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International  
Telecommunication  
Union



# ANNUAL REPORT 2001

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## FOREWORD

## A Word From the Secretary-General

Yoshio Utsumi



**For better or worse, 2001 will be remembered as a milestone in the reinvention of the telecommunication industry.** However, it did not deter ITU from adapting to the needs of the industry. Neither did we lose sight of our most fundamental mission to connect all of humanity through communications.

The Union's ability to transform itself was seen in the first approvals of ITU standards using a new fast-track procedure called the 'Alternative Approval Process' (AAP). The AAP was adopted to reduce time-to-market delivery of standards to a level that more closely matches industry timeframes and operational practice. Of 244 recommendations received in 2001, 69 per cent were approved in less than six weeks and all were adopted by consensus.

2001 marked the endorsement of the World Summit on the Information Society (WSIS) by the United Nations General Assembly. The Summit, to be held in two phases, will address a broad range of themes concerning the Information Society and will adopt a Declaration of Principles and an Action Plan in order to transform the 'digital divide' into 'digital opportunities'. Hosted by the Government of Switzerland, the first phase will take place in Geneva from 10 to 12 December 2003. The second phase, which will be hosted in 2005 by the Government of Tunisia, will focus on development themes and will provide us the opportunity to assess, augment or amend the action plan established in Geneva.

The launch of the Internet Training Centres Initiative for Developing Countries, a multi-million dollar project, is aimed at closing the gap in Internet and 'new economy' skills in the developing world. It provides a tangible contribution to sustainable development through the use of Information and

Communication Technologies (ICTs). Already, 20 of the 50 planned centres are providing the necessary skills in Internet Protocol (IP) networking and services to hundreds of engineers from developing countries.

Another significant event of 2001 was the progress made in Africa to 'connect' to the Information Society. It was often said that 'Tokyo has more telephones than the whole of Africa'. Fortunately, that is no longer true. There are now twice as many telephone lines in Africa as in Tokyo. The rapid penetration of mobile cellular technology worldwide holds out hope that the majority of humanity will soon have access to telecommunications. Africa was also the focus of the efforts of ITU's TELECOM exhibitions and forums in 2001. ITU TELECOM AFRICA 2001 was successfully held in Johannesburg, South Africa, in November. The Exhibition attracted more than 15 000 telecommunication professionals, including 40 government ministers and more than 200 exhibitors.

On the service development front, the allocation by ITU of the first code for Universal Personal Telephone Numbers (UPTN) means that local and global telecommunication connectivity is becoming much more efficient. UPTN will allow global number portability regardless of geography or telecommunication carrier, including new IP-based technologies. ITU standards for UPTN will greatly enhance a company's ability to operate across international markets and will benefit consumers by allowing them to contact anyone or any place on any communication device.

New telecommunication services were also enhanced with the adoption of global standards for Automatically Switched Optical Networks (ASON). The ASON family of standards builds on the Optical Transport Network (OTN) standards also completed in 2001. These developments bring the world one step closer to an all-optical communication network. It also creates tremendous business opportunities for network operators

and service providers by giving them the means to deliver end-to-end, managed bandwidth services efficiently, expediently and at reduced operational cost.

This is but a sampling of how ITU continued to meet the needs of both the telecommunication industry and the consumer in 2001. And given the complexity of those needs in an increasingly global information society, it is my belief that a multilateral and universal organization such as ITU will be increasingly important to meet the communication needs of all of humanity.

*Yoshio Utsumi*



2001:

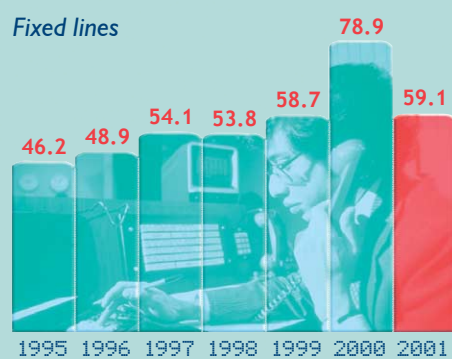
4



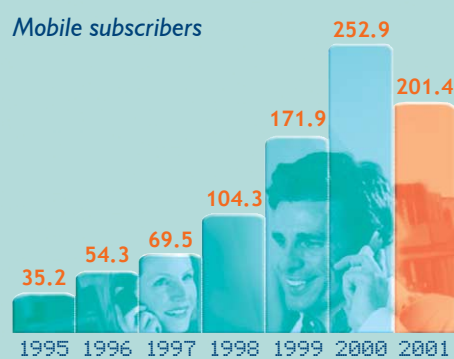
# Section 1

Figure: Thank goodness for the Internet  
New fixed lines, mobile subscribers and Internet users, added each year, 1995-2001 (millions)

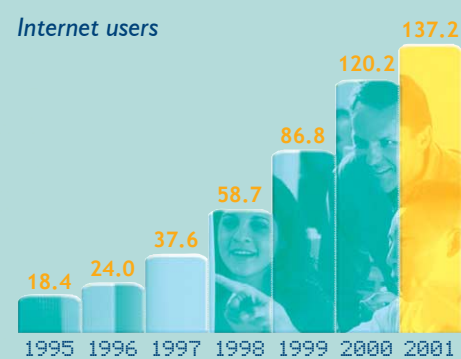
Fixed lines



Mobile subscribers



Internet users



Source: ITU World Telecommunication Indicators Database

# State of the Industry

## If 2000 was the year that the dot.com bubble burst,

then 2001 was the year the telecom boom ended. During the calendar year, telecommunication companies announced some 470 000 job cuts, with the manufacturing sector particularly hard hit. Shares plummeted, fortunes were lost and several famous names teetered on the edge of bankruptcy. Suddenly, opportunities that could not be resisted a year earlier could no longer be afforded. Licences to provide third-generation mobile services that were valued in terms of billions of dollars at the height of the boom in 2000 could hardly be given away in 2001.

But although the reaction of the financial markets suggests an industry in crisis, the actual performance of the sector was not really so bad. Shipments of new fixed lines fell by around a third and new mobile users added fell by around a fifth (see Figure opposite). But in both cases, the performance in 2001 was actually better than that of 1999. The Internet also grew, but at a much slower rate than in the past. The problem was that 2000 was *such* a good year for the industry, it was hard to maintain the momentum, especially after the tragic events of 11 September 2001.

Part of the reason for the slowdown in 2001 was the scale of past success. Many parts of the world are approaching saturation in fixed-line users and mobile. The growth is shifting away from developed economies to the developing world. For instance, China alone accounted for more than half of



all new fixed lines and a quarter of new mobile subscribers added. Africa, too, has added more mobile subscribers since the start of 2000 than in the decades that lead up to the turn of the millennium. The telecommunication operators and manufacturers that have suffered most are those that have not invested outside the developed nations. The competition to reach the last five per cent or so of potential users that do not use telecommunications in the developed world is much more intense than for the fifty per cent that are still unserved in the developing world. For instance, some 18 developing countries grew their mobile networks by more than 200 per cent in 2001 and 13 of these were in Africa. Top prize went to Nigeria, which grew its mobile network ten-fold during 2001, following the licensing of competition.

The growth is also shifting from today's networks to tomorrow's networks. For instance, the Republic of Korea added four million new broadband users and more than six million users of high speed (up to 144 kbit/s) mobile Internet during 2001. It leads the world in both fields. Worldwide, the number of broadband users almost doubled during 2001, with online games being the main demand driver. However, the

industry is still awaiting a true "killer application" that will appeal to users beyond teenage years. New technologies, such as wireless LANs or in-car navigation devices, have also witnessed a boom. But predicting winners is a risky business and for every business venture that succeeds, several others flop.

The plight of the industry is really due to a geographical mismatch between supply and demand. For instance, across the Atlantic, there is enough submarine fibre capacity to allow every single person in North America and Europe to make simultaneous phone calls. Faced with such over-capacity, prices are tumbling and profits too. But in the developing regions of Asia and Africa, there is a lack of capacity, especially for mobile communications and Internet traffic. The broader goals of humanity, such as those expressed in the UN Millennium Declaration, will be much easier to achieve once developing countries benefit from the same ubiquity of advanced information and communication technologies (ICTs) as developed countries.

Bridging the digital divide means creating a win-win game in which both developing and developed countries profit from increased investment in ICTs. If profitable growth is to be restored after the *annus horribilis* of 2001, then investors must look beyond their own shores. The telecommunication industry claims to be a global one. It must now prove it.

2001:

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# Section 2



# Connecting People

## Partners in Training

The first step in connecting people to the promise of the information society is to provide them with the skills to empower them and their communities. ITU, through its development sector ITU-D and in partnership with government, the private sector and development agencies entered into eleven training partnership agreements in the course of 2001. Our partners in these Human Resource Development projects included:

### Asia-Pacific Broadcasting Union and Institute for Broadcast Development

Online training modules to be delivered on 'Implementation of Digital Television Broadcasting', 'VHF/UHF Frequency Planning', 'Intellectual Property Rights in Broadcasting', and 'Issues of Public Service Broadcasting'.

### Alcatel CIT

ICT training courses to be developed as part of the ITU Centres of Excellence Initiative.

### Cable & Wireless

Fellowships to be provided for online post-graduate degree programmes in telecommunication engineering and law.

### CISCO

50 IP Network Training Centres to be developed in existing educational non-profit institutions in developing countries by the end of 2003.

## Commonwealth Telecommunications Organisation

This organization, in collaboration with ITU-D, will fund the design and delivery of 4 one-week workshops in telecommunication policy and regulation.

### Information & Communications University – Republic of Korea

Qualified masters and doctoral candidates from least developed countries will have their attendance at the university sponsored.

### Maltacom College International

A 'service provider' node for distance education through ITU's Global Telecommunication University will be established.

### National Office for Information Economy

The knowledge pool of the Asia-Pacific Region will be enriched through the development of online modules based on expertise provided by the Australian Communications Authority.

### Siemens ATEA

Core courses delivered through ITU's Centres of Excellence will be adapted to the specific needs of users in the African region.

### Waseda University – Japan

ITU, through its Centre of Excellence, will work with Waseda University to develop programmes in the area of new information and communication technologies and distance learning.

## Regional Commonwealth for Communications

Distance learning projects will be implemented in partnership with the Commonwealth of Independent States, national operators and the private sector.

### A Growing Fellowship

More than 1 500 people from every region of the world benefited from ITU training fellowships awarded through programmes run by BDT. The majority (85%) were for group training while 15% went to individuals. Two of those individuals had this to say about the opportunity to improve their telecommunication management skills:

**"I improved my ability to manage and operate our new GSM 900 network"**

**Ahmedou O. Ahmed Sidi**, Mauritius, Deputy Director of Operations for Mauritel. Mr Ahmed Sidi attended a training course on GSM Network Operation sponsored by ITU and the United Kingdom Telecommunications Authority.



**"It allowed me to convert my organization to a learning company, to make my staff and my colleagues understand change as an opportunity, not as a threat"**

**Kem Vikra**, Cambodia, Deputy Director of the International Telecom Department in the Ministry of P&T. Mr Vikra attended a Global Telecom Management Programme in the United States.



### Building Healthy Connections

ITU's Telecommunication Development Bureau has been asked to lead a project that will link African and Arab national telemedicine projects into the Afro-Arab Telemedicine Network. The goal is to establish a multi-country telemedicine network that will extend medical services to those who would otherwise not receive it. The telemedicine network will allow professionals to share resources and knowledge in order to prevent and treat common diseases in the region. Initially, the network will support remote consultations in radiology and pathology as well as distance training and education. Depending upon the state of the infrastructure in each country, the facilities will include:

- Connections for high-speed transmission enabling online consultation
- Distance learning, on-the-job training and education

- ISDN circuits and analogue lines of 28, 34, and 56 kbit/s
- Internet connections for file transfer and data acquisition and satellite connections for remote areas with no access to basic phone services.

In addition, ITU is active in telemedicine initiatives in Ethiopia, Georgia, Guinea, Malta, Mozambique, Myanmar, Nicaragua, Uganda, Ukraine, Uzbekistan and Zimbabwe.

### The Least Connected, The Most in Need

The Special Programme for the Least Developed Countries (LDCs) is directed at integrating the world's most marginalized countries into the global telecommunication network. Most of the countries in this category have very poor telecommunication networks resulting in teledensities below 1 per 100 inhabitants. Not only do they have very low per capita incomes but they suffer from long-term constraints to their growth as a result of human resource and severe infrastructure weaknesses.

The citizens of the LDCs are often divided digitally from the rest of the world in two ways. First, they do not have easy access to information and communication technologies (the majority have not used or even seen a telephone); second, the rural population is often further divided from their urban compatriots in terms of access and connectivity.

The ITU programmes for the LDCs, developed and delivered through BDT, undertook activities in priority areas. These include:

- Introducing new technologies and services for network expansion and modernization
- Reforming and restructuring the telecommunication sector to create an environment conducive to increased investment and competition
- Developing the human resources necessary to ensure sustainability of the management and operation of the telecommunication sector
- Promoting financing and partnerships as a strategy to attract investment into the sector.

In order to ensure the greatest impact of these programmes, assistance was concentrated on a small group of countries. These included: Eritrea, Guinea-Bissau, Mozambique, Nepal, Niger and Yemen. The projects ranged from developing a business plan in order to establish a telecommunication college, to assistance in migrating from a circuit-switched telephone network to an Internet Protocol, to the creation of rural telecommunication development strategies.

### Reconnecting After War

A special category of LDC has been targeted for assistance. These 'Countries in Special Need' include those that have been through war, civil strife

and other forms of conflict that have resulted in untold suffering and damage. One of the first casualties of war is often the telecommunication infrastructure. While ITU recognized this special need, finding the financial resources to fulfil the need was a challenge.

Nonetheless, the countries of Burundi, Liberia, Rwanda, Sierra Leone and Somalia have benefited from a partnership between ITU, the US Federal Communication Commission and the Leland Initiative of the United States Agency for International Development (USAID). The three institutions agreed to pool both financial and in-kind resources in order to reconnect these war-torn countries with the global telecommunication community.

## Working Together

ITU has always been a focus for the many stakeholders in the field of telecommunications. Through study groups, workshops, seminars and conferences we have been able to fulfil our responsibilities for setting telecommunication standards, meeting development goals and managing the frequency spectrum.

## Telecommunication

### Standardization Focus:

- Workshop on IP Networking and Mediacom 2004 ([itu.int/ITU-T/worksem/ipnetwork](http://itu.int/ITU-T/worksem/ipnetwork))
- Future Network Evolution – Venezuela, Study Group 13 ([itu.int/ITU-T/worksem/networkrevolution/](http://itu.int/ITU-T/worksem/networkrevolution/))

- Multimedia in the 21st Century – Brazil, Study Group 16 ([itu.int/ITU-T/worksem/multimedia/](http://itu.int/ITU-T/worksem/multimedia/))

- Quality of Service in evolving networks ([itu.int/ITU-T/worksem/qos/](http://itu.int/ITU-T/worksem/qos/))

### Strategic Policy Focus:

- Strategic Planning Workshop on the Economic and Regulatory Implications of Broadband ([itu.int/broadband](http://itu.int/broadband))
- Strategic Planning Workshop on the Licensing of Third Generation (3G) Mobile ([itu.int/3G](http://itu.int/3G))

### Development Focus:

- Regional Preparatory Meeting for the Arab Region for the World Telecommunication Development Conference (WTDC-02) (Alexandria, Egypt, 17-19 October 2000)
- Regional Preparatory Meeting for Europe and Commonwealth of Independent States for the WTDC-02 (Sofia, Bulgaria, 28-30 November 2000)
- Regional Preparatory Meeting for the African Region for the WTDC-02 (Yaoundé, Cameroon, 29-31 May 2001)
- GMPSC Workshops on Introduction, Licensing and Commercialisation of GMPSC Services were held for Asia (Bangkok, 27-29 August 2001) and Africa (Johannesburg, 7-9 November 2001)

## Connecting the Regulators

Many ITU Member States recognize that sector reform is the bedrock on which their Digital Divide initiatives rest. It is also widely

recognized that effective regulation is key to continuing to attract investment. One of the most fundamental tasks of ICT sector reform therefore is to establish an effective and transparent regulatory authority. Some 117 ITU Member States have created a national communications regulatory body, up from 13 in 1990. By 2005, this number is expected to jump to 140.

A Global Symposium for Regulators (GSR) was organized by the Telecommunication Development Bureau at the end of 2001, during a time of growing challenges for the telecommunication sector generated by the current market downturn. Three hundred and sixty-nine delegates from 102 ITU Member States, including representatives from 72 regulatory authorities, five communications ministers, a host of policy-makers, 21 Sector Member companies and participants from regional regulatory organizations, academic institutions and international organizations actively participated in the meeting.

The GSR is the only global venue designed to foster a dialogue among regulators from both industrialized and developing countries. In a testament to the importance regulators placed on the meeting, some 55 heads of regulatory authorities devoted time from their busy schedules to attend the meeting.

The Symposium resulted in a four-point action plan to assist regulators



in developing the tools they need for effective regulation. These include:

- A focus on skills training
- Developing benchmarks and models
- Bolstering regional and subregional initiatives
- Broadening input beyond the community of regulators.

ITU was requested not only to provide training, but also to collect information on other training programmes and training centres. It was further requested to conduct studies to identify best practices and models on pressing issues such as universal service, licensing and interconnection. It was also requested to bolster regional and subregional regulatory services, including fostering the development of regional associations for regulators and

providing training and promoting information sharing on a regional basis.

Finally, input is to be solicited from a broader array of market players while maintaining a forum for free and frank exchange among regulators. This would include conducting case studies to solicit feedback to regulators from operators and suppliers, the investment community and users' associations.

### **G-REX: a new hot line for global connections**

In just a few years, the number of countries that have established regulatory bodies for information and communication technologies (ICTs) has risen dramatically, making a global dialogue for



regulators imperative. In order to provide a way to engage the global regulatory community, ITU through BDT launched the Global Regulators Exchange (G-REX), a hot line for sharing best practices and learning from each other.

All regulators and policy-makers from the 189 ITU Member States have been invited to register a focal point to participate in G-REX. There are 207 registered G-REX users from 110 countries. G-REX comprises nine discussion groups on key regulatory issues and a regulators' hot line.

Contributions in the form of comments, questions and the posting of relevant documents have all been welcomed. G-REX users are not hesitating to use the hot line, which provides a way for regulators to send targeted requests on specific issues to their counterparts around the globe. For example, when a regulator from a least developed country recently requested sample mobile licence agreements, responses poured in from Australia, Denmark, Hong Kong (China), India, Jordan, Nigeria, Norway,

### **Workshop on IP Networking and Mediacom 2004**

Mediacom 2004 is an ITU project that aims to provide a framework for the development of standards for multimedia applications, services and systems. The interoperation of these systems so that they can respond to user requirements in terms of

# Connecting People

the Philippines, Uruguay and Switzerland. It is hard to imagine that this LDC would have been able to collect so many sample licence agreements in the absence of G-REX.

## Internet Diffusion Workshop

Internet diffusion is a fundamental factor in the integration of all world communities in the Information Society. The results of the 'ITU Internet Case Studies' carried out by the Association of South East Asian Nations (ASEAN), as well as other ITU case studies, were presented at this workshop. In addition to discussions on policy, the user and usage, and commercial and Internet indicator aspects of Internet diffusion, consideration was also given to the possible role of ITU in Internet-related projects ([itu.int/asean2001](http://itu.int/asean2001)).



mobility and ease of use is key for the success of next generation networks (NGNs). The workshop held in Geneva (Switzerland) discussed these issues as well as how Internet Protocol (IP) will fit into NGNs. Plans were made to identify steps for the evolution from existing networks to NGNs and identify and propose timelines for NGN standards.



## World Telecommunication Policy Forum 2001: IP Telephony

The third World Telecommunication Policy Forum, focused on the topic of Voice Over Internet Protocol (VoIP), was organized by the Strategy and Policy Unit of ITU. More than 750 senior officials from more than 120 ITU Member States participated. Three days were spent looking at the regulatory challenges and commercial opportunities presented by the development of technologies, that enable voice calls to be carried over data networks such as the Internet. The Forum defined four different 'opinions' which represent the shared views of ITU members on general implications of IP Telephony, actions to assist ITU members, human resource development challenges, and essential studies. For more information on the work of this forum, visit the website at [itu.int/wtpf](http://itu.int/wtpf)

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# Section 3

# Connecting Telecommunication and Technology

## Developing Standards for Next-Generation Networks

The ITU-T sector of ITU is responsible for the development of standards that lie at the heart of communication networks. Hand in hand with governmental agencies and private sector suppliers of technology and services, ITU-T provides a forum for research and debate on interoperability that will ensure the smooth running of legacy and future networks.

### Fast track to success

In today's fast-moving world, speed to market is key to success. ITU has acknowledged this with the development of an initiative to by-pass much of the bureaucracy involved in the development of standards. The Alternative Approval Process (AAP) was developed – by the ITU-T sector in response to members' demands – as a fast-track approval procedure for technical standards.

As network operators look to implement third-generation services, the interoperability of equipment is imperative. AAP is designed to make sure that standards reach Recommendation stage as quickly as possible. But AAP is not just about saving ITU study group members' time. With these standards in place, network operators will have the confidence to roll out next generation services quickly and efficiently.

As well as redefining many of the procedures involved, the aim of AAP is to automate much of the approval process. Under AAP, once a meeting considers that a

draft Recommendation is ready for approval, it is posted on the ITU website and the rest of the process can be completed electronically with no further meeting necessary.

In 2001, of 244 Recommendations received, 69 per cent were approved within less than six weeks. This compares with approval times of nine months in the late 1990s, and as much as four years in the early eighties. The hope is that AAP will bring year-on-year improvements in the number of approvals made, with the knock-on effect that commercial organizations can get quicker returns on next generation networks.

### One Number, Many Devices

ITU's electronic numbering (ENUM) initiative promises to be one of its most high-profile developments, giving true convergence across different network types and devices. Simply put, ENUM will give users the ability to have calls to a single number directed to a wide variety of devices – including fax, e-mail, pager, mobile phone, SIP telephony address or website.

The development of ENUM has also demonstrated ITU's willingness to work with other standards bodies. The Internet Engineering Task Force (IETF) has also been key to the successful definition of the ENUM standard.

ENUM's development has been complicated. Not only have a disparate set of networks had to be joined, but many different regulatory regimes across the world have had to be consulted.

Analysts have predicted that ENUM will allow the introduction of a range of new services that may be key to the success of next-generation networks. For example, ENUM will allow a user to call a voice-enabled IP terminal from a conventional telephone. It also means that a user can decide which device they want to deal with a call.



### Internationalizing the World Wide Web

A joint symposium hosted by ITU and the World Intellectual Property Organization (WIPO) and supported by the Multilingual Internet Names Consortium (MINC) aimed to help give Internet access to a wider global audience. English has become the lingua franca of the information society, exacerbating the digital divide – between the haves and the have-nots of the digital age.

Fifty per cent of the content on the Web is in languages other than English. The aim of the Symposium on Multilingual Domain Names was to reflect this diversity by suggesting ways in which scripts other than the

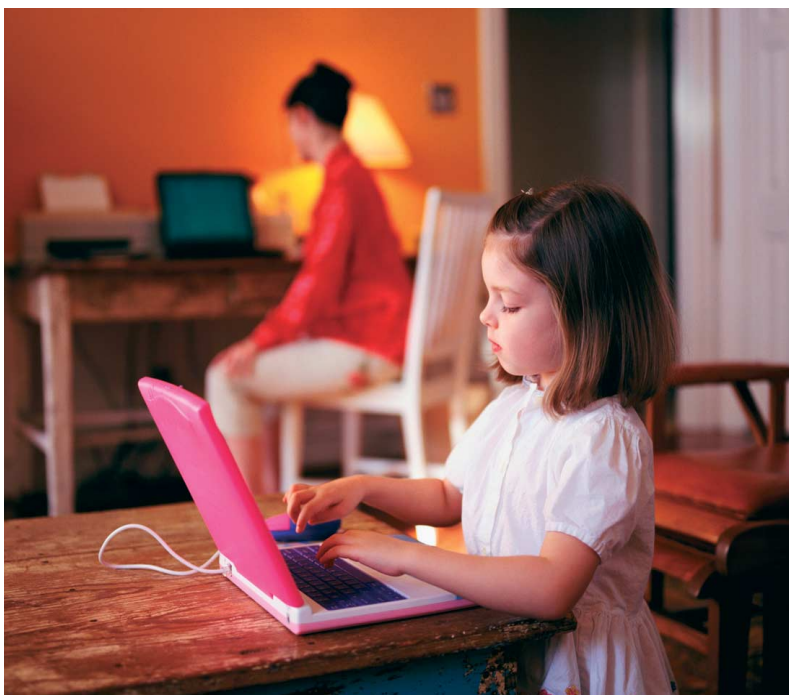
14 2 0 0 1 Latin-based ASCII means of accessing websites currently used can be built into the Web's infrastructure. Currently, native speakers of Arabic, Chinese, Japanese, Korean, Tamil, Thai and other languages have no means of addressing the Web in their own language.

The Internet has become a global network of more than 230 connected economies and over 360 million users. It is estimated that, by 2003, two-thirds of all Internet users will be non-English speakers, with the greatest expansion coming from Asia and Latin America. It is further estimated that, by that same year, at least one-third of Web users will prefer to conduct their online activities in a language other than English, and that by 2005 only one-third of Internet businesses will use English for online communication. Some forecasters even predict



that, by 2007, Chinese will be the primary language used on the World Wide Web.

A number of commercial and private organizations have proposed solutions that enable multilingual domain name use, but no *de facto* standards have emerged. The ITU and WIPO symposium concentrated on the technical, legal and policy issues relating to the enlargement of the domain name space to support scripts of languages other than English, as well as the intellectual property implications of such developments.



Equality of access to the valuable resources provided by the Internet is a key concern for ITU. And this symposium is just one of many ITU initiatives aimed at addressing the 'digital divide'.

### End-to-End Information Delivery

Convergence between communications, broadcasting and home electronics has created a need for an increasingly disparate set of devices to interoperate. Mediacom 2004 is an ITU project that aims to establish a framework for a harmonized and coordinated development of global multimedia communication standards.

Digital video is being adopted in an increasing array of applications ranging from video telephony and videoconferencing to DVD and digital TV. The adoption of digital video in many applications has been fuelled by the development of video coding standards, and many standards have emerged targeting specific application areas. These standards provide the means needed to achieve interoperability between systems designed by different manufacturers for any given application.

Mediacom 2004 aims to avoid confusion created by proprietary or competing standards by acting as a guiding force for global standards for multimedia applications, such as videoconferencing, video streaming and the systems that deliver them. This will benefit the consumer by offering a clear range of products, the service provider a larger range of services and the equipment

# Connecting Telecommunication and Technology

manufacturer a wider range of customers.

Recent standards work on multimedia by ITU includes a standard that will halve the bandwidth necessary for video streaming. ITU-T H.26L will give double the frames per second (fps) for streamed Internet video than available when using the incumbent MPEG4 technology.

Mediacom 2004, like all ITU-T work, relies to a certain extent on the cooperation of other standards developing organizations (SDOs), and private and public sector entities, and is another example of ITU's commitment to dialogue with all interested parties working towards the goal of a truly convergent information society.

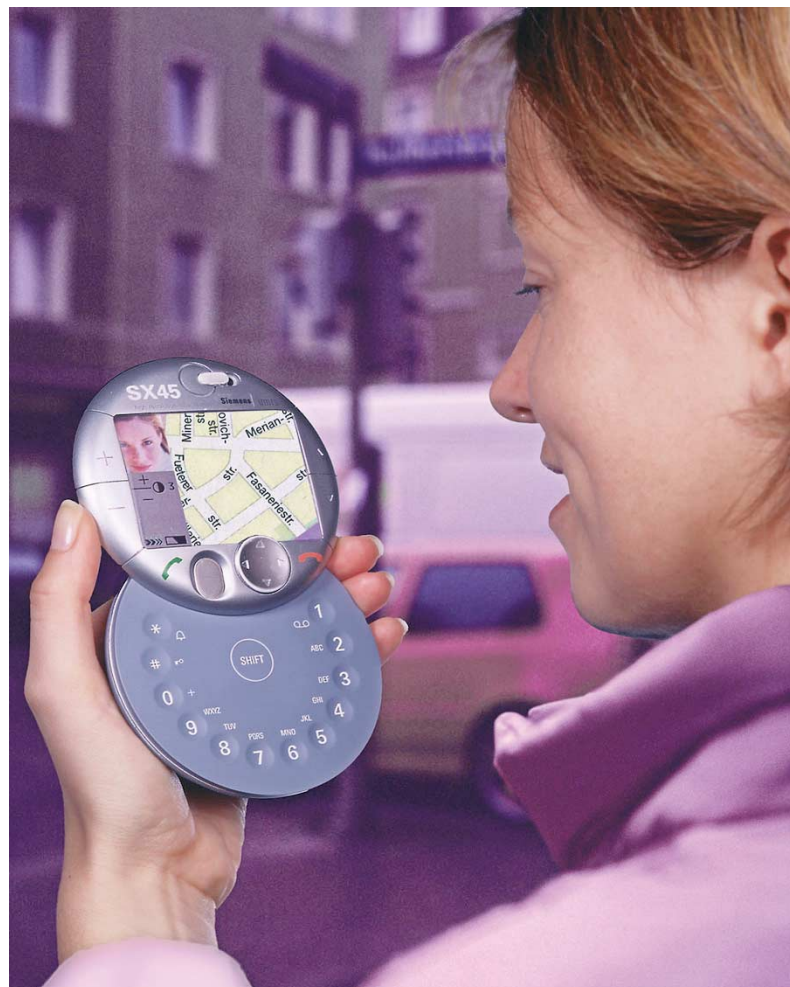
## Switch to the packet world

The Internet Protocol (IP) is seen by many as the underlying infrastructure for all future information delivery systems.

ITU's IP project aims to address the provision of voice, video and data over IP while ensuring that the transition from legacy networks to the new protocol is a smooth one.

To date, the IP project has established a general framework and architecture for future IP standardization, and worked with the Internet Engineering Task Force (IETF) towards a common standard that will straddle the circuit-switched and IP worlds.

Additionally, ITU has initiated the IP Cablecom project aiming to



develop interoperable specifications for delivering advanced real-time multimedia services over two-way cable networks.

## Quality of service

Quality of service is now a definable part of the communication service provider's portfolio. Often in the circuit-switched world it was difficult to offer QoS guarantees where the mechanisms were not in place to measure the ups and downs of service provision.

IP or packet-based networks have inherent QoS measuring tools and

this capability is often trumpeted as a must for next-generation networks. With the ability to measure QoS, operators will be able to guarantee quality service levels – as well as different classes of service – and this could yield a wealth of multimedia services at attractive price points for wholesalers and end users. IP QoS will allow operators to offer tiered levels of service at tiered prices with, for example, the option of charging more for a particular guaranteed level of service.

ITU-T has initiated a special project to establish how multimedia systems

interact with and request QoS statistics from the network and how this relates to end-to-end performance. The QoS special project also aims to establish best practice for service providers, in terms of the definitions of QoS targets. In past work, either QoS was assumed to be provided by the network (ITU-T H.320/ISDN), or the network was assumed to have no ability to provide QoS (ITU-T H.323 V1/LANs).

### Strengthening network security

The events of 11 September 2001 have made security a focus for governments, corporations and individuals. To this end, ITU has been at the forefront of the development of standards that will help to make the world a safer place.

ITU's standards development sector, ITU-T, has developed the *de facto* standard for electronic authentication over public networks – ITU-T X.509. X.509 is the definitive reference for designing applications related to Public Key Infrastructure (PKI). The elements defined within X.509 are widely used, from securing the connection between a browser and a server on the Web to providing digital signatures that enable e-commerce transactions to be conducted with the same confidence as in a traditional system.

Work continues on developing security standards in IP networks, ITU-T H.323 and mobile security issues for next-generation networks. Specifically, ITU study groups have looked at the following issues:

- Security from network attacks
- Theft or denial of service
- Theft of identity
- Eavesdropping
- Tele-biometrics for authentication
- Security for emergency telecommunication
- Telecommunication networks security requirements.

### Next-Generation Network Code

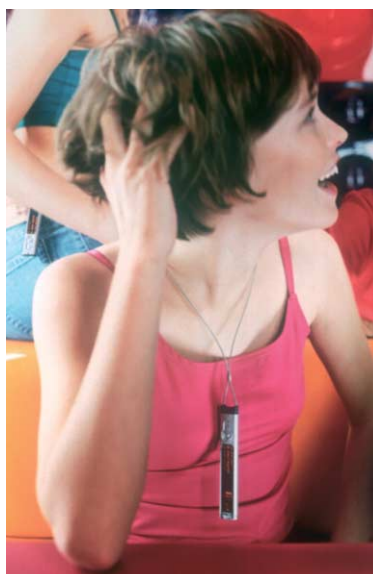
The way that audio and video elements are translated or coded is key to multimedia delivery. And development of coding recommendations by ITU has continued in 2001 with a major announcement on a new team to deliver the next-generation video coding standard.

The Joint Video Team (JVT) is another example of ITU-T's commitment to working with other standards developing organizations (SDOs). ITU-T and ISO/IEC have partnered for a project that will

enhance standard video coding performance. This new working party, the Joint Video Team (JVT), is expected to bring substantial improvements in video coding efficiency, which will result in improved video quality. The new standard is anticipated to be of use in all areas where bandwidth or storage capacity is limited.

The JVT project will take over the ITU-T H.26L (Improved Video Coding for Multimedia Communication) project of ITU-T and create a single interoperable solution for a next generation of standard video coding. It will result in technically aligned standards in MPEG. Formal approval of the new standards is expected to be complete by the end of 2002.

In addition, 2001 has seen the approval of a new speech codec that gives significant improvement to speech quality. The new standard – ITU-T G.722.2 – is expected to be used in applications such as Voice over IP (VoIP), high-quality audio and videoconferencing and ISDN wideband telephony. The codec has been selected by 3GPP (Third Generation Partnership Project) as the Wideband codec for GSM and 3G wireless applications.



# Connecting Telecommunication and Technology

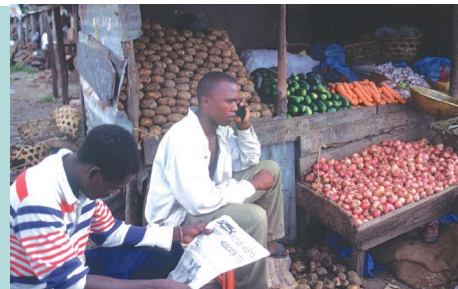


2001:

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## Section 4



## ITU Members – A Union of Respect

Unique among UN specialized agencies, ITU's membership comprises Member States, represented by their respective government administrations, and Sector Members, which include private and public sector entities such as operators, manufacturers and regulators as well as telecommunications-related organizations such as NGOs and research and training institutes.

Since its establishment more than 135 years ago, ITU has grown to become one of the most widely-represented organizations in the world, with 189 Member States along with some 660 Sector Members and more than 40 Associates who, between them, represent all the major players from all sectors of the telecommunication industry.

Growing interest in ITU activities continued to drive demand for membership across the ITU-R, ITU-T and ITU-D Sectors during 2001, with a sector membership growth of 7.8% and a 4.9% increase in Associates.

The Telecommunication Standardization Sector, in particular, reported in 2001 a marked rise in membership, with 46 new Sector Members and 28 Associates, representing an 11% increase on the 2000 figure. Representing service providers, manufacturers, consultancies and international organizations, some of these new members also came from the developing world.

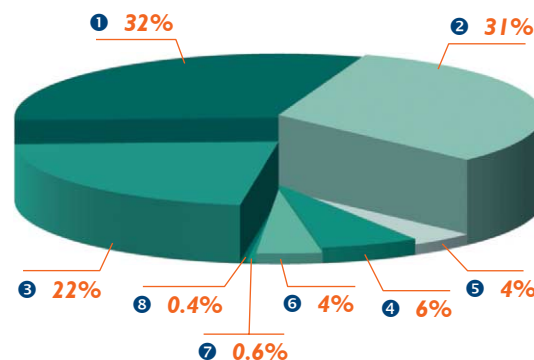
In line with efforts to increase responsiveness and address the evolving needs of members in a fast-changing environment, the year 2001 saw growing interest in the new category of partners – Sector Associates – that allows smaller companies to bring their innovative contributions to the work of a particular study group within their Sector of choice.

This increased participation from the private sector reflects the Union's rapidly broadening membership base, which now includes not only telecommunication operators and equipment manufacturers, but software developers, Internet service providers, financial institutions, specialized consultancies, research agencies, publishing houses, and even universities. National regulatory authorities also continued to account for a growing component of ITU's membership in 2001, in recognition of the Union's increasingly active role in international policy-making.

With intense pressure from Sector Members and Associates for ever-faster delivery of timely standards, sustaining the growth levels reported this year would depend in large part on the success of ITU's reform process and the related decisions of the Marrakesh Plenipotentiary Conference, scheduled for September 2002.

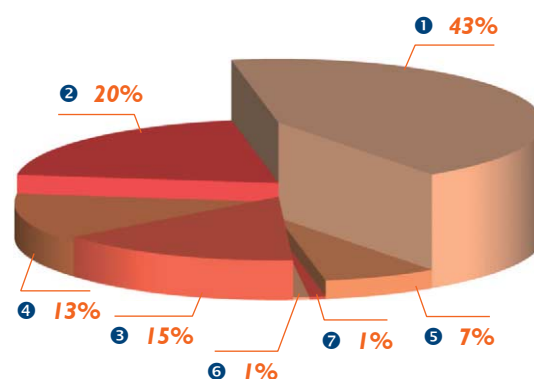
## Membership 2001

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- 1 Scientific or Industrial Organizations
- 2 Recognized Operating Agencies
- 3 Member States
- 4 Regional and International Organizations
- 5 Sector Associates
- 6 Other national entities
- 7 Intergovernmental Satellite Operators
- 8 Financial and Development Institutions

## Sector Members 2001



- 1 Manufacturing, research, etc.
- 2 Operators other than mobile
- 3 Regulators
- 4 Mobile Operators
- 5 International Telecommunication Organizations
- 6 International Satellite Organizations
- 7 Regulatory Telecommunication Organizations



### **ITU TELECOM – Connecting Industry and the Information Society**

For ITU TELECOM, the year 2001 was marked primarily by the successful organization of the AFRICA 2001 event, which brought together the communication community from across the African continent.

#### ***ITU TELECOM AFRICA 2001 (12-16 November, Johannesburg, South Africa)***

In spite of the difficult global economic circumstances and the troubles in the telecoms industry itself, AFRICA 2001 was a tremendous success, and was a watershed event for ITU, with Sub-Saharan telephone density for the first time breaching the one-per-cent subscriber barrier considered essential to economic growth. By the time of AFRICA 2001, mobile subscribers across the continent also outnumbered their fixed-line counterparts, and ITU was able to confidently forecast that there would be more than 100 million

mobile cellular subscribers in Africa by the year 2005.

Hosted by the Government of the Republic of South Africa, the event was ITU's fifth regional TELECOM Exhibition and Forum for Africa. It was held at the Gallagher Estate, outside Johannesburg.

The Exhibition attracted 15 000 telecommunication professionals, including many organizations who bring ICTs to communities and who wanted to see what was on offer. More than 200 exhibitors from the telecommunication, information technology and audiovisual entertainment fields were on hand to demonstrate their latest products and services.

The event was also attended by industry leaders at the highest level, from ambassadors and nearly 40 government ministers, to the CEOs of the front-ranked market players, along with some of the most respected industry analysts and commentators.

# Creating Partnerships that Connect the World

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## ITU TELECOM AFRICA 2001 Event Statistics

| EXHIBITORS                                                                                          |                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exhibitors                                                                                          | 236 exhibitors from 28 countries, including 7 National Pavilions. 75 South African companies exhibited.                                                                                                         |
| Exhibition space, net                                                                               | 8 314.50 square metres                                                                                                                                                                                          |
| <b>Total trade participants</b><br>(12 to 15 November)                                              | <b>13 107</b> from 95 countries.                                                                                                                                                                                |
| VIPs                                                                                                |                                                                                                                                                                                                                 |
| Ministers / Ministerial Representatives                                                             | 40                                                                                                                                                                                                              |
| Directors-General                                                                                   | 34                                                                                                                                                                                                              |
| Ambassadors                                                                                         | 55                                                                                                                                                                                                              |
| Delegates from Administrations                                                                      | 11                                                                                                                                                                                                              |
| Chief Executive Officers                                                                            | 110                                                                                                                                                                                                             |
| Other VIPs                                                                                          | 356                                                                                                                                                                                                             |
| <b>Total VIPs</b>                                                                                   | <b>606</b>                                                                                                                                                                                                      |
| FORUM                                                                                               |                                                                                                                                                                                                                 |
| Forum speakers                                                                                      | 166 from 42 countries                                                                                                                                                                                           |
| Youth Forum and TDS speakers                                                                        | 68                                                                                                                                                                                                              |
| Youth Forum participants                                                                            | 85 from 48 countries                                                                                                                                                                                            |
| TDS-sponsored delegates                                                                             | 73 from 40 countries                                                                                                                                                                                            |
| <b>Total Forum participants</b> including speakers<br>(not including VIPs and Press)                | <b>1 060</b> from more than 70 countries                                                                                                                                                                        |
| PRESS                                                                                               |                                                                                                                                                                                                                 |
| <b>Total Accredited press</b>                                                                       | <b>191</b> journalists from 123 media and 18 countries.<br>77 photographers, camera crews and support staff.<br>73 journalists represented the international press.<br>118 represented the South African media. |
| OTHER PARTICIPANTS                                                                                  |                                                                                                                                                                                                                 |
| Other participants                                                                                  | 138                                                                                                                                                                                                             |
| TOTAL PARTICIPANTS                                                                                  |                                                                                                                                                                                                                 |
| <b>15 102</b> from more than 100 countries. People came from all 56 countries in the Africa region. |                                                                                                                                                                                                                 |

The Forum at AFRICA 2001 was especially well attended, with standing room only at some sessions. Altogether nearly 2 000 people attended the Forum (including VIPs, press, etc.), which encompassed a Policy and Development Summit, an Infrastructure and Applications Summit, a TELECOM Development Symposium and – for the first time – a Youth Forum.

The Forum was closed by ITU Secretary-General, Yoshio Utsumi, South Africa's President Thabo Mbeki, ITU Deputy Secretary-General, Roberto Blois, South Africa's Minister for Communications, Dr Ivy Matsepe-Casaburri, and Hamadoun Touré, Director of ITU's Telecommunication Development Bureau (BDT).



### **ITU TELECOM Exhibitors' Meeting, 22 May, Geneva**

The Exhibitors' Meeting, held mainly to focus attention on the WORLD 2003 event, but also to publicize the forthcoming regional events, brought together around 200 exhibitors' representatives. The meeting was marked by an open and positive dialogue, and was an excellent opportunity for ITU to demonstrate its awareness of past problems and to demonstrate its commitment to responding to them.

### **ITU TELECOM Board Meeting, 14 November, South Africa**

The ITU TELECOM Board Meeting in November brought together key representatives from both government and industry – and gave the floor to them, so they could air their concerns, suggestions, criticisms and comments. The meeting was well attended, and has allowed ITU to develop a number of new strategies for the future of the ITU TELECOM events.



**ITU TELECOM  
WORLD 2003**  
Geneva  
12-19 October

### **Future Events**

Work was also performed during 2001 on preparing for the future ITU TELECOM events to take place in 2002 and 2003. See [itu.int/itutelecom](http://itu.int/itutelecom) for further details.

### **Financial Situation**

In accordance with Article 19 of ITU's Financial Regulations, any surplus income or excess expenditure resulting from the world or regional TELECOM events

is transferred to the Exhibition Working Capital Fund.

### **ITU TELECOM AFRICA 2001 – Development Symposium**

ITU TELECOM AFRICA 2001 and BDT presented a special symposium to address the key telecommunication issues in the developing countries in Africa. The following issues were the subject of much debate and interaction amongst those attending:

- Building Effective Regulators
- Development of the Internet in Africa: Who should pay?
- Capacity Development in the African Region

In addition, fellowships were provided to two representatives from each of approximately 30 countries in order to facilitate their participation in the symposium. The symposium resulted in a set of recommendations for the participating countries and ITU on how best to address the issues presented. These included regulations, Internet infrastructure and capacity building.

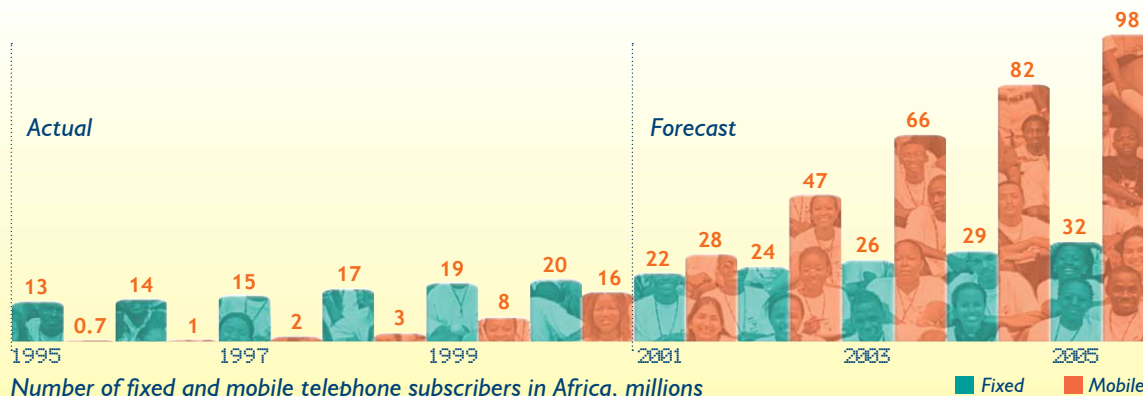
*The position of the Exhibition Working Capital Fund evolved in 2001 as follows:*

|                                                       | Debit (CHF)         | Credit (CHF)         |
|-------------------------------------------------------|---------------------|----------------------|
| <b>Balance on 31 December 2000</b>                    |                     | <b>32,471,739.11</b> |
| <b>Income</b>                                         |                     |                      |
| ITU TELECOM AMERICAS 2000                             |                     | <b>3,038,371.30</b>  |
| ITU TELECOM ASIA 2000                                 |                     | <b>3,048,421.79</b>  |
| ITU TELECOM MIDDLE EAST & ARAB STATES 2001            |                     | <b>-1,027,341.82</b> |
| Income from previous events                           |                     | <b>117,142.02</b>    |
| <b>Expenses</b>                                       |                     |                      |
| Transfer for financing technical cooperation projects | <b>5,000,000.00</b> |                      |
| <b>Balance on 31 December 2001</b>                    |                     | <b>32,648,332.40</b> |
| The minimum level of the Fund is set at:              | <b>5,000,000.00</b> |                      |

The accounts of AFRICA 2001 were closed in 2002 and the unaudited provisional result amounts to CHF -3,462,098.90

### **Regulations:**

- Although not an essential condition for the development of network and services, in the African context, a regulatory structure contributes to a legal environment for attracting investments, in particular from the private sector.
- Autonomy of technical, administrative and financial management can be given to regulatory bodies even if they are not completely independent from the government. Regulatory bodies should be able to finance themselves



through licence fees and taxes.

- Regulations should be created to motivate staff, and a policy of continuous education must be developed in all the activity fields of the regulatory body.
- Regulatory bodies should have, among their functions, development of networks and services and protection of the interests of users on the issue of accessible prices and quality of service.
- It is important to have subregional and regional regulatory associations similar to the Telecommunication Regulators' Association of Southern Africa (TRASA) and the West Africa Telecommunication Regulators' Association (WATRA).

## Internet Infrastructure and Costs:

- Critical mass in demand, bulk regional purchases and local assembly of computer terminals could significantly reduce costs.
- Subsidies are not a realistic solution; however, innovative approaches such as integration of the Internet into schools must be examined.

- Service providers of the Internet and network operators must share bridges and interconnection expenses for positive impact.
- Regulators should have a catalytic role to ensure universal access to ICTs through financing schemes.

## Capacity Building:

- Africa must establish its own priorities, representing a challenge both for governments and the private sector.
- Interested parties must become involved in the development of competencies and sufficient funds must be freed up for this purpose.
- Governments should give priority to education at all levels, and universities and teaching establishments should work in close collaboration with the public and private sectors to ensure that education and the proposed curricula correspond to the needs of the people.
- Optimal practices and systems of reference should be implemented to guarantee the quality and efficacy of education.
- ITU's Centre of Excellence initiative can significantly boost training in Africa.

## Africa – The state of Connectivity

**African Telecommunication Indicators 2001**, the sixth indicator publication on the African Region, was specially prepared for ITU TELECOM AFRICA 2001. The report provides a penetrating review of developments in the African information and communication technology sector, while the indicators include the latest data on ICT development on a regional and country basis. At this critical time of ICT growth in Africa, the analysis of growth trends, regulatory approaches and key data plays a useful part in identifying current and future needs, with the overall objective of finding a way to bridge the Digital Divide. [itu.int/ITU-D/ict/publications/africa/2001](http://itu.int/ITU-D/ict/publications/africa/2001)



### ITU partnerships on the front line of the Digital Divide

ITU has long been a strong proponent of the concept of Multipurpose Community Telecentres (MCTs) through the work of its Telecommunication Development Bureau. But our commitment to the centres, which can bring the tools of the Information Society directly to communities who need them, took on a new dimension with an agreement between ITU, the Office of the United Nations High Commissioner for Refugees (UNHCR) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) to establish a network of three multipurpose community telecentres in and around refugee camps along the north-western border of Tanzania. WorldSpace Corporation and Volunteers in Technical Assistance (VITA) have also agreed to participate in the project.

The centres will help to fulfil the health, education, information

and communication needs of rural residents, relief workers and an estimated 135 000 refugees, the majority of them from Burundi. Besides providing – for the first time – basic voice, fax and Internet connectivity for refugees to contact relatives who may have migrated to other countries in the region or overseas, the centre is also planned as an educational centre for refugee children and for teacher training. The telecentres will also provide links to medical information, WorldSpace radio programmes and web-based multimedia content. They will also stimulate the development and growth of local businesses as well as bringing ICT skills to the local population.

ITU will coordinate the establishment of the telecentres and equip them, while UNHCR will make an in-kind contribution in the form of the physical infrastructure and electricity from generators, as well as manpower to provide technical backup to the centres. UNESCO will

provide its expertise in community organization and ICT-based information and learning content for development. VITA will provide satellite support and information services through its VITA-Connect network, including the contribution of a ground station, antenna, and software for basic e-mail-based connectivity. Meanwhile, WorldSpace Corporation will provide at each site radio equipment, satellite receiver and data terminal to download web-based multimedia educational material and entertainment. The Tanzanian government will provide the land, the Tanzanian Commission for Science and Technology will execute the project and the Tanzania Communications Commission will monitor the performance of the telecentres.

Tanzania plays host to more than 500 000 refugees from strife-torn neighbouring countries. Providing a multipurpose community telecentre is a strategy that can help these communities improve their existence in the camps and take advantage of opportunities to build a better future after their life in the camps. The refugees, including women, will be trained to run the centres themselves.

### Radiocommunication Connects the Information Society

For almost a century, radiocommunications have been close to the heart of ITU's mission to connect humanity through communications, and the many stakeholders in this work have shown a tremendous commitment to this challenge.

In addition to determining the technical characteristics and operational procedures for a wide range of wireless services, the Radiocommunication Bureau also plays a vital role in the management of the radio-frequency spectrum, a finite resource that is increasingly in demand. Its work is vital to a wide range of the human need for connectivity including telecommunications, broadcasting, amateur radio communications, space research, radio astronomy, aeronautical and maritime services, meteorology and, not least, emergency communication services that ensure safety of life on land, at sea, in the skies and in space.

## Preparing for the Future

Providing communication access for humanity requires the development of a proper regulatory environment as well as the design of the appropriate standards. The World Radiocommunication Conference to be held in 2003 (WRC-03) in Geneva, Switzerland, will be key in the further development of an adapted regulatory framework to ensure fair and efficient use of the radio-frequency spectrum. The work of ITU-R study groups and the Special Committee on Regulatory and Procedural Matters in 2001 in preparation for WRC-03 makes possible the necessary technical and operational bases



on which to take sound decisions. It also ensures that the world radiocommunication community gets timely and relevant standards to continue the development of mobile, wireless and satellite-based systems and services.

The preparation for the Radiocommunication Assembly (RA-03) and the WRC-03 has involved all the ITU-R study groups and the Special Committee, resulting in the development of significant contributions for the Conference Preparatory Meeting scheduled for November 2002.

The main study areas in regard to standardization have related to operational and technical limits in the fixed-satellite service allocations to space science services, earth stations on board vessels using fixed-satellite service bands, and allocations to fixed terrestrial services.

Special provisions have been established in order to revise

the 1961 Stockholm Agreement, which will enable the introduction of digital sound and television broadcasting. The ITU-R study group chairmen and vice-chairmen decided to designate Study Group 6 (Broadcasting) as responsible study group. As a result, Study Group 6 established a new task group to prepare a technical report for the First Session of the Regional Conference. A new Recommendation containing a VHF/UHF point-to-area prediction method, for use by broadcasting and mobile services, is expected to greatly contribute to this preparatory work.

Considerable progress has also been made in the development of a number of significant new or revised Recommendations on radio-system standards. This concerns, in particular, those intended to facilitate the introduction of the IMT-2000 systems as well as to address technical characteristics and sharing criteria in preparation for WRC-03.

Study group activities have also resulted in the preparation of a considerable number of new handbooks which were published in 2001 or are in the process of being prepared. Their topics include:

- Satellite Communications
- Terrestrial Land Mobile Radiowave Propagation in the VHF/UHF Bands
- Digital Sound Broadcasting
- Digital Terrestrial Television Broadcasting
- Space Research Communication
- Use of the Frequency Spectrum for Meteorology
- Frequency Adaptive Communication Systems and Networks in the MF/HF Bands
- Spectrum Monitoring (new edition)

### **Space Service Connections**

Satellites play an important role in the development of world communication systems and services, encompassing an increasing range of services, which go beyond traditional (fixed and mobile) voice and data. These include, amongst others, broadcasting, digital cinema, meteorology, maritime communications, health care, distance learning and space research.

ITU-R plays a vital role in the development of a relevant regulatory, policy and technology framework for the peaceful use of outer space in general and of satellites and their applications in particular.

The primary objective of the Radiocommunication Bureau is to process notices for new or modified satellite systems. At the end of 2001, the Radiocommunication Bureau reported 1409 coordination requests outstanding. While the number of notices is virtually the same as the previous year, improvements in processing methods and software have begun to speed up the ability to handle them. However, the work by the Bureau continues to be overburdened by the fact that notices for advance publication and coordination of new systems and modifications to systems continue to be submitted in volumes that are around five times greater than the numbers of satellite systems that are subsequently brought into service.

During 2001, the Bureau also implemented decisions from WRC-2000 to introduce the new Broadcasting Satellite Service (BSS) Plans and the Lists for Regions 1 and 3 established at the Conference. This work included the need to complete a review started in 2000 of all relevant satellite systems already published in order to determine whether or not there is any additional requirements for coordination. The review activity will enable the Bureau to resume its normal activity of examining proposals for modifications to the Plans.

### **Earth Service Connections**

While satellite services are fundamental to the development of a fully effective worldwide

communication network, most applications and services are based on fixed or mobile, wire line or wireless terrestrial systems where potentially harmful interference remains the biggest concern.

The FM/TV component for the processing of notices for terrestrial services (TerRaSys) became fully operational during 2001 and the accumulated backlog was eliminated at the end of October 2001 (completion of the treatment for 7 754 notices for new or modified assignments under Article S11, as well as for 10 072 submissions for plan modifications under various regional agreements).

With respect to notices for which standard tools are not yet available, local databases were developed to deal with these and resulted in a treatment of 45 081 notices under Article S11, as well as of 134 submission notices under





various Plan modification procedures. The relevant information was published on a bi-weekly basis, through the International Frequency Information Circular (IFIC), as well as on the ITU website.

In addition, some 30 373 notices were treated under the Article S12 procedure (HF broadcasting service) and the relevant information, including the compatibility results, has been distributed regularly, on a monthly basis, through CD-ROMs.

The Bureau continued to provide updated information on the use of the frequency spectrum, as well as publishing various service documents dealing with ship stations, coast stations, radio determination and special service stations and call signs. The online database on ship stations, Maritime mobile Access and Retrieval System (MARS), which is available 24 hours a day, has been enhanced by incorporating additional search

and rescue information, and arrangements were made to provide access to this additional data for authorized users around the world.

In response to several categories of users, the List of Ship Stations (List V) was published in a combined format: paper version containing particulars of all ship stations that are normally engaged on international voyages, and a CD-ROM version containing the complete information on all ship stations included in the ITU database on ship stations.

### **Connecting the Plans**

A major achievement of 2001 was the completion of a two-year operational plan in order to respond to members' expectations, as expressed in the Minneapolis Plenipotentiary Conference Resolution 72, for improved linkages between strategic, financial and operational planning. This operational plan addresses the complete 2002-2003 budgetary

period. It also provides a clear linkage with the budget structure as well as with the activities defined in it. Moreover, this enhanced biennial plan sets out expected achievements to be attained in the period 2002-2003 and also describes the accomplished achievements of the previous reporting period.

The biennial plan will result in a more effective management of the Bureau's limited resources. The work to be carried out in the various units of BR will be assessed by means of quarterly reports in which the situation at the end of each quarter is compared to the results to be achieved. This assessment is facilitated by key performance indicators that will focus on members' needs, taking into consideration, on the one hand, the workload placed on BR, and on the other hand, the resources available as proposed by the Secretary-General and decided by the ITU Council.



Considerable efforts are also being made to provide the software infrastructure needed to process the space and terrestrial frequency notices submitted by ITU Member States. These software tools are required to capture, examine and validate the notice forms. They are also used to publish the results of these examinations with a view to informing the international community about new services being brought into use. By doing so, the Bureau helps ITU Member

States Administrations identify cases where their national services may potentially be affected.

The Bureau is also in charge of the dissemination of handbooks, standards and regulatory documents developed within the area of responsibility of ITU-R. Further, it complements the mission of ITU-D by designing and organizing seminars for ITU Member States and ITU-R Sector Members. In 2001, seminars were held in Iran and

Mexico. Practical workshops were also organized in Geneva for space and terrestrial services.

The complete series of ITU-R Recommendations were published in 2001. This amounted to 92 Volumes of Recommendations (in English, French and Spanish), as adopted by the Radiocommunication Assembly in Istanbul, Turkey (May 2000). These were produced on paper, on CD-ROM and are also available online through ITU's website.



The Bureau also produced the 2001 Edition of the Radio Regulations, including all amendments and decisions of the World Radiocommunication Conference (Istanbul, 2000), both on paper and in electronic format.

### **Public Private Partnerships – The Key to Sustained Connectivity**

ITU signed non-exclusive Memoranda of Understanding in 2001 with Siemens and Alcatel as part of its Centre of Excellence (CoE) initiative. The two European manufacturers will make in-kind contributions in equipment as well as making experts available to assist in developing new ICT training courses to complement the current programmes being made available through the Centres of Excellence.

The ITU Centres of Excellence serve as focal points in the different developing regions of the world for training, professional development, research and



information on matters related to telecommunication issues. Training is provided to policy-makers, regulators, high-level corporate managers and frequency managers. The CoEs are also the focal points for regional and global information society initiatives and they provide consultancy to governments and private sector interests as well as facilities for conferences, seminars and colloquia.

Building the human resource capacity to manage and administer networks in the new telecommunication environment is one of ITU's key objectives. Pioneering partnerships between the public and private sectors such as those with Alcatel and Siemens are essential if we are to see sustainable improvements in telecommunication service in all the regions of the world.

Centres of Excellence such as the Ecole supérieure multinationale des télécommunications (ESMT) in Dakar and the African Advanced Level Training Institute (Afralti) in Nairobi are located in physical facilities and serve professionals in West and East Africa respectively. Others consist of networked establishments, which accumulate and disseminate examples of best practice and training materials. The programme modules consist of telecommunication policies, regulatory issues, spectrum management, business management, technology awareness, IP awareness and human resources development.

### **Virtual Connections for Broadcast Training**

The Asia-Pacific Broadcasting Union (ABU) and the Asia-Pacific Institute for Broadcasting

Development (AIBD) launched a Virtual Learning Centre (VLC) in 2001 as part of the ITU Asia-Pacific Centre of Excellence. The goal is to meet the growing demand for skills development in the field of broadcasting.

Rapid developments in technology are presenting challenges for broadcasters in developing countries that risk falling further behind global broadcast standards if they are not able to embrace digital technology. This VLC will provide training in all aspects of broadcasting to the broadcasting community in the region.

2001:

30

# Section 5



# Finances of the Union

The 2000-2001 budget was implemented successfully, despite the difficulties due to variations in the exchange rate between the Swiss franc (CHF) and the United States dollar (USD).

The implementation of all of the work emanating from the World Radiocommunication Conference had the effect of delaying the processing of satellite network filings. As a result, the anticipated income was carried over, thereby generating a shortage of income of approximately CHF 11 million in relation to budgeted income. This resulted in a shortfall of income of CHF 2.4 million in relation to the budget, notwithstanding the increase in income from contributions by Sector Members and Associates.

Implementation of the 2000-2001 budget resulted in an operating surplus of CHF 2.3 million, after the cancellation of CHF 0.87 million of bad debts.

## Budget

At its 1999 session, the Council approved the 2000-2001 budget of

the Union for the amount of CHF 332.6 million. At its 2000 and 2001 sessions, the Council increased the appropriations by CHF 4.2 million. The amount of the contributory unit for Member States was set at CHF 315 000 for 2000 and 2001 (as against CHF 328 000 for 1998 and 1999), on a basis of 358 3/16 units. The amount of the contributory unit for Sector Members was set at CHF 63 000 (as against CHF 65 000 for 1998 and 1999), i.e. at one-fifth of the contributory unit for Member States.

## Income and expenditure

The budgeted income for 2000-2001, including a withdrawal of CHF 14 million from the Reserve Account, was CHF 336.9 million. Actual income amounted to CHF 334.5 million (as against CHF 359.1 million 1998-1999), or 0.72 per cent less than the amount budgeted. The following table details the budgeted and actual income.

Total expenditure amounted to CHF 332.2 million (as against CHF 329.8 million in 1998-1999),

or 1.66 per cent less than the amount budgeted. Details are given in the table below. When lower than budgeted income in the amount of CHF 2.4 million and the cancellation of CHF 865 500 worth of bad debts are taken into account, the surplus of income over expenditure amounts to CHF 2.3 million (as against CHF 29.3 million in 1998-1999); this amount has been transferred to the Reserve Account.

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| Source of income     | Income (1000 CHF) |                  |                  |
|----------------------|-------------------|------------------|------------------|
|                      | 1998-1999 actual  | 2000-2001 budget | 2000-2001 actual |
| Member States        | 241 538           | 225 802          | 225 362          |
| Sector Members       | 47 095            | 41 040           | 47 639           |
| Associates           |                   |                  | 231              |
| Support cost income  | 14 582            | 7 500            | 4 748            |
| Interest income      | 3 194             | 2 500            | 7 119            |
| Publication sales    | 29 634            | 28 000           | 26 577           |
| Cost-recovery income | 4 033             | 16 515           | 5 421            |
| Miscellaneous income | 1 024             | 1 420            | 1 108            |

| Sector                                           | Expenditure (1000 CHF) |                  |                  |
|--------------------------------------------------|------------------------|------------------|------------------|
|                                                  | 1998-1999 actual       | 2000-2001 budget | 2000-2001 actual |
| General Secretariat and intersectoral activities | 188 752                | 175 935          | 174 022          |
| Radiocommunication Sector                        | 60 295                 | 67 276           | 67 408           |
| Telecommunication Standardization Sector         | 19 836                 | 26 825           | 25 386           |
| Telecommunication Development Sector             | 60 475                 | 66 895           | 64 516           |

### Technical cooperation projects

In 2001, total expenditure for UNDP projects amounted to USD 4.4 million, and for trust fund projects to USD 9.9 million.

Overall expenditure was thus USD 14.3 million.

The corresponding support costs income amounted to USD 0.7 million or CHF 1.2 million.

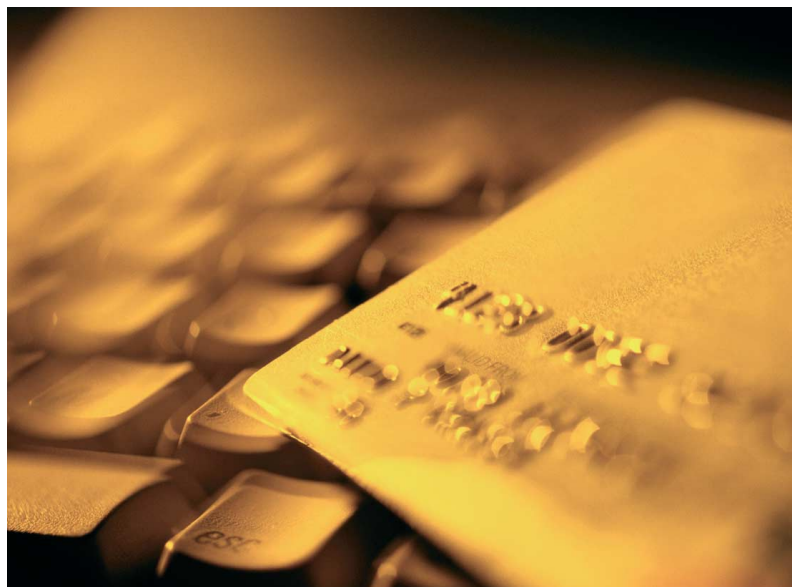
Cash contributions for trust funds were received for a total of USD 15.5 million.

### Cash and term deposits

As most of the contributors to the Union's budget paid their contributions on time, liquidity remained satisfactory throughout the biennium. Contributions for 2002 paid in advance amounted to CHF 70.6 million. It was not, therefore, necessary to request funds from the Government of the Swiss Confederation. The funds available were invested during the biennium, and income from interest amounted to CHF 7.1 million.

Bad debts amounting to a total of CHF 865 500 were written off by corresponding withdrawals from the Reserve for Debtors' Accounts.

The main indicators show the Union's financial situation to be sound, despite accounts receivable amounting to CHF 58.7 million at the end of 2001. The Reserve for Debtors' Accounts stands at CHF 52.5 million, providing 89.6 per cent coverage of all arrears.



### Capital Funds and Reserve Account

The 2001 Council approved the establishment of a working capital fund for information technologies, to which the sum of CHF 3.95 million was allocated from the Reserve Account.

The 2001 Council also approved the transfer of CHF 4.75 million from the Reserve Account to the Buildings Maintenance Fund.

The Exhibition Working Capital Fund ended the year 2001 with a balance of CHF 32.6 million as against 32.4 million on 1 January 2001.

The Special Fund for Technical Cooperation is based on voluntary contributions to meet the telecommunication needs of the developing countries and urgent requests for assistance they submit to the Union. The related project financing was USD 2.3 million from the Special

Fund and from ITU TELECOM surpluses. The capital of the Special Fund at 31 December 2001 was USD 13.9 million.

The Reserve Account is maintained mainly from unused appropriations. On 31 December 2001, the balance in the Reserve Account stood at CHF 17.6 million (as against CHF 38.4 million in 1999), including CHF 2 million for cost-recovery activities, which are identified separately within the Reserve Account.

### Conclusion

Although ITU's financial situation is healthy, some indicators reveal the limitations of the current financial framework. A less rigid financial system, permitting a better grasp of the effects of variations in external factors and elements, should make it possible to guarantee greater financial stability for the Union.



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