



INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION DEVELOPMENT BUREAU

Report of the Chairperson

ITU Global Symposium for Regulators

**8-10 December 2004
Geneva, Switzerland**

Executive Summary

The fifth annual Global Symposium for Regulators (GSR) was held 8-10 December 2004 in Geneva, Switzerland, at the invitation of ITU Development Bureau (BDT) Director Hamadoun I. Touré.¹ The meeting focused on ways to adapt and evolve licensing and regulatory structures to cope with convergence of information and communications technology sectors. The chairperson of the GSR was Kathleen Q. Abernathy, a member of the Federal Communications Commission of the United States. The GSR was held in conjunction with the Second Annual Meeting of Regional Regulatory Associations, held 7 December 2004 at the same location in Geneva. (See appendix for a full report on that meeting).

The 2004 GSR was evidence that the annual symposium continues to evolve in size, scope and in importance. Since its creation five years ago by the Regulatory Reform Unit of the ITU's Development Bureau (BDT), it has grown in terms of the numbers of regulators attending, the number of countries represented, the number of sector members attending (invited for the first day) and the array of issues that have come out of the symposium for further work, by both the BDT and the participating nations. At this year's GSR, there were 350 participants from 106 countries, including regulators representing 77 countries, as well as 34 sector members and all existing regional regulators' associations.

This GSR was notable for an increase in the number of proposals by delegates for issues and projects to be carried out before and at the next GSR. This included a proposal, made possible by an invitation from the government of Tunisia, to hold the next GSR outside of Geneva. The invitation to hold the symposium in Tunis in 2005 was warmly received, supported and adopted by the GSR.

¹ Due to growth in attendance at the GSR, as well as construction going on at other Geneva convention facilities, the GSR and its allied meetings were held this year at the headquarters of the World Meteorological Organization.

As in last year's GSR, this GSR reached consensus on an output document, the *Best Practice Guidelines for the Promotion of Low-Cost Broadband and Internet Connectivity*. The document expresses the view of the national regulatory authorities participating in the GSR that regulatory and policy decisions can serve to encourage the growth of broadband networks and services that will improve lives around the world. The symposium agreed that the views of regulators on such an important set of enabling technologies should be expressed to those seeking ways to build the Information Society. These *Best Practices Guidelines* will be presented to the next phase of the WSIS. (The final text of the document is attached to this report).

This year's symposium consisted of four plenary sessions, focusing on multiple aspects of licensing and spectrum management, along with two simultaneous break-out sessions – an innovation for the GSR format – focusing on “spam” and broadband infrastructure.

Opening Ceremony

Yoshio Utsumi, ITU Secretary General noted that the information and communication technology (ICT) sector is undergoing a radical transformation, from an industry based on "plain old telephone service" (POTS) to one that provides voice, data and multimedia applications. At the same time, countries around the world are in the process of updating their licensing and regulatory frameworks to address this convergence so as to be better able to promote affordable access to the entire range of communication services, from voice to high-speed Internet access. It is for this reason that the 2004/2005 edition of the ITU publication, *Trends in Telecommunication Reform: Licensing in an Era of Convergence*, was released for this year's GSR. We have seen an unprecedented rise in the number of wireless services—all of which require spectrum. Accordingly, many countries are now making the necessary transition to modern day spectrum management. The rise of wireless services gives great hope to developing countries. Many developing countries have already been able to raise substantially the number of users with access to voice telephony, through the adoption of mobile phones and pre-payment cards. The advent of wireless broadband and Internet technologies, such as Wi-Max and Wi-Bro, lends even more optimism to our quest to bridge the digital divide. Along with increased Internet access, however, comes new problems, such as spam and other forms of Internet fraud; this requires the community of regulators to work together to develop a multi-pronged attack on this scourge of the Internet. Effective regulation can help foster investment in the ICT sector, the rollout of innovative new technologies and provide an environment in which consumers can enjoy high-quality services at affordable prices.

Hamadoun I. Touré, Director ITU Telecommunication Development Bureau (BDT), said that the most crucial topics facing the industry today—how to address convergence, how to rethink spectrum management in an increasingly wireless world, how to promote low cost Internet and broadband access to make our dreams of an Information Society a reality, and how to ensure that the Internet remains safe to use, unhindered by spam, viruses and other forms of electronic fraud—are on the agenda of this 5th annual GSR. The main goal of the GSR is to launch dialogue among the world's community of regulators. It is our belief that by facilitating an exchange of best practices between regulators we can best help the industry grow and meet the needs of end users. Participants in this year's GSR are expected to agree to a set of Best Practice Guidelines for the Promotion of Low Cost Broadband and Internet Connectivity. Thus, this year's GSR also includes a demonstration of technologies to facilitate low cost broadband and Internet access.

Lord Currie, Chairman of the UK Office of Communications (Ofcom), said his country had recognized the phenomenon of convergence by combining an array of agencies into his office, a converged communications regulatory authority. He also emphasized that broadband networks are at the core of British communications policies. After an initial lag in broadband network expansion, services are growing rapidly today, augmented by the availability of local loop unbundling. Work is ongoing to expand flexibility in service provision and to introduce spectrum trading in Britain. Meanwhile, he suggested that the ITU look at whether the Radio Regulations should be made more flexible and exhibit less of a command-and-control aspect. He proposed that they could be amended to extend co-primary protection to all services that did not interfere with the primary service in any given band.

Marc Furrer, Director General of Switzerland's OFCOM, advocated an open, technology-neutral regulatory framework, characterized by the following principles:

- Commit to regulating only what *can* be regulated – He suggested that spectrum trading could be permitted under a policy of setting a basic framework of what can be offered using any given spectrum, then liberalizing who should offer it and how it should be offered. For example, wireless local loop license holders (whose original technology has not proved viable) should be allowed to sell spectrum to Wi-Max purveyors, which may be able to better employ the spectrum.
- Only license if it is really necessary – Licensing should not be looked upon solely as a means of raising money for the government. Licensing will still be necessary for some services and for spectrum, but for most other services, registration should be sufficient.
- Enable new technologies, like Voice over Internet Protocol (VoIP) – Although there are regulatory questions involving emergency services, law enforcement and other public policy concerns, the incumbent's circuit-switched offerings should nevertheless not be protected by regulation. Regulators should instead look to the interests of the consumer.

In her opening comments, GSR Chairman **Kathleen Abernathy** proposed that regulators adopt a presumption against extending the old regulatory frameworks to new services and providers and instead make *old regulations* conform to *new technologies*. Due to digital conversion, it is necessary to abolish the distinct regulatory categories that are based on the identity of the provider that so many of our regulatory schemes encourage or require. We need to develop more flexible regulatory structures that are focused on the competitive options and the fulfillment of core social policy objectives, and less bound up with arcane service categories or labels. Some regulation, however, will always be required in the public interest. While becoming *less* involved in price regulation, regulators are likely to become *more* active in two related areas – enforcement and consumer education. Regulators should work to determine which issues and goals could be addressed only through regulation. The GSR Chairman thanked all regulators who had contributed to the consultation on the Best Practice Guidelines and encouraged other regulators to join in the discussion during the course of the GSR so that consensus on the Guidelines could be reached. The GSR Chairman also encouraged all participants to visit the technology demonstration.

Session One – Licensing Today

Moderator: Kathleen Q. Abernathy, United States
FCC Commissioner and GSR Chairman

Presenters: Doreen Bogdan, Head of the Regulatory Reform Unit, BDT, ITU
Eric Lie, Regulatory Analyst, Regulatory Reform Unit, BDT, ITU

Panelists: Franco Silva, General Operations Manager, Venezuela
Thomas Barankauskas, Director, CRA, Lithuania
Clara Luz Alvarez, Commissioner, Cofete l, México
Jose Ferreira, CEO, Mascom Wireless, Botswana
Gracie Foo Siu Wai, Deputy Director General, OFTA, Hong Kong, China

Presenter **Doreen Bogdan** discussed the continuing worldwide trend of liberalization in regulating telecommunications and ICT sectors. She also illustrated the growth in those sectors worldwide – particularly in the mobile services sector, which now serves nearly 1.5 billion subscribers around the world. Her presentation set the stage for discussions of convergence and the growing demand for broadband networks and Internet access. This trend is not limited to developed countries, and demand is growing in developing and emerging economies, as well, putting pressure on regulators and policy-makers to address their roles in promoting broadband access and content.

Eric Lie discussed traditional and current forms of licensing. Licensing approaches that were highlighted included individual licences, general authorizations (or class licences) and open entry. Some licensing classifications were also discussed including service-based and facilities-based licences and unified licences. He noted the trend, apparent in many countries, of easing licensing requirements, encouraging general authorizations and even – particularly in the case of ISPs and other networking services – eliminating them altogether. He also gave an overview of the different licence award mechanisms available such as auctions, comparative selection and hybrids of the two.

After the introduction of the session the Moderator made general remarks on regulation based on the experience of the FCC. She placed particular emphasis on the fact that all regulators have similar objectives and similar challenges regardless of their country of origin: to improve access to telecommunications in a dynamic and sustainable manner.

During the interactive panel discussion, the following points were raised:

- Convergence could be approached as the evolution of existing services and licensing regimes. This could facilitate a smooth transition from older forms of licensing to a converged or unified licensing system. The example of regarding SMS as a new form of paging was cited as an example of such an approach.
- Technology neutrality was cited as a key principle of licensing. A number of examples of licensing approaches were raised in this context. Jordan highlighted its new licensing regime, which no longer utilizes service and technology distinctions while Mexico highlighted its flexible approach to licensing which allows its existing regime to accommodate convergence.
- The session also discussed the danger of industry consolidation resulting from mergers induced by convergence. Market power could be consolidated in the hands of a few operators, edging out smaller entrepreneurs.
- The advent of newer wireless technologies such as Wi-Max has raised the issue of whether these low-cost access platforms should be licensed. Countries such as the US have decided against licensing but have mandated technical parameters for unlicensed use.
- It was emphasized that regulatory regimes should be transparent and independent from undue political pressures, and they should also be flexible and agile enough to cope with rapidly shifting technology trends.
- Consumer education was cited as an important aspect for regulators to examine. In order for newer digital technologies and services to become widespread and successful, consumers will have to be educated and informed about their usefulness and value. This in turn will promote more meaningful competition among service providers.

Session Two - Addressing Convergence Licensing Issues

Moderator: Ewan Sutherland, Executive Director, INTUG, Belgium

Presenters: Lynne Dorward, President, LADCOMM
Devendra Pal Seth Singh, TRAI, India

Panelists: Jose Leite Pereira, Member of Governing Body, ANATEL, Brazil
Tom Phillips, GSM Association, United Kingdom
Mohamed El Kadiri, Technical Director, ANRT, Morocco
Malick Gueye, Director General, ART, Senegal
Leong Keng Thai, Director General and Assistant Chief Executive, IDA, Singapore
N.B.S. Al Kharusi, Committee Member, TRA, Oman

Lynne Dorward briefed the GSR on license fee structures, variations in policies on license renewals and duration, and mechanisms for setting license fees. Her discussion on fees touched on mechanisms such as auctions and government-determined fees. She highlighted, in particular, the economic benefits of having lower licence fees. She cautioned, however, that a full understanding of the factors and variations that go into setting fees is necessary in order to avoid undermining a country's goals in licensing and regulation.

Dr. Devendra Pal Seth Singh related the evolution in licensing from the era of a single monopoly through the current period of convergence. The convergence phenomenon has several aspects, including blurring of lines between services, networks, equipment and markets. He then went on to discuss the impact of convergence on licensing, noting that countries have several options to cope with this trend. He highlighted approaches such as facilities based and service based licensing, general authorization regimes and unified licensing for operators. He outlined the new unified licensing framework now being developed in India.

The panelists discussed efforts by regulators in their home countries to grapple with convergence issues. Some points and perspectives that came out of the session included:

- There is a need to review the small, numerous licence categories created in an earlier era. For example, Brazil created a category of multimedia licences that replaced a number of earlier licensing categories.
- In designing or auctioning licenses, governments should look to the future by not including technology-specific requirements that would limit the adoption of newer technologies in the future.
- In developing countries, licensing should be done based on needs of consumers, socio-economic goals and economic realities. In Senegal, for example, there is a strong licensing system for publicly available services, but a flexible regime for value-added services.
- With convergence, regulators should look not only at licensing flexibility but also at changes in regulation. Spectrum management, in particular spectrum allocation and assignment, is an area that will have to be examined closely. ITU would have a key role to play in this area.
- Some allowance should be made to address the uncertainties of introducing new technology. Singapore, for example, has sought to provide support for new innovations by developing a technical and market trial license. This gives operators and entrepreneurs a "safe zone" to experiment with new technologies without paying high fees. The experimental licenses last just six months, at which time, if there is promise for the technology, its backers can apply for a standard license.

Session Three – Licensing Tomorrow

Moderator: Muna Nijem, Chairman and CEO of TRC, Jordan

Presenters: Sofie Maddens, Attorney, Telecommunications Management Group, USA
Dale Hatfield, Adjunct Professor, University of Colorado, USA

*Panelists: John S. Nkoma, Director General, Tanzania Communications Regulatory Authority
Neil Gough, International Institutions Director, Vodafone, UK
Edwin San Román, President, OSIPTEL, Peru
Peter Scott, Head of Policy and Regulatory Framework unit, European Commission
Suresh Kumar Pudasaini, Chairman, Nepal Telecommunications Authority*

Presenter **Sofie Maddens Toscano** explained that the factors determining future licensing include the current state of market evolution, including the status of the incumbent and the existing level of competition, and the vision of market development in the future along with the legal, institutional and administrative framework. In adopting a new licensing framework, regulators will have to consider how to map existing licenses to the new framework, and address key issues such as universal access, interconnection, spectrum management and quality of service. The transition to a new licensing framework will require capacity building as well as enforcement and sanctions powers on the part of regulators.

Professor **Dale Hatfield** said that spectrum licensing also deserves re-consideration. The current “command and control” approach to spectrum management was created in an effort to mitigate interference due to improper design, proximity or improper operation of equipment and networks using spectrum. Today, however, technological and market developments are calling into question these practices since they may stifle innovation and create barriers to sharing resources. Two innovative approaches are being developed. One is a “property rights” approach that allows flexibility of use and spectrum trading. Two is a move to an unlicensed, spectrum commons approach, which has been used successfully, for example, for wireless Internet service providers, increasing Internet access in rural areas. The spectrum “commons” approach relies on technological advances to prevent interference. Some countries are beginning to use a combination of both approaches in different bands. Professor Hatfield added that reducing licensing requirements facilitates market entry by those providing services in rural areas.

The panelists discussed the transition to technology and service neutral licensing. Some of the main points raised are:

- The lack of human resources within a regulatory authority will affect its ability to manage the transition.
- Policies should not change if the government changes. Policy confusion is a deterrent to investment.
- Effective regulatory practices are enabling countries to achieve their universal access goals; legal constraints, however, can act as a barrier to universal access.
- Rural development funds are one method countries can use to achieve universal access.
- Some countries, e.g., the US, are developing rules for broadband services over power lines. Rules must be worked out with the country’s power/energy regulator. If the platform develops, it could be a viable competitive access choice for people in previously underserved areas.
- Asymmetric regulation can be used in conjunction with a technology neutral approach—operators with significant market power have greater regulatory obligations, particularly with regard to pricing.
- One approach is to allow operators to use general authorizations to enter the market, unless they require spectrum or numbering resources, in which case they could seek permission from the regulator.

- Although spectrum trading is not yet required in the European Union, the U.K. is moving forward to implement spectrum trading.
- Countries can move to technology and service neutral approaches in a more gradual approach; not all countries will follow a “big bang” approach to the transition.
- A variety of practices concerning Voice Over IP (VoIP) currently exist, although most countries realize the move to VoIP is inevitable. Many countries view VoIP as a positive development, since it enables customers to shop for the best prices and services; others, however, noted that VoIP can raise concerns if tariff balancing has not yet occurred. While VoIP may be fully authorized in some countries, it may nevertheless be regulated. Key regulatory issues include contributions to universal service funds and interconnection. The question of whether VoIP providers should be allowed to terminate their traffic on the PSTN or whether broadband operators should give free access to VoIP operators is one for further study.

Session Four: Towards a New Era in Spectrum Management

Moderator: Ernest Ndukwe, Chief Executive, Nigerian Communications Commission

*Presenters: Mostafa Terrab, InfoDev Manager, World Bank
Hank Intven, Partner, McCarthy Tetrault LLP, Canada
Chris Doyle, Senior Research Fellow, University of Warwick, UK*

*Panelists Fatih Mehmed Yurdal, Frequency Management and Regulator Affairs, ERO, Denmark
Graham Louth, Director of Spectrum Markets, Ofcom, UK
Donald Abelson, Chief of the International Bureau, FCC, US
Tshoganetso Kapaletswe, Senior Manager, Engineering, BTA, Botswana
Elmer Arely Menendez Calderon, Frequency Regulation Manager, Telecommunications Superintendent's Office, Guatemala
Dale Hatfield, Adjunct Professor, University of Colorado, US
Fabio Leite, Counselor, Radiocommunication Bureau, ITU*

This session began with a special presentation from InfoDev Programme Manager, Mostafa Terrab, and Hank Intven of McCarthy Tetrault. Messrs. Terrab and Intven unveiled a new, online resource that will be made available for regulators and others. The regulatory “Toolkit” being undertaken by InfoDev together with the BDT. The Telecom Regulatory Toolkit is an evolution from a previous product, the Telecoms Regulation Handbook (published in 2000). The new product, planned as a set of modules in an electronic Toolkit format will expand on the previous handbook and offer new and updated content in a web-based presentation. It will be a practical tool for regulators and is expected to serve as a reference source for regulators on the telecommunications regulatory practices and procedures currently utilized around the world. The first pilot module on licensing was presented.

Dr. Chris Doyle talked about traditional approaches to spectrum licensing, using technology, geography, temporal and spatial parameters. That is, licenses have been issued for particular technologies, particular services, for national or local coverage areas, for set durations and for terrestrial, maritime, aeronautical and space-based systems. He then discussed the idea of taking a completely technology-neutral approach – simply distributing spectrum without any mandate for a particular use or technology. This may work well (and already is) in many bands, where license-exempt technologies such as Wi-Fi or Wi-Max can operate, or where spread-spectrum and frequency-hopping techniques can help avoid interference. But in many bands, neutrality will be practically undermined by the existence of harmonized standards and the institutional legacies of tradition spectrum managements. He added that greater flexibility is needed to allow increases and more efficient use of spectrum.

During the panel discussion, **Donald Abelson** noted that the FCC had formed a task force two years ago to examine spectrum use and management. The issue, they discovered, was not so much that spectrum itself is scarce, but that *access* to spectrum was the problem. Since then, the FCC has been exploring mechanisms and technologies to increase parties' access to existing spectrum, including through spectrum trading. Graham Louth explained that in the UK spectrum scarcity is a problem. He explained that the UK is developing spectrum trading but also looking beyond that to increase the flexibility for existing license holders to develop different uses for their spectrum.

The example of the experience in Australia was highlighted. Australia liberalised its spectrum management regime by introducing a combination of secondary trading and administrative incentive pricing. Introduced in 1997, secondary trading in Australia is conducted on the basis of Standard Trading Units (STUs) that represent blocks of spectrum defined by geographic and bandwidth boundaries. Licence holders are able to sell, lease, repackage and change the use of the STUs that they are assigned. Notably, the introduction of market-based reforms and secondary trading has had the effect of bringing the price of spectrum licences down at the point of initial assignment through auction.

Mr. Menendez Calderon of the Regulator in Guatemala explained that Guatemala had reformed its telecommunications sector in 1996 by the introduction of a system of tradable "usufruct titles" for spectrum (TUFs). Holders of TUFs can sell, lease, reconfigure and change the use of their spectrum rights, without any interference of the government. In addition, under the reform, all frequencies not previously assigned were introduced into the market on a "first come, first served" basis. In cases where more than one interested party applies for the same frequency, a primary licence auction is held to determine the assignment. This has resulted in lowering the price of wireless licences per megahertz and an increase in mobile penetration rates and mobile traffic. The TUF system of tradable rights has also enabled significant flexibility in terms of coverage, allowing the broadcasting sector to reorganize their spectrum rights to match new broadcasting coverage boundaries introduced by the regulator.

Panelists and audience participants raised a question, however, about the potential for spectrum trading to lead to "speculation" and hoarding by wealthy parties at the expense of consumers and small entrepreneurs. Another issue for developing countries is the large amount of spectrum held off-limits by military officials.

Questions and issues raised in the session included:

- Should regulators get input from finance or treasury officials on valuations of spectrum for auction or licensing? Panelists noted that finance officials sole object is to gain revenues for the treasury and cannot be expected to know or apply telecom policies.
- How should regulators define "efficient" spectrum use? Several panelists said there is no one metric, although one audience comment advocated measuring the cost per megahertz, per end user as a way of defining cost-effective spectrum use. Some commented that efficiency is measured in economic terms, but that there is also a social aspect that is very difficult to measure. It was also noted that improving efficiency is not necessarily equal to no regulation.
- Is it possible to be truly "neutral" in awarding spectrum? Several audience participants questioned neutrality, noting that equipment harmonization in highly used bands (e.g., GSM bands) dictates the technology that will be used.
- Some delegations asked whether other governments required military users to pay for spectrum allocated to them. Mr. Louth responded that the UK government does require its military to pay annual rent for spectrum, and that this practice leads the military to return spectrum it is not using, to avoid paying rent on it.

- The question of what authority should be responsible for collecting spectrum fees was raised. This was raised in the context of the budget of the regulatory authority and the importance of being independent and not relying on government funding.

Breakout Session – Promotion of Cost-Effective Broadband and Internet Services

Moderator: Dato V. Danapalan, Chairman, Malaysian Communications and Multimedia Commission

Presenters Sudhalakshmi Narasimhan, Head of Marketing, MIDAS Communication Technologies Pvt. Ltd., India
 Michael Best, Research Scientist, Massachusetts Institute of Technology, US
 Russell Southwood, CEO, Southwood Consultants, UK

Panelists: Leong Keng Thai, Director General (Telecoms) and Assistant Chief Executive of IDA, Singapore
 Alaa Fahmy, President of NTRA, Egypt
 Audrey Baudrier, Chairperson, ITU-D Study Group 1 and Economist, ART, France
 Ahmed Toumi, Director General, ITSO, US
 Jose Alfredo Rizek Vidal, Executive Director, INDOTEL, Dominican Republic

Presenters **Sudhalakshmi Narasimhan** and **Michael Best** reported on the advances over the past year in both the take-up of low-cost wireless access technologies, and in the quality of those technologies themselves. They indicated that technologies such as cordless DECT and 802.11 (Wi-Fi), are being used successfully to link rural communities in many countries, including India. In this regard, the session also noted that Wi-Max has the potential for future applications. Mr. Best indicated that a franchise model of “micro” enterprise in India could provide a sustainable business model for local entrepreneurs at revenues of some \$3-5 a day. The key is to involve local ownership and tailor marketing to local needs. In addition, content applications should be developed to generate traffic that will use e-government, agricultural, tele-medicine and rural banking services. State support for development of community Internet centers may be provided, but in the case of India, a forward-looking bank provided funding as a way to broaden its distribution of banking services, including ATM access. These sustainable, tailored business models were seen as vital to providing broadband access in remote or rural areas.

Presenter **Audrey Baudrier** noted that in France, the broadband market is vibrant and innovative, but it does not reach the entire population or the full geographic extent of the country. Government policy has been tailored to be appropriate for further development in the zones where broadband service is not subject to competition or not available at all. She noted in particular that the regulator focuses its intervention on the wholesale markets to incite alternative operators to invest in infrastructure and to offer cost-effective services. The regulator also makes a strong effort to involve local communities and private operators in the implementation of projects. As Chairperson of ITU-D Study Group 1, Ms. Baudrier stressed the importance of comparing the situations of different countries and invited the GSR participants to join in the work of the ITU-D study groups to define a new question on Broadband in view of WTDC-06.

Presenter **Russell Southwood** discussed the experience of many African countries, which have faced the issue of having to procure expensive international Internet bandwidth even to complete Internet links within the same city. He discussed an initiative to build national and regional Internet exchange points (IXPs) within African nations, allowing local traffic to remain local. This will lower the cost of backbone bandwidth and, by decreasing latency, allow many new applications to be rolled out in developing countries that were not previously possible with limited local bandwidth. He stressed that, lower costs and increased quality of service will then ultimately benefit consumers in these countries, he suggested.

Contributions from the audience underlined the need to address the larger issue of affordability, including the need to directly address the current practice of having to purchase whole-circuit backbone access on international routes. Several contributions emphasized the critical nature of the cost disparities that confront developing countries and urging international action to make broadband access more affordable. The World Bank representative urged advocacy on this issue, noting that developed countries have vastly greater purchasing power to obtain Internet access than citizens in developing economies do.

Other audience members and panelists added that the issue of high rates for facility access was not just international in scope, but also included the need for incumbents to reduce costs for leased lines on a national basis. Several contributors pointed out that flat-rated services appear to be vital in a broadband environment but that current rates in many countries remain high for consumers. Panelist Jose Alfredo Rizek Vidal of the Dominican Republic noted that national regulators should ensure that their own regulations set the proper environment for broadband development before they address regional and international initiatives. He emphasized the need for a partnership between the private and public sectors.

Also on the international level, panelist **Ahmed Toumi** presented an initiative, dubbed the Global Broadband Satellite Infrastructure Initiative, to develop global, open standards for low-cost broadband access to satellites. The initiative would involve harmonizing spectrum use and creating common standards in order to create a global market for equipment manufacturing. It would also call for harmonizing regulatory frameworks, based on common principles such as the promotion of competition. In response to a question from the audience, Mr. Toumi affirmed that the initiative would reinforce, not interfere with, national regulators' ability to set rules for satellite access in their countries.

Panelists **Leong Keng Thai** of Singapore and **Alaa Fahmy** of Egypt discussed their countries' experiences in promoting the take-up of Internet services and broadband access. A series of carefully planned initiatives in Egypt focused not only on free Internet access on the supply side, but also low-cost purchases of computers, on the demand side. Balancing of these initiatives was successful in increasing Internet usage in the country, and Egypt has now turned to a broadband access initiative as well. On the demand side, this initiative is promoting a "laptop for every professional" – both to boost computer purchases and to provide a market for Wi-Fi and Wi-Max installations. Mr. Leong noted that his country, with a small land area, has less difficulty than most others in providing access to broadband infrastructure. The key to obtaining ubiquitous use, then, is to stimulate demand through promotion, education and establishing the government itself as an "anchor tenant" through the provision of e-government services.

Finally, the discussion turned to the issue of whether spectrum should be considered a scarce resource. Presenter Michael Best noted that in many rural areas, spectrum should be widely available, and even in densely populated areas, recent advances in cognitive radios and other technologies mean that there are greater opportunities for spectrum sharing and reuse. The meeting noted that these new technologies may be initially confusing and destabilizing, but they ultimately will free regulators up to explore new spectrum management techniques that will maximize spectrum use. Other contributors questioned the conclusion that spectrum was no longer a scarce resource, particularly in certain bands. For example, GSM equipment is manufactured to use either 900 MHz or 1800 MHz and in those bands, technical scarcity is still a reality in many countries.

The major themes and issues that came out of the breakout session:

- While recognizing that national broadband strategies will need to be country specific, there was a general agreement among participants on the value of cost effective broadband infrastructure and access to all economies and societies around the globe;
- The group discussed how advances made over the past few years in low-cost technologies can improve local access to broadband services, particularly in developing countries;

- There was discussion of broadband connectivity issues on multiple levels, from local and national, through regional and international;
- The group heard from several countries that have concentrated not only on efforts to promote the supply of broadband services but also on efforts to stimulate demand and acceptance of those services and of multimedia applications.
- There was a discussion of challenges posed by affordability of broadband access in many countries.

The overall context of the discussion – which came through in the presentations and panelist remarks, as well as from the audience questions – is that broadband access will be a vital tool in the future to improve the lives and well-being of citizens in all countries. This consensus provided the starting point for the rest of the discussion, which moved to a substantive and often detailed discussion of how to best achieve the goal of bridging the digital divide among citizens – both within and between countries.

Break-Out Session – How to Combat Spam

Moderator: Robert Horton, Acting Chairman, Australian Communications Authority

*Presenters: Susan Schorr, BDT; Claudia Sarrocco, SPU; Richard Hill, TSB – ITU
Tom Dale, Chairman of OECD Taskforce on SPAM
John Haydon, Executive Manager, Consumer and USO Group, ACA, Australia
Muhd Hanafiah, Assistant Director, International, IDA, Singapore
Nur Sulyna Abdullah, Head, Corporate & International Affairs, MCMC (Malaysia)*

*Panelists: Eric Walter, Chief Officer, Office of the Prime Minister, Direction du Développement des Médias, France
Peter Macmillan, OFTA, Hong Kong, China
John Haydon, ACA, Australia
Philippe Gerard, European Commission, Belgium
Elizabeth Nzagi, Legal Counsel, Tanzania Communications Regulatory Authority*

The first panel session gave attention to a situation analysis of experiences with SPAM. ITU staff gave a summary of progress since the last GSR, and this included the conclusions of a WSIS Thematic Meeting and two virtual conferences in advance of GSR 2004. Also briefly reported was the basis of anti- SPAM legislation in some 30 countries. Technical aspects of SPAM control were discussed at WTSA2004 with two resolutions for further work.

A Spam Task Force has been set up in the OECD, and its key current project is to complete a tool kit, which should assist significantly in national efforts to develop legislative and other strategies to combat spam.

An analysis of potentially useful structures for wider international cooperation based on the ACA (Australia)/ KISA (Korea) MOU was given, leading to the observation that there is not necessarily a need for extensive and comprehensive arrangements, and legislation does not need to be in place in advance of an agreement. Also, each nation could only enforce its own laws. The analysis concluded with an invitation to any other agency to peruse the widened MOU and participate if they felt it appropriate to their circumstances.

The IDA Singapore reported on its consultative process prior to adopting a proposed multi-pronged solution that involves a hybrid opt-in (for indiscriminate spammers)/ opt-out (for genuine and responsible businesses) system. Complaints would be to ISPs in the first instance, with enforcement against both spammers and merchants, and possible exceptions for Government communications to citizens. Industry self-regulation was also envisaged as a prominent feature.

MCMC (Malaysia) does not rely on a specific anti-SPAM law, but a section of Telecommunications Law that refers to improper use of the network (e.g., intent to annoy, abuse, harass at any electronic address). Again a public discussion paper preceded developments. Self-regulation is heavily depended on, and a Consumer Code provides a benchmark – adherence with it is a licence condition. The MCMC representative also noted that ASEAN will establish a group to consider SPAM matters, and hopes to learn from OECD, ITU and others.

Updates on the environment in the USA, Saudi Arabia, and Brunei were offered from the audience.

The second discussion panel focused on questions such as the baseline needs of regulators, cooperative action, and the role of parties involved, and the ITU.

It was advanced that legal certainty in the market place would be a good starting point for implementation of a multi-pronged approach. The need for legislation that includes enforcement capability was questioned by a number of developing countries, given that they were not the source of spam, whilst other developing countries recognized a need for some legal basis for local ISPs to take action.

There was a common recognition in developing countries of the need for technical support, and cooperative assistance with consumer information and industry guidance.

The Chairman summarized discussions as follows:

- A multi-pronged approach to dealing with SPAM was appropriate,
- Some level of legislation was relevant for all countries but its form and extent would depend on the circumstances and degree of enforcement necessary,
- Cooperation could include action on complaints from one regulator to another, together with appropriate sharing of information,
- Cooperation should also involve industry (direct marketers and ISPs), other forums and regional groupings as necessary,
- Public education and the concerns of civil society were important elements of a strategy,
- It was essential to have international cooperation arrangements in place, and
- The ITU offered the only “family gathering” which accounted for all developing and developed countries and was well placed to raise awareness.

A living model for international cooperation was needed urgently, and this could be developed as a special focus at the next GSR, perhaps with virtual conferences in the lead up. If the latter was held prior to WSIS then it might produce the basis for input to WSIS deliberations. The form of cooperative model was not specified at this stage.

A couple of interventions reflected on the fact that some potentially useful representative opinions were not present at the meeting. However, the Chair would summarize the conclusions above as those of a group of interested and concerned regulators at the meeting who saw the need for some pragmatic and positive action amongst regulators on what is a distressing problem for the citizens of the Internet.

Session Five: Impact of SPAM and the Future for Broadband and Internet Services and Open Discussion on Best Practice Guidelines for the Promotion of Cost-effective Broadband and Internet Services

Moderator: Kathleen Q. Abernathy, United States
FCC Commissioner and GSR Chairman

Panelists: Robert Horton, Acting Chairman, Australian Communications Authority
Dato V. Danapalan, Chairman, Malaysian Communications and Multimedia Commission
Hamadoun I. Touré, Director, BDT, ITU

The moderators for the two breakout sessions presented their reports to the GSR. (See reports above. Presentations are available on TREG <http://www.itu.int/ITU-D/treg/Events/Seminars/2004/GSR04/documents.html>).

GSR Chairman Abernathy thanked the moderators and introduced the *Best Practice Guidelines for the Promotion of Low-Cost Broadband and Internet Connectivity* (Rev 1, EN9) for discussion and adoption.

It was highlighted by Jordan that each regulator has to regulate in ways that respond to national specificities. It was also mentioned that there is also a need for technical know-how in order to make informed decisions. The BDT Director noted the point, suggesting that virtual discussions on relevant topics could be one approach to filling the knowledge gap.

The guidelines received unanimous support, and were adopted without further modification.

The Chairperson suggested that the *Guidelines* be presented during WSIS, Tunis. The GSR supported this proposal.

Session Six: The Way Forward

Moderator: Kathleen Q. Abernathy, United States
FCC Commissioner and GSR Chairman

Presenters: Susan Schorr, Regulatory Officer, RRU, BDT
David Satola, Senior Counsel, Legal Department, World Bank

Panelists: Mohsen Jaziri, Vice President, Instance des Télécommunications, Tunisia
Hamadoun I. Touré, Director, BDT

Susan Schorr explained that the Global Regulators' Exchange (G-REX) is a password-protected website for regulators and policy makers. Its main feature is the Regulators' Hotline where regulators can pose a question of concern to them and receive replies from their colleagues around the world. More than 140 countries are registered to use G-REX. G-REX advisors translate all messages so that they are available in English, French and Spanish and research selected questions. Regulators that are not currently active on G-REX are invited to post relevant website links to their consultation papers, decisions, and other helpful documents. Regulators may wish to consider assigning this task to a public information officer or a central coordinator. Any regulator or policy maker interested in registering for G-REX is invited to do so at <http://www.itu.int/ITU-D/grex/register.asp>

In order to encourage greater participation, BDT decided to give awards to those who actively participate. BDT will work with the Regional Regulatory Associations next year, in response to the recommendation that each Regional Regulatory Association identify focal points to respond to Hotline queries within their field of expertise. BDT will also work to create a list of national focal points that would agree to answer particular questions offline, but would like to encourage that the written dialogue on G-REX continue. BDT requested parties to offline discussions kindly post information about their exchanges on G-REX for the entire community of regulators to share. A sneak preview of a new G-REX platform that will provide users with greater functionality and make G-REX more user friendly was provided. The new G-REX platform will be available early in 2005. G-REX is also the BDT platform for virtual conferences on key regulatory issues.

David Satola of the World Bank and **Pierre -Paul Lemyre** of LexUM presented a joint ITU-World Bank feasibility study concerning the creation of an online searchable database of regulators' decisions. The demonstration included a mock up of the database, which is available at: <http://itu.lexum.umontreal.ca/>. Comments on the database project may be made either to Doreen.Bogdan@itu.int, dsatola@worldbank.org or at <https://lists.lexum.umontreal.ca/mailman/listinfo/tdr-database>. ITU and World Bank will continue to work together in 2005 in an effort to implement such a database.

Participants accepted the kind invitation of Tunisia to hold the 2005 edition of the GSR in Tunisia, immediately prior to the second phase of the World Summit on the Information Society (WSIS), scheduled to be held in Tunis from 16-18 November. In order to ensure that GSR 2005 make a valuable contribution to the second phase of WSIS, it was agreed to establish a working group to prepare the contribution of the 2005 GSR to WSIS. It was further agreed that one of the contributions to WSIS would be the Best Practice Guidelines agreed at GSR 2004, which could be formally presented to WSIS. It was further suggested that the 2004 GSR Best Practice Guidelines also be provided to the Council Working Group on WSIS.

Looking forward, the GSR responded favorably to the following proposals by the BDT, the regional regulators' associations and GSR participants:

- To create a global "exchange program" that would allow regulators from one country to travel to another for an extended period (several months) of intensive mentoring on a particular issue;
- To train top-level executives of regulatory and policy-making institutions during 2-3 day workshops.
- To make available experts on broadband technology implementation, spectrum management and means of combating spam for real-time virtual conferences.
- To establish a website for national regulators and others to post information on what they are doing to promote broadband networks and services.

The idea was that regulators would use their own budgets to support the exchange program, and that in some cases regulators' exchanges could replace sending private consultants. The BDT Director will send a letter by the end of January asking countries to identify their experts who would be available to participate in such exchanges and to indicate any resources they would have to support such an exchange. A number of participants noted that their regulatory bodies or regional regulatory associations had already undertaken such regulatory exchanges and were pleased to see that this trend would continue. In addition, it was noted that training is also provided by the ITU Centres of Excellence.

Participants suggested that high level training could be made available for chairmen, CEOs, directors or board members of regulatory authorities. In addition, such high level training could be made available to policy makers so that they can better understand the importance of regulation. Participants noted that there are already existing regulatory training and exchange programmes that have been created, so such work should be designed to supplement existing training programmes and programmes through which regulators already visit more experienced regulatory authorities.

The BDT Director summarized the suggestions for the topics to be addressed in the next GSR, and these were endorsed by the participants. Each topic, it was requested, should be addressed from a regulator's perspective. These include:

- Further study, assessment and work on ways that the ITU and member nations can cooperate in combating or limiting spam.
- Issues involving the increased usage of voice over Internet Protocol (VoIP) services.
- New developments in spectrum management technologies and techniques.
- Ways to reduce high costs in developing countries for access to domestic and international broadband capacity.

Another topic was also proposed for the 2006 GSR: interconnection rate costs, including fully allocated and long run incremental costs. Support for the continuation of breakout sessions was also voiced. In addition, it was suggested that the issue of what regulators can do for end users with physical disabilities also be addressed. It was noted that ITU-T is also working on this issue.

The proposals to designate regional "focal points" within each regional regulator's association to respond to questions on GREX and to establish executive-level regulatory training were developed during the regional regulators association meeting held the day before the GSR was convened. In addition to that proposal, the regional associations developed the following recommendations:

- To establish an ITU "certification" scheme that would certify certain countries as having expertise in a particular regulatory aspect was suggested as a way to ease the identification of regulatory best practices. However, the difficulty of developing appropriate criteria to define expertise and the potential sensibilities involved in ranking countries were identified as significant hurdles to such a scheme. BDT would nevertheless look into the feasibility of a regulatory certification programme.
- To link various online databases – such as GREX, the proposed ITU -InfoDev Regulator's Toolkit, the ITU-World Bank database of regulators' decisions and the database on regulatory remedies set up by the European Commission -- allowing free navigation from one to another. These organizations were encouraged to look into further co-operation.
- To provide support for regulatory independence of regulatory agencies.

Closing Ceremony

Commencing the closing ceremonies of the GSR, BDT Director **Hamadoun Touré** awarded GREX Certificates of Appreciation to individual regulators who have made valuable contributions to the dialogue on the G-REX forum. Awards for 2004 were given to the following regulators:

- Gracie Foo on behalf of the many users at OFTA, Hong Kong, China who were the biggest contributors to G-REX this year;

- Bob Horton of Australia;
- Edwin San Roman of Peru;
- the “Comité E-Strategy” of Madagascar;
- Carlos Balen of Colombia;
- Cuthbert Lekaukau of Botswana;
- Antonio Delgado of Venezuela;
- Au Kim Filiberto of Cuba;
- Mr. Gupta and Mr. Bhatnagar of India; and
- Caroline Simard, GREX advisor.

Mr. Touré encouraged all of the regulators to participate actively in G-REX activities.

Proceeding with his closing remarks, Mr. Touré thanked all participants for attending the GSR. He also thanked the sponsors of events surrounding the GSR, including Ofcom, Switzerland; Qualcomm, Ericsson, Nortel, Texas Instruments, Vodafone, Nokia and USTTI. He then went on to thank all the companies that participated in the technology exhibition. In addition, Mr. Touré thanked the moderators, presenters and panelists for their work. And he recognized the BDT staff for their efforts in making the fourth GSR a success.

Mr. Touré noted that new technologies and services are posing great challenges, causing regulators to rethink past regulatory practices. While new technologies will enable regulators to achieve ICT development goals faster, they can also be used to do harm through spam, viruses and fraud. He noted that at the GSR there was consensus on the need for national legislation and multi-lateral cooperation to combat Spam.

Mr. Touré also noted that many issues related to convergence such as spectrum management, interconnection, VoIP and universal access obligations have to be worked out. He encouraged regulators to participate in dialogue and cooperation on these issues through the regional regulatory associations and other regional forums for regulation, as well as through G-REX and in the work of ITU-D Study Groups, such as Question 10/1 of Study Group 1 that addresses the impact of convergence. He also encouraged GSR participants to participate in the regional preparatory meetings to prepare for the 2006 WTDC that start next year. While assuring the GSR that the BDT would endeavor to address all of the proposals the GSR had made, he urged all present at the GSR to partner with the BDT to maximize limited resources.

Finally, Mr. Touré thanked GSR Chairman Kathleen Abernathy for her leadership in guiding the discussions on the *Best Practice Guidelines for the Promotion of Low-Cost Broadband and Internet Connectivity* and in chairing the GSR, which he termed an overwhelming success.

In her Closing Remarks, **GSR Chairman Kathleen Abernathy** stressed the importance of the Global Regulators Symposium and focused her discussions on the future of an information and communications technology sector that is evolving and “converging.” Specifically, she focused on the ways that regulators can help to harness and drive these trends, including using the steps that are outlined in the *Best Practice Guidelines for the Promotion of Low-Cost Broadband and Internet Connectivity*. The GSR Chairman outlined two specific steps that regulator must also take: 1) providing incentives for investment in broadband networks; and 2) adjusting regulatory frameworks to accommodate the broadband revolution to achieve low cost-access to broadband and Internet connectivity. To this end, the GSR Chairman stressed the importance of lighter regulation and adherence to the principles outlined in the agreed to *Best Practices Guidelines*. The GSR Chairman thanked the participants at the conference for their support and hard work and stressed the need for regulators to continue to support each other as each regulator faces challenges back home.

The GSR adjourned in a spirit of collective good will and achievement.

ANNEX 1

Chairman's Report

Second Annual Meeting of Regional Regulatory Associations

**7 December 2004
Geneva, Switzerland**

Introduction

At the invitation of the BDT Director, the second annual meeting of Regional Regulatory Associations was held in Geneva on 7 December 2004, to discuss the topics of "Capacity Building" and "Resource Mobilization". Some 25 participants took part in the meeting, representing regional regulatory associations, international organisations and national administrations. Mr. Patrick Masambu, Executive Director of the Uganda Communications Commission (UCC) and Chairman, ARICEA (the Association of Regulators of Information and Communications for Eastern and Southern Africa), chaired the meeting.

Presentations

During the first session, separate presentations on the capacity development activities of the Arab ICT Regulators' Network (ARN), the Francophone Network for Telecommunications Regulation (FRATEL), and the European Regulatory Group (ERG) were delivered. These were followed by a presentation by the Human Resource Development Unit (HRD) of the BDT on their capacity building activities.

During the second session, three different presentations were made. The first presentation focused on the training opportunities made available by the Australian Communications Authority (ACA). The second presentation highlighted the activities of the Latin American Forum for Regulatory Agencies for Telecommunications (REGULATEL), in particular its recent Third IRG-REGULATEL Forum held last month. LexUM delivered the last presentation on the development of an online database of global regulatory decisions.

Summary of the Discussion

During the open discussion that followed in the two sessions, the following points were raised by the meeting:

- The possibility of an ITU certification scheme that would certify certain countries as having expertise in a particular regulatory aspect was suggested as a way to ease the identification of regulatory best practices. However, the difficulty of developing appropriate criteria to define expertise and the potential sensibilities involved in ranking countries were identified as significant hurdles to such a scheme. BDT would nevertheless look into the feasibility of a regulatory certification programme.
- The establishment of nodal points on a regional level was suggested as a possible way of facilitating the identification of country best practices. Nodal points, which can constitute regional associations or designated regulators, could assist regulators from outside their region by providing or pointing out good regulatory practices from that region. GREX could also assist in establishing the network of nodal points.

- The need for high-level regulatory capacity building, particularly at high levels such as commissioner or CEO, was highlighted by the meeting. Possibilities included adding short training sessions of one or two days to the GSR or having longer three day to one week long training sessions during the year. In order to ensure that these training sessions would be appealing, it was emphasised that attendance would be confined to only high-level delegates with no substitutes allowed. BDT would follow-up on this matter.
- Following the presentation on the online database for global regulatory decisions, the meeting agreed that it would be useful if there was a way to link the different regulatory databases, These included LexUM, GREX, the proposed ITU - InfoDev Regulator's Toolkit and the database on regulatory remedies set up by the European Commission. These organisations were encouraged to look into further co-operation.
- The topic of regulatory independence was also raised during the meeting. Following on from the REGULATEL presentation that highlighted the November 2004 Joint IRG-REGULATEL Declaration, the meeting recognised the importance of guaranteeing the independence of regulatory agencies. The Chairman of REGULATEL was invited to take the initiative to sponsor a similar declaration during the course of the GSR.

Conclusion

The meeting ended with a summary of the proceedings by the Chairman.

ANNEX 2

Best Practice Guidelines for the Promotion of Low Cost Broadband and Internet Connectivity

We, the regulators participating in the 2004 Global Symposium for Regulators, have identified and proposed best practice guidelines to achieve low cost broadband and Internet connectivity. Our goal is the creation of national regulatory frameworks that are flexible and enable competition between various service providers using multiple transport and technology options. We believe the best practices outlined below will help bring social and economic benefits to the world's citizens.

An enabling regulatory regime that encourages broadband deployment and Internet connectivity

1. We encourage political support at the highest government levels with such support expressed in national or regional policy goals. These include an effective regulator separated from the operator and insulated from political interference, a transparent regulatory process, and adoption and enforcement of clear rules.
2. We believe that competition in as many areas of the value chain as possible provides the strongest basis for ensuring maximum innovation in products and prices and for driving efficiency.
3. We encourage regulators to set policies to stimulate competition among various technologies and industry segments that will lead to the development and deployment of broadband capacity. This includes addressing barriers or bottlenecks that may exist with regard to access to essential facilities on a non-discriminatory basis.
4. We believe that the primary objective of regulation should be to secure fair and reasonable access for competitive broadband services, including Internet connectivity.
5. We encourage the maintenance of transparent, non-discriminatory market policies in order to attract investment.
6. We encourage regulators to adopt policies that are technology neutral and do not favor one technology over another.
7. We encourage regulators to take into consideration the convergence of platforms and services and that they regularly reassess regulatory regimes to ensure consistency and to eliminate unfair market advantages or unnecessary regulatory burdens.
8. We encourage regulators to allocate adequate spectrum to facilitate the use of modern, cost effective broadband radiocommunications technologies. We further encourage innovative approaches to managing the spectrum resource such as the ability to share spectrum or allocating on a license-exempt non-interference basis.

9. We urge regulators to conduct periodic public consultations with stakeholders to inform the regulatory decision-making process.
10. We recommend that regulators carefully consider how to minimize licensing hurdles.
11. We encourage the development of a regulatory framework that permits ISPs and broadband providers to set up their own last mile.
12. We encourage regulators to provide a clear regulatory strategy for the private sector in order to reduce uncertainty and risk, and remove any disincentives to investment.

Innovative Regulatory Policies Must Be Developed To Promote Universal Access

1. We recommend that the promotion of access to low cost broadband interconnectivity should be integrated from “grass-roots” efforts to identify local needs all the way through the “tree-tops” of international law. Governments, business and non-governmental organizations should be involved.
2. We recommend that regulators adopt regulatory frameworks that support applications such as e-education and e-government.
3. We encourage each country to adopt policies to increase access to the Internet and broadband services based on their own market structure and that such policies reflect diversity in culture, language and social interests.
4. We encourage regulators to work with stakeholders to expand coverage and use of broadband through multi-stakeholder partnerships. In addition, complementary government initiatives that promote financially sustainable programs may also be appropriate, especially in filling in the market gap that may exist in some countries.
5. We encourage regulators to adopt regulatory regimes that facilitate the use of all transport mechanisms, whether wireline, power line, cable, wireless, including wi-fi, or satellite.
6. We encourage regulators to explore programs that encourage public access to broadband and Internet services to schools, libraries and other community centers.
7. We encourage regulators to implement harmonized spectrum allocations consistent with the outcome of ITU Radiocommunication Conference process and each country’s national interest. Participation in this well-established framework will facilitate low-cost deployment of equipment internationally and promote low-cost broadband and Internet connectivity through economies of scale and competition among broadband vendors and service providers.

Broadband is an Enabler

1. Regulation should be directed at improving the long term interests of citizens. Broadband can contribute to this by improving and enabling education, information, and increased efficiency. It can reduce costs, overcome distance, open up markets, enhance understanding and create employment.

2. We encourage regulators to educate and inform consumers about the services that are available to them and how to utilize them so that the entire population benefits.
3. We urge regulators to work with other government entities, industry, consumer groups, and other stakeholders to ensure consumers have access to the information they need about broadband and Internet services.