e). For the purposes of the open category, each Member shall only have one vote irrespective of the number of membership categories the Member is in.

Amended on 17/04/200

(b) the two (2) positions available for Directors appointed by Members from the Network Facilities Provider category of membership will be reserved to be filled by the largest and second largest Network Facilities Provider, respectively, determined by reference to the Annual Revenue of the Network Facilities Providers concerned during the preceding financial year;

Amended on 17/04/2002

(c) (i) the first position available for a Director appointed by Member from the Network Service Provider category of membership will be reserved to be filled by the largest Network Services Provider determined by reference to the Annual Revenue of the Network Services Providers concerned during the preceding financial year; and

(ii) the second position available for a Director appointed by Members from the Network Services Provider category of membership will be reserved to be filled by the second largest Network Services Provider determined by reference to the Annual Revenue of the Network Services Provider concerned during the preceding financial year provided that its Associated Company or itself are not allocated any other directorship in the category of memberships specified in paragraphs (b), (c), (d) and (e).

Amended on 17/04/2002

(d) the two (2) directorship positions available for Directors appointed by Members from the Applications Service Provider category of membership will be reserved to be filled by the largest and second largest Applications Service Provider, respectively, determined by reference to the Annual Revenue of the Applications Service Provider concerned during the preceding financial year provided that their respective Associated Company or themselves are not allocated any other directorship in the category of memberships specified in paragraphs (b), (c), (d) and (e);

Amended on 17/04/2002

(e) the two (2) directorship positions available for Directors appointed by Members from the Content Applications Service Provider category of membership will be reserved to be filled by the largest and second largest Content Applications Service Provider, respectively, determined by reference to the Annual Revenue of the Content Applications Service Provider concerned during the preceding financial year provided that their respective Associated Company or themselves are not allocated any other directorship in the category of memberships specified in paragraphs (b), (c), (d) and (e);

Inserted on 17/04/2002

(f) two (2) Directorship positions shall be available to any Members and its Associated Company in any category of membership ("**open category**") notwithstanding that the Member and its Associated Company have a directorship position in the category of membership specified in paragraphs (b), (c), (d) and (e) . Any Member wishing to nominate its representative shall state the name of its representative and the category of membership in which its representative would be representing. The two (2)

Inserted on 17/04/2002

Directorship position shall be nominated by way of ballot and all Members are entitled to vote irrespective of which category they belong to. The nominees with the highest and second highest votes will be allocated the Directorship positions.

50. Any Director appointed by nomination by a Member may only be removed or replaced by the Member who nominated that person and must resign if so requested by the Member. Amended on 17/04/2002

51. No person nominated by a Member is eligible for election to the Board unless the nominating Member has paid all annual membership fees outstanding and/or any other outstanding charges levied by the Board.

52. At the first general meeting, the first Director shall retire and the new Director appointed will hold office for a two (2) year term, expiring at the general meeting immediately subsequently to the end of the two (2) year term.

53. A retiring Director shall be eligible for re-election.

54. Each Director must act in the best interests of the Company as a whole and with due regard to the furtherance of the Company's objectives. Each Director must also act in accordance with any non-excludable duty or obligation owed by the Director to the Company or the Members of the Company under general law, the Act or other provisions of these Articles, provided that notwithstanding any fiduciary duty, principle of general law or provision of the Act to the contrary, any Director may make a decision in the interests of the Members appointing him.

55. The Directors shall be entitled to be reimbursed for all travelling or such reasonable expenses as may be incurred in attending and returning from meetings of Directors or of any committee of the Directors or general meetings or otherwise howsoever in or about the business of the Company in the course of the performance of their duties as Directors.

56. The acts of a Director shall be valid notwithstanding any defect that may afterwards be discovered in his appointment or qualification whether by virtue of **Article 49 or 51** or the Act.

CHAIRMAN

57. The first Chairman shall be Dato' Dr. Ir. Hj. Mohamad Khir Bin Harun, and will hold office until the first general meeting wherein the first Chairman shall retire. At the first general meeting, the Members shall, in accordance with **Article 35(a)**, appoint a person to be the Chairman of the Board. The Chairman appointed will hold office for a one (1) year term, expiring at the general meeting immediately subsequent to the end of the one (1) year term.

58. A person nominated as Chairman may be a Member but shall not be a Director on the Board. The nominee must also have relevant experience in the industry. The Chairman will be entitled to receive a stipend in such amount as the Board may determine and receive reimbursement of all travelling or such reasonable expenses as may be incurred in attending and returning from meetings of Directors or of any committee of the Directors or general meetings or otherwise howsoever in or about the business of the Company in the course of performance of his duty as Chairman.

59. The Chairman shall not be eligible to vote and shall not have a casting vote in the event of an equality of votes.

CESSATION OF DIRECTORSHIP

60. The office of a Director shall be vacated if the Director:-

(a) is removed from his position by the Member that appointed him; or

(b) becomes bankrupt or makes any arrangement or compromise with his creditors generally; or

(c) becomes prohibited or disqualified from being a Director under any provisions of the Act; or

(d) becomes of unsound mind; or

(e) ceases to be a Director by virtue of these Articles; or

(f) the Member which appointed the Director under **Article 49** ceases to be a Member; or

(g) is absent from more than three (3) consecutive meetings of the Board without permission of the Board; or

(h) resigns his office by notice in writing to the Company.

61. If any Member entitled to nominate a Director ceases for any reason to be entitled to nominate a Director, the Director nominated by that Member will cease to be a Director of the Company and the position of that former Director will become a casual vacancy to be filled in accordance with **Article 62**.

62. Any Director may at any time resign office by giving to the Secretary a notice in writing of his resignation. Subject to **Articles 49 and 50**, the Board shall have the power at any time and from time to time, to appoint any representative from the Members to the Board, to fill a casual vacancy or as an addition to existing Directors, provided that:- Amended on 17/04/2002

(a) the person so appointed is a representative of a members; Amended on 01/10/2002

(b) the person so nominated is a person who would otherwise be eligible to be nominated as a Director; and Amended on 17/04/2002

(c) that the total number of Directors shall not at any time exceed the number fixed in accordance with the Articles. Inserted on 17/04/2002

Any Director so appointed shall hold office only until the next annual general meeting, and shall then be eligible for re-election. Amended on 17/04/2002

63. Nothing in **Article 62** will affect the right of a Member entitled to appoint a Director pursuant to the provisions in **Articles 49 and 50** to replace the Director, including by filling a casual vacancy caused by the resignation of the Director. The Director appointed to fill a casual vacancy must retire at the time that the Director whom he is replacing would have retired in accordance with these Articles, and shall be eligible for re-election. Amended on 17/04/2002

64. Subject to **Articles 49 and 50**, the Company may, at a general meeting by special resolution, remove any Director before the expiration of his period of office, and may by special resolution appoint another person in his stead.

MINUTES OF MEETINGS

65. The Board shall cause minutes to be made in the books provided of:-

    (a) all appointment of Directors and officers;

    (b) the names of the Directors at each meeting of the Board and of any committee of the Board; and

    (c) all resolutions and proceedings at all meetings of the Company and of the Board and of any committee of the Board and every Director present, whether in person or by means of video conferencing/telephone conference call at any meeting of the Board or committee of the Board shall sign his name in a book to be kept for that purpose.

    Such minutes must be signed by the Chairman of the meeting at which the proceedings were held or by the Chairman of the next succeeding meeting.

POWERS AND DUTIES OF THE BOARD

66. The business of the Company is managed by the Board who may pay all expenses incurred in promoting and registering the Company and may exercise all such powers of the Company as are not, by the Act or these Articles, required to be exercised by the Company in a general meeting.

67. The Board shall meet at least once every quarter.

Amended on 17/04/2002

68. The Board must act in the best interests of the Company as a whole and with due regard to the furtherance of the Company's objectives.

69. The Board has ultimate responsibility for the policy of the Company but in formulating the policy, it shall operate in line with the national policy objectives of the Malaysian communications and multimedia industry.

70. The Board shall prepare or caused to be prepared and updated from time to time an Operations Manual which shall set out, inter alia, the method of establishing the Access Forum Committee, Working Committees and shall describe the transparency of process with which the Company, the Access Forum Committee, the Board, the Executive and the Working Committees are to conduct their deliberations and operations.

71. The Board, upon considering advice from the Chief Executive Officer shall, subject to **Articles 86, 87** and **88** adopt and promulgate a Working Plan which shall be implemented by the Executive, the Access Forum Committee and the Working Committees, or where appropriate, outsourced for implementation by suitably qualified contractors.

72. The Board shall ensure that to the greatest extent possible the Access Forum Committee and the Working Committees are representative of all Members interested in the subject matter of the proposed tasks or other issues the subject of their deliberations and recommendations.

73. The Board shall ensure that professional competency is maintained and that due process is observed.

74. The Board shall be accountable for the functions of the Company including administration of the Executive, the provision of reports to general meetings and fulfilment of all corporate governance responsibilities.

75. The Board shall be responsible for recommending the access list and access code which has been approved by the Board, to the Commission. The Board shall be given the authority to monitor access code compliance and administer sanctions, as it deems fit, for breaches of the access code in accordance with rules and procedures set out in the access code. Amended on 01/10/2002

76. The Board shall establish resourcing arrangement for the activities of the Company and shall constitute itself as the body responsible for the raising and allocation of funds to finance the Company's activities.

77. The Board may exercise all the powers of the Company to borrow money and to mortgage or charge its property, or any part thereof and to issue debentures and other securities whether outright or as security for any debt, liability or obligation of the Company.

78. All cheques, promissory notes, drafts, bills of exchange and other negotiable instrument and all receipts for money paid to the Company shall be signed, drawn, accepted, endorsed or otherwise executed as the case may be in such other manner as the Board shall from time to time by resolution determine.

PROCEEDINGS OF THE BOARD

79. The Board may meet together for the despatch of business, adjourn, and otherwise regulate their meetings, as they think fit. A member of the Board is deemed to be present at any meeting if he/she is there by virtue of a video conference/telephone conference call even if such person is not physically present at such meeting.

80. The Secretary must, where requisition is made by three (3) Directors, convene a meeting of the Board to be held not less than fourteen (14) days after the date of requisition. Amended on 1/10/2002

81. The meeting of the Board shall, notwithstanding that it is called by shorter notice than that specified in this Article, be deemed to have been duly called if it is so agreed by all the Directors entitled to attend and vote thereat.

82. A Director, in consultation with the Member nominating that Director, shall by notice to the Company, appoint an alternate Director to exercise the powers of the nominating Director, if the nominating Director is unable to attend a meeting of the Board. The appointment will take effect upon receipt of that notice by the Company and continue to operate until:-

    (a) receipt of any further notice given by the nominating Director revoking the nomination;

    (b) the office of the nominating Director becoming vacant pursuant to **Article 60** or **61**; or

    (c) the Director otherwise ceasing to be a Director of the Company.

83. No business may be transacted at a meeting of the Board unless a quorum of Directors is present at the time when the meeting proceeds to business. A quorum will comprise of seven (7) Directors. Amended on 17/04/2002

84. If within half and hour from the time appointed for the meeting a quorum is not present, the meeting stands adjourned to the same day in the next week at the same time and place or to such other day and at such other time and place as the Chairman of the meeting may determine and if at the adjourned meeting a quorum is not present within half and hour from the time appointed for the meeting, five (5) Directors shall be a quorum. It shall not be necessary to give notice of an adjournment or of the business to be transacted at an adjourned meeting. Amended on 01/10/20

85. On a show of hands or a poll every Director shall have one vote.

86. Any resolution of the Board will not be taken to be carried, whether on a show of hands or a poll, unless the requisite majority comprises the following:-

(a) in the case of an ordinary resolution of Directors, there is an affirmative vote of more than fifty percent (50%) of the Directors (including alternate Directors acting as Directors) present at the meeting; or

(b) in the case of Special Matters, there is an affirmative vote of more than seventy five (75%) of the Directors (including alternate Directors acting as Directors) present at the meeting. However:-

(i) where there is an affirmative vote of more than fifty percent (50%) but not more than seventy-five percent (75%) of the Directors (including alternate Directors acting as Directors) present at the meeting, the Special Matters shall be voted again at the next meeting, which shall be within thirty (30) days from the first meeting; and

(ii) at the second meeting, where there is an affirmative vote of more than fifty percent (50%) but not more than seventy-five percent (75%) of the Directors (including alternate Directors acting as Directors) present at the meeting, the Special Matters shall be forwarded to the Commission as issues debated on and considered by the Board along with differing views of the Board on the said Special Matter.

(c) in the case of Extraordinary Matters, the unanimous votes of the Directors (including alternate Directors acting as Directors) present at the meeting. For the purposes of this **Article 86(c)**, unanimous votes are achieved where there is an affirmative vote of more than ninety percent (90%) of the Directors (including alternate Directors acting as Directors) present at the meeting. Once the Extraordinary Matters are approved, the views of the dissenting Director(s) on the Extraordinary Matters would be also forwarded to the Commission. Inserted on 01/10/20(

87. Special Matters shall be matters pertaining to:-

(a) promulgation, adoption and variation to any rules of conduct for the Members;

(b) the promulgation, adoption, variation and approval of the access codes to be submitted to the Commission for registration;

(c) the promulgation, adoption and variation to an Operations Manual;

(d) the promulgation, adoption and variation of a Working Plan;

(e) establishment of the Company's annual budget;

(f) splitting of the Network Facilities and Network Service Access Forum Committee into two distinct Access Forum Committee; and

(g) a downward revision of the fees in the **Schedule**.

88. Extraordinary Matters shall be matters pertaining to approval and evaluation of the access list promulgated by an Access Forum Committees and approved by all the other Access Forum Committees.

89. The Board may, at its absolute discretion and subject to such conditions as it deems fit, invite one (1) additional representative from the Applications Service Provider and one (1) additional representative from the Content Applications Service Provider category of membership to attend a meeting of the Board and to be heard but such representative shall not be entitled to vote. Amended on 17/04/2002

90. In the event of any vacancy or vacancies in the office of a Director or offices of the Directors, the remaining Directors may act but if the number of the remaining Directors is not sufficient to constitute a quorum at the meeting of the Board, they may only act for the purposes of convening a general meeting of the Company.

91. A resolution in writing, signed by all the Directors of the Board for the time being entitled to receive notice of a meeting of the Board shall be as valid and effectual as if it had been passed at the meeting of the Board duly convened and held.

CHIEF EXECUTIVE OFFICER

92. The Board may appoint a person as the Chief Executive Officer who shall be entitled to attend meetings of the Board and to be heard but will not be entitled to vote. Appointment or removal of the Chief Executive Officer must be confirmed in writing by the Board. Amended on 17/04/200

93. The Chief Executive Officer will be accountable to the Board for, inter alia:

(a) the delivery of the Working Plan in a timely fashion in accordance with the guidelines promulgated by the Board;

(b) development of the Operations Manual for approval and endorsement by the Board;

(c) performance of the administrative functions of the Company, including without limitation, the development of a web-site and other Internet database applications to facilitate interaction between Members and participation in the Working Committee;

(d) provision of logistical support to Working Committees and general meeting and the facilitation of the same;

(e) implementation of consultation processes and liaison mechanisms between the Board, Members and Working Committees;

(f) monitoring of the progress of Working Committees;

(g) liaison with the Commission and if required, the Minister;

(h) preparation of reports and submissions to:-

(i) the Board and the Members; and

(ii) the Commission; and

(iii) if required, the Minister.

(i) attendance at Board meetings;

(j) the delivery of such public statements as are duly authorised by the Board; and

(k) performance of the Company in relation to the budget and business plan agreed by the Board.

ESTABLISHMENT OF WORKING COMMITTEES

94. The Board or the Access Forum Committee may at any time appoint Working Committees from among the Members, either corporate or individual, or non-member individuals co-opted by the Board, and the constitution of such Working Committees must be approved or endorsed by the Board or the Access Forum Committee, as the case may be. Working Committees must to the greatest extent possible be representative of parties interested in the subject matter of the proposed body of work to be undertaken.

95. Working Committees will be established on a project by project basis and must operate in accordance with the Operations Manual or principles determined by the Board and the Articles.

96. The Working Committees shall maintain a relationship with the Board or the Access Forum Committee, as the case may be, and liase with them on a regular basis.

97. Where the Access Forum Committee or the Board establishes a Working Committee to undertake specific tasks, any work prepared by the Working Committee must be submitted to the Access Forum Committee or the Board for consideration and approval unless otherwise directed by the Access Forum Committee or the Board.

THE ACCESS FORUM COMMITTEE

98. There shall be three Access Forum Committees comprising of Network Facilities and Network Service Access Forum Committee ("**NFNSC**"), Applications Service Access Forum Committee ("**ASC**") and Content Applications Service Access Forum Committee ("**CASC**"). Each of the respective Access Forum Committee shall comprise of Members from the relevant categories of membership representing the Network Facilities Provider, Network Service Provider, Applications Service Provider and Content Applications Service Provider. The NFNSC shall be regarded as an Access Forum Committee. However, the NFNSC may be split into two distinct Access Forum Committees at such future date as may be agreed by the Board as a Special Matter.

99. Each Access Forum Committee may, from time to time, invite representatives from governmental or non-governmental bodies (including the Commission), associations or individuals, who in the Access Forum Committee's opinion, will facilitate the development and growth of the Malaysian communications and multimedia industry, to attend any meeting of the Access Forum Committee. Such invited persons shall be entitled to be heard at the meetings but shall not be entitled to vote thereat.

100. Each Access Forum Committee shall, respectively, meet as and when required to:-

(a) (i) determine the Network Facilities, Network Services and other facilities and/or services which facilitate the provision of Network Services or Applications Services, including Content Applications Services, to be included from time to time in the access list or to have the same amended or updated from time to time; or

(ii) prepare or caused to be prepared and updated from time to time such other matters that are incidental to item (a)(i) above; or

(b) (i) promulgate, develop or vary the access codes, from time to time, which provide model terms and conditions for compliance with the standard access obligations and national policy objectives for the Malaysian communications and multimedia industry or to have the same amended or updated from time to time; or

(ii) prepare or caused to be prepared and updated from time to time such other matters that are incidental to item (b)(i) above; or

(c) any other matters, as the case may be, which has been determined and prepared by the other Access Forum Committees.

101. Where the members of the NFNSC, ASC or CASC, which are present and voting, have respectively reached a Consensus (as hereinafter defined) on any of the matters referred to in Article 100(a) and (b), the NFNSC, ASC or CASC, as the case may be, shall put forward those matters to the other Access Forum Committees, respectively, either by itself or through the Secretary for their deliberation and consideration. Where the NFNSC, ASC and CASC have all reached a Consensus on those matters, such matters shall be forwarded to the Board as recommendations. Amended on 01/10/2002

102. -Deleted- { Deleted on 01/10/2002

{

103. -Deleted- {

104. The Board may, at its discretion, call for a meeting between the NFNSC, ASC and CASC to discuss industry wide access issues.

105. For the purposes of **Articles 101:-**

(a) "**Consensus**" is established when those participating in the consideration of the subject at hand have reached substantial agreement and it requires that all views and objections be considered, and that a concerted effort be made toward their resolution. Under some circumstances, Consensus is achieved when the minority no longer wishes to articulate its objection and no major interest maintains a negative stand; and

(b) "**substantial agreement**" means more than sixty seven percent (67%) but not necessarily unanimity.

106. The Secretary must, where a requisition in writing is made by Representatives of Members or members from the Access Forum Committee holding at the date of deposit of the requisition not less than one-tenth (10%) of the total voting rights of all members from the Access Forum Committee having, at that date, a right to vote at meetings, convene a meeting to be held not less than twenty-one (21) days after the date of the requisition at such time and place as the

Board may determine. Any requisition made by members from the Access Forum Committee must state the object of the meeting proposed.

107. The notice requirements in **Article 21** shall be applicable where relevant.

108. No business may be transacted at any meeting convened by an Access Forum Committee unless a quorum of Representatives of members from the Access Forum Committee is present at the time the meeting proceeds to business. A quorum will comprise of Representatives of members from the Access Forum Committee present in person, by proxy or by Representative, holding not less than fifty percent (50%) of the total voting rights of all members from the Access Forum Committee having at the date of the meeting a right to vote.

109. For the purposes of clarification, the Members who have been admitted pursuant to **Article 3(a)(ii)** herein will vote in the relevant category of membership they would have been assigned to under the licensing structure of the CMA as if it/he/she had been licensed under the CMA. Where a Member is in one or more Access Forum Committees, that Member shall have one (1) vote in each of the respective Access Forum Committees. Amended on 17/04/2002

110. No decision in respect of any business referred in **Article 100**, may be taken to be carried out unless Consensus is achieved in accordance with **Articles 101.** Amended on 1/10/2002

111. Notwithstanding anything to the contrary, a matter referred to in **Article 100** may only be recommended to the Board if prior Consensus is obtained in accordance with **Article 101.** Amended on 01/10/2002

112. All decisions made by the members in the Access Forum Committee are binding notwithstanding that there has been a reclassification of category of membership for a Member after the date of a decision has been made or if is discovered that a person is not entitled to be a Member or is not entitled to vote by virtue of **Article 16** unless mala fides is proven. The burden of proof that a person was entitled to vote rest with such member or person.

SECRETARY

113. The Secretary shall be appointed by the Board for such term, at such remuneration and upon such conditions as they may think fit; and any Secretary so appointed may be removed by them. The first Secretary shall be Lee May Ling (MAICSA 7012790).

114. The Secretary will not be an ex-officio member of the Board but if a Director, will be entitled to exercise Directors' powers. A provision of the Act or these Articles requiring or authorising a thing to be done by or to a member of the Board and the Secretary shall not be satisfied by its being done by or to the same person acting both as a member of the Board and as, or in place of, the Secretary.

SEAL

115. The Board shall provide for the safe custody of the seal, which shall only be used by the authority of the Board or a committee of the Board authorised by the Board in that behalf, and every instrument to which the seal shall be affixed shall be signed by a members of the Board and shall be countersigned by the Secretary or by a second member of the Board or by some other person appointed by the Board for the purpose.

ACCOUNTS

116. The Board shall cause proper books of accounts to be kept with respect to:-

(a) all sums of money received and expended by the Company and the matters in respect of which the receipt and expenditure takes place;

(b) all sales and purchases of goods by the Company; and

(c) the assets and liabilities of the Company.

Proper books shall not be deemed to be kept if there are not kept such books of accounts as are necessary to give a true and fair view of the state of the Company's affairs and to explain its transaction.

117. The books of accounts shall be kept at the registered office of the Company or, subject to section 167(3) of the Act, at such other place or places as the Board think fit and shall always be open to the inspection of the member of the Board.

118. The Board shall from time to time determine to what extent and at what times and places and under what conditions or regulations the accounts and books of the Company or any of them shall be open to the inspection of the members not being members of the Board.

119. The Board shall from time to time in accordance with the requirement of the Act cause to be prepared and to be laid before the Company in general meeting such profit and loss accounts, balance sheets and any reports as are referred to in the Act.

120. A copy of every balance sheet (including every document required by law to be annexed thereto) which is to be laid before the Company in general meeting, together with a copy of the auditor's report, shall be sent to every member of, and every holder of debentures of the Company not less than twenty one (21) days before the date of the meeting

AUDIT

121. Auditors shall be appointed and their duties regulated in accordance with sections 174 and 175 of the Act.

NOTICES

122. Notices of every general meeting shall be given in any manner hereinafter authorised to:-

(a) every member except those Members who have not supplied to the Company an address within Malaysia for the giving of notices to them; and

(b) the auditors for the time being of the Company.

No other person shall be entitled to receive notices of general meetings.

123. Notice may be given by:-

(a) delivery to the address of the party notified by prepaid post, in which case notice shall be deemed to be effected by properly addressing, prepaying and posting a letter containing the notice in the ordinary course of post.

(b) facsimile transmission to the facsimile number of the party notified, in which case notice shall be deemed to have been received when the party notified receives the facsimile if received on a Business Day, or otherwise at 9.00 am on the first Business Day after receipt, provided always that:-

(i) a transmission report is produced by the facsimile machine from which the facsimile was sent which indicates that the facsimile was sent in its entirety to the party notified or if the party notified confirms by telephone that they have received the facsimile transmission in its entirety; and

(ii) a conforming copy of the facsimile is sent to the party notified by prepaid post on the same day the facsimile transmission is transmitted if transmitted on a Business Day or, otherwise, on the next Business Day; or

(c) e-mail to the e-mail address of the party notified in which case it is deemed to have been received when the party notified receives the email if received on a Business Day, or otherwise at 9.00 am on the first Business Day after receipt, provided always that:-

(i) a transmission report is produced by the machine from which the e-mail was sent which indicates that the e-mail was sent in its entirety to the party notified or if the party notified confirms by telephone that they have received the e-mail in its entirety; and

(ii) a conforming copy of the e-mail is sent to the party notified by prepaid post on the same day the e-mail is transmitted if transmitted on a Business Day or, otherwise, on the next Business Day.

INDEMNITY

124. Subject to the provision of and so far as may be permitted by the Act, every member of the Board, auditor or other officer of the Company shall be entitled to be indemnified by the Company against all costs, charges, losses, expenses, liabilities incurred by him in the execution and discharge of his duties or in relation thereto including any liability incurred by him in defending any proceedings civil or criminal which relate to anything done or omitted or alleged to have been done or omitted by him as an officer or employee of the corporation save in the case of negligence and breach of fiduciary duty and in which judgement is given in his favour (or the proceedings are otherwise disposed of without any findings or admissions of any material breach of duty on his part) or in which he is acquitted or in connection with any application under any statute for relief from liability in respect of any such act or omission in which relief is granted to him by the court.

PROHIBITED ACTIVITIES

125. Notwithstanding any resolution being approved by Members at general meeting, the Company shall not engage in the following activities:-

(a) apply for listing and quotation of the Company in any stock exchange; and

(b) acquire or form any subsidiary corporation or acquire or invest in another corporation or business.

ALTERATION OF ARTICLES

126. These Articles may only be varied or amended in accordance with the Act and the provisions of the Memorandum and the Articles.

SCHEDULE 1

INITIAL SUBSCRIPTION FEES AND ANNUAL MEMBERSHIP FEES

Amended
on 17/04/2002

Annual Revenue of the Members (RM)	Initial Subscription Fee (RM)	Annual Membership Fee (RM)
Above 2.5 Billion	3,000	100,000
Above 1 Billion to 2.5 Billion	3,000	75,000
Above 500 Million to 1 Billion	3,000	50,000
Above 200 Million to 500 Million	3,000	25,000
Above 20 Million to 200 Million	3,000	7,000
20 Million and below	3,000	1,500

In the event a grant is provided by the Commission to the Company, the fees prescribed in this Schedule may be revised, in an equitable manner, in accordance with **Articles 35** and **36** or **Articles 86** and **87**.

We, the several persons whose names, addresses are subscribed hereunder being subscribed hereby agree with the foregoing Articles of Association.

Name, address and description of subscribers	
TELEKOM MALAYSIA BERHAD (COMPANY NO.: 128740-P) TINGKAT 2, IBUPEJABAT TELEKOM MALAYSIA JALAN PANTAI BAHARU 50672 KUALA LUMPUR	Nama : DATO' DR. ABDUL RAHIM BIN HAJI DAUD Designation: DIRECTOR
	Name : WANG CHENG YONG Designation: COMPANY SECRETARY
MAXIS BROADBAND SDN. BHD. (COMPANY NO.: 234053 -D) LEVEL 18, MENARA MAXIS KUALA LUMPUR CITY CENTRE OFF JALAN AMPANG 50450 KUALA LUMPUR	Name : TAN POH CHING Designation: DIRECTOR
	Name : AMDAN MAT DIN Designation: COMPANY SECRETARY

Dated this 16th day of March 2001

Witness to the above signatures:

Name : DARREN KOR YIT MENG
NRIC : 730827 –14 –5289
Address: Zul Rafique & Partners
Suite 17.01, 17th Floor,
Menara Pan Global,
8 Lorong P. Ramlee,
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Lodged by: Zul Rafique & Partners
Address : Suite 17.01, 17th Floor, Menara Pan Global, 8 Lorong P. Ramlee, 50250 Kuala Lumpur
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INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

Document: 18

GLOBAL SYMPOSIUM FOR REGULATORS
Geneva, Switzerland, 8-9 December 2003

INFORMATION DOCUMENT:

ITU Mini Case Studies – Key Findings

International Telecommunication Union (ITU)

Key Findings From ITU Interconnection Dispute Settlement Mini Case Studies

In 2003, the International Telecommunication Union (ITU) conducted mini-case studies of interconnection dispute resolution in Botswana, Denmark, India, Jordan and Malaysia with the involvement of the telecommunication regulators in those countries, which are available at http://www.itu.int/ITU-D/treg/. The preparation of the mini-case studies was followed by an on-line discussion of interconnection dispute resolution among regulators worldwide on the ITU's Global Regulators Exchange (GREX) forum. The ITU then hosted a live "virtual conference" for regulators globally on 10 November 2003 in which the principal countries involved presented and discussed their perspectives on and experiences of interconnection dispute resolution. This conclusion paper was prepared by Robert Bruce and Rory Macmillan of Debevoise & Plimpton, London U.K., who conducted the mini-case studies.

This short paper draws together a number of key findings and observations based on the mini-case studies, the GREX discussion and the virtual conference. Direct reference should be made to the country mini-case studies in order to gain a fuller understanding of the issues the various countries have been facing. Further, this short paper merely touches on various issues and experiences that are explored in considerably more depth in a joint ITU and World Bank discussion paper prepared by Robert Bruce and Rory Macmillan of Debevoise & Plimpton, and Timothy Elam, Hank Intven and Theresa Medema of McCarthy Tétrault entitled Dispute Resolution in the Telecommunications Sector: Current Practice and Future Directions – Discussion Paper", which is available on the Global Symposium for Regulators webpage at http://www.itu.int/ITU-D/treg/.

I. Recognition of the Importance of Dispute Resolution

It is widely recognized that dispute resolution, particularly in interconnection, is now a core strategic issue in telecommunication sector regulation. Interconnection disputes raise issues that are fundamental to sector development. They concern the very availability on a cost-effective basis of the infrastructure necessary to provide competitive services. Prolonged unresolved disputes can make interconnection effectively unavailable. This can seriously hamper investment and competition. Regulators are increasingly facing up to the challenge of providing effective resolution efficiently as their markets liberalize. An efficient and effective interconnection dispute resolution process is now a necessary hallmark of a mature telecommunications market.

II. Addressing Underlying Problems

Interconnection disputes may arise as a simple product of resistance to market liberalization. Operators that dominate their markets may refuse the physical and logical connection with other networks. They may also charge prices that are so far above costs that other operators cannot provide services on a competitive basis.

More fundamental market structure issues often underlie such common disputes. For example, regulators commonly seek to achieve cost-based pricing of interconnection charges. Insufficient retail price rebalancing, however, can render this effectively unachievable. This can sometimes be beyond the scope of the regulator's immediate power to change given political circumstances.

The Jordanian regulator, the Telecommunications Regulatory Commission (TRC), encountered this problem in its June 2003 decision on interconnection charges. According to the TRC, Jordan Telecom's international transit rates were higher than costs and best international practice. The profit on international outgoing traffic was subsidising the access deficit and the deficit on Internet Service Provider calls, both matters of government policy. As a result, the TRC decided to continue to determine Jordan Telecom's international transit rates on a retail-minus basis, phasing in reductions. This is not a problem unique to less developed markets. Local loop unbundling has been hampered in the German market, for example, as a result of low local retail pricing.

Another underlying sector structure problem was illustrated by the complex Indian access deficit charge (ADC) and interconnection usage charge (IUC) system. The basic service operators (BSOs) subsidize below-cost line rental and local calls, as well as other requirements, through the ADCs. The ADCs, however, make the BSOs' national and international services less competitive. The result is contributing to a flow of traffic away from the BSOs' services towards competing GSM and limited mobility wireless services (WLL(M)). The arrival of voice over Internet protocol (VoIP) services has driven international rates down further. This kind of problem illustrates the need, mentioned below in Section VII B, for regulators to take a step back and review the sector and its structural problems as a whole. The Telecommunications Regulatory Authority of India (TRAI) has been doing just this.[1]

India's case illustrates how the transformation of telecommunication sectors worldwide is challenging interconnection regimes. The extraordinary growth of mobile services is posing competitive challenge to fixed line operators. Frequently, regulators are finding that interconnection arrangements established early in the life of the mobile sector cannot keep pace with dramatic changes in market share – as mobile penetration overtakes fixed line services. Revenue sharing contracts or interconnection pricing among operators may quickly stop reflecting commercial reality, fuelling the likelihood of disputes. Robust but flexible dispute resolution systems are crucial to ensure that the market can accommodate such underlying sector changes.

Interconnection dispute resolution, then, is not merely a domain of lawyers who are expert in dispute procedures. Nor is it even a simple matter of enforcing policies promoting sector liberalization. The resolution of disputes and disputatious circumstances is often central to the economics of the sector.

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[1] See the various consultative documents of the TRAI attached as annexes to the India Interconnection Dispute Resolution mini-case study on TREG at http://www.itu.int/ITU-D/treg/ and also available on the TRAI's website at http://www.trai.gov.in .

III. Drawing on Available Resources

A common theme that emerged from this interconnection dispute resolution project was the increasing tendency of regulators to draw upon resources external to themselves. This is not surprising given the importance of successful interconnection dispute resolution to sector development.

There are several ways in which regulators are drawing upon available external resources where their resources are not sufficient alone for efficient and effective solutions:

- using data from other markets to benchmark information, such as cost-models, where reliable data is not available in the domestic market (e.g., Botswana, Jordan);
- employing external consultants to gather such information and to assist in reaching decisions to supplement and strengthen in-house expertise (e.g., Botswana);
- allocating external costs incurred by regulators in the dispute resolution process to the parties (e.g., Jordan);
- encouraging the use of non-officials, such as arbitrators, to resolve disputes (e.g., Jordan, Australia);
- initiating industry consultation focused on identifying key underlying sector issues the resolution of which may result in an overall less contentious sector (e.g., Denmark);
- trying self-regulatory structures whereby industry bodies can anticipate issues that will arise in disputes (e.g., Malaysia, Australia).

IV. Information Deficits in Dispute Resolution

Information is a crucial aspect of interconnection disputes. One of the most frequent causes of interconnection disputes, particularly in developing economies, is a lack of information about matters that are essential to provide interconnection services in accordance with regulatory policy.

Consistent with the World Trade Organization (WTO) Reference Paper on Regulatory Issue, regulators are generally seeking to ensure that operators charge cost-related interconnection prices. Establishing what these should be, however, is difficult, particularly in less developed markets. Operators may be slow in providing cost models, whether because they lack accounting systems, accountants or as a strategic mode of resisting cost-based charging. When they do provide them, the models may be based on assumptions or allocations of costs that the regulator considers inappropriate.

Both the TRC in Jordan and the Botswana Telecommunications Authority (BTA) in Botswana faced this problem in 2003, when the operators failed to provide satisfactory

cost models. In their decisions on interconnection rates, both institutions chose to determine interconnection rates based on benchmark data drawn from European Union countries.[2] These rates will be used on a transitional basis until cost-based pricing is calculable. The BTA's choice of European Union averages was justified because of competitive conditions in the European Union interconnection market and the usage of Long Run Incremental Cost (LRIC) methodologies.

Relying on international benchmark data raises the twin problems of how to choose the data and how to apply it to the home market, since the competitive conditions of the benchmark countries may be quite different. Labour and other costs may also be incomparable in developed benchmark markets relative to those in the home market. For this reason, some regulators are sceptical about the usefulness of benchmark data. Many believe, however, that benchmarking remains the only alternative way of continuing to build the momentum towards using cost-based pricing in the absence of reliable cost-models.

Given the importance of information in resolving disputes, the availability of well-organized data from competitive markets is likely to be immensely helpful to markets that lack such information at home. The European Union is a frequent source of such information, but there is scope for more gathering and organizing of such information on a regional and worldwide basis. This observation is relevant to procedures as well as market data. Organized banks of procedural precedent would also be useful in equipping regulators in assessing what approaches they can take to resolving disputes, including using innovative techniques like mediation and arbitration.

V. Costs in Dispute Resolution

The question of who bears the cost of resolving disputes can affect the way dispute procedures are used by parties, as well as their results. Parties are less likely to engage in potentially expensive frivolous proceedings if they are likely to bear their costs. In developing markets, regulators may lack resources necessary for effective dispute resolution.

Countries are taking a variety of approaches to allocating the direct costs of resolving disputes. The direct costs are external expenses incurred by the regulator in hiring advisors and technical experts, the regulatory body's own internal costs of its staff involved in dispute resolution, as well as the parties' costs of their own advisors.

Some regulators take the view that since dispute resolution is part of the legislative mandate their expenses are to be borne from the regulator's allocated budget. The Botswana Telecommunications Authority (BTA), for example, bore the cost of hiring an outside consulting firm to assist with a benchmarking exercise relied on in its 26 February 2003 ruling in the dispute between Botswana Telecommunications Corporation and Mascom Wireless. The BTA paid for this from its budget, which in turn is drawn from fees imposed on the sector.

[2] See the ITU Interconnection Dispute Settlement mini-case studies for each country.

Other regulators may allocate the costs of external expenses to the parties. Jordan's new Interconnection Dispute Procedure permits the Jordanian Telecommunications Commission (TRC) to require the parties to the dispute to bear costs incurred by the TRC in connection with the dispute. The TRC may be able to allocate those costs to a party that it considers ought to bear them, perhaps for bringing a frivolous case or due to its behaviour in the proceedings.

At the core of design of effective dispute resolution procedures is the framing of parties' incentives. The allocation of costs is an essential component of such incentives.

VI. Using Non-regulatory Dispute Resolution Processes

Regulators are showing an increased tendency to involve non-officials in dispute resolution. Jordan's new Dispute Resolution Procedure, for example, offers parties a choice of arbitration or regulatory adjudication. If they choose arbitration, the TRC expects not to be involved in the dispute. This permits parties to choose their own suitable adjudicators, for whose services they will pay. This is expected to reduce the burden on the regulatory authority.

Similarly, the Australian Communications Commission (ACCC) has developed a dispute resolution approach that encourages parties to use independent experts, arbitrators and mediators. The approach is relatively flexible; the parties can involve the ACCC as an "honest broker" to facilitate resolution of the dispute outside of its normal adjudicatory role. A key conclusion of the ACCC has been that the availability of a robust regulatory adjudication process remains an important safety net for the effective operation of such approaches.

The use of non-regulatory actors and processes raises various issues about ensuring the quality of decision-making and that official policy is effectively implemented.

With respect to the quality of decision-making, the availability of professionals to the disputing parties is important. Thus, for example, the TRC in Jordan considered that while there is not a Jordanian arbitration institution, there are Jordanian arbitrators and there is a regional arbitration body. The TRC concluded that a professional arbitration service is an available alternative to regulatory adjudication. The proliferation of arbitrators and mediators worldwide is a helpful sign for regulators seeking to draw from non-official resources in resolving disputes.

With respect to effective implementation of policy, with reference again to the Jordanian example, it remains to be seen how arbitrators will choose to interpret the Jordanian Telecommunications Law of 1995, as amended, and the interconnection provisions in the main operators' license agreements. This is likely to become ever more complex as a third mobile operator is licensed in Jordan since interconnection and roaming issues are likely to be key to its ability to compete in the market. Achieving a sufficiently level playing field in the given context of existing licenses will require

sensitive application of regulatory policy, including in disputes. Thus there are likely to be some types of dispute that involve such fundamental issues of regulatory policy that regulatory adjudication remains the only effective path to resolution.

VII. Towards Dispute Prevention

Dispute prevention is as important as dispute resolution. As a general matter, parties are less likely to dispute if they are able to pursue their interests constructively and openly. Sometimes this may mean that there is scope for self-regulation so that industry participants can identify and address the key issues themselves. Initiatives in self-regulation and consensus building are discussed below.

A. Self-regulatory initiatives

In keeping with the spirit of the Malaysian Communications and Multimedia Act of 1998, the Malaysian Communications and Multimedia Commission (MCMC) permits the market to engage in self-regulation.[3] Consequently, companies in the sector have established the Malaysian Access Forum (MAF), itself a private corporate entity, in order to prepare an access code to deal with operators' access to infrastructure and services of others.

The MAF is closely modelled on the similar Australian Telecommunications Access Forum (TAF). It remains to be seen whether the MAF will succeed in developing more extensive self-regulation where the TAF did not. The TAF did develop an access code but was unable to achieve agreement concerning what services should be subject to the access provisions and it was eventually dismantled. It has been suggested that the Australian experience shows that while self-regulation does offer some benefits, threshold regulatory matters still need to be addressed by regulators, albeit with input from the industry after consultation.

Where regulators are releasing some or much control over regulatory processes, including dispute resolution processes, they are adopting ways of structuring the non-official process in advance and of checking it afterwards.

It is likely to be helpful if regulators establish secondary legislation or guidance to establish a framework of reference points for private decision-makers. Jordan's 2002 Interconnection Guidelines are an example of the kind of guidance that are frequently used and will be a reference point for arbitrators in reaching awards. In many markets, such guidelines even specify the type of cost-model (e.g., LRIC) to be used, thus imposing a relatively clear structure for self-regulatory institutions.

The MCMC has already listed the network facilities and services that should be subject to a self-regulatory code on access proposed by the MAF. Such an "Access Code" will also have to be approved by the MCMC, thus ensuring another level of regulatory approval after the code is prepared. Such "*ex ante*" and "*ex-post*" approaches

[3] See the ITU Interconnection Dispute Settlement mini-case study for Malaysia.

can be used to ensure that non-official actors and processes will occur broadly in line with regulatory policy.

B. Consensus Building

A key challenge for policy makers and regulators is to ensure that the sector's basic structure balances the regulatory objectives of optimising the pricing, quality and range of services against the basic financial incentives and limitations of private companies. Some innovative regulators are using industry consultation and consensus building in order to tackle underlying areas for improvement. Denmark's wide-reaching industry consultation process in 2003 is an example of such an initiative.[4]

Achieving consensus is not easy where competing interests are at stake. The MAF, like the TAF before it, is intended to operate by "consensus". The Australian experience with the TAF indicated how the scope for achieving consensus could be limited except for a lowest common denominator of issues. There may, however, be ways to structure consensus building measures as hybrids of self-regulation and regulatory consultation to ensure that issues are properly aired and that the necessary regulatory backing is provided to address the issues with the weight of effectiveness that official bodies can offer.

[4] See the ITU Interconnection Dispute Settlement mini-case study for Denmark.

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

Document: 24

GLOBAL SYMPOSIUM FOR REGULATORS
Geneva, Switzerland, 8-9 December 2003

INFORMATION DOCUMENT:

Current Status of Interconnection Charge Rule and Dispute Resolution in Japan

Shigeki Suzuki
Director of International Economic Affairs Division
Telecommunications Bureau, MPHPT, Japan

1 Interconnection Rules (1) - Cost Calculation Rules

? Overview ?

✧ Cost calculation rules have been introduced since FY1997, affecting interconnection charges paid by long-distance and other carriers to the local NTT operator.

✧ Consequently, interconnection charges for fixed line calls have fallen sharply. Also, fair and appropriate interconnection charges have established in a range of other areas such as dark fiber interconnection.

< Details >

¦ The Asymmetric Regulation is legislation for fixed line interconnection which was introduced in FY1997. It was accompanied by rules for calculating fair and reasonable costs based on interconnection accounting figures.

¦ In FY2000, the LRIC (Long-Range Incremental Cost) model was introduced to the calculation of interconnection charges for fixed-line services in a bid to enhance the transparency of the calculation process and provide an added incentive for efficiency improvement.

[About the LRIC model]

- Used to calculate expenses across a network based on the assumption that the network utilizes the cheapest and most efficient technology and equipment available at the present point in time
- Can also be used to eliminate inefficiencies inherent in monopol y networks

<Reference: Falling interconnection charges at NTT East and West>

(charge per three minutes call time)

	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003/2004
Group Center (GC)	\5.81	\5.57	\4.95	\4.60	\4.50	\4.37
Zone Center (ZC)	\11.93	\10.64	\7.65	\5.88	\4.78	\5.36

* Shaded areas denote calculations based on LRIC model

1

2 Interconnection Rules (2) - Asymmetric Regulation

? Overview ?

✧ Until FY1997, interconnection terms and conditions were determined via direct negotiation among the carriers; however, this approach often led to protracted negotiations and disputes. In an attempt to speed up the process of interconnection and ensure that all interconnection agreements are predicated on fair and transparent terms and conditions, the following measures were introduced in FY1997:

1. Mandatory obligation to provide interconnection
2. Introduction of asymmetric regulation (open of network) on only essential facilities

<Criteria for designation>

¦ Local Network (from FY1997)

Telecommunication facilities which handle over 50% of the subscriber lines in any one prefecture (i.e., a network that other carriers need to be able to use in order to develop their business)

→ ***applies to NTT East and West facilities in all prefectures***

¦ Mobile Network (from FY2001)

Telecommunication facilities which handle over 25% of telecommunication lines for mobile terminals in the coverage area of the carrier (i.e., the preferred network for interconnection with other carriers)

→ ***applies to NTT DoCoMo and Okinawa Cellular facilities***

<Details>

Mandatory preparation and publication of interconnection agreements

(1) Interconnection charges (function-specific)

(2) Interconnection conditions and application procedure

(3) Required information

Mandatory preparation and publication of interconnection accounting reports (Local Network only)

Separation of accounts for critical equipment into separate sections for facility management and usage

Interconnection Agreements (and any amendments thereto) must be

? approved by the Minister for Public Management, Home Affairs, Posts and Telecommunications (for Mobile Network, however, notification is sufficient)

? Base data for calculation of interconnection charges*

? Monitoring of cross-subsidization

* Refer to Interconnection Rules (1) — Cost Calculation Rules

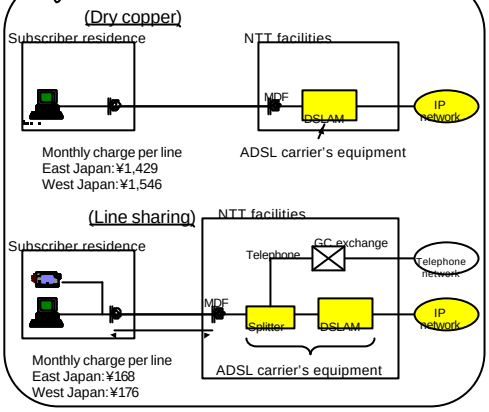
2

3 Interconnection Rules (3) - Subscriber Line Unbundling

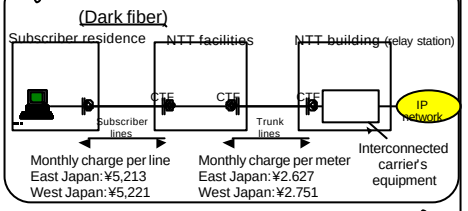
? Overview ?

- ✧ Obligation to unbundle subscriber lines was introduced in FY2000 – 2001 to promote new services such as ADSL. (Unbundling refers to the use of separate interconnection charges for each function.)
- ✧ In order to take advantage of unbundling, other carriers need to house their interconnection equipment within NTT East and West facilities, necessitating the introduction of appropriate collocation rules.
- ✧ The combined introduction of both unbundling and collocation rules has resulted in rapid growth in broadband services in Japan.

Metal line unbundling (September 2000)



Optical fiber unbundling (April 2001)



Collocation rules (September 2000)

1. Provision of information regarding space availability
2. Formal procedures regarding installation and maintenance of equipment by interconnection carriers
3. Standard response times (from survey application to formal reply, from installation application to commencement of installation work)

3

~~4 Interconnection Rules (4) - Dispute Settlement Procedures~~

? Overview ?

- ✧ Under the 1985 Telecommunications Business Law (TBL), if two carriers are unable to reach agreement during negotiations or if the other party refuses to negotiate altogether, the first party can request or apply to the Minister for Public Management, Home Affairs, Posts and Telecommunications for an order forcing the other party to negotiate, or for adjudication in the matter.
- ✧ The Telecommunications Business Dispute Settlement Commission was set up in November 2001 to handle disputes between telecommunications carriers and promote the prompt resolution thereof. The Commission provides dispute mediation and/or arbitration services upon request by the parties to the dispute.

< Details >

- In the event that a carrier refuses to enter into negotiations when requested by another carrier seeking an interconnection agreement, or if negotiations break down, then either party may:
  - Apply for an interconnection order from the Minister for Public Management, Home Affairs, Posts and Telecommunications; or
  - Request mediation by the Telecommunications Business Dispute Settlement Commission.
- In the event of a breakdown in negotiations over specific details of an interconnection agreement or other matter:
  - Either party may request adjudication by the Minister for Public Management, Home Affairs, Posts and Telecommunications;
  - Either party may request mediation by the Telecommunications Business Dispute Settlement Commission; or
  - Both parties may request arbitration by the Telecommunications Business Dispute Settlement Commission.

4

5 Overview of the Telecommunications Business Dispute Settlement Commission

? Summary

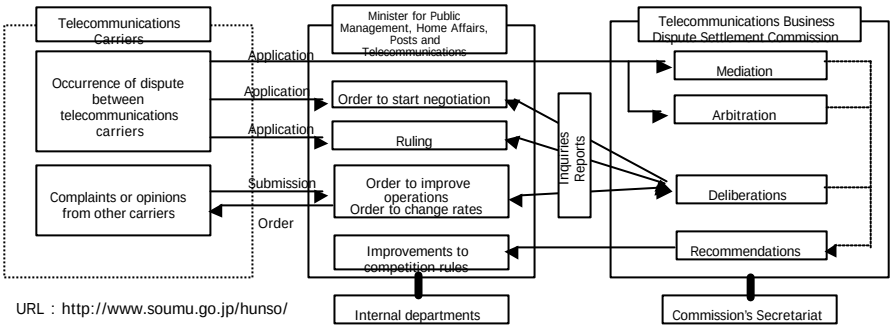
The Telecommunications Business Dispute Settlement Commission was set up under the Ministry of Public Management, Home Affairs, Posts and Telecommunications on November 30, 2001. The commission's objective is to resolve disputes between telecommunications carriers, involving interconnections and other matters, in a prompt and efficient manner.

? Organization

- Established as a commission that is organizationally independent of approval and permission departments (an institution based on Article 8 of the National Government Organization Law)
- The commission consists of five members who the Minister for Public Management, Home Affairs, Posts and Telecommunications appoints with the consent of both Houses
- The Minister appoints seven special members to participate in dispute settlement proceedings

? Enhancements to dispute settlement procedures

- Introduced new procedures, mediation and arbitration, regarding negotiation about interconnections or other matters, to promote easier and quicker consensus building between the telecommunications carriers
- The commission deliberates on and issues reports in response to inquiries from the Minister regarding orders to start negotiation about interconnection, rulings, and rate-change orders
- Has the authority to make recommendations to the Minister on dispute settlements and other matters



URL : http://www.soumu.go.jp/hunso/

5

6 Record of Dispute Settlements by the Commission (As of November 19, 2003)

Settled Cases

(1) Mediation: 25 (2) Arbitration: 1 (3) Inquiry/Report: 4 (4) Recommendations: 2

Some Specific Cases

Case	Summary
Use of equipment needed for interconnection (Feb. 14, 2002)	- Company A made a proposal to use co-location space, power supplies, and MDFs in NTT East's buildings. Negotiations, however, broke down between NTT East, which studied and disallowed the installation of interconnection points, and company A, which doubted the basis of their decision. - With mediation by the commission, the issue was resolved through mutual cooperation to allow company A to immediately begin construction work. - The commission also recommended to the Minister that both NTT East and West should put priority on the urgency of co-location use and not just on the orders of request to use by other carriers(Feb. 16, 2002). ⇨ This recommendation led to a revision in interconnection agreements and the overhaul of co-location rules.
Interconnections with dark fiber (Mar. 6, 2002)	- Negotiations reached an impasse between NTT East, which rejected an application for interconnection with dark-fiber citing non-payment of unrelated interconnection fees as the reason, and company B, which claimed that a dispute on an unrelated matter was not sufficient reason to deny an interconnection. - Through mediation by the commission, the issue was resolved when NTT East accepted the dark-fiber interconnection application and agreed not to deny interconnections because of non-payment of interconnection fees.
Right to set user rates on calls from fixed telephones to mobile telephones (Nov. 5, 2002)	- Interconnection negotiations between Heisei Den Den and NTT DoCoMo Group hit a roadblock when Heisei Den Den sought to set rates on calls from fixed telephones to mobile telephones. - After an inquiry from the Minister, the commission issued a report stating terms that NTT DoCoMo Group must accept the interconnection request under the condition that Heisei DenDen would set the user rates. - The commission also recommended to the Minister that mechanisms should be examined and put into place that set appropriate charges in a reasonable and transparent manner. ⇨ Later, after a study group conducted an examination, the Telecommunications Bureau established and announced the policy concerning the setting of charges for fixed-to-mobile calls.

6

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Short Message Service "Convergence" Interconnection in Venezuela

International Telecommunication Union (ITU)

This mini-case study was conducted by Gustavo Tamayo of JOSE LLOREDA CAMACHO & CO., Bogota, Colombia with the active participation of country collaborators Jesus Rivera, Irene Torres and Ludmila Rodriguez from Venezuela's National Telecommunications Commission CONTATEL. The views expressed in this paper are those of the author and do not necessarily reflect the views of ITU, its members or the Government of Venezuela.

The author wishes to express his sincere appreciation to CONATEL for its support in the preparation in this mini-case study.

This is one of a series of Latin American mini-case studies on Convergence and the Information Society.

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MINI-CASE STUDY FOR
THE 2003 GLOBAL SYMPOSIUM FOR REGULATORS

SHORT MESSAGE SERVICE "CONVERGENCE" INTERCONNECTION IN VENEZUELA

I. Introduction

Located in the Northeastern region of South America, Venezuela has a population of about 25.2 million and a GDP of approximately USD129.6 billion. Revenues produced by the oil industry give Venezuela one of the highest per capita incomes in Latin America.

The year 2002 marked a difficult economic, social and political situation in Venezuela. Despite these difficulties, the telecommunications sector registered growth and constituted 3.56% of the nation's consolidated GDP.

Telecommunications is the second major industry in Venezuela, after the oil industry. By the end of 2002, Venezuela had 2,841,771 fixed telephony subscribers, for a fixed line penetration rate of 11.27%. Public telephones reached 105,039 terminals, including those located in public Access Centers, for a public telephone penetration rate of 0.42%. The country numbers about 6.5 million mobile cellular subscribers, an approximate mobile cellular penetration rate of 27%, one of the highest in Latin America. Indeed, Venezuela was among the first countries in the world in which the total number of mobile cellular subscribers exceeded the number of fixed line customers.

Venezuela's telecommunications regulatory agency, CONATEL, was first established in 1991. Since its creation, CONATEL has played an important role in the telecommunications sector and has promoted the sector's growth.

Sector reform in Venezuela began a decade ago with the privatization of CANTV, the government local and long distance telephony provider. Sector reform expanded, more recently, by allowing free competition throughout the sector.

On 24 November 2000, the "Reglamento de Apertura" or Opening Regulations were issued, establishing the principles and rules for the promotion of competition, based on transparency, equal access among operators (including, when necessary, asymmetric regulations placing heavier burdens on those with market power) multiple operators, freedom of choice by customers, and service quality.

Currently, there are about a 100[1] different service providers offering a wide range of services, including local and international fixed telephony, mobile cellular telephony, trunking, value added services and short message service (SMS).

The Venezuelan Telecommunications Law is based upon the fundamental principle of competition. And, since interconnection enables the effective entrance into the market of new operators and services, the Venezuelan Telecommunications Law treats interconnection as a key measure necessary for the market's development and an essential tool for the maintenance of a competitive environment. In fact, under the Venezuelan Telecommunications Law, interconnection between telecommunication operators is mandatory.

The terms and conditions of interconnection agreements are initially left to the parties to agree. CONATEL is not authorized to intervene unless and until the parties have failed to reach an agreement within sixty days, counted from the date in which one party requests interconnection from another party.

The Venezuelan Telecommunications Law limits the role of the government to verify: a) that the interconnection requested is provided and b) to establish, where necessary, the general, technical and economic interconnection terms and conditions which will apply in the absence of an agreement between operators.

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[1] A complete list of the Telecommunications operators in Venezuela may be consulted at: www.conatel.gov.ve, under the heading "operadores".

When requested to intervene, CONATEL sets interconnection terms and conditions within 30 days following a hearing in which both parties participate. The deadline for CONATEL's decision may be extended by another 30 days.

To promote competition, the Venezuelan Telecommunications Law mandates that interconnection negotiations between operators must be carried out based on the following principles: neutrality, good faith, non discrimination, equality of access, adequate quality of service and cost-oriented interconnection charges that include a reasonable rate of return for operators. CONATEL has issued a series of interconnection rulings based on these principles. (See Annex A to this report)

II. Short Message Service

Short Message Service (SMS) enables mobile cellular subscribers to send and receive alphanumeric messages from their handsets. SMS messages may be no longer than 160 alphanumeric characters. SMS messages may also originate from other devices or networks such as personal computers (PCs), personal digital assistants (PDAs) or websites. Like electronic mail, this service enables users of mobile devises to exchange short text messages with other users, including those of different operators, whether locally, nationally and internationally.

SMS or "text messages" (described more fully in Annex B) have revolutionized the telecommunications market. Today, mobile cellular users around the world consider text messages to be an essential communications mechanism. The service responds to consumers' combined need for access to information and mobility.

Mobile subscribers in Venezuela are no exception to such global trends. Since mobile terminal equipment normally includes voice and data capacity, SMS services in Venezuela are considered an essential tool for communication among users and a necessary component of mobile cellular service. In addition, this technological evolution has opened the way for third generation mobile services that enable the convergence of voice, data and video.

III. The Movilnet and Digitel Case

On 15 February 2002, CONATEL ordered Telecomunicaciones MOVILNET, C.A. ("Movilnet") and Corporación DIGITEL, C.A. ("Digitel") to interconnect their SMS platforms.

The following summarizes their general, technical and economical conditions:

- Movilnet C.A., a licensed cellular operator since 1992, transports over 120 million SMS per month, collecting USD 0.025 per message.
- Digitel C.A., a licensed Rural Telecommunication Services operator since 1998, transports over 100 million SMS per month, collecting USD 0.05 per message.
- On 24 May 2001 Movilnet and Digitel entered into an agreement by which both parties would establish the terms and conditions for the connection of their SMS platforms within 180 days, if technically feasible. Due to their failure to reach a complete agreement (they were able only to agree to use the Short Message Peer to Peer[2] protocol), CONATEL initiated administrative proceedings to develop the terms and conditions for the interconnection of their respective SMS platforms.
- Each party presented its respective arguments to CONATEL. Digitel alleged that technical limitations in its network prevented the immediate interconnection with Movilnet's network. More specifically, Digitel's invoicing platform was not capable of applying different tariffs to the same service. Thus it was not possible to establish one tariff for SMS traffic terminating on the Digitel network and a different tariff for SMS traffic terminating on the Movilnet network.
- Similarly, Digitel argued it was temporarily unable to generate Call Detail Register (CDR) of the MT Type[3].

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[2] SMPP, or Short Message Peer to Peer, is messaging protocol for the integration of applications with wireless mobile network messaging systems. With SMPP an application developer can send data to mobile devices or to other applications over SMSC (Short Message Service Centre).

[3] CDR of the MT Type is an optical connector developed for interconnecting optical fiber ribbons quickly, easily and economically. In addition to interconnecting optical fibers, the connector finds wide-ranging, high-volume

- After a thorough study of the facts CONATEL ordered the parties to effectively interconnect their respective SMS platforms.
- The interconnection terms were established taking into consideration the technical work that had to be carried out by the parties enabling them to transmit short message services under optimum quality conditions.
- The parties had also been unable to reach agreement on economic terms. Moreover, the parties failed to provide CONATEL any information with respect to their respective cost structures. Thus, CONATEL considered conducting a benchmarking study as it does in the case of fixed-mobile interconnection.[4] Unfortunately, the information gathered by CONATEL was insufficient to establish referential values, and thus CONATEL was unable to use a "Benchmark" system to determine access and use costs among the parties.
- CONATEL, nevertheless, found that the "bill and keep" system was applied to SMS traffic in some European countries.[5] After a careful study of the experience in the United Kingdom (UK), CONATEL ordered the parties to use the "Bill and Keep" method, at least initially. The parties are obliged to notify CONATEL in writing if they will continue to use this scheme or if they agree to adopt a different structure within three months of implementing the interconnection of their two platforms.
- Under such commercial terms, Movilnet and Digitel are not required to pay each other for terminating messages on each other's network.
- Under this temporary measure, the parties were subsequently required to determine the volume of traffic between the two platforms, and to estimate the volume of messages managed by each platform, and the respective costs the volume of messages generate.

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applications such as interfacing components for routers, switches, high-speed parallel optical links, and other telecommunications systems.

[4] Benchmarking is mandatory under the Venezuelan interconnection rules for fixed to mobile interconnection. It is not mandatory in the case of SMS interconnection.

[5] A "bill and keep" interconnection charging regime is an agreement between network operators to net off their interconnection charges to each other so that no net interconnection payments are made. Under a bill and keep arrangement the net payment between carriers for the origination and termination of interconnected calls is zero. This does not mean, however, that carriers view the cost of interconnection as being zero. When a bill and keep regime is adopted, the long-run incremental price for the termination of interconnected local calls is an opportunity cost. It is the cost saved by not making termination payments to other carriers. Bill and keep is therefore like a two-part tariff in access charges. The fixed fee equals the own-network costs for termination of the call generated by the other network, while the variable fee is zero.

- Short Message Service interconnection is a novel regulatory issue. CONATEL is the first Latin American regulatory body to order the interconnection of SMS platforms.
- It is expected that CONATEL's SMS interconnection decision will bring users of both mobile networks great benefits. It enables the interchange of text messages, which have great demand and are perceived as an essential service by users in Venezuela.

Results of Prior Decisions: All SMS providers are connected

The interconnection orders issued by CONATEL related to public telecommunications networks established general, technical and economical conditions to be applied to resolve disagreements among operators. CONATEL's SMS interconnection decision builds on these earlier decisions to ensure that mobile cellular subscribers in Venezuela can exchange text messages among themselves.

Annex A

CONATEL's interconnection orders may be downloaded from its website at: http://www.CONATEL.gov.ve/ns/interconexion.htm. The first interconnection case was brought to CONATEL after basic telephony services opened to competition in 2001.

The following is a list of the interconnection disputes CONATEL has resolved:

1. TELCEL C.A. is a mobile cellular operator that was the first operator qualified to provide basic telephony services in Venezuela. When TELCEL and CANTV were unable to reach an interconnection agreement within the legally required timeframe, CONATEL proceeded to issue an interconnection order.

2. Interconnection orders were issued with respect to TELCEL, C.A. and other mobile cellular operators, including Telecommunications Movilnet, C.A. and Infonet, Redes de Información, C.A..

3. At the end of 2001, mobile cellular operator Cooperación Digitel, C.A. and Veninfotel Comunicaciones (Vitcom), C.C. failed to reach agreement on a variety of interconnection issues. CONATEL subsequently issued an order for the interconnection of their networks.

Annex B

SMS, EMS and MMS Explained

Short Message Service (SMS) is a two-way simple text service for sending short (160) characters) alphanumeric messages to mobile phones. SMS can be used for both “point-to-point” as well as cell-broadcast modes. The service is not unlike e-mail as it involves the asynchronous delivery of text messages, with the difference that messages are delivered directly to a mobile handset and can thus be received by the user anywhere and at anytime. Once a message is sent, it is stored at the SMS message center until it is successfully delivered of “forwarded.” This is knows as a “store and forward” process.

Once a message is sent, it is received by a Short Message Service Center (SMSC), which must then send it to the appropriate mobile device. The SMSC sends an SMS Request to the home location register (HLR) to find the roaming customer. Once the HLR receives the request, it responds to the SMSC with the subscriber's status, reporting whether it is inactive or active and where the subscriber is roaming. If the response is "inactive", the SMSC will hold the message for a period of time. When the subscriber accesses his device, the HLR sends an SMS Notification to the SMSC, and the SMSC attempts delivery. The SMSC transfers the message in a Short Message Delivery Point-to-Point format to the serving system. The system pages the device, and, if it responds, the message will be delivered. The SMSC receives verification that the message was received by the end user, categorizes the message as "sent" and does not attempt to send it again.

As it charged for according to the number of characters, however, SMS is not suitable for lengthy communications—a 640 character message costing four times as much as a 160-charcter one. SMS can originate either on a mobile phone or through a Web-based SMS service. Already, a number of instant messaging (IM) providers have introduced services whereby Internet users can send and receive SMS.

The phenomenal growth of SMS was predominantly user-driven, rather than the result of any targeted marketing efforts. In fact, operators hardly expected this simple technology to become a popular service and a significant revenue booster. Once the potential of SMS became clear, however, companies began exploiting the broadcast mode and offering a wide array of billable information

services. These services include local and international news, stock updates, weather forecasts, banking information and travel information.

As the phenomenal success of SMS seems to indicate, person-to-person messaging will most likely continue to drive mobile data revenues for some time. Correspondingly, the adoption of EMS (enhanced messaging service) and MMS (multimedia messaging service), in combination with the increased use of prepaid services, are likely to become crucial drivers of the mobile Internet.

EMS is similar to SMS in terms of the store-and-forward process, but also includes additional features, such as the transmission of a combination of simple melodies, pictures, sounds, animations, and modified text as an integrated message. The combination of several short messages together will be a key technical feature of EMS.

MMS, based on a new global standard, will provide more sophisticated messaging than EMS and SMS, allowing users to send and receive messages with formatted text, graphics, audio and video clips. MMS will require new network infrastructure as well as MMS-enabled handsets. Unlike SMS and most EMS, MMS are not limited to 160-characters per message.

Source: ITU Internet Reports, Internet for a Mobile Generation, September 2002 and
http://isp.webopedia.com/TERM/S/short_message_service.html

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ITU Brazil Mini-Case Study 2003

Multimedia Communication Service: A New Service Category to Promote Convergence

International Telecommunication Union (ITU)

DRAFT ITU BRAZIL CONVERGENCE MINI CASE STUDY

This mini-case study was conducted by Gustavo Tamayo of JOSE LLOREDA CAMACHO & CO., Bogota, Colombia with the active participation of the country collaborator Mr. José Gonçalves Neto of the AGENCIA NACIONAL DE TELECOMUNICAÇIONES, ANATEL. The views expressed in this paper are those of the author and do not necessarily reflect the views of ITU, its members or the Government of Brazil.

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DRAFT ITU BRAZIL CONVERGENCE MINI CASE STUDY

Multimedia Communication Service:

A New Service Category to Promote Convergence

1. General Background

Brazil is the fifth largest country in the world with a population of about 173.8 million, a GDP of approximately USD 508.5 billion and a GDP per capita of USD 2,959. Until the end of 2001, Brazil was the largest Latin American economy and eighth largest economy in the world. In 2002, Brazil became Latin America's second-largest economy after Mexico, and its ranking in the world economy fell to eleventh place. Nonetheless, having the largest population of Latin America and the second-largest population in the western hemisphere, Brazil is one of the most important emerging markets in the world. Although Brazil's history of privatization and liberalization of its telecommunication sector is recent, it has earned a reputation for effective sector reform.

Since 1998, as a result of privatization and the introduction of competition, Brazil's telecommunications market has grown at a rapid pace. The fixed telephony teledensity rate increased from 8.6% in 1996 to 27.9% in 2002. Likewise, mobile telephony subscribers increased from 2,451,008 in 1996 to 40,851,400 in 2002.[1] This outstanding performance came as a result of the new Telecommunications Law of 1997 and the auction of Telebras in 1998, which generated USD 19 billion of investment from foreign and local investors.

[1] ITU Indicators from www.itu.int/itu-d/ict/statistics/

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Until 2002, Brazil was divided into a series of operating regions. Each fixed line operator had one fixed line competitor in the region in which it operated, as well as two competing cellular companies.[2] Competition has now increased since local telephony operators, who were initially restricted to in-region services, have been subsequently authorized by AGENCIA NACIONAL DE TELECOMUNICAÇIONES (ANATEL), Brazil's regulatory agency, to provide new telecommunications services other than those indicated in their concession contracts. These additional services include international long distance, local telephony service throughout the country, and wireless telephone services[3].

2. Regulatory Background

The Telecommunications Law of 1997[4], which "changed the role of the State from telecommunications service provider to sector regulator and policy maker" was the main legal instrument through which Brazil's telecommunication sector was privatized and opened to competition. A comprehensive description of Brazil's telecommunications privatization and liberalization process can be found in ITU Effective Regulation Case Study: Brazil 2001 (available at http://www.itu.int/ITU-D/treg/.) Although, Brazil may have started the liberalization process later than other countries, ANATEL has launched a number of regulatory initiatives to promote convergence.

3. Convergence

[2] By the means of the General Concessions Plan of April 1998 Brazil was divided into three different fixed line regions, one area for long distance services and eight regions for mobile services. Operators were allowed to provide services only within their respective concession area.

[3] In April, 2002, Telesp was granted a long-distance license; in August 2002 Embratel was able to obtain a license to operate local telephone services throughout Brazil; and Telenorteleste Participasoes TNL received authorization to launch new services and expand outside of its operating area. Following ANATEL's authorization, TNL launched wireless telephone services in June 2002. In July 2002, TNL launched international and domestic long distance and data transmission service nationwide.

[4] Other regulatory milestones include: (i) the issuance of Constitutional Amendment No. 8 "which authorized the entry of private, domestic, and foreign investment into the telecommunications sector"; (ii) The minimum law, which "required only specific market segments to be open to competition, namely mobile cellular, satellite telecommunications signal transportation, and value added services".

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Regulation is often slow to adapt to technological developments such as convergence. Past ITU reports have explained that "despite the widespread availability of digital communication technologies, the movement behind convergence only really came about with the advent of a

dominant single data communications standard, namely TCP/IP[5], the Internet protocol which brought together multimedia capabilities with a simple protocol"[6]. As in the rest of the world, the advent of TCP/IP in Brazil has brought the ability to integrate Information Technology "IT" hardware and software into telecommunications systems, digitizing networks and making possible an increased array of Internet Services. Furthermore, as is also the case in Brazil, "Information and Communication Technologies (ICT) convergence may also involve an attempt to integrate telecommunication and broadcast media regulations. As networks become digitized and broadband capacity is established, telecom broadcast services can be provided over the enhanced information infrastructure and on the Internet"[7].

ANATEL began addressing the convergence phenomenon in 2001, when, with the assistance of ITU, the agency studied the impact of technological developments in the telecommunications sector, including broadcast and information technology[8]. The only precedent in regulating convergence in Brazil at the time was Resolution 190 of 1999, the purpose of which was to facilitate interconnection between mass communication service infrastructure, such as cable, satellite and MMDS networks[9] and valued added infrastructure, mainly Internet infrastructure. This Resolution was intended "to allow the use of that

[5] TCP/IP is defined as a set of protocols including Transmission Central Protocols (TCP) developed for the Internet in the 1970's to get data from one network device to another. TCP uses a retransmission strategy to insure that data will not be lost in transmission.
[6] ITU Trends in Telecommunication Reform 1999: Convergence and Regulation, Foreword.
[7] Anders Henten – Rohan Samarajiva – William H. Melody, Designing Next Generation Telecom Regulation: ICT Convergence or Multisector Utility?, January 2003, p. vii.
[8] See Section 3.5 of ITU Effective Regulation Case Study: Brazil 2001, p. 10.
[9] Multichannel Multipoint Distribution Service (MMDS) is a broadcasting and communications service that operates in the ultra high frequency (VHF) portion of the radio spectrum between 2.1 and 2.7 GHz. MMDS is also known as wireless cable. It was conceived as a substitute for conventional cable television. However, it also has applications in telephone, fax and data communications.

infrastructure (cable, TV, satellite TV and MMDS) by any (operator) for the provision of Value Added Services (VAS) like Internet Access"[10]. The Resolution generated an increase in the number of cable modems users in Brazil from 88,000 in 2001 to 131,000 in 2002, representing 19% of the total broadband users in Brazil[11]. Resolution 190 was also geared towards promoting free-market competition between Internet Service Providers by permitting the use of cable TV infrastructure without having to invest in a new network.

4. Multimedia Communications Services

After a thorough analysis and public consultation, ANATEL issued Resolution No. 272 on 9 August 2001, regulating Multimedia Communication Services. Multimedia Communication Services, or Serviços de Comunicaçao Multimídia in Portuguese, are referred to in this report by their Portuguese acronym, SCM.

Services Covered by SCM

According to Resolution 272/01, SCM refers to multimedia information, described as "audio, video, data, voice (corporate voice) and other sound, image, text and related signals, conveyed, sent and received through fixed telecommunication services rendered by the private sector in the collective interest[12], on a domestic or international basis and in any format, to subscribers within a certain service area"[13].

SCM was devised and regulated by ANATEL to accommodate the growing need for convergence of telecommunication services, as well as to conform to the technologies recently

[10] Speech by Dr. José Leite Pereira Filho, member of ANATEL Board, "The Broadband and Digital Broadcasting Conference", American Chamber of Commerce – Sao Paulo, 23 April 2003, p. 10.
[11] Idem.
[12] The Telecommunications Law introduced two new service classifications. *Collective Interest Services* are those services that must be rendered by the service provider to any interested party, without any kind of discrimination. *Restrictive Interest Services* are services to be used by the provider itself or rendered to a specific group of users chosen by the service provider.
[13] Article 67 of Resolution 272/2001.

developed in an increasingly globalized telecom market. The following are some of the most important applications under SCM: "broadband access to Internet, data communications, audio and video, telemedicine and tele-education"[14]. The basis of this new service is to avoid the need for multiple authorizations to cover a wider range of information transmission means[15].

Additionally, Regulation 272/2001 allows SCM providers to access the Public Switched Telecommunications Network (PSTN), so that calls may be freely made from the PSTN to SCM users and vice-versa anywhere in Brazil. In other words, calls must originate or terminate with an SCM user. SCM operators are prohibited from providing services with the same characteristics as those of the Public Fixed Telephone Service.

There were initial doubts as to whether SCM would be allowed to provide pay TV services, given that Article 67 of Resolution 272/2001 could be construed as enabling "SCM operators to transmit audio and video signals of either (1) certain events, or (2) on the basis of a contractual relationship, or (3) in the form of pay per view"[16]. Furthermore, national broadcasters challenged article 67 before the courts, arguing that it violated their exclusive right to broadcast to the public. However, the Court of Appeals rejected this argument and upheld Article 67[17]. ANATEL further clarified the court decision through Sumula 06 of 24 January 2002 which specified that the SCM licenses did not authorize its holder to provide: (i) public fixed telephone service; (ii) free live TV and radio broadcasting; and (iii) paid TV.

In addition to the license, the SCM operator must comply with the Terms of Authorization. "The Terms detail the obligations of the operator in a fashion very similar to that of a

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[14] Presentation of Dr. Jose Leite Pereira Filho, Member of the Board of ANATEL, to ITU-T Seminar, Multimedia in the 21st Century, Portosegura, VA, 4 June 2001, p. 9.

[15] The SCM replaced, among others, the so-called network and circuit services, telecommunication transport network services, packaged commuted network services and circuit commuted network services, which were cataloged as "specialized limited services". As of August 9, 2001 ANATEL decided not to issue any further "specialized limited services" license. The operators who had these types of licenses are now required to request the adaptation "adaptaçao" of their former specialized limited services into SCM licenses.

[16] Designing Next Generation Telecom Reform. Annex to Draft Report, Country Summaries, www.regulateonline.org

contract"[18]. The purpose of the Terms of Authorization is to "clarify the conditions under which SCM operators will be able to transmit video, voice and data in order to differentiate SCM from existing Paid TV Operators. SCM shall be used for videoconferences, educational television and transmission of signals between producers and TV Broadcasters, i.e., not for pay-per-view exhibitions. The SCM regulations are not linked to the transmission means used by the SCM operator[19].

License Requirements

There are no limits to the number of licenses that ANATEL may issue. In fact, by December 2003, 151 different companies had obtained an SCM license[20]. The fee for the license is 9,000 "reais", equivalent to approximately USD 3,000. If the SCM provider uses radio frequencies to render the service, it must pay an additional fee for the use of those frequencies established under Resolution 68 of 1998[21].

Terms and Conditions of the License

The SCM license is granted for an indefinite term, and does not require prior bidding. The interested party must submit an application and if certain minimum requirements are met, the license shall be granted[22]. The SCM licenses are granted on a non-exclusive basis and the

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[17] Idem

[18] The L.I.N.K. offering Multimedia Communication Services-March-April 2003 is www.thelink.lu

[19] The following transmission means among others may be used for SCM: Frequency bands: 2.5, 3.5, 10.5 and 24 to 31 GHz; MMDS Network; DTH Network; Cable TV Network; XDSL Technology.

[20] Information obtained from ANATEL's web page http://www.ANATEL.gov.br.

[21] Resolution 68 of 1998 establishes the terms and conditions under which radio frequencies must be paid for. The system is based on bandwidth usage and other considerations. Also, according to radio frequency rules (Resolution 259 of April 2000), the following frequencies are reserved for fixed local telephony and to SCM: 3.450 MHz to 3.500 MHz; 3.550 MHz to 3.600 MHz; 10.15 GHz to 10.30 GHz; 10.50 GHz to 10.65 GHz; 25.35 GHz to 28,35 GHz; 29,10 GHz to 29,25 GHz and 31,00 GHz and 31,30 GHz.

[22] Requirements are posted in ANATEL's web page and they refer to: (i) information regarding the applicant, including declarations of their partners that they do not participate in other companies rendering the same service; (ii) documents attesting to the technical qualification of the company requesting the license; (iii) a declaration of financial solvency; and (iv) evidence on being current on its tax obligations.

licensees are obliged to comply with telecommunications regulations applicable to all telecommunication operators. The licenses provide for the rendering of the services to subscribers throughout Brazil and internationally.

SCM License Success

The regulation establishing the SCM service has been considered a success. The fact that more than 150 companies have obtained an SCM license speaks for itself. Additionally, license holders have highlighted the advantages of SCM[23]. One operator, for example, announced that its SCM license, which replaced a previous specialized limited services license, would enable it to offer transmission capacity, as well as to send and receive multimedia content to subscribers throughout Brazil and internationally. Likewise, ANATEL's latest announcement regarding SCM licenses mentioned that the operator, Life Soluçoes EM Internet S/C Ltda., had been granted a license to provide SCM for an indefinite term on a non-exclusive basis to subscribers throughout Brazil and internationally. This company announced that it plans to use its SCM license with the purpose of providing "corporate network services, intranet, extranet, Internet access, web server hosting, e-mail, and video conferences, among others".

[23] AT&T Latin America and Global Crossing made public announcements on their respective SCM licenses.

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ITU Colombia Mini-Case Study 2003

Implementing Capacity-Based Interconnection Charges

International Telecommunication Union (ITU)

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The Telecom Vs. Telefónica de Pereira Case: Implementing Capacity-Based Interconnection Charges

1. General Background

Located in the Northern region of South America, Colombia has a population of over 43 million and a gross domestic product (GDP) of about USD83.4 billion. It has over 7.3 million fixed lines in service, for a fixed line teledensity rate of about 17.1% and approximately 4.5 million mobile subscribers, for a mobile cellular penetration rate of 5.33%. There are 98,859 public phone lines, or a penetration rate of 0.23%. The personal computer ownership rate is 3.31 per 100 inhabitants, and Internet user density is about 2.07%.

Additional information regarding the telecommunications sector in Colombia is included in Annex 1.

2. Sector Overview and Regulatory Background

There are 32 local telephone companies operating in Colombia today, many of which were initially established as private companies providing local telephone services. Over the years, several of these local companies became public concerns owned by their respective municipalities and cities. As a result, the participation of private capital in local telephone companies today is very small. This trend, however, is changing. The city of Bogota, for example, has initiated a public stock offering for its local operator.

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Telefónica de Pereira (TDP), owned by the city of Pereira, is one of 32 local operators in Colombia. Colombia Telecommunications (Telecom) is a government-owned long distance operator. Telecom was the sole long distance operator for fifty years. Today Telecom competes with two other long distance operators, Orbitel and 007 World ETB[1].

For many years, the local operators and Telecom shared long distance calls revenues in an arbitrary manner, without taking into account the actual use of their respective interconnected networks. Local operators received a substantial portion of the revenues generated by high international call tariffs, thus allowing them to charge very low tariffs for local telephony service. Indeed their tariffs, which were subsidized by international revenues, were below the real costs and efficient performance of the service. The surplus revenues earned by the local companies from the profitable long distance market segment was traditionally used to cover losses on non-profitable services such as local telephony. Resolution 087 of 1997[2] expressly abolished such cross subsidy practices.

In 1994, the Congress issued Law 142, granting CRT the authority to establish rules for the use of telecommunications networks and to develop the formulas necessary to calculate access charges. Law 142 also stipulates that tariffs to end-users should be based on efficient costs plus a reasonable profit[3].

In order to comply with its legal mandate to terminate cross-subsidy practices and to rebalance local and long distance tariffs, CRT issued a series of regulations[4], the last of

[1] Orbitel is 50% owned by the City of Medellín and 50% by Colombian local investors, Grupo Santo Domingo and Grupo Sarmiento. 007 World ETB is owned by the City of Bogota and by private investors who hold a minority share.

[2] Resolution 87 of 1997 abolished the cross subsidy scheme created by former Decree 1593 of 1976. Decree 1593 regulated the relationship among the local telephone companies and the long distance operator until 1997.

[4] Law 142 applies to public utilities including water, sewage, trash collection, electric power, natural gas, fixed public telephony and rural mobile cellular telephony.

[4] Resolution 23 of 1995 established the per minute access charge that long distance operators pay local operators, replacing the previous revenue sharing arrangement. Resolution 23 further adopted the access charge mechanism called the Index of Tariff Updating, explained in further detail in Annex. 2. This Index

which was the Unified Interconnection Regime, known in Colombia as RUDI[5], the Spanish acronym for "Régimen Unificado de Interconexión". Colombian regulations use the terms "interconnection charges" and "access charges" interchangeably. CRT defined[6] access or interconnection charges as mandatory payments made by long distance or cellular operators to local operators for their use of the accessed network. Network use can be measured in terms of time units, for example, minutes, or in any other appropriate manner, for example, capacity, such as the availability of an E-1 circuit[7]. In other words, the term "access charges" refers exclusively to the use of the accessed network and does not include those services categorized as "additional services." Additional services include traffic registration and measurement, consumer claim management, failures and errors and collocation costs. Some of these services are subject to separate regulations while others are not regulated at all.

3. Convergence and The Unified Interconnection Regime - RUDI

Today, multiple services can be offered through a single network. In 2000 CRT addressed convergence by issuing the Unified Interconnection Regime "RUDI". RUDI includes a clear set of obligations and principles that apply to all telecommunications operators and service provides, as well as special obligations that apply only to selected operators.[8] While the RUDI regime provides for as little intervention as possible from CRT, it also enables the regulator to facilitate interconnection negotiations and stimulate convergence and the

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replaced existing interconnection agreements made between local and cellular operators, between long distance and cellular operators and between local operators. Resolution 23 further set the framework for intervention by CRT, defining the legal, technical, operative and economic conditions by which CRT may impose mandatory interconnection. Resolution 055 of 1996 introduced the concept of efficient costs as a requisite in establishing end user tariffs. Resolution 087 of 1997 reiterated that tariffs to end-users should be directed to efficient costs. Decree 1130 of 1999 granted CRT the authority "to issue all the regulations of general and particular character in the matters related to the interconnection regime, competition rules and those inherent to the resolution of conflicts between operators".

[5] Annex 3 describes the principles and obligations set forth in RUDI.

[6] RUDI was adopted into Colombian regulations through Article 1.1, Resolution 469 of 2002.

[7] An E-1 circuit carries signals at 2 Mbps (32 channels at 64Kbps, with 2 channels reserved for signaling and controlling). A T1 circuit carries signals at 1.544 Mbps (24 channels at 64Kbps). E-1 and T1 lines may be interconnected for international use.

[8] A summary of RUDI obligations and principles is available in Annex 3.

efficient use of existing infrastructure. One of the main tools RUDI adopted is the option of capacity-based interconnection charges, under which the operator that interconnects with another operator pays a flat monthly charge corresponding to its anticipated peak period traffic. Effectively the interconnecting operator leases circuits from the operator providing interconnection. The price is calculated based on the premise that the operator providing interconnection for the service shall recover its administrative costs for operation and maintenance of the network, plus a reasonable profit, independently of the volume of traffic. The risks associated with traffic fluctuations are assumed by the operator that purchases capacity. CRT also set per-minute charging alternatives, meaning that operators requesting access have the choice between per-minute and capacity-based rates.

CRT's capacity-based approach to interconnection is unique in Latin America. It responds to a need for efficient and economic access charges that result in lower tariffs for the consumer.

CRT established the interconnection tariff at prices that permit local companies to continue operating in a more efficient way. The idea was to prevent local operators from continuing to charge excessive interconnection tariffs to finance other operations, usually as a response to political requests from their Colombian city and municipality owners. In other words, the interconnection access tariffs set by CRT focus on the operational costs of the local companies and not on political considerations[9].

CRT divided local operators into three categories based on their financial situation, each category applying a different tariff for access charges, as described in Annex 4. The first category includes local operators, whose financial situation is less dependant on interconnection charges; the second one on operators who depend on interconnection

[9] CRT set the interconnection tariff after reviewing a variety of reference materials, including the value of the investment in an E1, equivalent to USD8,000 amortized over a five-year term in accordance with the actual interconnection agreements already executed by local companies. Likewise, the Spanish Market Telecommunications Commission "Comisión del Mercado de las Telecomunicaciones de España CMT", was

charges to some extent, and the third category includes operators that depend heavily on interconnection charges. CRT fixed interconnection tariffs for each of the years between 2002 and 2005, decreasing the tariffs by approximately 10% each year.

TDP falls into the second category. The interconnection tariff for this category was set at COP11,540,000 (approximately USD4,615)[10] and it is scheduled to decrease to COP9,350,000 by 2005 (approximately USD1,245)[11]. CRT is expected to review these tariffs in 2005. Operators may request CRT to review the tariffs before 2005 if it finds them unfair. CRT has not yet had the occasion to modify these tariffs. CRT has also set a capacity based interconnection tariff for cellular operators, including personal communication systems PCS[12], that applies only to communications initiated from the long distance carriers' network or from another cellular operator and terminated on a cellular terminal device. In the case of fixed local to mobile network traffic, the cellular operators are paid at their full tariff, and thus, are not subject to interconnection tariff regulations.

4. The Telecom and Telefónica de Pereira (TDP) Conflict. Implementation of Capacity Based Interconnection Rates.

The Conflict: Under the RUDI regime, the operator requesting interconnection or the operator who had previously requested it under the former legislation, (usually a long distance operator[13]), has the right to choose between the traffic-based tariff or the capacity-based tariff. At the beginning of 2002, Telecom requested Telefónica de Pereira "TDP" to amend its interconnection agreement and adopt capacity-based charges. After the parties failed to reach agreement, TDP requested CRT to intervene on 8 March 2002. TDP alleged

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used as a source. The CMT introduced interconnection capacity based charges in resolution CMT of 9 August 2001 and fixed the tariff at COP4,055,000, approximately USD1,500.

[10] At the exchange rate of USD1= COP2,750.

[11] At the exchange rate of USD1= COP2,750.

[12] PCS: Abbreviation for Personal Communications Service, a set of capabilities that allow terminal mobility, personal mobility, and service profile management. The flexibility offered by PCS can supplement existing telecommunications services, such as cellular radio, used for NS/EP missions. Under Colombian law PCS has the same prerogatives as cellular companies and compete with them on an equal basis.

[13] Annex 5 documents traffic volume trends and shows greater traffic flow from long distance to local operators.

that TELECOM's decision to adopt capacity-based charges would cause serious damage to its financial situation since it would have to modify its interconnection infrastructure to adapt to TELECOM's requirements, In fact, the previous interconnection agreement between TELECOM and TDP required 90 E-1 circuits, but TELECOM argued that only 36 E-1s were necessary. TDP also alleged that the payments for access charges made by TELECOM to TDP would be reduced substantially under the new regime. This dispute marked the first conflict to arise after the introduction of the capacity-based tariff regime in which CRT's intervention was requested.

The solution to the conflict: In May 2002, CRT called the parties to mediation, but no agreement was reached. CRT therefore issued an administrative act setting the procedures to be followed to resolve the conflict. CRT appointed an expert[14] who based his recommendation on traffic measurements, interconnection safety factors, and capacity usage. CRT followed the expert's recommendation and published in Resolution 541 of 19 September 2002 its decision requiring TDP to proceed with the interconnection of 47 E-1 capacity links, 11 E-1s more than TELECOM had requested. TDP was ordered to increase its capacity within three days following the date the decision became enforceable. In addition, CRT fixed the monthly price to be paid for each E-1 to COP11,540,000 (approximately USD4,150) payable from the date from which the administrative decision was taken, 17 April 2002. The decision was appealed[15] by TDP and CRT affirmed its final decision in December 2002.

This decision has had an important impact since it laid the foundation for subsequent dispute resolution and sent a clear message to the telecommunications sector on how CRT is likely to handle and solve future interconnection disputes.

[14] The expert appointed by CRT was registered on CRT's list of experts. To be registered, experts must have experience in network design, an electronic engineering degree and substantial regulatory experience. All of the presently registered experts are from Colombia.
[15] A reconsideration petition was filed with the CRT by Telefonica de Perira.

The future: It is expected that this decision will promote more efficient network usage by local telephony companies as well as operators requesting interconnection. The reduction in access charges will force local operators to find other market segments, such as data communications and the Internet to increase their traffic and compensate the loss of revenues generated by voice services.

It is also expected that the reduction in interconnection charges will result in lower end-user tariffs for voice and data services. This is particularly important for data customers where packaged information and flat tariffs are required.

Likewise, capacity-based interconnection charges will certainly provide for greater competition in the local market, an increase in Internet penetration figures , and will secure efficient and non-discriminatory entrance of PCS services[16].

Local telephone operators have challenged CRT's decisions arguing that the new regime could only be applied to new interconnection agreements or to interconnection agreements already in effect at the time RUDI was issued. If the courts were to accept these arguments, the implementation of capacity based interconnection costs could be delayed but not reversed. While it may be difficult for local telephone companies to accept a reduction of income from access charges, the general public also has a strong interest in lower tariffs and increased Internet access[17].

[16] PCS Service began in Colombia on November 2002.
[17] Telefónica de Pereira and other local telephony operators have challenged CRT's decisions with respect to capacity based interconnection. The Administrative Courts have not yet issued any decision. The timeframe for a decision to be rendered is a maximum of two years.

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ANNEX 1

BASIC STATISTICS ON THE COLOMBIAN TELECOMMUNICATIONS SECTOR

Sector Income Evolution

Income (COPBillion)	2000	2001	2002
Local Telephony[1]	1.396	3.553	3.802
Long Distance	1.408	1.584	1.519
Cell-Phone Telephony	826	1.072	1.585
Valued Added Service	283	371	415
Other	1.418	1.916	2.088
Total	**5.331**	**8.496**	**9.409**

1: Includes local extend, rural mobile telephony, access charges.

Local Telephony. Largest Companies/2002

Company	Working Networks	%	Icome	Net Profits
ETB	2.033.972	27%	1.310.446	253.792
TELECOM[1]	1.646.431	22%	1.530.422	**-677.618**
EPM GROUP	1.622.944	22%	1.126.548	184.412
TELEASOCIADAS	1.008.412	13%	416.522	59.350
EMCALI	507.004	7%	269.374	27.811
OTHER	703.237	9%	255.994	13.202
TOTAL	**7.522.000**		**4.909.306**	**-139.051**

1. Projected based on information from SSPD – June. Income and net profits in Col$million

Evolution of the indicators of Local Telephony

	2001	2002 py
Return over Patrimony (Roe)	6,44%	2,13%
Net Margin	9,27%	3,38%
Operational Margin	-1,33%	-3,46%

Profitability including Telecom

National Long Distance Traffic	2000	2001	2002
Telecom	2.828	173	2.150
Orbitel	514	582	768
007 Mundo	272	386	466
Total	**3.614**	**1.141**	**3.384**
International Long Distance Traffic	**2000**	**2001**	**2002**
Telecom	209	173	132
Orbitel	71	100	121
007 Mundo	62	80	102
Total	**342**	**353**	**355**

In Million Minutes

Mobile Telephony. ARPU Evolution	2001	2002
East Bellsouth	0.4	0,45
Comcel	0,3	0,3
West Bellsouth	0,5	0,5
Occel	0,2	0,3
Bellsouth Costa	0,4	0,5
Celcaribe	0,3	0,37
Total Country	**0,3**	**0,34**

COPMillion. ARPU: Average revenue per

Mobile Telephony		2001	2002
East Bellsouth		0,6	0,7
Comcel		1,2	1,8
West Bellsouth		0,4	0,5
Occel		0,7	1,1
Bellsouth Costa		0,2	0,3
Celcaribe		0,2	0,2
Total Country		**3,3**	**4,6**

Working networks (million)

Source: CRT. Sector Report 2002

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ANNEX 2
HOW THE TARIFF UPDATING INDEX (IAT) WORKS

CRT has defined the IAT in order to update the interconnection charges for the monthly use of local, extended local and rural mobile networks. The index is formed by elements that generically reflect the cost structure of an average telecommunications operator in Colombia. The ingredients are as follows:

- Employees' Minimum Salary Index (ISS). This element is incorporated into the IAT to reflect the local labor component, and contains variations in salary levels in Colombia.
- Producer Price Index (IPP). This component measures the variation in the cost of local inputs acquired by operators.
- Average peso duties on telecommunications imports (USD). This component attempts to measure materials, goods and services required by the industry from other countries. There are two elements involved: the average import duty for telecommunications goods and the peso/dollar exchange rate.
- The weighting is: a=0.33, b=0.29, and c=0.38

Access charges are updated when there is a variation of at least 3% in any of the indicators used in the IAT formula. A summary of the original interconnection charges in Colombian pesos is:

Interconnection	Date	Amount
Local cellular	Oct 1993	24/minute
Local – long distance	Mar 1997	30/minute
Local-Extended local	Sep 1996	10/pulse[18]

In December 2000 the IAT formula was applied and interconnection charges rose to the following charges in Colombian pesos:

Interconnection	Date	Amount
Cellular-local	Dec 2000	67.20/min
Long-distance – local	Dec 2000	51.15/min
Local – Extended local	Dec 2000	17.05/pulse

[18] The pulse is the unit of measurement for charging and billing local telephony, and is approximately 3 minutes.

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ANNEX 3

RUDI PRINCIPLES AND OBLIGATIONS

Type A General Principles and Obligations for all telecommunications operators.

- Right to interconnection. Applications should be made to suit traffic needs and characteristics of the services to be rendered.
- Duty to allow interconnection. Operators must provide interconnection directly or otherwise without imposing any requirements other than those in the regulations.
- Direct negotiation. The operators have the right – and a matching obligation – to work on access contracts in good faith and by direct negotiation, only calling on CRT to intervene if no agreement is reached.
- Indirect interconnection. This is the right to route traffic of other operators to the network of the interconnected operator without contravening the regulations for each service, and subject to certain rules.
- Non-discrimination (neutrality). The principle is satisfied by applying equal access for equal charges.
- Remuneration. The operators' right to receive reasonable consideration for the use of its infrastructure.
- The right to free negotiation of access costs, use and interconnection of networks. If no agreement is reached the operator making the request will bear the costs required to reach the interconnection points of the interconnecting operator.
- Separation of costs by elements of the network. The costs for effecting interconnection will be suitably unbundled so that the requesting operator does not have to pay for elements he does not need.
- Interconnection points. Interconnection will be provided at any point of the network where it is economical and technically feasible to do so, and requesting operators may not be required to connect at a larger number of points than necessary to guarantee the quality of the service.
- Additional services and provision of essential installations. Operators must negotiate for these services and for the installation of the equipment required for interconnection. Prices should be based on cost plus a reasonable profit.
- General technical aspects. Nine technical aspects are defined, including the establishment of alternative routes, minimum lag times and indicators of completed communications.
- Signaling. Operators are free to negotiate the adoption of the signaling standard that bests suits them.
- Provision of necessary information. Operators entitled to interconnection must receive effective and prompt access to technical and commercial relevant information.
- Information on traffic for proposing and maintaining interconnection. Operators will keep available, and will circulate among each other, information on traffic estimates

in order to dimension their interconnection; this must be reviewed every six months and included in the interconnection contract.

- Use of information and public knowledge of the contracts, confidentiality clauses and the handling of public information.
- Information for CRT. All operators must provide CRT with the technical, operational and economic information related to their networks at the request of CRT and for CRT's purposes.
- Other: network indicators, signaling for international interconnections, minimum signaling conditions, transmission, compliance with international commitments, traffic routing restrictions.

B-Type Obligations, for PSTN, Mobile Cellular and PCS operator when interconnecting with each other.

- Absolute obligation to interconnect with networks of:

- PSTN with local PSTN
- Local and Extended Local with Extended Local
- Long-distance with Extended Local
- Rural Mobile with other telecommunications networks
- Rural Mobile using satellite solutions
- Mobile Cellular and PCS with PSTN networks
- Mobile Cellular with PCS networks
- Special rules for Long-distance interconnection
- Access to PSTN by operators of telecommunications services using trunking access systems
- New PSTN operators with the PSTN, Mobile Cellular and PCS operators

- Characteristics of interconnection nodes
- Availability of capacity to provide the interconnection
- Exception of available capacity
- Basic offer of interconnection. Operators must make their offers available and update them for consultation by anyone. The offer must be registered with CRT before 1 November each year and be published and updated on the webpage of each operator.
- Availability of essential installations. "Essential installations" for interconnection are defined as follows:

1. Switching
2. Signaling
3. Transmission between nodes
4. User Assistance services
5. Operational support systems
6. Civil infrastructure
7. Billing, distribution and collection
8. Automatic roaming between mobile network operators

9. Physical space and additional services required to install equipment required for interconnection. CRT may include or exclude, on a case-by-case basis, the list of installations considered essential.

- Signaling for PSTN, mobile cellular and PCS networks
- Parameters of signaling quality
- Routing
- Availability of overflow
- Routing of PSTN international traffic
- Synchronization
- Distribution of degradation
- Transmission
- User information
- Numerical information of users and telephone directory service
- Access charges to telephony networks:
- Charges between local PSTNs
- Special cases for local PSTN service
- Special cases for towns with the same numbering
- Access and use charges for extended local networks
- Access and use charges for the Rural Mobile networks by PSTN and mobile telephony operators
- Access and use charges for calls from public telephones
- Access charges between PCS and Mobile Cellular networks.

C-Type obligations applicable to operators in a dominant position in relations to any other operator.

- Determination of the existence of the dominant position for interconnection purposes. Analysis of the relevant market(s) that are or might be affected by the interconnection or service analyzed. There are six criteria.
- Segregation. Any operator with a dominant position may be obliged to offer separately the element(s) of its network or services that give it that position, as determined by CRT.
- Exclusion of certain obligations for an operator in a dominant position
- Access charges for networks of operation with a dominant position in the market.

D-Type obligations, To be satisfied by all operators and by persons who own, hold, possess or on any title exercise rights over an item which can be considered an essential installation to allow them to make use of it, as determined by CRT.

- Access to essential installations
- Charges for access to items considered to be essential installations

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ANNEX 4
TABLE OF ACCESS CHARGES AND OPERATOR GROUPS

Art. 4.2.2.19, Res. 463/2001

"ACCESS CHARGES FOR TELEPHONY NETWORKS: As of 1 January 2002 telephony operators will offer at least the following two options of access charges to operators requesting interconnection:

		Option 1: Per minimum maximum interconnection tariff			
	Group of companies	January 1/02	January 1/03	January 1/04	January 1/05
1. PSTN LOCAL NETWORKS **(2)**	ONE	49.35	43.26	37.16	31.07
	TWO	50.98	46.50	42.03	37.56
	THREE	53.59	51.73	49.87	48.01
2.	Cellular Networks (3)	66.92	97.49	142.02	206.90

(1) Expressed in constant pesos of 30 June 2001 (constant pesos means that the numbers after June 30, 2001 are adjusted to prevent inflation distortion). The updating of constant pesos to current pesos will be effected as directed by Section 4.3.8. This corresponds to the value of access charges that Local PSTNs receive from operators of other services when the latter use the former´s networks for incoming and outgoing traffic.
(2) Annex 008 defines the local PSTN operators that form each of the Groups mentioned here. The values in this option correspond to remuneration per minute. All fractions are rounded up to the next full minute.
(3) Access charges may not be collected at the same time as air-time. This applies to incoming calls for the International Long-Distance PSTN service and any other determined in regulations.

		Option 2: Maximum interconnection capacity charges			
	Group of companies	January 1/02	January 1/03	January 1/04	January 1/05
1. PSTN LOCAL NETWORKS **(2)**	ONE	11,230.000	9,920.000	8,760.000	7,740.000
	TWO	11,540.000	10.760.000	10,030.000	9,350.000
	THREE	11.960.000	11,960.000	11,960.000	11,960.000
2.	Cellular Networks (3)	14,700.000	22,180.000	33,480.000	50,520.000

(1) Expressed in constant pesos of 30 June 2001. The updating of constant pesos to current pesos will be effected as directed by Section 4.3.8. The values in this option suppose a monthly rental of 2,048 kbps/month E-1 or equivalent links. Operators may agree different

values depending on bandwidth required. For the purposes of blocking at interconnection points, operators will observe 1%.
(2) Annex 008 defines the local PSTN operators which form each of the Groups mentioned here.
(3) Access charges may not be collected at the same time as air-time. This applies to incoming calls for the International Long-Distance PSTN service and any other determined in regulations.

PARAGRAPH 1. When the interconnection is not effected directly at the switching nodes in the upper part of the hierarchy of the local PSTN operator, the interconnecting operator will be entitled to receive payment for carrying traffic to other points at the same level at which the interconnection is to be made. Access charges shown here include local dispersion and domestic dispersion for mobile cellular and PCS services.

PARAGRAPH 2: Operators may set differential access charges in Option 1, taking account of peak traffic hours on their networks, provided that they can show that the weighting corresponds to the value provided in this Article.

PARAGRAPH 3: The interconnecting operator may insist on a minimum term of contract for the option of access charges by capacity, which may only be that required to recover the investment in the adaptations for the interconnection. If there should be a dispute on this, the interconnecting operator will immediately supply the interconnection at the prices shown in the table for the option of capacity access charges until the parties reach an agreement or CRT has settled the dispute. If the interconnection is over-dimensioned, the operators may request CRT to settle the differences that may arise from a future return of links. For this purpose the interconnecting operator may insist on the maintenance of the links required to comply with a minimum quality level of 1% blocking, even for peak traffic hours”.

DRAFT ITU COLOMBIA CONVERGENCE MINI CASE STUDY

"CLASSIFICATION OF LOCAL PSTN OPERATORS
FOR THE PURPOSES OF CALCULATING ACCESS CHARGES
(Annex 8 of Resolution 463/2002)

Company	Group
EPM	1
ETB	1
EDT B/quilla	2
Emcali	2
Emtelsa	2
Metrotel	2
Telebucaramanga	2
Telecartagena	2
Telfonica de Pereira	2
Edatel	3
E T Girardot	3
Emtel popayan	3
Telebuenaventura	3
Telearmenia	3
Telecalarca	3
Telecaqueta	3
Telecom	3
Telehuila	3
Telemaicao	3
Telenariño	3
Teleobando	3
Telepalmira	3
Telesantamarta	3
Telesantarosa	3
Teletolima	3
Teletulua	3
Teleupar	3

The Local PSTN operators that do not appear on this list should apply as a maximum use/capacity access charge, that corresponding to the local PSTN that operates in the same market as they".

ANNEX 5
International Long Distance Traffic

International Long Distance Traffic			
Million of Minutes			
Year	**Incoming**	**Outgoing**	**Ratio**
1994	285	97	2.9
1995	344	121	2.8
1996	378	124	3.0
1997	362	154	2.4
1998	398	175	2.3
1999	438	211	2.1
2000	482	342	1.4
2001	530	363	1.5
2002	583	355	1.6
		Source:	Telecom - Division of International Relations
			Calculations by the National Planning Department
		Source:	CRT. 2002 Telecommunications Sector Report
		Stimulated	There are no CRT statistics
			An annual 10% income traffic increase was stimulated

INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

Document: 31

GLOBAL SYMPOSIUM FOR REGULATORS
Geneva, Switzerland, 8-9 December 2003

SOURCE: GSR CHAIRPERSON

TITLE: UNIVERSAL ACCESS REGULATORY BEST PRACTICE GUIDELINES

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Global Symposium for Regulators 2003

Universal Access Regulatory Best Practice Guidelines

We, the regulators participating in the 2003 Global Symposium for Regulators, have identified and propose the following best practice guidelines to achieving universal access to information and communication technology (ICT) services.

An enabling regulatory environment: the role of governments and regulators

1. The success of any universal access/service policy is dependent upon political support at the highest level that recognizes the role of ICTs as a tool for development.
2. It is essential that Regulators exist or be established where they do not yet exist, and that their key role in implementing universal access policies and promoting competition be recognized and reinforced.
3. A series of policy and regulatory reform measures can be taken to achieve universal access to ICTs. These include:
    a. Formulating a national policy that identifies appropriate and realistic universal access/service objectives that take into account the differences between universal access—public access to ICTs—and universal service—household or private access to ICTs.
    b. Including all citizens, regardless of gender, ethnicity, socio-economic level or geographic location, in national universal access/service objectives.
    c. Reviewing universal access/service policies, regulations and practices periodically to adapt to the evolving nature of ICT services and the needs of end users.
    d. Conducting periodic public consultations to the extent possible with stakeholders to identify their needs and modify accordingly universal access policies, regulation and practices.
    e. Designing universal access policies, regulations and practices in order to create incentives for the private sector to extend universal access to communications services.
    f. Establishing a fair and transparent telecommunication regulatory framework that promotes universal access to ICTs.
    g. Adopting technologically neutral licensing practices enabling service providers to use the most cost-effective technology to provide services for end users.
    h. Adopting a framework of interconnection rates linked to costs.
    i. Reducing regulatory burdens to lower the costs of providing services to end users.
    j. Developing an effective regulatory body responsible for implementing policies directed towards assuring the best quality reliable services at the most affordable prices that meet the needs of consumers—existing and future.
    k. Promoting competition in the provision of a full range of ICT services to increase access, affordability, availability and use of ICTs.

4. Countries can use regulatory reform as the first step in achieving universal access, recognizing that further steps may be necessary to achieve ubiquitous access to ICTs, e.g., in rural areas or to users with special needs.
5. Appropriate licensing schemes for rural service providers could be granted to meet the needs of un-served and under-served areas.

B. Access to information and communication infrastructures

6. The lessons learned from the initial experiences developing countries have achieved with mobile cellular services can be applied to a broader range of ICT services to foster universal access. These lessons include providing services in a competitive framework, using new technologies that offer both innovative services and affordable pricing options (e.g., pay as you go options such as pre paid cards) to a wide range of end users.
7. Other measures to promote affordable ICT equipment could include national manufacturing of ICT equipment, reduced customs tariffs and duties, and end-user loans to foster affordability of ICT equipment.
8. A full range of public access options can be developed, including the creation of public telecentres.
9. Local input (including the content useful for local populations) into projects increases their long-term financial sustainability.
10. Educating local people on the benefits of ICTs and their use increases their long-term financial sustainability

C. Guidelines in regard to finance and management of universal access policy

11. Universal service funds can be viewed as an option that complements regulatory reform and developed as a mechanism within a broader market-oriented approach to achieving universal access.
12. Universal service funds can be financed by a broad range of market players, managed by neutral bodies such as regulators, and be used to kick-start public access projects that meet the needs of the local community.
13. Governments may consider a full range of other financing mechanisms, including tax incentives for ICT providers and end users.
14. Competitive minimum subsidy auctions could be used, as an option, to reduce the amount of financing necessary for public access projects financed by a universal service fund.
15. Public access projects can be designed to achieve long-term financial self-sustainability, especially where consideration is given to innovative low-cost technologies.