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Highlights in February



Guy-Olivier Segond, former President of the State Council of the Republic and Canton of Geneva, appointed Special Ambassador for the World Summit on the Information Society

ITU made this announcement in a press release issued on 4 February 2002. Mr Segond is a prominent politician who, in the course of his various elective terms as a member of the Federal Parliament, as Mayor of Geneva and as President of the State Council of Geneva, has always been committed to international cooperation. With a keen eye on human rights, sustainable development and the digital divide, Mr Segond has participated in numerous conferences and meetings at which the focus was on putting new technology to work in the service of human development.

It was in that context that he co-chaired, together with President Alpha Oumar Konaré of Mali, the Bamako 2000 Conference. In addition, he played an active part in the high-level meeting of the Economic and Social Council devoted to new information and communication technologies, which contributed to the Millennium Declaration.

As Special Ambassador for the Summit, the first phase of which is to be held in Geneva from 10 to 12 December 2003, Mr Segond will be responsible for high-level contacts with governments and with agencies of the United Nations system aimed at sensitizing them to the importance of the Summit. In addition, he will be responsible

for contacts with leaders in the private sector aimed at securing their involvement in the preparatory work for the Summit on both the content and financial levels.

Vladimir Petrovsky, Geneva's number one diplomat, bids ITU farewell

On 15 February 2002, Vladimir Petrovsky, Director-General of the United Nations Office at Geneva (UNOG), bade ITU farewell. On this occasion, ITU Secretary-General Yoshio Utsumi awarded Mr Petrovsky the ITU Silver Medal in recognition of his support and dedication to the work and activities of the Union. Mr Petrovsky, who retired at the end of February after 45 years in world diplomacy, was known to the Geneva diplomatic community as "Diplomat number one". Mr Petrovsky lauded ITU for the leading role it played in deploying the *Geneva Diplomatic Community network* (GDCnet) to link the Geneva-based permanent missions and international organizations. He went on to thank Mr Utsumi for his steadfast commitment to extending the benefits of information and communication technologies to the whole world. The "future belongs to ITU", Mr Petrovsky said with regard to the World Summit on the Information Society. Read our *Exclusive interview* with Vladimir Petrovsky in a future issue of *ITU News*.

ITU sets new standard for digital wideband speech coding

Known as Recommendation G.722.2, the new standard, which ITU approved recently, is expected to improve quality for wideband voice applications and services across a wide range of communication systems and platforms. Several important applications are envisaged for the standard. These include: voice over the Internet

protocol (VoIP), third generation (3G) mobile communications, PSTN high-quality audio-conferencing and business applications (both in point-to-point and multi-point situations), streaming audio and speech, ISDN wideband telephony, and ISDN video telephony and videoconferencing. Recommendation G.722.2 is also referred to as the Adaptive Multi-Rate Wideband (AMR-WB) codec. Experts from around the world collaborated in the definition, selection and testing of this new codec, and have stated that they are proud to offer a single standardized solution that can be used across several industries.

The standard has been selected by the Third Generation Partnership Project (3GPP) as the Wideband codec for GSM and 3G wireless W-CDMA applications. This marks the first time that both wireless and wireline services may be able to adopt the same codec. Experts say that the AMR-WB codec is a breakthrough in speech quality. Wideband speech coding, using an audio band of 50 to 7 000 Hz, is said to offer major subjective improvements in speech quality compared to traditional narrowband telephone speech (200 to 3 400 Hz). A bandwidth of 50 to 7 000 Hz improves the intelligibility and naturalness of speech, adds a feeling of transparent communication and eases speaker recognition.

ITU approves new Question on digital cinema

On 7 February 2002, administrations of ITU Member States decided to approve a new study Question on digital cinema broadcasting. Digital cinema is a new service using advanced television technology to emulate the cinema experience by means of electronic delivery of programmes for collective viewing on screens of cinema-like size in cinema-like environments. ■

The importance of WTDC-02 for the World Summit on the Information Society



The global information society continues to evolve at break-neck speed with information and communication technologies (ICT) at the heart of this fundamental transformation. However, the uneven access to ICTs, commonly referred to as the “digital divide”, continues to be a challenge. Governments and regulators have a duty to make sure that telecommunication access is available to everyone. We also have a responsibility to ensure that telecommunication is priced reasonably, making not just the technology, but also the services available and affordable to all sectors of society.

In order to meet these challenges, the International Telecommunication Union is playing an increasingly vital role as a facilitator of international policy-making. This is especially important to the work of the upcoming World Telecommunication Development Conference (WTDC-02) as it addresses the problems of access to ICTs. These include imbalances between developed and developing nations, between urban and rural areas, and between the younger and older generations.

While many middle-income developing countries are making rapid progress to achieve world-class networks, it is in the world's poorest nations where the problems of the digital divide are most acute. The challenge facing WTDC-02 is to show how sector reform and investment in information and communication technologies can make a genuine difference to improving the lives of the world's most deprived. I believe that together we can meet this important challenge.

The most prosperous nations of the world, the G8, have made a joint commitment to address the global inequities of the information society. As part of that commitment, WTDC-02 is holding a special session to discuss both short- and long-term action plans to bridge the digital divide. This will provide critical input for the World Summit on the Information Society (WSIS) to be held under ITU's leadership in 2003 and 2005, at which time a common vision and understanding of the information society will be developed by all of its stakeholders. As a result, ITU finds itself in an historic and privileged position. The work accomplished by WTDC-02, together with that of the United Nations ICT Task Force, the G8, the Global Digital Opportunity Initiative and other international stakeholders will allow us, for the first time, to obtain a commitment to this vision from those at the highest political level on both sides of the digital divide.

Yoshio Utsumi
Secretary-General

International Telecommunication Union

The stage is set for WTDC-02



Welcome to this special issue of *ITU News*.

As you know, ITU will organize the third World Telecommunication Development Conference (WTDC-02) in Istanbul from 18 to 27 March 2002 at the kind invitation of the Government of Turkey. WTDCs are convened every four years.

On this occasion, we thought a special issue was the best way to give you, our readers, the con-

text as well as the detail of what will be at the heart of the discussions in Istanbul. Before I continue, let me offer special thanks to all contributors for their in-depth analysis and invaluable insights into what is at stake.

The Telecommunication Development Bureau (BDT) has been preparing earnestly for WTDC-02, mainly through five Regional Preparatory Meetings which were held in Egypt, Bulgaria, Indonesia, Cameroon and Trinidad and Tobago. For the ITU Telecommunication Development Sector (ITU-D), it is time again to review the work done over the last four years and define future strategies and priorities.

There are lessons we in BDT have learned from implementing the activities and programmes of the last two WTDCs held in Buenos Aires in 1994 and in Valletta in 1998. One of these is that, no matter how hard we may work, there will always be changes in the environment. If we cannot anticipate all these changes, we should strive to adapt to them. It

is for this reason that I hope that the conference will endeavour to be more adaptive, dynamic, creative, and flexible in conceiving the Plan of Action, which will be delivered at WTDC-02.

At the heart of the discussions

WTDC-02 will consider, among other things:

- Regional development priorities and strategies formulated at the five Regional Preparatory Meetings.

- The main activities undertaken by ITU-D in the context of the Valletta Action Plan in the key areas of introducing new technologies, reforming and restructuring of the Member States' telecommunication sector, developing human resources, promoting universal access through rural telecommunication development, developing partnerships with the private sector, and putting in place the appropriate financial policies especially in respect of tariffs and accounting rates.

- Reports of ITU-D Study Groups in the strategies and policies domain (Study Group 1) and development and management domain (Study Group 2).

- The Special Programme for least developed countries (LDC).

- The report of the Telecommunication Development Advisory Group.

- Direct assistance and implementation of technical cooperation projects within the framework of agreements with UNDP and other financing sources.

- Proposals for reforming ITU-D.

- The results of the global symposia for regulators.

- The outcome of the follow-up workshops to the third World Telecommunication Policy Forum 2001 on the theme of "IP telephony".

Defining a new telecommunication development agenda

These are exciting times. The last four years since Valletta have been characterized not just by technological convergence, but also by “stakeholder” convergence. If we look around everywhere, there is enormous enthusiasm and unprecedented involvement in defining a new telecommunication development agenda by all our stakeholders, who range from our Member States, our Sector Members, the private sector, intergovernmental and non-governmental organizations, academia and the general public.

Never before have there been so many new players keenly interested in contributing to the development and promotion of information and communication technologies (ICT).

It is with these technological and “stakeholder” convergences in mind that the ITU Council determined that WTDC-02 will focus on the theme of “Bridging the Digital Divide”. A high-level session on this theme is expected to attract quality participation from stakeholders in the sector.

The need to adapt to rapid technological change is critical if we are to be responsive to the needs of developing countries in a timely manner. The aim should be to manage the environment and not to be managed by it.

Regional Preparatory Meetings have highlighted the need for ITU to provide pertinent assistance to developing countries which have vigorously embarked on a crusade to drive the ICT agenda onto their national development plans. Increasingly, these countries are forging new relationships with the private sector. This is very important because continuously promoting public-private co-financing of infrastructure as a matter of national policy raises a significant management challenge for national, regional and local government units.

However, governments can develop and sustain successful public-private sector partnership only if capable institutions, effective policy frameworks, and clear operating systems are in place to manage each critical step of the project cycle. This is where the leadership’s political will becomes the key ingredient. And I am proud to report that this ingredient is now a definite part of the mix, as leadership is left

in no doubt that ICTs are a solution to socio-economic development.

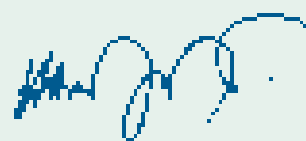
Regional Preparatory Meetings have also re-emphasized BDT’s role as a catalyst and match-maker for potential partners and a tool for sustainable telecommunication development. Stakeholders’ achievements are there to see. We have worked tirelessly together with governments, Sector Members, development partners and other ICT players to develop the telecommunication sector of developing countries, of LDCs, and of countries in special need whose telecommunication infrastructures were destroyed by war or civil strife. We have striven to provide assistance in the true spirit and letter of the Valletta Action Plan.

Anticipated outcome

Based on the review of regional priorities, and of the achievements of the previous four-year action plan, WTDC-02 will work towards adopting:

- *The Istanbul Declaration*, enshrining a shared vision of the future of telecommunications worldwide.
- A *Strategic Plan for Bridging the Digital Divide*.
- An *Action Plan*, which will establish the work programmes for implementing the Strategic Plan in the period 2003 to 2006.

I am confident that WTDC-02 will make a difference, and that its various outcomes will open a new chapter in our collaborative effort to create significant new digital opportunities for the greater benefit of our membership. I can assure you that BDT is up to this formidable challenge and I very much look forward to further discussing these issues with you at WTDC-02.



Hamadoun I. Touré
Director

ITU Telecommunication Development Bureau

WTDC-02: A significant milestone in bridging the digital divide



It gives me great pleasure to welcome you all to Turkey, the crossroads of many civilisations over past centuries as a geographical and cultural bridge between Asia and Europe as well as a “bridge of telecommunications” of recent times because of its historical function. With huge investments made in recent years, Turkey has a unique position in the region in terms of telecommunications, which is in perfect harmony with its geographical location.

As we are all well aware, the world is in the midst of a global information revolution driven by the convergence and proliferation of telecommunications and information technologies shaping the information society of the new millennium.

Information technologies play an ever-increasing role in the social, political, and economic development of every country. While generating wealth and prosperity, IT may also deepen economic disparities and the existing inequalities. Many developing and least developed countries are isolated from recent technological advances and do not have access to personal computers, the Internet and the opportunities these technologies provide.

One of the basic objectives of ITU is to foster development of telecommunications in developing countries and to extend the benefits of telecommunication technologies to all the world's inhabitants. Extension and wider use of information technologies will close the digital divide between those who have access to the information world and those who do not have this access.

It is my sincere belief that the World Telecommunication Development Conference (WTDC-02) in Istanbul, a city which links the two continents, will be a significant milestone in the process of bridging the digital divide, thus contributing to the world's welfare and peace as well.

Expressing once again the great pleasure we have in hosting you all in such a city of uniqueness for the second time after the Radiocommunication Assembly (RA-2000) and the World Radiocommunication Conference (WRC-2000), I trust that WTDC-02 will offer an excellent ground not only for taking up the issues on its agenda, but also for the exchange of views on various matters of common interest, thus achieving its foreseen purposes.

Bülent Ecevit
Prime Minister
Republic of Turkey

Serving ITU is serving humanity

All over the world today, telecommunications and information technologies move at an incredible pace which becomes more and more difficult to catch up with and control. In this context, the main idea on which all the countries have agreed is to offer these ever-evolving technologies to the use of humankind under equal opportunities and conditions. However, the need for single-handed conduct of such a mission has always been felt along with an authority to coordinate. That authority has been ITU for years. It has been very successful in performing its task, and the success it has achieved has been continued into the new millennium as well.

ITU's roots date back to the establishment of the International Telegraph Union, of which the Convention was signed in 1865 by 20 founding Members including Turkey. The Ottoman Empire had participated actively in the work for the establishment of the Union. Despite Turkey's continuous participation in relevant ITU activities for over a period of 135 years, the country had not made a significant contribution until the year 2000 when we hosted the World Radiocommunication Conference (WRC-2000) in Istanbul. Hosting the third World Telecommunication Development Conference, or WTDC-02, is the second important contribution that Turkey will make to ITU.

WRC-2000 was organized by Turkey's main telecommunications operator, Türk Telekom, of which I happened to be the Director General at that time. Remarkable developments have taken place in the field of telecommunications in Turkey since then. One of them is the establishment of the Telecommunications Authority as the independent regulatory body. This time, WTDC-02 is being hosted by the Telecommunications Authority, of which the Presidency is held by myself. Both events are sources of pride for my country.

In full consciousness of the fact that serving ITU is serving humanity, Turkey has already taken action for the third important contribution to ITU. Now, we wish to serve it as a member of the ITU Council which we, unfortunately, could not have the opportunity to serve over a period of 50 years. Among our other wishes are to make further contributions and host some of the ITU's future activities in Turkey again.

Trusting that WTDC-02 will contribute much to all the world's inhabitants, to the world telecommunication sector and especially to the telecommunication needs of the least developed countries, I wish the delegates a very successful and fruitful conference.



Fatih Mehmet Yurdal
President of the Telecommunications Authority
Republic of Turkey

Transforming the digital divide into digital opportunities

ITU-D's challenge over the next four-year period

Tony Zeitoun

*Chairman, Telecommunication Development Advisory Group
and Senior Advisor
Canadian International Development Agency*

The technological progress in information and communication technologies (ICT) continues unabated, generating the creation of “networks” of individuals and communities. The power of these networks is their ability to “connect” these communities by allowing them to access and exchange information and knowledge so crucial for their socio-economic development. Increasingly, we are becoming dependent on ICTs — from radio and television to telephony and the Internet — to obtain our information needs, be it the daily news, the market, weather, education, health or tourism.

Unfortunately, the availability of ICT infrastructure is not evenly distributed in the world and a “knowledge gap” has developed between the information rich and information poor countries. Providing “connectivity” within and between countries will contribute greatly towards narrowing that gap: the digital divide, as it is now called. This divide is already affecting the opportunities for developing countries’ economic



growth and wealth distribution. By inhibiting the equal sharing of knowledge, the digital divide is promoting “information and knowledge poverty” amongst certain groups. If left unaddressed, some countries will reap the benefits of ICTs while others will lag behind, thus exacerbating disparities between developed and developing countries.

The digital divide is an issue of such importance that in recent years, major institutions around the world have risen to the challenge and launched concerted initiatives in a bid to bridge it. These initiatives range from the G8 Dot Force, the UN ICT Task Force, the OAS Institute of Connectivity, development agencies activities to the upcoming World Summit on Information Society led by ITU. A common characteristic running through all these initiatives is the recognition that partnerships between government, private sector and civil society are needed to successfully bridge the digital divide, with the developing countries playing a pivotal role in identifying their ICT requirements.

But ICTs cannot be seen as a panacea for development. They are merely enabling tools, which can facilitate knowledge transfer if they are used effectively. Misuse or misapplication of ICTs can lead to further marginalization of groups. For instance, women in particular, are potentially marginalized by the ICT revolution in some societies. The use of the wrong technology to serve a certain community can potentially discourage them.

The report of the Maitland Commission, *The Missing Link*, released in January 1985 had noble goals "...to bring a telephone within easy reach of every citizen before the turn of the century..." Much has been accomplished to date, but a lot remains to be done:

- As of 2000, some 70 per cent of the world's poor live in rural and remote areas where access to ICTs, let alone to a telephone, is often scarce.
- Over one-third of the world's population has never made a telephone call.
- As of 2000, the developed world had 49.5 telephone lines per 100 people, compared to 1.4 lines per 100 people in developing countries.
- Most of the information exchanged over global networks such as the Internet is in English, the language of less than 10 per cent of the world's population.

The challenge facing ITU

For many years now, but particularly since the establishment of the Development Sector in 1992, ITU has contributed towards enhancing the capabilities of developing countries in narrowing the digital divide that separates them from industrialized countries. This was evident at the first World Telecommunication Development Conference in 1994 where the Buenos Aires Action Plan (BAAP) was developed, followed by the Valletta Action Plan (VAP) in 1998, the basic elements of which are: policy and regulatory reform; new technologies; rural development and universal access; finance and economics; private sector partnerships; and capacity building through human resources development and management.

One of the anticipated results of WTDC-02 is the adoption of an ITU-D four-year action plan aimed at bridging the digital divide. The

synergy that exists between these plans and other recent international initiatives such as the G8 Dot Force, and the UN ICT Task Force is no accident. They all deal with the essential issues facing any administration committed to developing the ICT sector in their country.

As a member of the G8 Dot Force and the UN ICT Task Force, ITU has a lot to offer based on past experience and lessons learned.

However, for ITU to be considered a key player in these international deliberations, it needs to adapt to the evolving environment and start working in partnership with other stakeholders such as governments, private firms and various civil society groups working at the grassroots level. ITU-D should pride itself in having such a large constituency of private sector Members. This begs the question: Is it not time for ITU to broaden its constituency and initiate discussions with voluntary sector organizations such as non-governmental organizations and academia? At WTDC-98 in Valletta, an historic resolution was passed regarding the establishment of a Task Force on Gender Issues (TFGI), which was later adopted unanimously at the Plenipotentiary Conference in Minneapolis. One of the main objectives of TFGI is to harness ICT applications as a tool to empower women and lead them on the path of socio-economic development.

The whole world is now focusing on the role of ICTs as an essential tool for socio-economic development. ITU has been chosen as the lead agency in organizing the World Summit on the Information Society in 2003 and 2005. The fact that it is a Summit is already a big stride in obtaining the commitment of government leaders to start building their knowledge-based societies. ITU, and in particular ITU-D, has a golden opportunity now to transform the digital divide into digital opportunities. It can do so by getting actively involved in the work of the G8 Dot Force and the UN ICT Task Force. This will not only demonstrate ITU's willingness to work in partnership with other stakeholders, but will also provide these stakeholders with the fruits of its past experience. In return, ITU would gain their confidence so that together they can work as full partners in devising value-added substantive initiatives as they prepare for the World Summit on the Information Society. ■

United Nations General Assembly adopts

Resolution A/RES/56/183 on the World Summit on the Information Society

The General Assembly,

Recognizing the urgent need to harness the potential of knowledge and technology for promoting the goals of the United Nations Millennium Declaration¹, and to find effective and innovative ways to put this potential at the service of development for all,

Recognizing also the pivotal role of the United Nations system in promoting development, particularly with respect to access to and transfer of technology, especially information and communication technologies and services, *inter alia*, through partnerships with all relevant stakeholders,

Convinced of the need, at the highest political level, to marshal the global consensus and commitment required to promote the urgently needed access of all countries to information, knowledge and communication technologies for development so as to reap the full benefits of the information and communication technologies revolution, and to address the whole range of relevant issues related to the information society, through the development of a common vision and understanding of the information society and the adoption of a declaration and plan of action for implemen-



New York, 21 December 2001 (ITU 010106)

tation by Governments, international institutions and all sectors of civil society,

Recalling the contributions to international consensus in this field achieved by the Millennium Declaration and the agreements reached at other international conferences and summits in recent years,

Taking note of the action plan presented by the Secretary-General of the International Telecommunication Union to the Administrative Committee on Coordination for the holding of the World Summit on the Information Society and the creation, by the Administrative Committee on Coordination, of a high-level Summit organizing committee, chaired by the Secretary-General of the International Telecommunication Union and consisting of the heads of those United Nations and other international organizations interested in participating in the process leading to the Summit,

¹ See resolution 55/2.

Considering that the Summit is to be convened under the patronage of the Secretary-General of the United Nations, with the International Telecommunication Union taking the lead role in its preparation, in cooperation with interested United Nations and other international agencies and the host countries,

Recalling the ministerial declaration concerning information and communication technologies, adopted by the Economic and Social Council at the high-level segment of its substantive session of 2000², and the subsequent work done in this regard, including the creation of the Information and Communication Technologies Task Force, as well as the welcoming of the forthcoming Summit by the Council in its agreed conclusions 2001/1³,

Recognizing the need to harness synergies and to create cooperation among the various information and communication [technology] initiatives, at the regional and global levels, currently being undertaken or planned so as to promote and foster the potential of information and communication technologies for development by other international organizations and civil society,

1. Welcomes the resolution adopted by the Council of the International Telecommunication Union at its 2001 session, in which the Council endorsed the proposal of the Secretary-General of the International Telecommunication Union to hold the Summit at the highest possible level in two phases, the first in Geneva from 10 to 12 December 2003 and the second in Tunis in 2005, pursuant to Resolution 73 (Minneapolis, 1998) of the Plenipotentiary Conference of the International Telecommunication Union;

2. Recommends that the preparation for the Summit take place through an open-ended

intergovernmental preparatory committee, which would define the agenda of the Summit, finalize both the draft declaration and the draft plan of action, and decide on the modalities of the participation of other stakeholders in the Summit;

3. Invites the International Telecommunication Union to assume the leading managerial role in the executive secretariat of the Summit and its preparatory process;

4. Invites Governments to participate actively in the preparatory process of the Summit and to be represented in the Summit at the highest possible level;

5. Encourages effective contributions from and the active participation of all relevant United Nations bodies, in particular the Information and Communication Technologies Task Force, and encourages other intergovernmental organizations, including international and regional institutions, non-governmental organizations, civil society and the private sector, to contribute to, and actively participate in, the intergovernmental preparatory process of the Summit and the Summit itself;

6. Invites the international community to make voluntary contributions to the special trust fund established by the International Telecommunication Union to support the preparations for and the holding of the Summit, as well as to facilitate the effective participation of representatives of developing countries, in particular the least developed countries, in the regional meetings to be held in the second half of 2002, in the preparatory meetings to be held in the first half of 2002 and in 2003, and in the Summit itself;

7. Invites the Secretary-General of the United Nations to inform all heads of State and government of the adoption of the present resolution;

8. Invites the Secretary-General of the International Telecommunication Union to submit to the General Assembly, at its fifty-seventh and fifty-eighth sessions, through the Economic and Social Council, for information, a report on the preparations for the Summit. ■

² See *Official Records of the General Assembly, Fifty-fifth Session, Supplement No. 3 (A/55/3/Rev.1)*, chap. III, para. 17.

³ *Ibid.*, *Fifty-sixth Session, Supplement No. 3 (A/56/3/Rev.1)*, chap. V, agreed conclusions 2001/1, para. 7.

The Yaoundé Declaration: What it means for Africa

Maximin Paul Nkoue Nkongo
Minister of Posts and Telecommunications
Cameroon



On 28 May 2001, African ministers responsible for telecommunications, assembled in Cameroon to prepare for the World Telecommunication Development Conference (WTDC-02) scheduled to take place in Istanbul from 18 to 27 March 2002, adopted a joint strategy for bridging the digital divide that separates the North from the South and urban areas from rural areas.

Known as the “Yaoundé Declaration”, the strategy is one of several initiatives adopted in recent years by the African plenipotentiaries and by other multilateral meetings. It reflects in particular the active solidarity now breathing new vigour into the continent, and a new awareness which is a strategic departure from earlier initiatives. Furthermore, the Yaoundé Declaration embodies the new vision which Africa plans to convey to the world by implementing the New Partnership for Africa’s Development (NEPAD).

WTDC-02 and the Yaoundé Declaration

With Istanbul in mind, Africa’s first step was to take stock of progress in the implementation of the Maitland report, *The Missing Link*, published in 1985. The aim of the report was to redress the balance in the number of fixed telephone lines between developed and developing countries. Africa noted that, despite the noble aims stated in *The Missing Link* and the efforts made so far, the situation on the ground has remained static. What is more, nearly two decades on, the situation has been compounded by a new concept: the digital divide, on which all telecommunication development strategies are now focusing.

Through the Yaoundé Declaration, Africa is appealing with one voice to decision-makers, firms, equipment manufacturers, funding agencies and information technology specialists to ensure that the right solution is found to close once and for all the huge gulf in the rate of

penetration of information technologies in daily life that separates the people of the North from those of the Southern hemisphere, and Africa in particular.

What prompted the appeal was the meagre results yielded by the enormous efforts which our States have undertaken, in vain, at the instigation of the Bretton Woods institutions in order to restructure the telecommunication sector. The Buenos Aires Action Plan (BAAP) set a target for the developing countries of five telephone lines per 100 inhabitants in urban areas and one line per 10 000 inhabitants in rural areas. The revolutionary growth of mobile telephony in 2001 still leaves Africa with as few as 15 million subscribers, and the advent of the Internet benefits barely 4 million users.

By adding the Yaoundé Declaration to prevailing development strategies for Africa, in particular NEPAD, our region is expressing its appreciation of the encouraging contributions it has received from countries of the North and ITU's cooperation in the continent's telecommunication restructuring process. Thanks to them, the rate of connectivity is rising in our cities.

Africa also wishes to alert the international community to the limited nature of results so far and to convince it that mentalities in the continent are in the throes of radical change. The concept of democracy has spread throughout the continent, overthrowing the established order and challenging traditional values. People are constantly making painful sacrifices as they cope with economic crises and demanding structural adjustment programmes, impoverished as they are by falling prices of agricultural goods and armed conflict which is destroying the meagre infrastructures in place today.

The struggle against poverty and the establishment of good governance in public affairs are, without doubt, signs of an awakening on the continent — an awakening that can no longer be reversed. For all these reasons, the West has an historic and humanitarian duty to support, without any new conditions, the elimination of the digital divide, as advocated by the Yaoundé Declaration.

It is against this backdrop that WTDC-02 is taking place. Africa will be going to Istanbul full of hope and with the conviction that the world will be more attentive to its problems. The Yaoundé Declaration, which sums up all the proposals set forth in the various regional and subregional initiatives, lays down guidelines for the work that will be done at Istanbul



Photo: PhotoDisc (ITU 010053)

With the necessary resolve, a digital Africa can be built and will give globalization greater coherence. The Yaoundé Declaration is both a rational and an emotive plea from a continent in search of equity and fairness in the development of ICTs

on the digital divide. It is Africa's intention to obtain from WTDC-02 new measures to encourage, in particular:

- an increase in teledensity in our States so that telecommunications can play its role as an economic catalyst;
- implementation of pilot projects conducive to universal access in Africa;
- more sustained establishment of equipment manufacturers with a view to developing

appropriate technologies at lower cost as a means of increasing teledensity on the continent;

- instant access for people in all corners of the continent to all forms of information, the key to a new society in which people will acquire broader freedom;
- training, human resources development and capacity-building in information technology;



The entire continent has opened up its telecommunication networks to operators the world over

Photo: R. Woodridge (ITU 020026)

- financial flows from funding agencies to support telecommunication infrastructure development programmes for the benefit of inhabitants in the rural areas of our continent.

What gives these hopes and ambitions their legitimacy is the fact that the entire continent has accepted to open up its telecommunication networks to operators the world over.

Those who are reticent argue the need for short-term financial returns. The counter-argument is that our society is seeking to acquire the information and communication technologies (ICT) it needs for development. With the necessary resolve, a digital Africa can be built and will give globalization greater coherence. The Yaoundé Declaration is both a rational and an emotive plea from a continent in search of equity and fairness in the development of ICTs. ■

YAOUNDE DECLARATION

We, African ministers responsible for telecommunications and information technologies, meeting in Yaoundé on 28 May 2001 within the framework of the Africa Regional Preparatory Meeting for the 2002 World Telecommunication Development Conference (WTDC-02), organized to identify and analyse obstacles to the development of telecommunications and information technologies in Africa and to identify strategies, priorities and other appropriate means of overcoming those obstacles,

Considering

— that digital technology and the development of high-capacity telecommunication media such as optical fibre and satellite systems have led to the advent of the global information infrastructure and to convergence between telecommunications, information technology and broadcasting;

— the relatively low level of development of the basic telecommunication infrastructure, telephone penetration and the use of new services derived from information technologies;

— that the digital divide is now widening the gap that already exists between developed and developing countries in terms of access to, and the use of, telecommunication services and services derived from information technologies;

— the role played by ITU in the development and harmonious use of telecommunication services and information technologies,

Reaffirming

the particular importance and central role of telecommunications and information technologies in political, economic, social and cultural development in the age of globalization and the information society,

Noting

the efforts deployed by African countries, despite a particularly difficult economic context, to stimulate the development of the telecommunication sector,

Further noting

— with satisfaction, ITU's initiatives and other initiatives, including the African Information Society Initiative (AISI) and African Connectivity;

— ITU's participation in, and contribution to, the meetings of "Dot Force" — a working group set up by the G8 Summit in Okinawa,

Declare

— that we welcome the actions undertaken on behalf of the Organization of African Unity (OAU) by South Africa, Algeria and Nigeria, particularly their fruitful participation in the Okinawa G8 Summit, and invite them to continue with such actions;

— that we undertake to devote more actions to the timely addressing of issues relating to telecommunications and to information and communication technologies, these being issues which we consider to be of prime concern;

— that bridging the digital divide must of necessity entail development of the telecommunication and sound and television broadcasting infrastructure, and that development partners must consider this parameter, in particular with respect to rural areas;

— that it is essential that African countries, given the importance of telecommu-

nications and information technologies in political, economic, social and cultural development, adopt innovative strategies and policies designed to stimulate development, particularly through reform of the telecommunication and information technology sector;

— that each African country should henceforth define a common, or at least coordinated, national policy and strategy for the development of telecommunications and information technologies that takes account of multimedia convergence (telecommunications, information technology and broadcasting),

Recommend

that African administrations take the necessary measures to stimulate the development of the private sector as well as measures to encourage private investment,

Appeal

— to ITU to pay particular attention to the urgent development needs of African countries and to continue to implement activities and programmes that will make a concrete and tangible contribution to reducing the digital divide in Africa;

— to ITU to assist African countries in developing their human resources and strengthening their capacities in the area of information technologies;

— to subregional economic integration institutions to work towards the harmonization of policies and regulations in the field of telecommunications and information technologies;

— to development partners, African regional institutions and international institutions to strengthen cooperation and coordination between all projects and initiatives with a view to ensuring the harmonious use of resources. ■

Meet the Chairmen of the Regional Preparatory Meetings for WTDC-02

Despite the obvious uniqueness of each of the five regions, the topics adopted for discussion at the regional preparatory meetings, following consultations undertaken by ITU Regional Offices with the Member States and Sector Members, were strikingly similar. These topics basically focus on infrastructure development and new technologies; ICTs and universal access; telecommunication policy and regulation; finance and investment; and human resources development.



"The Americas Regional Preparatory Meeting (AMS-RPM) afforded Latin America and Caribbean countries the opportunity to address critical areas such as ITU reform and the digital divide. For my part, I hope that the World Telecommunication Development Conference in Turkey will take some of the views expressed at the AMS-RPM and design strategies to further advance telecommunication development in Member States."

Carol Clark, Permanent Secretary
Ministry of Science, Technology and Tertiary Education
Republic of Trinidad and Tobago

Chairman, The Americas Regional Preparatory Meeting
(Port-of-Spain, 16–18 October 2001)

William S. Tallah
Senior Telecommunications Engineer
Ministry of Posts and Telecommunications
Cameroon



Chairman, Africa Regional Preparatory Meeting
(Yaoundé, 29–31 May 2001)



Mohamed Wagdy Abdel Hamid
Advisor and member of the Board
of the Egyptian Regulatory Authority

Chairman, Regional Preparatory Meeting for the Arab States
(Alexandria, 17–19 October 2000)

Peter Rendov
Director, Information Society and Information Technologies Directorate
Ministry of Transport and Communications
Republic of Bulgaria
(now member of the Communications Commission)

Chairman, Regional Preparatory Meeting for Europe and
the Commonwealth of Independent States
(Sofia, 28–30 November 2000)



Sirhat Djamhari
Director General of Posts and Telecommunications
Indonesia
Chairman, Asia and the Pacific Regional Preparatory Meeting
(Bali, 25–27 April 2001)

Greater cooperation could avert marginalization...

Hedwige Bereaux

*Minister of Science, Technology and Tertiary Education
Government of the Republic of Trinidad and Tobago*



The globalization process, facilitated by information and communication technologies (ICT), underscores the need for even greater cooperation among countries to avert the problem of marginalization that could affect collateral interests of developed countries.

This reality was made clear at last year's Americas Regional Preparatory Meeting, which was held in Trinidad and Tobago. This country welcomed the opportunity to host the meeting, which attracted approximately 150 participants from 30 countries throughout the Americas region.

The event provided a prime opportunity for participants to identify critical issues in the area of telecommunications development within the region. Specifically, the digital divide, lack of financial, human and technical resources, finance and investment, and telecommunication policy regulations were identified as the priority areas that needed to be addressed.

These issues, identified as critical to the development of telecommunications in the Americas are also being considered on the global level. However this region's economic, cultural and geographical realities dictate that they

be addressed differently.

Developing nations, including those of the Americas region, must of necessity address head-on the issue of the digital divide if they are to successfully implement strategies to prevent economic hardships. The digital divide in a region as geographically fragmented as ours can present a greater challenge to development than one with an equal amount of land space on one continuous stretch of land. The region's geography affects trade, cultural exchange, intra and extra regional technical cooperation, and other activities vital to development.

While internal initiatives by decision-makers such as the provision of community access points to ICT, can serve to mitigate the situation, the

need for global cooperation in this matter is an issue that must not be ignored. Private sector partnerships with regional governments should also work towards the promotion of interoperability that would allow for more effective communication among individuals and groups as well as governments within the region. Private sector companies can also play an active role in bridging this divide by seeking investment opportunities to promote more widespread ownership by lower end users of the technology.

in ensuring the injection of finances into hard-pressed areas.

Capital flows into projects geared towards the upgrading of physical resources particularly in rural areas in Latin American and Caribbean countries would work towards narrowing the divide. While this would not immediately result in these areas' ability to operate on the same technological frequency as other countries, it would serve to leverage efforts of central governments to deal with matters pertinent to



(ITU 900155)



(ITU 910001)

Infrastructure development remains one of the primary objectives in the narrowing and the ultimate elimination of the digital divide. Therefore, the sharing of global resources to bring relief in this area is an issue that should be put on the front burner of discussions on the digital divide. The injection of funds by international funding agencies towards the acquisition of basic computer hardware, software and networking would certainly add a meaningful fillip to developing economies.

The economic issues that stem from the digital divide easily overflow into the wider finance and investment issue. At the Regional Preparatory Meeting, there was unanimous support for the implementation of measures to increase the size of investment in telecommunication services in the region. The private sector in particular was identified for the role it could play

The digital divide in a region as geographically fragmented as ours can present a greater challenge to development than one with an equal amount of land space on one continuous stretch of land

economic strength in today's globalized environment.

Globalization is an economic matter that inherently encompasses the issue of demonopolization but is poised to bring major investment and employment opportunities to the peoples of this region. Governments are therefore coming to terms with the

negative and sometimes explosive effects of monopolization, which could stymie future lucrative benefits in the area of information and communication technologies. In recognition of this, the process of demonopolization has begun to be dealt with in many of the region's States.

Economic challenges, which hinder the establishment of independent regulators, have led to the idea of establishing a regional regulator such as the Eastern Caribbean Telecommunications Authority (ECTEL).

An interesting point that must be noted is that the human resource bases in the region must be strengthened in order to effect any of the changes required for telecommunication development. This is another area of critical concern. Technology workers need constant retooling to remain at the cutting edge. Acquisition of skills and abilities in various areas of the technology arena are required to allow for easy adaptability in a rapidly changing global environment.

monitor in terms of implementation of the project assignments and to evaluate various groups in terms of the achievement of objectives.

The region looks forward to the World Telecommunication Development Conference in Istanbul as it will provide an ideal forum for all regions to collectively address these and other issues that affect ICT development in their respective parts of the globe.

As countries representing the five world regions come together and ideas flow, the



(ITU 005074)



Photos: A. de Ferron (ITU 005027)

Training in ICT at all levels and access to technology would not only ensure the development of a technologically adept human resource base in the region, but also allow for the acquisition of skills necessary for parity in technology expertise.

The Americas region, while faced with a number of challenges within the context of the global technological advancement scenario, is willing to cooperate with the International Telecommunication Union to promote more opportunities.

The Inter-American Telecommunication Commission (CITEL) also discussed this matter. CITEL's working group advanced support for the restructuring of the various working groups in the ITU Telecommunication Development Sector (ITU-D) into project management groups. This would mean a more focused agenda, and specific time frame, that is easy to

The injection of funds by international funding agencies towards the acquisition of basic computer hardware, software and networking would certainly add a meaning fillip to developing economies

synergy created could lead to the identification and formulation of workable solutions that would benefit the global community.

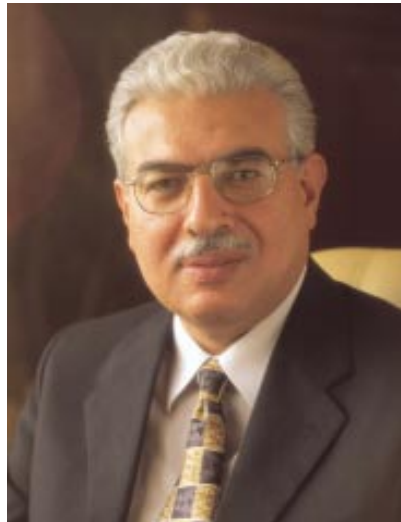
If these issues are effectively addressed, the World Telecommunication Development Conference could very well mark

the start of a new thrust in technical cooperation on the wider global level with the involvement of national and international funding agencies and the International Telecommunication Union at the core. The rate of technology advance would affect the global economy, which must be viewed as an organism. This organism is a whole that consists of interdependent parts. It must therefore be recognized that strangulation at any point of that organism, would eventually negatively affect the whole. ■

Restructuring and reform of the telecommunication sector: a top priority...

Ahmed Nazif

*Minister of Communications and Information Technology
Arab Republic of Egypt*



In most countries of the Arab region, restructuring and reform of the telecommunication sector have become a top priority issue enjoying full government support. This support is key in facing the challenges encountered in the reform process and in building modern telecommunication and information technology infrastructure.

Contributing strongly as it does to the development of other sectors, telecommunication has become a substantial factor of economic growth, and is essentially vital to the improvement of society in the areas of education, health, the environment and in almost every aspect of daily life.

The evolving technical capabilities of digital technology tend to change the operating procedures, the commercial character of telecommunications and the international environment; hence the need for a structure that is adapted to these situations and functions. The new network concept introduced to allow the transmission of all voice, data and video applications will, because of its adequate capacity and ability to convert different systems and different telecommunication protocols, finally lead to the convergence of information technology, telecommunications and broadcasting.

In order to assess the obstacles that prevent the development of telecommunications and information technologies in the Arab region, and to identify the means to address this hindrance within the framework of the strategies and programmes to be tabled at the upcoming World Telecommunication Development Conference (WTDC-02),

the Regional Preparatory Meeting for the Arab States was held in Alexandria in October 2000 at the invitation of the government of Egypt. The meeting was organized by the ITU Telecommunication Development Bureau (BDT) and brought together more than 200 participants from 23 countries. Participants discussed and identified priority areas of concern to the countries of the region, and agreed on the strategies to be adopted and pursued. Top priority issues are presented in this article.

Policy and regulatory issues

Regulators in the region are facing a number of issues such as the process for the establishment of sound regulatory bodies, and the different regulatory functions to be entrusted to them. The regulation process is not a single event; nor can it be considered as a single set of rules. Rather, it is an on-going process that

changes as the market develops and involves a series of difficult decisions, the nature of which changes with time.

Given that the number of countries in the region planning to establish a regulatory body is expected to rise by at least 13 in the coming few years, the Alexandria meeting considered regulatory issues to be a high priority for the Arab region and suggested having this item placed on the agenda of WTDC-02. Furthermore, BDT was requested to provide advice and support to the countries of the region based on the regulatory status of each country. BDT was also asked to carry out studies on quality of service (QoS) and other issues of benefit to end-users.

Financing and investment strategies

Huge investments are needed for the development of efficient telecommunications infrastructure in the Arab region. However, the majority of Arab countries will no longer be able to fully finance their requirements from traditional resources, namely internal cash generation and government-backed funding, as most governments are facing budgetary constraints. Alternative solutions have to be sought, and private investment must be encouraged. A growing number of developing countries have already involved the private sector through various methods, including resource and risk sharing such as the build-operate-transfer (BOT) and other revenue-sharing methods. There is need for:

- Assistance to telecommunication network operators in developing tools to determine costs, their calculation and their allocation to services.
- Advice on means of attracting investment.
- Assistance in establishing a macroeconomic, legal and regulatory framework conducive to investment.
- Assistance to Member States engaged in planning privatization of their telecommunication sector.
- Studies to assess the impact of tariffs on usage.
- Adoption of a coordinated policy in respect of alternative traffic routing, and making the necessary efforts to adapt international telephone services tariffs.

Network development

The telecommunication industry has undergone enormous technological changes in the past decade. The convergence of computers, telecommunications and information technologies is expected to bring new telecommunication products and services progressively within reach of the global population. In addition, with the integration of technologies, telecommunication administrations are under growing pressure from large national and international users requiring access to new services.



A section of the international operator's room in Muscat

Photo: Ministry of PTT, Oman (ITU 900030)



DSL standards make it possible to introduce systems that provide affordable access to the Internet, teleworking, distance learning and multimedia services

Photo: PhotoDisc (ITU 000039)

An overview of emerging technologies was considered in order to evaluate cost-effective solutions for high-capacity networks, taking into account the existing infrastructure in the various countries. There is need for:

- Advice on broadband access solutions such as very high-speed digital subscriber line (xDSL) systems and ATM-based passive optical networks (A-PON).
- Advice on data security and privacy solutions for new networks.
- Introduction of telecommunication management network (TMN) to improve network monitoring, control and management. New technologies should be taken into account to

ensure interoperability and interworking between existing and new networks.

Internet and new services

During the past few years, Internet has added an enormous potential for social, cultural and economic development. Introduction of IP-based services covers various applications of great social, cultural and economic interest such as telemedicine, tele-education, e-commerce and telebanking.

The Alexandria meeting recognized this issue as one of the priorities for countries in the region and identified the need for:

- Organizing appropriate forums to facilitate information sharing and produce comparative studies on Internet experience in the region.
- Advice on evolution from circuit switched to IP-based networks.
- Developing more Arab content/portals in collaboration with governments, Internet companies and multilateral and bilateral organizations.
- Provision of training and education to develop skills to use the Internet, and raising Internet awareness.
- Advice on policy, technical and economic aspects of IP telephony.
- Advice on development of e-commerce toolkits for policy-makers and businesses.

Wireless communications

The past decade has been marked by considerable development of telecommunication infrastructure, in particular the massive use of radiocommunication media. Today, wireless infrastructure covers a large part of the radio-frequency spectrum, along with new technologies in the field of terrestrial and space telecommunications, fixed and mobile services and sound and television broadcasting. This trend will obviously continue and accelerate. And so prompt creation of the most appropriate conditions is needed to prepare countries in the region to take their place in the global information society. In particular, the meeting underlined the need for:

- Preparation and dissemination of models that identify the most appropriate radiocommunication solutions likely to meet present and future needs.

- Provision of training to specialists in engineering and strategic planning, information networks and broadcasting systems.

- Advice on the establishment of organs for planning and monitoring the use of the radio-frequency spectrum.

- Assisting countries in the migration process from second generation mobile to IMT-2000.

- Assessing the implications of WRC-2000 for radio and television service via satellite in the KU/KA bands.

Enhancing capacity building

The meeting recognized the challenges of training and human resources development for the Arab region in the near future. It is well recognized that regardless of how perfect a new structure may be, the desired goals will not be achieved unless the human resources that will implement it and use it are well prepared for their task.

In this respect, the meeting highlighted the following priorities:

- Assistance to training centres in adapting their products and services to the changing needs of the telecommunication organizations.
- Assistance on the establishment of complementary training programmes, human resources development and cultural change in telecommunication organizations to better meet the challenges of modernization.
- Identification of the main needs in the region in order to define the key programmes to be developed and delivered in a timely manner.

International and regional cooperation

The meeting identified the pressing needs of the least developed countries (LDC) in the Arab region and called for immediate action to:

- Mobilize additional resources for LDCs (e.g. TELECOM surplus, Sector Members in the region).
- Focus special assistance on one or two LDCs at a time.
- Strengthen relations with regional and international organizations and financial institutions in order to further Arab region development activities.
- Create a database in cooperation with ITU and other regional organizations concerned, such as the League of Arab States and ESCWA. ■



Diverse region, diverse needs

The Asia-Pacific Regional Preparatory Meeting was held in Bali at the end of April 2001. Hosted at the invitation of the Government of Indonesia, the meeting provided a forum for ITU Member States and Sector Members in the region to establish their telecommunication development goals for the next four years and to highlight issues that need to be addressed to achieve those goals. This article looks at the key points of discussion at the Bali meeting: policy and regulation; infrastructure and new technologies; universal access and information and communication technologies (ICT); finance and investment; and human resources development.

Policy and regulatory issues

In the area of policy and regulation, the Asia-Pacific region places emphasis on receiving advice on ways of creating and strengthening regulatory bodies. Statistics from the *ITU World Telecommunication Regulatory Database 2001* show that only 34 per cent of Asia-Pacific regulators are considered separate bodies, the lowest percentage of all regions. Countries in the region express the need to improve and update regulatory frameworks in the areas of interconnection, licensing, tariffs and dispute settlement. Those in the throes of transition seek timely advice in developing a roadmap to navigate their way from sector-specific to convergent ICT legislation. In particular, the region

wishes to develop model laws or guidelines that take into account socio-economic concerns such as cybercrime, security, privacy, harmful content and taxation.

Infrastructure and new technologies

Like other regions, the general thrust in Asia and the Pacific is on establishing the necessary information infrastructure and improving interconnectivity within and between countries to bridge the digital divide. In particular, the region underscores the need to:

- Assist small countries in their commercial negotiations with carriers for interconnection to the backbone or global networks. A better focus needs to be put on interconnectivity and quality of service (QoS) to cope with the increase of Internet traffic.
- Include in ITU statistics data of markets not yet served, in particular, data of small markets in developing countries.
- Promote industry cooperation so that new technologies and their standards can be applied harmoniously to enhance access to affordable services.
- Extend the Internet to rural and remote areas in a cost-effective manner by promoting national and regional initiatives.
- Provide assistance in digital broadcasting and in applying digital delivery systems to rural areas to meet the needs of converging networks.

- Encourage countries to submit proposals to the ITU Telecommunication Development Bureau (BDT) within the scope of the wireless IP rural telecommunication project.

Universal access and ICT

The general concept of universal access pervades the specific needs of each region. However, similar priorities tend to come into play when establishing general guidelines and frameworks within which the development of each region and use of ICTs can take place. In view of the broad framework, it would be helpful for all regions to revisit the definition of universal access with a view to refining its measurement.

In the case of the Asia-Pacific region, some countries need assistance in QoS and advice on mechanisms or solutions for affordable access to basic communication and information services, especially in rural and remote areas. Other priorities include the need to:

- Spread the message that ICT is as important as basic infrastructure.
- Request ITU to provide a clear definition of universal access and ICTs, which could be incorporated into national plans and policies.
- Develop digital laws and identify model legislation in areas such as e-commerce, privacy and cybercrime.
- Promote investment and tariff policies on the provision of infrastructure and Internet access, especially in remote and rural areas.
- Bring the issue of Internet charging to the attention of WTDC-02.
- Develop skills to effectively use ICTs.
- Bring to the attention of WTDC-02 the use of community teleservice centres as a way of providing access to rural areas.
- Promote the development of relevant content as well as use of local languages.

Finance and investment

One very common priority in all five regions is the need to establish a framework that is conducive to investment. The Asia-Pacific region needs direct assistance to service providers and regulators in the areas of costing and pricing, interconnection charges and computation of universal service funds. Advice is also sought on techniques and models, for exam-

ple, a licensing-fee structure to attract investment in wired and wireless technologies as well as in broadcasting services. ITU is requested to endorse country-specific telecommunication projects to international development agencies with a view to implementing them jointly.

Human resources development

There appears to be an overall consensus not just on building a truly integrated human resources system that is able to identify the changing needs of the telecommunication sector, but also on offering the necessary training programmes and expertise to respond to those needs. All regions consider ITU Centres of Excellence, and training centres in general, as focal points. These centres allow strategic alliances



to be fostered among industry, educational institutions and the community. Besides, they promote regional cooperation. All regions tend to acknowledge the importance of supporting entrepreneurial spirit and customer/market-driven culture in capacity-building.

The Asia-Pacific region highlights the fast rate of technological change and sector expansion, which puts tremendous pressure on the upgrading of skills. There is recognition in the region for those strategic alliances to be encouraged in order to mainstream skills into vocational training schemes. The region has a shortage of ICT specialists, and places emphasis on assisting institutions to use more ICT-based tools such as distance learning. The Pacific island subregion has unique needs and characteristics that can be only met with the use of ICT. Proper indicators for ICT-literacy should be identified and quantified. ■

*Thoughts on the ITU Asia-Pacific Centre of Excellence
and on one of its websites*
www.ofta.gov.hk/frameset/home_index_eng.html



“The Office of the Telecommunications Authority (OFTA) has a wealth of information it can share with other Members of the ITU Asia-Pacific Centre of Excellence (ITU ASP CoE). The OFTA experience in setting up and managing one of the most deregulated telecommunication sectors in the world can benefit many of the countries of the region. We are delighted to share our own experience and expertise with countries of the region wishing to deregulate their telecommunication sector and which are, to this end, striving to ensure that the new competitive framework is implemented in a way that serves the best interests of their people.

In view of the rapid development of the telecommunications market particularly in China, OFTA has embarked on providing a Chinese version of the e-learning modules. We are looking at launching, in the first quarter of 2002, the Chinese version of two modules: “The Role of the Independent Regulator” and “Competition Safeguards”. With the massive group of potential Chinese users, and the frequent visits of fellow regulators and policy-makers, the site is expected to grow into a noteworthy tele-community base for professionals.

The fact that the hit rate continues to rise steadily, reaching a high of 1250 to 3300 per week in the November/December 2001 period, reinforces our belief that it is worthwhile contributing even greater efforts to further develop and expand the scope of the training. We look forward to collaborating further with the ITU Regional Office as we plan to add new modules, including topics such as price control and universal service obligations.” **Anthony S. K. Wong, Director-General of Telecommunications at OFTA, Hong Kong Special Administrative Region (China)**

“The website takes us a huge step forward in having a common accessible resource of information for regulators and those associated with regulation. It will cause us to re-evaluate our national skill development programmes in the future, when we will not be totally reliant on national self-help and the painful or slow process of first-hand experience and learning the hard way. A shared information repository will help to accelerate staff development. And from that we should see earlier benefits from the new regulatory environments challenging us at present. The Australian Communications Authority (ACA) looks forward to being one of the continuing contributors to the ITU ASP CoE information bank.

The parallel challenge is then one of delivery. That is picking up, packaging and delivering the value which resides in the information bank in a way that is optimized for the range of regulatory audience we have — and tailored to local circumstances. This delivery can be physical, virtual or a combination of both using the very communications technology which we are charged with regulating. The delivery agents, as physical persons with their own experiences, are critical to the personalization of the process. Their willingness to support the process with their time and patience will be rewarded by advances in regional development to higher levels of social and economic prosperity. We hope the ACA can help here also.” **Bob Horton, Deputy Chairman, ACA**



Europe and the Commonwealth of Independent States

*Plamen Petrov
Minister of Transport and Communications
Republic of Bulgaria*



The organizing committee of the Regional Preparatory Meeting for Europe and the Commonwealth of Independent States (CIS), working in Sofia during late autumn 2000, was far from being confident in the success of this event.

In the context of ITU/BDT activities, Europe as a region with comparatively high average telephone penetration and a high level of network digitization does not, at first sight, represent a primary objective. One could expect little common discussion points between the well-developed western, and in recent years central European ITU Member countries on the one hand, and its eastern Europe and CIS Members, with less developed telecommunication infrastructure and services, on the other hand.

But the Preparatory Meeting was a success. Approximately 260 representatives from more than 40 Member States, recognized operating agencies and regional organizations attended the meeting, held under the patronage of Antoni Slavinski, then minister of Transport

and Communications of Bulgaria.

Participants endorsed the agenda of the meeting, focusing on ITU reform, telecommunication sector development in Europe and the CIS and the role of ITU/BDT, regulatory issues, the

information society and the digital divide, investment and social issues, human resources management and development and network development.

More than 35 written contributions were presented and thoroughly deliberated.

The work was intense and focused on the common priorities of Europe and the CIS.

ITU reform

The meeting acknowledged its support for the main findings and proposals concerning the "Review and improvement of the management, functioning and structure of the ITU" and the "Draft Report of the third meeting of the Working Group on ITU Reform", presented by the ITU Secretary-General.

Policy and regulation

The European Union Member States and, to a lesser extent, the associated countries of the region have well-established national regulatory agencies in telecommunications and an improving regulatory framework. Many ITU Members from the CIS and Western Balkans already either have or intend to establish regulatory bodies.

The convergence of technologies, services and markets in the digital world highlighted the need to adapt the regulatory framework to the on-going transition from sector-specific to converged ICT legislation. High priority will be given to studying and adapting the regulatory framework in the case of digital terrestrial television broadcasting.

Participants also underlined the need to access and share experiences and knowledge and encourage the collection and dissemination of information. It was suggested to handle ICT-related policies in connection with the European Information Society concept.

Information society, the digital divide and universal access and ICTs

Education and life-long training in the field of ICT were underscored as primary objectives in the efforts to offer equal opportunities to all members of the society.

Participants agreed that while information society developments are mainly in the hands of private entrepreneurs, government spending in ICT could play an important triggering role. The e-Government concept offers possibilities to cut administrative costs and restrain corruption.

For Europe and the CIS, the concept of universal access is targeting mainly the needs of the population in remote and less developed areas and people with special needs. Access

to electronic services, including the Internet, emerged as a new priority in defining and providing universal access.

In order to ensure universal access to ICT, an emerging need to develop mechanisms for access to the Internet and to elaborate recommendations for extending ICTs to rural areas was underlined.

Collective Internet access from public facilities such as telecentres in remote and scarcely populated areas, established with an initial financial support from government or local



Photo: MEDEA (ITU 010060)

Access to electronic services, including the Internet, emerged as a new priority in defining and providing universal access

authorities and business, was evidenced as being successful.

Discussions stressed the need to develop friendly tariff models and a legal basis intended to favour the expansion of Internet access.

Finance and investment

An investor-friendly framework was stressed as a key priority. This includes, *inter alia*, political and financial stability, a banking sector that

works efficiently and, where possible, some tax incentives. Sector-specific conditions attracting investments are a stable regulatory framework, and a predictable and consultative national regulatory authority.

In addition, the introduction of tariff rebalancing schemes was assessed as important for attracting investments in the incumbent operators and the sector.



The regulatory framework for digital television platforms is said to be causing problems to most of the Members in the region. Exchange of experience in this field is deemed important

Photo: MEDEA (Micro-Electronics Development for European Applications) (ITU 010066)

Participants also emphasized the need to study further service costs and tariffs, interconnection charges and calculation of universal service compensation funds.

Human resources development

The speed of technology and service innovation in the sector clearly delineates human resources as the most important factor in the development of the sector. Life-long training using the new information and communication technologies was identified as vital for maintaining each country in the pace of technology developments.

ITU Centres of Excellence and training centres were considered as focal points and as a vehicle for strategic alliances among industry, educational institutions and community, promoting regional cooperation.

Telecommunication sector development and the role of ITU/BDT, network development and new technologies

ITU/BDT presented an overview of sector development in the region, followed by several presentations from country representatives.

Eastern Europe and CIS Members underlined the need for technical assistance in coordinating, harmonizing and planning the successful implementation of new technologies and services. In the light of emerging technologies, there is a need to identify and assess developments such as broadband access solutions and IP telephony.

The regulatory framework for digital television platforms was assessed as causing problems to most of the Members. Exchange of experience in this field was deemed important.

The panel discussions during the different sessions were lively and friendly. If there are findings of the meeting to be outlined as a summary, probably they could be expressed as follows:

- The assistance of ITU/BDT in the region should extract the essence of the variety of existing Cupertino bodies.
- State sector information portals should be considered as a first step in establishing e-Government services.
- The establishment of enterprises for collective access to Internet and IT services should be fostered.
- Efforts to secure a faster BDT response to regulators and industry needs should be supported.
- ICT application to training activities should be used extensively, thus reducing travel and accommodation costs.

• Experience in the new data and video services and applications should be disseminated.

The Preparatory Meeting gave the opportunity to all participants to exchange views and formulate priorities for Europe and the CIS. We expect a positive and successful outcome from WTDC-02. ■

Harmonizing idealism with solvency

The basic challenge of the modern telecommunication regulator

Luíz Francisco Perrone
Member of the Board of Directors
 Agencia Nacional de Telecomunicações (ANATEL)
 Brazil

The role of telecommunications in modern society

The telecommunication sector witnessed an unprecedented growth rate during the last decade. In some countries such as Brazil, network expansion in the last three years alone (1999, 2000 and 2001) has surpassed the plant that had been in place until 1998. In other words, in literally three years, the Brazilian society was offered

their distribution among the less favoured members of society.

Telecommunications is no longer a second-class actor in the global development of a country. It is an indispensable tool for economic growth and better distribution of wealth. This democratization of wealth is a factor that has become more evident as information has become more and more valuable and as the telecommu-



The telecommunication sector witnessed an unprecedented growth rate during the last decade. In some countries such as Brazil, network expansion in the last three years alone has surpassed the plant that had been in place until 1998

far more services than all services ever provided since the start of telecommunications more than a century ago.

This growth, if considered at its face value, is formidable. But much more than the quantity of services available is their improved quality and

nication network itself has come to transport information. Unlike material goods, information can be shared, distributed, stored, processed and reused without losing its original value. These characteristics highlight the importance of telecommunications as the tool that can transport



Photo: PhotoDisc (ITU 020028)

Universal access and competition should be the pillars upon which each country should build its telecommunication model, stimulating infrastructure development and the use of new technologies

and distribute information at low cost. Furthermore, telecommunications is, naturally, a non-polluting, employment-generating industry.

From all of these factors, the level of priority that many countries attach to this “politically correct” sector today should not be surprising.

Regulatory agencies and the role of the regulator

In this environment of explosive growth, responsible governments cannot disregard telecommunication penetration (teledensity). Rather, they should ensure that the offer of telecommunication services is widespread and available to all classes of the population, irrespective of their purchasing power, economic activity or geographic location. This preoccupation is generally known as universal access to telecommunications.

At the same time, services built on the latest technology must be of high quality and must

be offered at a fair cost to users. In order to achieve such conditions, there must be stimulation to provide services under a competitive environment.

Universal access and competition should be the pillars upon which each country should build its telecommunication model, stimulating infrastructure development and the use of new technologies. This model is normally developed by the regulatory agency taking into account the particular characteristics of a country; and should be subject to congressional review.

Regulatory agencies are entities created with the basic responsibilities of stimulating investments in telecommunications, protecting the interests and rights of consumers and promoting fair competition among service providers. Harmonizing idealism with solvency is a very difficult task.

What conditions are necessary for a regulatory agency to be able to discharge its responsibilities? The first condition is the political will of the highest authorities of the country. This political and unequivocal determination, coupled with the characteristics listed below, constitute the basic foundations of a successful regulatory agency.

■ **Independence and authority:** Regulatory agencies should be seen as State entities, and need to keep administrative continuity during governmental changes. They should also have the power to implement their decisions, which, in principle, could only be challenged in Court.

■ **Transparency and public information:** Decisions and actions of regulatory agencies should be published after a transparent decision-making process. The intention of all decisions and actions should be made clear.

■ **Predictability:** There should be no surprises regarding actions and decisions. The model for telecommunication exploitation should be clear, and decisions should always conform to that model. The regulatory agency's working plan and schedule of main decisions should be made public.

■ **Budgetary autonomy:** Agencies should operate with their own budget, which should be adequate to cover their needs.

■ **Capable and stable staff:** Employees of the agency should be selected from among capable individuals and should work under stable conditions. The most senior officers should have a fixed-term appointment and should not be removed from office for political reasons.

Regulators should be fully aware of their responsibilities and functions *vis-à-vis* the society. They should, for example:

- Create and develop rules and procedures in conformity with the telecommunication model adopted in their countries.

- Authorize and license the provision of services in accordance with those rules and procedures.

- Protect the interests and rights of consumers, preventing poor service quality and the abuse of economic power of telecommunication operators.

- Inspect service operations, taking the necessary enforcement actions so that rules and regulations are followed.

- Keep abreast of the main national policies that may have implications for the agency's activities and interact and work within those policies.

In this sense, deregulation should evolve along two lines:

- Firstly, an evolution in the sense of reducing “technical” rules, with more concentration on the rules pertaining to the “rights of consumers” and “competition”.



Photo: A. de Ferron (ITU 005083)

Telecommunications is no longer a second-class actor in the global development of a country. It is an indispensable tool for economic growth and better distribution of wealth

Should there be more regulation or less regulation? Should we regulate or deregulate?

The creation of an agency with its rules and procedures might be perceived as “more regulation”, going against the need to attract investments from telecommunication service providers. Indeed, attracting investments might be easier when service providers have more freedom and creativity.

This false paradox is based on the erroneous assumption that deregulation means no regulation. But in actual fact, deregulation does not mean that there is no regulation at all. Rather, it means reducing selectively the fields and amount of State regulation on private economic activities — widening private activities in a country's economy.

- Secondly, an evolution in the sense of reducing those rules as fair and healthy competition increases.

The future scenario of telecommunication regulation

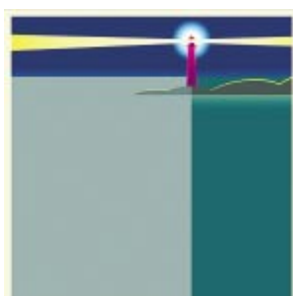
If one wishes to imagine telecommunications in the future, and the role of the regulatory agencies, a simplified vision would lead to a scenario where services would converge continuously (reducing the differences between them). And these services would be available to all classes of consumers (democratization). Regulatory agencies would have the function of ensuring that the services provided respect the rights of consumers in a fair and competitive environment. We are working towards this “telecommunication utopia”. ■

Trends 2002

Trends 2002 is the fourth edition of *Trends in Telecommunication Reform*. This new edition provides a detailed insight into effective regulation. In keeping with the tradition established in earlier editions, *Trends 2002* includes one chapter highlighting global trends in market reform. The other chapters explore why regulators are needed, the institutional framework of regulation, general and specific regulatory functions and powers, transparency and fairness, staffing and financing. This article highlights some of the ways to achieve effective and transparent regulation.

Why effective regulation?

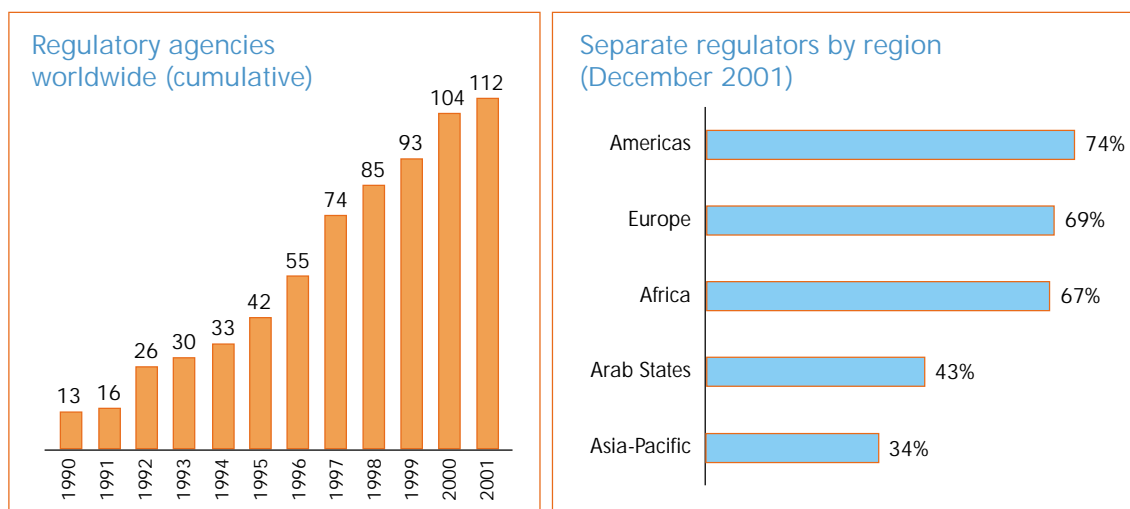
In the last decade, the reform of the information and communication technologies (ICT) sector resulted in major changes at the regula-



tory and institutional levels. One of the most striking changes has been the rise of regulatory agencies for telecommunications and related industries. More than 110 governments around the world have created regulatory entities and many more are planning to do so in the near future. The rise in regulatory agencies is due to the fact that countries have recognized that the most fundamental task of ICT sector reform is to establish an effective and transparent regulatory authority.

In many ways regulators are like a lighthouse shining a path of light into a safe and prosperous harbour. They provide a signal that their market has the security of clear investment rules applied in a fair and transparent fashion. Although regulators themselves do not ply the waters of trade and commerce or operate the

Figure 1 — Regulatory bodies, globally and by region



Source: ITU World Telecommunication Regulatory Database, 2001.

“shipping lanes” of ICT networks and services, or sell products or services to customers, they, like a lighthouse, create a climate conducive to enabling those that do to conduct their business. They enable networks to be rolled out, new services to be launched, create new job opportunities and ensure that customers are satisfied. It is for this reason that the image of a lighthouse was selected for the cover of *Trends in Telecommunication Reform 2002: Effective Regulation*.

Sector reform

Sector reform has become the norm for ITU Member States, a majority of which have at least initiated a sector reform programme, if not fully embarked on the path of sector reform. The momentum of the global sector reform movement that crystallized during the 1990s carried over into the new century, even as the economic boom of the 1990s in many countries plateaued and faltered. While the cooler economic outlook of 2001 clearly had an effect on sector restructuring — particularly on planned privatizations and spectrum auctions — governments continued their commitment to opening markets to competition in order to better meet their universal service goals.

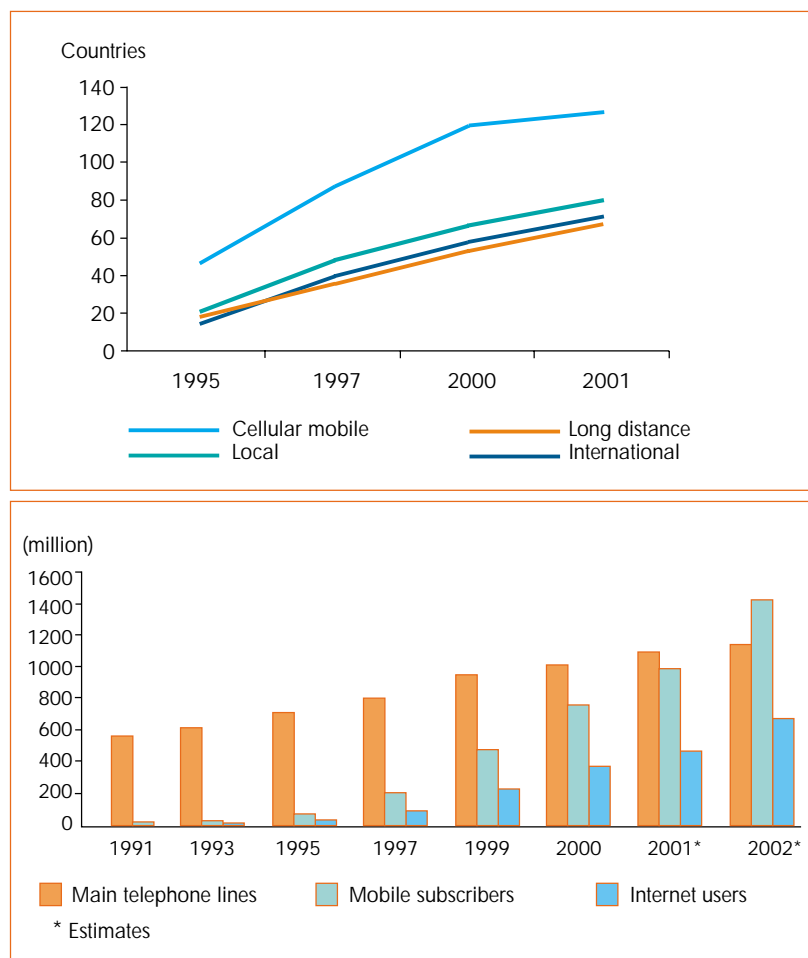
As governments began to authorize competition for a growing array of services, they discovered that they could not simply declare markets open and walk away. Indeed, in many, if not most countries — particularly those with long histories of government ownership of telecommunication operators — functioning markets for telecommunication services could hardly be said to even exist. Telecommunications in those

countries was a government utility, not a service subject to market forces. Simply declaring telecommunications “competitive” did not ensure that any new market entrants would, or could, actually begin competing.

It became apparent that government action and guidance was necessary in nearly every country — including developed ones — at least in order to nurture competition to the point where it could survive on its own. Moreover, the most pressing competitive issues, such as interconnection, licensing, and pricing, demanded a high level of regulatory expertise. Thus, the need for regulators became *more* acute, not less.

Figure 2 — The market just keeps growing

Growth of competition in selected services (top) and growth in the number of subscribers (bottom)



Source: ITU World Telecommunication Indicators Database and World Telecommunication Regulatory Database, 2001.

Since nearly every country in the world now allows competition for at least some telecommunication services and in a growing number of countries sector reform programmes are based on consumer needs, governments face three fundamental questions:

- What should “regulation” be in markets that are in various stages of transition to competition?
- What is the best institutional approach for each government to take in dealing with market conditions it finds within its own country?
- How should governments ensure that consumers’ needs are met?

New regulatory institutions

Increasingly, governments are finding the answers to these questions in legislation setting up new regulatory institutions, or reforming existing ones. Obviously, in a country only just emerging from the monopoly PTT model and spinning off a commercial operator, it may be necessary to create a regulatory authority for the first time. But even governments with existing regulatory bodies are re-examining the structures and mandates of those agencies, with an eye towards coping with perceived market changes, including the “convergence” of voice, data, and multimedia industries.

Governments are turning more and more to specialized, even technocratic, institutions. In many cases, these are separate agencies or offices, headed by commissioners or appointed chief executives. In a few cases, they remain semi-autonomous units within government ministries. In either case, the regulatory authorities are designed to house and mobilize the specialized talents that governments need to act as promoters and developers of growing, competitive telecommunication markets.

As the new report emphasizes, the whole point in creating these institutions is to establish effective, independent regulatory regimes that provide optimal conditions for private-sector investment in infrastructure and services. One of the most crucial of those conditions is

regulatory stability. Investors seek clarity in policy-making, equity in policy implementation, and consistency in regulatory enforcement.

Competition and private investment, particularly in the developing world, is viewed as a tool for achieving social and economic goals such as providing for universal access or introducing new broadband technologies that will induce greater productivity in the overall economy. Regulators in most countries are expected to have these ultimate societal goals in mind as part of their *public interest* mandate.

How, then, can regulatory authorities be sufficiently effective and transparent to live up to their mandates?

The report explores this essential question. It also shows that there is a global trend towards retooling and establishing regulatory structures.

Moreover, there are remarkable similarities in the issues that all governments face when they attempt to establish effective regulatory regimes. All governments must deal with resource issues, the delegation of powers to regulators, and defining the long list of regulatory tasks those regulators must perform. Many

regulators around the world — in developing and developed countries alike — are dealing with these issues in constructive and innovative ways, for example, by establishing less-hierarchical organizations, by using training and employee benefit programmes, and by taking advantage of the Internet to provide public information as well as for public consultation processes.

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

In many ways regulators are like a lighthouse shining a path of light into a safe and prosperous harbour

Contributed by Doreen Bogdan-Martin and Nancy Sundberg, ITU/BDT. For more information on the new report, consult www.itu.int/ITU-D/treg/

Effective regulation

Peru

country case study

Peru is the fourth in a series of five country case studies on regulatory independence and effectiveness to be presented in ITU News



Why Peru?

Peru, situated on the western side of Latin America, covers an area of 1.28 million km². In mid-2000, the country had an estimated population of over 27 million.

With an annual per capita gross domestic product (GDP) of USD 2500, the Peruvian economy is dominated by the services (45 per cent) and industrial (42 per cent) sectors, with agriculture accounting for only a small part (13 per cent). Telecommunication services amount to 3.1 per cent of GDP.

On deciding to privatize the State-run telecommunication enterprises in the early 1990s, the Peruvian Government embarked on a programme to reform the sector. It began by setting up a regulatory body in the form of the Supervisory Authority for Private Investment in Telecommunications (*Organismo Supervisor de Inversión Privada en Telecomunicaciones —OSIPTEL*). At the end of the decade, it took another major step in the reform process by opening up the telecommu-

nication market to full and unrestricted competition.

With privatization and the award of 240 licences to 209 companies, the advent of the private sector in telecommunications brought with it a considerable amount

of investment and innovation in business management, generating the rapid development of new services and marked improvements in existing ones (see Table 1).

What is OSIPTEL?

The *Organismo Supervisor de Inversión Privada en Telecomunicaciones* was established by Legislative Decree No. 702 of 1991. OSIPTEL was the first regulatory body to be set up in Peru, and began operations in 1993.

It is a decentralized public body attached to the Office of the President of the Council of Ministers, enjoying internal public law status and administrative, functional, technical,

Contributed by Jorge Crom, Director, Atlantic Consulting and Ben A. Petrazzini, Policy Adviser, ITU/SPU.

economic and financial independence. To enable it to carry out its functions, authority is vested in OSIPTEL for regulation and standard-setting, remedies and penalties, and dispute settlement.

Unlike other Latin American countries, Peru created a regulatory body before privatizing its State-run telecommunication companies. Although OSIPTEL reports to the Office of the President of the Council of Ministers, two government bodies have a say in telecommunication issues: the Ministry of Transport, Communication, Housing and Construction (MTC) (Directorate-General for Telecommunications and Specialized Unit for Telecommunication concessions) and the Ministry of Economy and Finance (MEF) both of which appoint a repre-



sentative to OSIPTEL's Governing Board.

Independence and transparency

The fact that it is attached to the Office of the President of the Council of Ministers is a significant factor in OSIPTEL's structural and institutional independence, since accountability to a high-level political body with little incentive to control the regulatory authority affords it protection from the sort of political vicissitudes to

which ministries are very often exposed.

Its independence is also protected from private interests thanks to the mechanisms that govern staff recruitment and separation. Someone who in the previous six months has worked in a company regulated by OSIPTEL is not

Table 1 — Performance of the telecommunication sector

	1993	August 1998	June 2001
Installed fixed lines	670 400	1 959 000	2 009 549
Fixed line installation time	118 months	45 days	15 days
Connection charges	USD 1500	USD 170	USD 160
Fixed lines per 100 inhabitants	2.7	6.2	6.6
Localities with telephones	1450	3000	3260
Public telephones	8000	47 040	82 619*
Network digitization	33%	89%	96%
Optical fibre	200 km	3000	414 050**
Direct and indirect employment in the sector (number of persons)	13 000	n.a.	34 000

* This is the number of public telephones installed by Telefónica del Perú and BellSouth Peru.

** This figure refers to the optical fibre of Telefónica del Perú, BellSouth Peru and AT&T Peru.

Source: OSIPTEL.

eligible for recruitment. Similarly, a former employee may not join any company in the sector for a full year after leaving OSIPTEL.

International experience so far has shown that whatever the institutional or legal mechanisms

put in place to ward off threats to a regulatory authority's decision-making independence, transparency in day-to-day practice is undoubtedly the most effective safeguard of that independence.

A question of principle

Principles that guide the activity of the regulatory authority in the performance of its duties

According to OSIPTEL's General Regulations, its practices and activities must be based on the following principles:

- **Free access:** OSIPTEL must guarantee operating companies and users free access to public telecommunication services.
- **Neutrality:** OSIPTEL must ensure neutrality in the operation of enterprises within its jurisdiction, taking care that they do not use their position, either directly or indirectly, to obtain advantages over other telecommunication service operators or over users.
- **Non-discrimination:** OSIPTEL must ensure that companies operating in public telecommunication services markets are not discriminated against.
- **Cost-benefit analysis:** Before embarking on any activities, OSIPTEL must carry out an analysis of their costs and benefits, backed up by studies and technical evaluations showing their rationality and efficiency.
- **Transparency:** The decision-making bodies of OSIPTEL must adopt their decisions on the basis of criteria which are predictable and accessible to those under its jurisdiction.
- **Promotion of competition:** OSIPTEL's policy must be to encourage investments that will enhance the coverage and quality of public telecommunication services by gearing its activities to the promotion of free and fair competition.
- **Impartiality:** When considering the interests of service operators and users, OSIPTEL must act fairly and impartially in strict compliance with the relevant standards.
- **Independence:** In the performance of its functions, OSIPTEL shall not be subject to any compulsory order of any other State body or entity.
- **Subsidiarity:** OSIPTEL's activity is subsidiary in that it arises only insofar as freely competitive markets and mechanisms fail to meet adequately the interests of users and competitors.
- **Supplementarity:** The rules of free competition are supplementary to whatever standards and/or regulations are issued by OSIPTEL in the performance of its duties.
- **Analysis of functional decisions:** This must take account of the effects of such decisions on tariffs, quality, incentives for innovation, contractual conditions and any other areas relevant to market development and the satisfaction of users' interests.
- **Efficiency and effectiveness:** OSIPTEL's activities shall be guided by the search for efficiency in the assignment of resources and the achievement of objectives at the lowest cost to society as a whole.
- **Expediency:** In carrying out its administrative duties, OSIPTEL must endeavour to resolve problems and disputes in the best and most expeditious manner.

OSIPTEL has numerous mechanisms to guarantee transparent decision-making. Some of the main ones are: advance publication of decisions; public hearings; consultation of interested parties; public access to all OSIPTEL documents; prior publication on the Web of the Governing

with the service provider. Cases not resolved at that stage are referred to OSIPTEL's Administrative Tribunal for the Settlement of User Claims (TRASU).

The quality of human resources is a key element in a regulatory body's ability to perform



Lurin Earth station (Peru)

Photos: A. de Ferron (ITU 910015)



Cellular telephone in Cuzco (Peru)

(ITU 980150)

Board's meeting agendas; a website providing plentiful statistical and regulatory information, reference documents and annual reports (www.osiptel.gob.pe). What is more, OSIPTEL is the first State body to have incorporated a clause on transparency in its regulations that applies to all staff in their daily activities and decision-making (see box on page 38).

In terms of institutional practice, OSIPTEL can be said to have broken new ground, being the first State body to write transparency into its internal rules.

OSIPTEL's budget consists mainly of compulsory contributions from the companies it regulates. The contribution, paid monthly, amounts to 0.5 per cent of the company's gross revenue of the previous month.

In order to secure access to public telecommunication services for as many people as possible, OSIPTEL provides, as a matter of principle, users with guidance in fulfilling their rights and obligations. This policy is reflected in its procedures for claims. Claims may be submitted in person or in writing — Response and Guidance Service (SAO) — or by telephone using the helpline "Fono Ayuda". Claims are initially filed

efficiently the duties assigned to it. Strict selection and ongoing training and motivation of staff are therefore among OSIPTEL's priority objectives. After starting out at the end of 1993 with only 16 staff members, by 1996 OSIPTEL's staff had reached a total of 120 and has remained stable since then. Of these, 76 are university graduates, 16 of whom hold postgraduate qualifications.

Conclusion

OSIPTEL's considerable achievements are largely due to the principles on which it operates and the continuity of its management. Ever since it was founded, OSIPTEL has received consistent support directly from the President of the Nation with a view to keeping it independent of other State bodies. The fact that it comes under the Office of the President of the Council of Ministers has been a significant factor in its structural and institutional independence.

A more detailed analysis of OSIPTEL's effectiveness as regulator, its independence and its activities can be found on the ITU/BDT website at www.itu.int/ITU-D/treg/Case_Studies/Index.html ■

“The most valuable asset of any organization is its human resources!”

David Mellor

President, Cable & Wireless Virtual Academy



From Buenos Aires to Valletta and now Istanbul we meet to review how best the ITU can assist the communications sector with its development. Particular emphasis is placed on how the developed nations can create opportunities for improvement of the least developed countries (LDC).

The most valuable asset of any organization is its human resources!

In Buenos Aires in 1994, ITU was instructed by its Members to develop a “Global Telecommunications University” and this request was reiterated at the Valletta Conference four years later. Today, this is becoming a reality thanks to the Telecommunication Development Bureau (BDT) and the private sector working together.

Not only has BDT coordinated on-line training courses, but it has also, in conjunction with a number of universities, commissioned post-graduate programmes to address the specific shortfalls in knowledge which are so desperately needed by the LDCs.

In December 2001, a group of graduates received a Master of Communications Management (MCM) award from the University of Strathclyde in Scotland. The private sector and

BDT are working together to ensure that such programmes as the MCM are delivered online via the Internet in at least three of the ITU languages, namely English, French and Spanish.

Although management of human resources and technology are critical skills for operating communication networks, the LDCs still require engineer-

ing competencies and thanks to the University of Dalhousie in Canada an innovative programme covering Internetworking is being developed which will also be available online.

Last November at ITU TELECOM AFRICA 2001, ITU and Cable & Wireless signed a cooperation agreement committing the Cable & Wireless Virtual Academy to the provision of a number of scholarships each year to enable the LDCs to benefit from its portfolio.

Organizations such as the United States Telecommunications Training Institute (USTTI) and the United Kingdom Telecommunications Academy (UKTA) have played a vital role through their member organizations in the provision of training materials. Since entering the new millennium, both organizations have recognized the benefit of supporting taught programmes with on-line knowledge.

Critical to the enhancement of skills in Africa are the “Centres of Excellence”, which came about as a result of the ITU making extremely effective use of the surplus funds generated by its TELECOM Exhibition programme. The purpose of the Centres of Excellence is to develop programmes that enable strategic high-level initiatives to be created.

Today, the ITU Global Telecommunications University is a truly virtual organization addressing the needs of the Union’s membership.

Africa must be congratulated for hosting the Youth Forum at ITU TELECOM AFRICA 2001, which demonstrated once again how ITU and the private sector by working together, created an opportunity for some very bright individuals from across the whole continent to meet and explore the world of telecommunications. This initiative must continue since the youth of today are the leaders of tomorrow.

We meet in Istanbul for the third World Telecommunication Development Conference and this is clearly the opportunity world leaders of the communications industry must take to determine how developments over the past eight years can be enhanced for the future.

Last year in Coventry, participants from around the world explored the e-Culture and concluded that this is the future whether it be e-Government, e-Banking, e-Taxation, e-Media, e-Commerce, e-Education or e-Training. The ‘e’ is with us now, and in the future will play a critical role in our efforts to aid the bridging of the digital divide.

This year UKTA will host a conference on “Wireless Access to the Information Society”, which it believes will enable discussion to take place as to how the next generation of mobile products will assist in the provision of increased access to information.

The rapid changes in technology over the past eight years have created considerable pressure on operators in the developed and developing countries and this has resulted in a very different skill-set being required by the human resources of the organizations.

Globally, we have seen a move towards liberalization of the communications sector. When competition is introduced, the government of the country needs to ensure that both the incumbent and new entrants have a fair chance of conducting their businesses. To do this, a regulator is



required, laws need to be revised and a new Telecommunications Act needs to be produced. The regulator is a vital human resource and his or her skill-set is quite unique and critical to the successful introduction of competition.

The incumbent operating company will invariably have been a part of the Ministry of Posts and Telecommunications and heavily engineering led. The skill set required is a lean, highly efficient organization with a strong marketing/selling portfolio. The human resources need to be changed or re-educated before the technology for the successful introduction of competition.

The challenges facing the human resources of the membership of ITU’s Telecommunication Development Sector (ITU-D) will be addressed, and together we will bridge the digital divide! ■

In December 2001, a group of graduates received a Master of Communications Management award from the University of Strathclyde in Scotland (ITU 020027)

From the missing link to the digital divide

Taking stock

William S. Tallah
Senior Telecommunications Engineer
Ministry of Posts and Telecommunications
Cameroon



As Africa and the rest of the international community were saluting the peaceful transition of power in Ghana in 2001, United Nations Secretary-General, Kofi A. Annan, a fervent advocate for the development of information and communication technologies (ICT) in Africa, was pointing at the tiny mobile phone as one of the agents contributing to the entrenchment of democratic values in the continent. "Election monitors in remote locations", he indicates, "are using mobile phones to communicate instant results from polling stations", thus thwarting attempts to alter the will of the people.

In South Africa, the biggest powerhouse in the continent's ICT drive, police zero in on a suspected murderer thanks to the victim's mobile phone. And in the sprawling suburbs of Benin's capital city Contonou, a motor cycle taxi rider answers a client's call from his mobile phone. For many city dwellers across Africa today, from north to south and east to west, this newest comer is opening a window, at least, if not a door of opportunities for them. But these vivid pictorial accounts tell only part

of the complex story of the dire straits in which the continent finds itself at the beginning of the 21st century as far as ICT is concerned.

The phrase, "the missing link", came to prominence in telecommunication circles with the publication of the Maitland report in the 1980s.

It was referring, as well as drawing attention, to the urgent need for a coordinated effort to redress the huge discrepancy in the number of fixed-telephone lines between developed and developing countries. Today, almost 20 years after that rallying call for action, a new phrase, "bridging the digital divide", has taken over the discourse. Regrettably enough, it points yet to another gulf between the developed and developing countries as telecommunications break fresher grounds.

Targets

The International Telecommunication Union's Buenos Aires Action Plan (BAAP) is part of the teledensity improvement drive underscored by *The Missing Link* report. Five telephone lines per 100 people in urban areas and one telephone to

every 10 000 people in rural areas, were the goals set for developing countries. Relative progress has been made; but with only 35.3 million phone lines (both fixed and mobile) today for 850 million people, Africa has under performed.

Internet access and the acquisition and use of mobile phones are two trends offering a response to bridging the digital divide campaign in Africa. Last year the continent had 15.5 million mobile phones and 4.4 million Internet users. Huge as they may appear, these figures literally pale in significance on a global scale. For instance Africa, which is home to 10 per cent of the world's population, has about 1 per cent of Internet users. Without set goals and targets, we may simply comfort ourselves into inaction.

Back to basics

The African telecommunications landscape of 2002 compares somehow differently from what it was in the 1980s when the Maitland report was published. The number of telephone lines has increased, government telecommunication monopolies of the time have made way in most countries to a number of private sector companies, national regulatory entities have been created and the Internet is now available to the general public. These are important developmental milestones which are rightly a source of satisfaction. But compounded in some of these positive developments are a number of worrisome trends which

will determine whether Africa remains where the Maitland report found it or whether it moves along with the rest of the world.

Four priority areas, namely political will, infrastructure, human resources development and cost of services, merit particular attention for ICT take-off in Africa.

The political will and infrastructure top the list as an acknowledgement of the pivotal position they occupy in the entire process. Infrastructure and human resources development constitute the fundamental

Four priority areas, namely political will, infrastructure, human resources development and cost of services, merit particular attention for ICT take-off in Africa



building blocks for any development in the ICT sector. The wide range of innovative products inundating the ICT market today, no matter how efficient and promising they are, will not deliver their full potential for Africans if the continent's infrastructural base is not substantially developed.

Examples of different ways on how poor infrastructure is already holding back users in Africa abound. For most mobile phone users in the developed world today, receiving or making phone calls is becoming the

secondary use of that gadget. It is replacing the credit card and is fast becoming the instant television receiver and so on.

The seriousness of the setback caused by poor infrastructure is even greater when one takes a careful look at high end uses and applications. With a shortage of doctors and teachers across the continent, one would rightly say that the very revolutionary distant surgery and the relatively older application, distance learning, are the magic formulas for African countries. That surgical operation will not be done from a cell phone; nor will that lecture be delivered from the street.

The back to basics principle is a wake up call that without a serious rededication to the development of infrastructure, Africa's dream for a piece of the pie or the sky, will collapse like a pack of cards

The back to basics principle in this case, is a wake up call that without a serious rededication to the development of infrastructure, Africa's dream for a piece of the pie or the sky, will collapse like a pack of cards.

As we move from the fixed-line era to ICTs, the demands in human resources development are increasing tremendously both for users and professionals. While there is literally no learning for someone to use a fixed telephone, manipulating the mobile phone is already a big challenge, especially in Africa where levels of technology acquaintance are rather low. The Internet may have all the information in the world, but it requires some ability to read and write in order to operate and manipulate a complex machine to find

out what one is searching for. National incentives, designed to keep ICT experts are paramount. The loss of a skilled workforce is one of the biggest challenges facing Africa today; and it is most acute in the ICT sector. Creating an environment conducive for its professionals to learn, experiment and exploit their potential to the full is, therefore, important. Africa's stifling work and political environments have pushed some of its finest professionals into a search for greener pastures.

Africa is gradually accessing ICT thanks to huge financial investments mainly by foreign companies. There is however, the danger that the situation of a few well-to-do, high-income city dwellers may be mistaken for a typical scenario. Far from it! Keen observers of the African ICT sector are already pointing to what they call "high-tech elitism" in reference to the handful of wealthy people who are accessing and using more and more services as opposed to the vast majority who cannot afford the barest minimum.

Blame is apportioned to the high cost of services for the huge divide among users within countries. The promise that price erosion will make cost marginal, as competition is promoted by breaking government monopolies, is not yet a reality in many countries. Instead, prices of services have shot up, forcing some former users off line. If this situation persists, many will lose faith in the sector's market-oriented reforms being backed and promoted by the World Bank and the International Monetary Fund (IMF).



The wave of privatizations witnessed in many African countries have been misconstrued in some cases as the “death of government”. In the particular case of Africa, and in the light of this submission, it is nothing but a redefinition of roles. From infrastructure through financing to human resources development, governments will have to play a very important role for the continent to turn around its fortunes. Learning to define its new role and exploring ways of interacting better with the other stakeholders is critical for success.

Conclusion

In this goal-oriented age and in the fast-paced ICT sector in which we operate, the balance sheet of the “Missing Link” and its sister concept, “bridging the digital divide” is dismal, especially for Africa. There is very little to show to match the rhetoric, despite the huge investments that have been sunk in the process. Apportioning blame is the easy way out when confronted with failure in an endeavour involving many players. The difficult but noble thing to do in such a situation is an introspective assessment, where each player seeks to find out where it went wrong.

At this critical juncture, it is imperative for Africa to take this painful path in its quest for a brighter tomorrow. In carrying out its own self-assessment, African governments, telecommunication organizations and entrepreneurs, must acknowledge the valuable assistance from the international community.

It must take stock of the wasted opportunities but above all, it must nurture and consolidate some of the new experiments in cooperation emerging on the continent with the ICT revolution.

Home-grown business initiatives and intra African ventures may compare poorly *vis-à-vis* multinational companies investing in the ICT sector. They deserve a chance to prove their case since they have never even had the benefit of the doubt. ITU is pointing the way forward as it



For Africa, the stakes are extremely high and the outcome of WTDC-02 will be a litmus test for international cooperation in shaping and bridging the digital divide

is already incorporating into its projects some of the telecommunication aspects of the New Partnership for Africa's Development (NEPAD), a plan drawn up by three African leaders – President Thabo Mbeki of South Africa, President Olusegun Obasanjo of Nigeria and President Abdoulaye Wade of Senegal.

Such political will and vision is a strong signal of the direction the rest of

Africa should be heading. For Africa, the stakes are extremely high and the outcome of the WTDC-02 will indeed be a litmus test for international cooperation in shaping and bridging the digital divide. ■

Challenges for rural communications development

The legacy of the Maitland report

Nearly twenty years ago, the Plenipotentiary Conference of the International Telecommunication Union (Nairobi, 1982) adopted a resolution that led to the establishment in May 1983 of the renowned Independent Commission for World-Wide Telecommunications Development chaired by Sir Donald Maitland. The Nairobi Conference took this momentous decision convinced that the United Nations General Assembly had proclaimed 1983 as "World Communications Year" to provide the opportunity for all countries to undertake a comprehensive review and analysis of their policies on communications development.

In a nutshell, the Independent Commission's mandate was to identify the obstacles hindering communications infrastructure development and to recommend ways in which the expansion of telecommunications across the world could be stimulated. In January 1985, the Commission submitted its report known as *The Missing Link* to Richard Butler, then Secretary-General of ITU. "We are grateful to you for inviting us to join the Commission", Sir Donald said in a letter



Yasuhiko Kawasumi, General Manager
JAPAN TELECOM CO., LTD

transmitting *The Missing Link* report to Mr Butler. "The challenge was formidable. But we found the task rewarding."

Leaders from the developing world have been implementing the recommendations given in what soon became known as "the Maitland report". Today, seventeen years later, the legacy of the Maitland

report lives on and remains a benchmark for policy-makers and telecommunication administrations in developing countries. The target set in *The Missing Link* was that by the early part of the 21st century "virtually the whole of [humankind should be brought] within easy reach of a telephone and of all the benefits this can bring". Pekka Tarjanne, who served as ITU Secretary-General from November 1989 to January 1999, took this goal to heart and appealed to the United Nations "to recognize the right to communicate as a basic human right". Since then, higher investment in telecommunication development, coupled with the implementation of new technologies and innovative strategies, as well as the general understanding of the socio-economic effect of communications

infrastructure, have led to a remarkable degree of telecommunication development observed in most of the developing countries throughout the 1990s.

Whereas the goal set in the Maitland report is deemed to be a realistic and achievable target, the progress of digital technologies and the proliferation of Internet-related services and applications have brought us new challenges. At ITU TELECOM 99, ITU Secretary-General Yoshio Utsumi set a new goal in his opening speech, namely: to bring Internet-style services to all humankind within the first decade of the new millennium, and apply all the new technologies and impulses so that the gap in connectivity to the Internet can be reduced.

This digital era, which emerged during the mid-1990s, has brought with it corollary questions that are being addressed in both the developing and the developed world under the catchword: "the digital divide". In June 2000, a meeting of the G8 countries discussed the growing digital divide and came up with the *Okinawa Charter on the Global Information Society*. One year later in July 2001, the G8 countries focused again on the digital divide at their Genoa Summit. Besides these events, the United Nations and many of its agencies are actively looking for workable solutions to the digital divide. ITU is the most relevant UN agency in this search for viable solutions; particularly as regards basic information infrastructure.

ITU action since Valletta

The second World Telecommunication Development Conference, held in Valletta (Malta) in March 1998, called for the development of new technologies designed to meet the needs of developing countries. For many years, developing countries voiced concern over ITU's allocation of resources for standardization activities with primary applicability to developed countries. There was a feeling that developing countries were forced to purchase unnecessarily expensive telecommunication equipment made for developed countries. A proposal for ITU to tackle this problem was adopted at WTDC-98 as Topic 7* in an annex to the "Valletta Action Plan Programmes". Focus Group 7 (named after Topic 7) was set up in April 1999 at a meeting of the Tele-



(ITU 850001)

Sir Donald Maitland, Chairman of the Independent Commission for World-Wide Telecommunications Development, planting a symbolic tree on the occasion of a meeting in Arusha (Tanzania) in October 1984 in the presence of Tanzanian authorities and members of the Commission

communication Development Advisory Group (TDAG) to "study various mechanisms by which to promote the development of new telecommunication technologies for rural applications". With the assistance of contributions, particularly from Japan, a website to track developments in rural telecommunications has been created and can be found at www.itu.int/ITU-D/fg7.

The final report of Focus Group 7 entitled "New Technologies for Rural Applications", was released in February 2001 and has been published in three languages in print and CD-ROM versions. The report highlights emerging technologies suitable for use in rural and remote areas,

* This topic is listed in Chapter II of the "Valletta Action Plan Programmes" under Annex 1 entitled "List of topics approved by the Conference for incorporation into the BDT Operational Plan", section A: "Topics related to focus groups."

and their applications for distance education, telemedicine, small business development, emergency support, disaster relief and environmental monitoring. It concludes that wireless access technologies, combined with packet-based Internet protocol (IP) networks, can be used in the rural and remote areas of developing countries because of their cost effectiveness, fast roll-out time and capability for affordable and sustainable multimedia services.



Wireless access technologies, combined with packet-based Internet protocol (IP) networks, can be used in the rural and remote areas of developing countries

The report makes six recommendations to the Director of the Telecommunication Development Bureau (BDT), which underscore the need to promote the development of rural communications as one way of bridging the digital divide. In essence, they call on BDT to:

- Promote the development of low-cost information appliances for rural use.
- Create a renewable energy handbook on small-scale power systems for rural information and communication technologies.
- Increase collaboration with micro-finance organizations to help develop communication-based rural businesses and applications.
- Conduct pilot projects of packet-based wireless access infrastructure for multimedia applications.

- Maintain and expand the ITU website related to the work on new technologies for rural applications.

- Hold a symposium on new technologies for rural applications.

Planned pilot projects

A Task Force, made up of volunteers from among Focus Group 7 members, was set up during the fourth TDAG meeting in October 2000 to

advise and assist BDT in implementing the six recommendations. The Task Force met three times in the twelve months leading up to October 2001, and drafted the selection criteria needed for the location of pilot projects, along with the Request for Proposals document to encourage developing countries to submit their project proposals to BDT. Phase 1 of this planned pilot project programme foresees the selection of five countries from Africa, Asia, Latin America, Arab States and the Commonwealth of Independent States (CIS) on the basis of their proposals. Modest financial and in-kind resources from ITU, the private sector, funding

organizations and recipient countries will be mobilized with a view to implementing selected pilot projects. Hamadoun I. Touré, BDT Director, has called for partnerships with administrations and Sector Members in order to implement the recommendations on new technologies for rural applications. He is also seeking collaboration with other UN agencies, the private sector, non-governmental organizations and interested organizations or institutes in the information technology (IT) sector.

To reduce the cost of implementation, pilot projects will most likely be conducted within a shared-facility, such as a university extension centre, a hospital, a post office, or a telecentre in a rural community. In-kind contributions, such as local personnel, transportation, basic facility for equipment storage, are encouraged from recipient countries. At present, three proposals have been submitted to BDT, and project refinement is under way. Initial evaluation of proposals will include a review of geographical

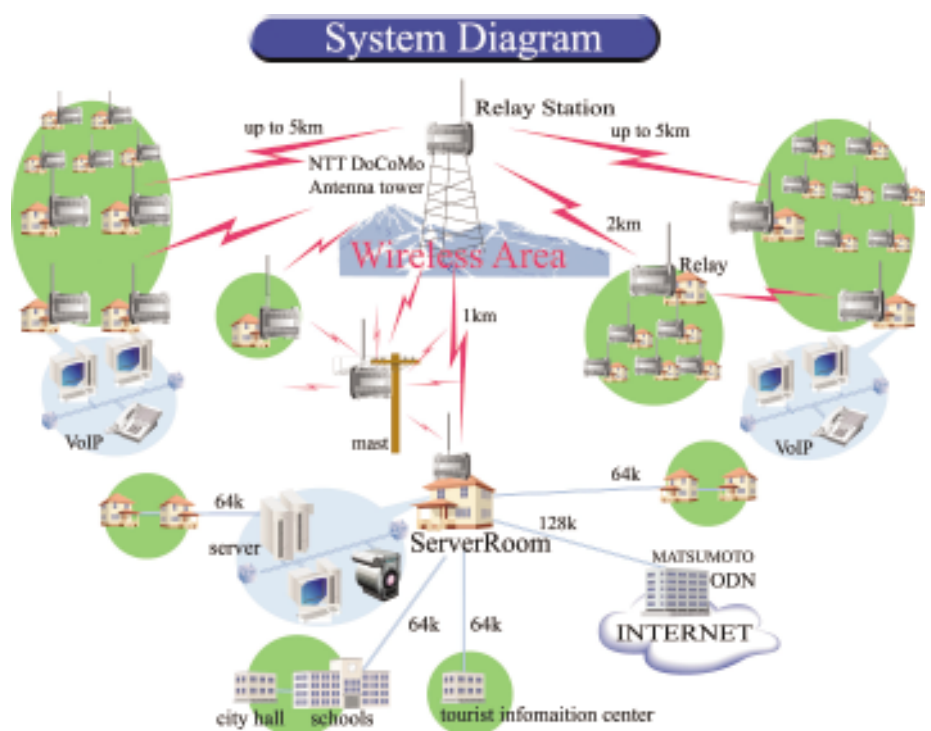
site surveys, cost estimates and to verify the reference information provided to ensure that it complies fully with the selection criteria. A number of key elements will be considered in the selection process and include: a favourable regulatory environment, an identified demand (existing or potential) for telephone services, as well as for multimedia applications such as tele-education, telemedicine, small business development, environmental monitoring, governance and poverty reduction. The level of commitment from the government and local authority is important as well.

The future

More than 2.5 billion people, 40 per cent of the planet's population, live in rural and remote areas of developing countries. Of the small fraction that has access to telecommunications, radio broadcasting and voice telephony have traditionally been the main services provided. Today, a wide variety of new telecommunication applications such as e-mail, e-commerce, telehealth and telemedicine, among others, have made access to interactive multimedia services as important for rural and remote communities as voice connectivity alone. Since each rural district or community requires a different mix of voice, text, image, video and audio communications to best meet its needs, today's tele-communication network operators must be able to support a wide range of services, applications and bandwidth levels at a reasonable cost.

The proposed pilot projects for providing multimedia services such as voice, facsimile, data over the wireless IP-based platform for rural and remote areas is a challenge for ITU, yet it represents a workable option to help bridge the digital divide. Internet-type services

will be implemented cost effectively, with fast roll-out time in the rural and remote areas of developing countries. Islands of local communities with wireless IP-based platforms will be interconnected by the satellite or inter-urban backbone system to the public switched telephone network (PSTN) of the country for connectivity beyond its borders.



One of the key issues for ITU in the promotion of telecommunication development for rural and remote applications on a large scale is how to mobilize the necessary financial resources. In this regard, ITU's initiative to hold the World Summit on the Information Society (WSIS) in two phases — with the first in Geneva in 2003 and the second in Tunis in 2005 — will surely increase collaboration with other United Nations agencies in mobilizing the much-needed resources to connect rural and remote communities to the rest of the globe. Providing connectivity for rural and remote communities remains a critical challenge and responsibility of the ITU and its partners. ■

Universal access to the Internet: dream or reality?

Jean-Marie Blanchard
Director of Development, Alcatel



In the current context of economic globalization and global trade, the industrialized countries are entering — not without a few jolts along the way — a new era that will essentially be based on information and knowledge. The question then arises as to how developing countries, given the inadequacy of their communication facilities, can gain a foothold in this environment.

The widespread dissemination of new information and communication technologies in the developing countries thus clearly emerges as an inescapable challenge in this new context.

What uses for the Internet?

While it is clear that Internet access in developing countries depends essentially on the availability of telecommunication infrastructures, it is equally clear that the Internet will not really be able to take off on a sustainable and far-reaching basis unless services and content tailored to specific local needs are well and truly offered to potential users.

Indeed, Internet use and applications in the developing countries should not be viewed as

a mere transposition of what is currently taking place in the industrialized world, where the Internet is regarded essentially as a means of improving and enriching existing modes of communication. In the developing countries,

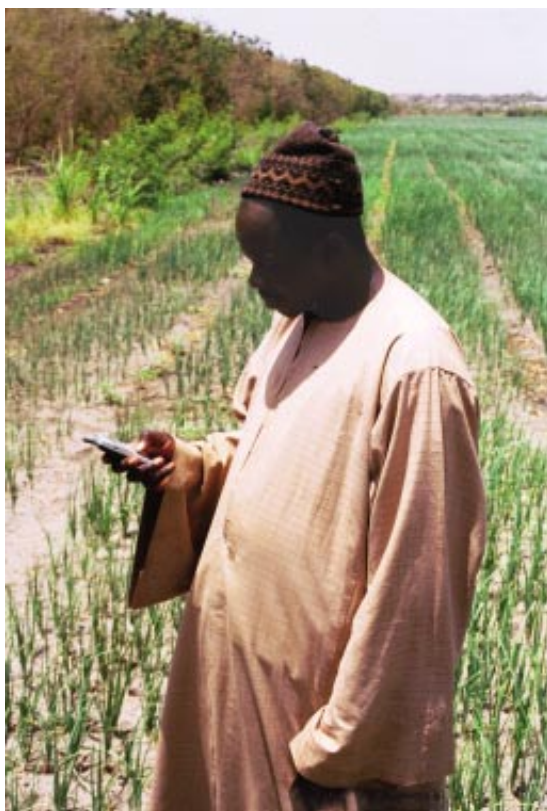
on the contrary, the aim is to make good a shortage of communication media, which is why the Internet must be seen above all as a basic communication tool to be used in leveraging economic and social development in the regions concerned.

What stage have we reached in practice?

A number of promising signs lead us to continue our search for realistic ways in which to “bridge the digital divide”. These signs include young people’s infatuation with the Internet as a tool that is becoming accessible through the proliferation of *cybercafés* in developing countries (and not only in the major towns and cities); and the very obvious correspondence that exists between the community-type lifestyles that characterize the populations of developing countries and the networking possibilities offered by the Internet.

On all the continents, numerous experiments are being conducted for the purpose of reinventing a form of Internet use that is suited to local problems. In this regard, more and more local players with the necessary creativity and drive, and with an in-depth knowledge of their environment, are taking the initiative and developing innovative services, applications and specific contents. Take Senegal for example:

- the “Saint-Louis@net” platform developed by *Afrique Initiatives* (www.afrique-initiatives.com and www.africa21.net) is offering useful everyday neighbourhood services.
- the “Time to Market” service developed by the company *Manobi* (www.manobi.net) offers small-scale professionals in the Dakar region a “virtual” marketplace accessible by means of the mobile Internet using WAP-SMS technology.



A farmer looks up the day's selling prices. The «Time to Market» service also offers small-scale professionals in the Dakar region a «virtual» marketplace accessible by means of the mobile Internet using WAP-SMS technology

Photo: Alcatel (ITU 020024)



Photo: PhotoDisc (ITU 010049)

On all the continents, numerous experiments are being conducted for the purpose of reinventing a form of Internet use that is suited to local problems

These experiments demonstrate that people are prepared to commit expenditure, regardless of their income, whenever they are offered genuinely useful neighbourhood services.

From experimentation to the establishment of communication media

When it comes to lifting the main barriers to Internet access in developing countries, a cybercafé or cybercentre-type approach based on community and collective access, as opposed to individual residential access, appears to be the most appropriate solution. The usage and investment depreciation costs are thus distributed among a large number of users who can consume as and when they wish, provided

they have the necessary funds, with no commitment in terms of duration. Moreover, such collective means of access enable persons unfamiliar with Internet use to receive assistance from the cybercentre's staff, who thereby assume the role of public letter-writer.



Cybercentre in St. Louis (Senegal) offers everyday neighbourhood services

Photo: Alcatel (ITU 020025)

Finding ways to finance such projects is obviously still a key factor for success. And the first question to be asked concerns not so much the amount to be invested but, rather, the income that can be generated by the project. It is on the basis of an attractive business plan that potential investors will see their way to committing funds. Those investors could be either private parties seeking a financial return or public investors pursuing social and political development objectives, for example in the context of programmes to combat poverty. One particularly attractive approach in this connection would be to pool investments and offer different types of service on the basis of a single infrastructure, thereby achieving substantial economies of scale.

Finally, appropriate technological solutions exist and can be geared to local constraints. In order to promote Internet diffusion; rather than build a new communication infrastructure from scratch, what is required is to expand existing communication capabilities gradually in line with the increase in traffic. As far as long-

distance transmission routes are concerned, the price-quality ratio offered by optical fibre-based links is the decisive factor. It is also possible to have recourse to ADSL-type technologies as a means of increasing the capacity of existing cables. For areas that are not yet covered by the telephone network or where quality is inadequate, access solutions can be matched to both usage and investment cost criteria. From this point of view, the widely tried and tested GSM technology currently stands out as the most cost-effective solution — infrastructure and terminals — owing to its widespread dissemination. In addition, when extended to data transmission using GPRS technology, it can be used to connect cybercafés in the same area with a reasonable data rate.



Telecentre in Sevaré (Mali)

(ITU 010124)

Conclusion

As is shown by the results of the various experiments referred to in this article, the large-scale dissemination of new communication technologies in the developing countries is no illusion! However, to achieve full success, a number of precautionary measures do need to be effectively implemented, including the adoption of a targeted approach, taking care not to succumb to the all-too-familiar temptation of hastily transposing to the developing countries solutions previously adopted in the industrialized world. ■