INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION DEVELOPMENT BUREAU

GLOBAL SYMPOSIUM FOR REGULATORS

Geneva, Switzerland, 8-9 December, 2003
Salle 1, CICG

CHAIRPERSON'S REPORT

Executive Summary

The fourth annual Global Symposium for Regulators (GSR) was convened from 8-9 December, 2003, in Geneva, Switzerland, at the invitation of ITU Development Bureau (BDT) Director Hamadoun I. Touré. The Chairman of this GSR meeting was Ms. Muna Nijem, Chairman of the Board and CEO of the Telecommunications Regulatory Commission of Jordan. The GSR was organized by the BDT Regulatory Reform Unit within the scope of its Programme on Reform, Regulation and Legislation.

In marking the fourth GSR, many delegates expressed their pleasure and confidence that the institution was maturing as a tool for regulators from around the world to share information and to form mutually reinforcing bonds with their colleagues. Satisfaction was also expressed with the high quality of the work reflected in the presentations to the GSR, which reflected the Symposium's focus on efforts to pursue goals for universal access and universal service. The topic of universal access/service appeared to have been well chosen, as the presentations elicited numerous questions and comments from delegates during the interactive discussion periods following presentations.

This year's GSR was also very well attended. More than 300 people participated in the GSR from 98 countries (including regulators from 80 countries). In addition, 17 sector members participated, along with all existing regional regulators' associations.

The 2003 GSR immediately preceded the convening of the high-level World Summit on the Information Society (WSIS) from 10-11 December, allowing delegates from many countries to attend both the GSR and the WSIS. Indeed, as the GSR convened, it was with the knowledge that the week in Geneva, taken as a whole, might be regarded as a milestone in turning the world's attention squarely to issues of promoting broad and affordable access to networks and services that will make up the Information Society of the future.

Participants in the 3rd Annual GSR, held in Hong Kong, China, 7-8 December, 2002, had agreed that the world's regulators would prepare a message to be delivered to the WSIS on the important role regulators play in achieving universal access to Information and Communications Technologies (ICTs).

On 3 July 2003, BDT Director Hamadoun Touré sent a letter inviting countries to identify five key principles for achieving universal access. More than 30 countries and one regulatory association responded. Based on these contributions, the GSR chairperson formulated a document containing universal access guidelines, which was then circulated, beginning in November 2003. Many countries commented on the draft guidelines, with consensus on a final text achieved during the GSR. The *GSR 2003 Universal Access Regulatory Best Practice Guidelines* defines best practices in three major areas:

1) "An enabling regulatory environment: the role of governments and regulators";
2) "Access to information and communication infrastructures"; and
3) "Guidelines in regard to finance and management of universal access policy."

The final text of the *Guidelines* document delivered to the WSIS is attached to this report (http://www.itu.int/ITU-D/treg/Events/Seminars/2003/GSR/Documents/BestPractices_E_31.pdf).

Also during the final day of the GSR, Chairman Nijem solicited and received recommendations for the future work of the GSR. Possible topics for further research and presentation for the 2004 GSR and the intervening were suggested by several countries, including India, Australia and Syria. These were:

- The promotion of cost-effective broadband and Internet services;

- The regulation of scarce resources such as spectrum, numbering resources and rights of way;

- Licensing in an era of convergence;

- In terms of the GSR administration itself, exploring the possibility of including smaller, "break-out" sessions for more interactive discussions;

- Creation of a "virtual forum" for the regional regulatory associations, to enhance dialogue and continue the fruitful discussions carried out at the first informal meeting of the world's regional regulatory associations, hosted by BDT RRU on 7 December 2003, the day before the GSR convened;

- Holding a Global Regulators' Exchange (G-REX) virtual conference in the first quarter of 2004 on how to combat "spam"email messages with a view to develop a code or Memorandum of Understanding for the next GSR. Additional workshops and training for dispute resolution.

These recommendations were embraced by the delegates.

ITU-D SECTOR MEMBERS AND REGULATORS' DAY

Opening Ceremony

In his remarks, ITU Secretary-General **Yoshio Utsumi** gave an update on progress made during preparations for the WSIS. He indicated that as of that morning, there was nearly 100 percent agreement on a Declaration of Principles and Action Plan to be adopted during the sessions later that week. The sole sticking point was on discussions about whether to create an international fund for Information Society development.

Mr. Utsumi noted how significant it was that the world's leaders—not just ICT regulators—now recognized ICTs as a powerful development tool. This represented a great achievement for regulators, who have spent much of their lives trying to convince those leaders regarding that importance, he said. For this reason alone, he added, the WSIS already was successful.

Among other areas of agreement heading into the WSIS were that ICT infrastructure-building is vitally important, that an enabling environment of competitive market policies is essential, and that there is a need to take into account cultural identity, diversity and the role of civil society in constructing the Information Society. Further, there is support for open-source software environments and policies. These are very important principles for the ITU, Mr. Utsumi said, and it is very significant that, for the first time in human history, these principles have been agreed on by all people in the world. There have been many difficult discussions on issues such as the role of media, intellectual property rights, freedom of expression, and others. These will continue to be issues under discussion, he said.

The role of regulators is to create a favorable environment for industry, Mr. Utsumi continued. In the draft Declaration of Principles, the WSIS delegates agreed that policies should enable greater investment where possible, augmented by universal service mechanisms where the private sector falls short.

BDT Director **Hamadoun Touré** said the first GSR in 2000 had been a watershed event, sparking dialogue among regulators. The GSR has developed into an innovative venue for regulators. It works well because it is less formal and encourages interactive discussion, he said. The BDT is trying to put the emphasis on what regulators want to discuss, to fuel greater dialogue. Mr. Touré encouraged the regulators to continue their discussions year-round on the G-REX forum, which has been established online for regulators on the TREG website. He noted the informal meeting of regulatory associations held the day before, stating that the BDT would like to encourage this dialogue by including a special online group on GREX for this purpose. Also, a steering committee will be set up to improve cooperation among organizations.

Mr. Touré described the process of preparing the *GSR Guidelines* document for the WSIS. He added that he expected the WSIS to agree on a series of universal access targets. It will be up to the regulators present at the GSR to achieve these targets in their own countries. The BDT will help, he added, but it cannot form each country's universal access plan. Mr. Touré said universal access efforts can succeed only where they are a tool for development, not for bringing revenue into government accounts.

Representing the host government of Switzerland, **Marc Furrer,** State Secretary for WSIS and Director of OFCOM, welcomed delegates to Geneva, which he termed the "capital" of telecommunications. He noted that telecommunications is one of the main elements of an Information Society. He added that telecommunications does not need to be "policed," but any time a market is opened to competition, there must be a regulator. No private firm has in view the interests of the public at large; its role is to make money. Regulators must ensure that the public interest is met through policies that promote fair competition, universal access and the reliability of networks.

Regulators must, however, consider the consequences of their work and actions. There is often a tendency to over-regulate, Mr. Furrer said. He urged the GSR participants to question whether all of their regulatory actions are really necessary. He raised the example of European railways, which he said were heavily regulated, leading to a lack of flexibility in operations, a lack of innovation and a general decline in the industry. What is needed is regulation that promotes innovation, rather than hindering it. He urged the regulators to be independent, not only from incumbent operators, but also from government interventions in pursuit of industrial policy goals. Regulation will not work when it is subsumed in national industrial policy, he said.

Muna Nijem, Chairman and CEO of the Telecommunications Regulatory Commission of Jordan, gave opening remarks upon being announced as the **Chairperson of the 2003 GSR.** Ms. Nijem thanked the regulators for their contributions to the universal access *Guidelines* document, stating her goal to provide a valuable and clear statement of consensus by the world's regulators to the WSIS on the importance of universal access to the Information Society.

Illustrating her own views on universal access, Ms. Nijem noted that many of the comments on the draft *Guidelines* document related to the need to build a reliable, cost-effective infrastructure in each nation. Recent trends, she said, have shifted away from the idea that universal access is a "public good," toward the concept of providing an environment for private investment and competition. In the past, single-operator markets confronted universal access issues by including implicit subsidies as part of the rate structure. With the advent of competition, these have evolved into explicit funding mechanisms—but these require increasingly complex calculations of costs and determinations of contribution requirements and allocation criteria.

Increasingly, countries are employing innovative approaches that attempt to harness market forces and new technologies to create sustainable business models for remote or low-income areas. She cited the Grameen Phone project in Bangladesh and subsidy bidding projects in Chile and Peru. She also cited the growth of mobile services as evidence that new markets can be tapped, under the right economic conditions, in previously under-served parts of the world. Moreover, she suggested that efforts to promote universal access in a market-oriented environment will increasingly include broadband access to applications such as distance learning, tele-medicine and social services. Ms. Nijem sought to set the stage, through these comments, for the following two days of panel discussions.

Session I (10:30-12:30) — Universal Access: Obligation or Opportunity?

Moderator: Mr. Emmanuel Olekambainei, Former Chief Executive and Coordinator, African Connection, South Africa.

Presenters: Doreen Bogdan-Martin, Head of the Regulatory Reform Unit, BDT, ITU; and Mandlesilo Msimang, Senior Expert, South Africa

Panelists:

- Axel Busch, Vice President, Detecon International GmbH;
- Ahmed Toumi, Director General and CEO, International Telecommunications Satellite Organization;
- Luiz Guilherme Schymura de Oliveira, President, ANATEL, Brazil;
- Willy Jensen, Director General, Norwegian Post and Telecommunications Authority (NPTA);
- D.P.S. Seth, member of the Telecommunications Regulatory Authority of India (TRAI);
- Abulrahman A. al-Fehaid, Chairman, Communications and IT Commission, Saudi Arabia
- Alvin Lezama, Director General, CONATEL, Venezuela

Doreen Bogdan-Martin indicated she would provide a "snapshot" of the global ICT sector, which would provide a foundation for discussions of universal access. She noted the salient fact of the rapid growth of mobile services, which now reach roughly 1.15 billion subscribers. Of those, 46 percent are found in developing countries. China has become the largest mobile service market in the world, and India and African countries such as Nigeria also are rapidly gaining subscribers, and teledensity, from mobile services. A factor in this mobile service growth has been pre-paid pricing strategies, which have gone hand-in-hand with sector reform moves and innovative technologies to increase demand. Another area of market growth around the world is in the area of Internet access, she said. Increasingly, the market is shifting to broadband access.

The rate of privatizations of incumbent fixed line operators has slowed to a trickle. Only Saudi Arabia and China have recently completed partial public offerings. But most new market competitors are private, not government owned. And other countries are preparing IPOs for their incumbent operators in the near future.

It is becoming clear, Ms. Bogdan-Martin said, that more transparent regulatory frameworks lead to greater investment. Regional regulators' associations are working to enhance cooperation. Meanwhile, the Regulatory Reform Unit is working to promote platforms for the exchange of experience and information among regulators, through its publications, its websites and other means.

Mandlesilo Msimang used her presentation to define and clarify terms and concepts used in the universal access field. *Universal service* refers to the goal of making telecommunications services available within households and is a concept more relevant to developed countries that already possess nearly ubiquitous infrastructures. *Universal access*, however, refers to the extension of service to a point near every resident, up to a certain standard (such as within walking distance). Universal access goals are more pertinent to developing countries that lack basic telecom infrastructure in many areas.

Both concepts embody the same general goals: affordability, availability and accessibility of ICT services. In a broader sense, universal access/service programs are efforts to promote greater economic productivity, more political and social cohesion, better delivery of government services, and the elimination of socioeconomic disparities among population groups within a country. In addition, universal access/service programs "make cents"—that is, they are designed to earn revenues, not simply to provide a charitable public service.

The Maitland Commission first identified the "missing link" between telecom and social development and alerted the world to disparities in telecom capacity between developed and developing countries. Since then, the Maitland goal of bringing service within 1-2 miles of any individual has been superseded by more ambitious goals, and these are not limited to simple telephone service but also include broadband access to the Internet and other data networks. Still, the same concerns persist. The world now faces a "digital divide," and it does not want to see a "broadband divide."

In the past, universal access programs had a "command and control" flavor, mandating obligations that operators had to fulfill as part of license conditions, or through receipt of access deficit charges, implicit subsidies or universal service fund allocations. Some of these techniques are still employed, but there is increasing emphasis on "sustainable" or micro-credit ventures such as the Grameen Phone operations, bidding for public pay phone franchises and rural or regional licensing for public access venues.

During the panel discussion, **Ahmed Toumi** noted that satellites can play a role in providing the missing link to close any potential "broadband divide." The cost of using satellite capacity is distance-insensitive, allowing the linking-up of hospitals, schools and remote industrial sites such as mines or forestry operations. This will unlock the socioeconomic potential of rural populations, which account for some 50-60 percent of the populations of many developing countries.

Luiz Schymura de Oliveira said that in Brazil, the regulator moved quickly after privatization to reach its universal access objectives not through the state system, but through private operators. It mandated provision of access to all places with more than 600 inhabitants and required public phones in all villages with more than 300 people.

At this point, 60 percent of homes in Brazil have at least one phone line, a statistic that compares well with other countries that have similar development profiles. The expansion of the Brazilian telecom market in recent years was more due to compliance with supply obligations rather than growth in demand and affordability of the population, he said. He added, however, that Brazil will be using universal service fund resources next year for solving telecom problems associated with the digital divide.

Offering a different perspective, **D.P.S. Seth** indicated that the best approach to universal access is to make it beneficial for operators. When service in rural or remote areas becomes profitable, it will become sustainable. This is the essence of the "pay or play" strategy. He added that successful, self-sustaining operations usually involve maximum interaction with the population being served. Media content has to be of a quality to make the user hurdle over his or her lack of ICT skills and access problems. It should be presented in the native language and relevant to local conditions. This puts a premium on local content development. In India, efforts have been made by NGOs to create local language content and applications such as agricultural extension services. This kind of content development has been found to be more successful than other government interventions.

Several audience members had questions about universal access policies in multi-operator, competitive environments. These concerned whether competition would undercut the incumbent's ability to provide greater network coverage, and what countries should do if the incumbent is absent or largely non-functional. Mr. Seth said that India first attempted to reach universal access goals through imposing obligations on operators. New entrants were told they must reach a certain baseline capacity. This policy largely failed, however, and was replaced by the encouragement of pilot projects for sustainable universal access. For example, postal workers were equipped with mobile phones, enabling them to provide per-call telephone capacity on their rounds. The moment that obligation became an opportunity, the universal access program began to succeed.

The panelists came to several conclusions during the discussion:
- The role of regulators is to enable an environment for universal access. Through sector reform, regulators can provide opportunities for innovative ventures that meet local demand for services.
- Access to infrastructure is a primary prerequisite for universal access.
- There must be access to capital, as well as incentives for investment in last-mile networks.

Session II (14:00 – 15:30) — Market Reform: A Tool for Achieving Universal Access
Moderator: Kathleen Q. Abernathy, Commissioner, Federal Communications Commission, USA

Presenters: Sonja Oestmann, Senior Manager, INTELECON Research & Consultancy, Ltd.; and Edgardo Sepúlveda, Senior Telecommunications Economist, McCarthy Tetrault LLP

Panelists:

- Andrew D'Uva, Vice President and Associate General Counsel, New Skies Satellites NV;
- Erkki Ormala, Director, Technology Policy, Nokia Group;
- Neil Gough, Director-International Relations Group, Vodafone Group Services, Ltd.;
- Moustapha Ould Cheikh Mohamedou, President of the Regulatory Authority Mauritania;
- Ernest Ndukwe, CEO, Nigerian Communications Commission;
- Edwin San Roman Zubizarreta, Chairman of the Board of OSIPTEL, Peru

Moderator **Kathleen Abernathy** shared the U.S. experience in working toward universal service goals of providing service to all, at affordable rates. She said U.S. regulators have had to balance two goals: opening markets to competition and providing support for universal service. U.S. policy has done this by introducing competition, backed up by a targeting funding mechanism. This policy is embodied in three principles:

1) Have faith in competitive markets

2) Establish transparency and enforcement

3) Concentrate on educating consumers

Fully functioning, competitive markets provide better services, at lower rates, than regulated services, she said. But there is a critical role for government to play, particularly when market forces are in their infancy. Regulators should not walk away from intervention when it's necessary; they must remain engaged. There will always be cases in which companies act in contravention to law and/or the public interest.

In her presentation, **Sonja Oestmann** focused on what markets can achieve, in terms of greater market penetration, before regulators are forced to resort to financing plans. First, she defined two terms. The *market efficiency gap*, she said, is the gap between the goods and services a market currently provides and those goods and services it could provide if it were allowed to operate more efficiently through sector reforms. The *true access gap* captures the goods and services that are simply uneconomic to provide, even where markets are operating most efficiently.

Along the axes of poverty and geographic isolation, some markets will under-perform, due to inefficiencies and regulatory burdens. If these burdens are removed, and proper economic incentives are present, markets would take up the market efficiency gap. There are, however, some areas or populations that the market will not serve without intervention through subsidies such as universal service funds, which may be drawn from a levy on the industry.

Ms. Oestmann maintained, however, that un-served or underserved rural areas constitute markets that offer attractive opportunities and can be tapped through innovative pricing (e.g., pre-paid calling) and tariff flexibility. She stated that operators can obtain revenues in rural areas through call-termination charges on incoming calls from urban areas. In order to create incentives for rural build-outs, regulators could give operators in rural areas flexibility to establish higher call-termination charges, she suggested. This "asymmetric interconnection" model of geographically disaggregated, cost-based rates resembles the strategy that mobile operators have employed in charging higher interconnection rates for termination to mobile phones. This has allowed mobile operators to earn revenues even from subscribers with few outgoing calls.

The reality is that regulators have seldom addressed the market efficiency gap prior to establishing funding mechanisms. Ideally, regulatory reform efforts should be exhausted to eliminate the market efficiency gap before resorting to targeted funding mechanisms to address the true access gap.

Edgardo Sepúlveda discussed auction-based mechanisms for awarding universal service funding to least-cost bidders. Such mechanisms have been implemented in Chile, Peru and Colombia and will be implemented soon in additional countries in Latin America and the Caribbean region. About a half dozen more countries in Africa and elsewhere are planning least-cost bidding projects, and many more will likely follow.

The process begins when the USF program administrator defines the need in an area, determines the desired services and calculates the monetary amount available for subsidizing public access projects. The first generation of funding has involved pay phones, while the second often includes Internet access. The third generation will pioneer broadband access.

Mr. Sepúlveda noted that the auction mechanisms used by Chile, Colombia and Peru were implemented after full competition was introduced. Regulators did not impose universal access obligations on market entrants. Instead, they provided incentives in the three countries for entering new markets. Some modifications may be needed in areas where there already is some existing network coverage, he said.

He offered three observations on universal service funds:

1) Universal service funds should be forward-looking. The main objective in developing countries should be to expand the network rather than maintain existing operators.
2) Countries should make funds available to universal access projects as soon as possible. The opportunity costs incurred through delay are very high at this stage of development.
3) Governments should contribute to universal service funds. For example, proceeds from mobile license fees could be funneled back into universal service funding rather than being allocated to general revenues.

Andrew D'Uva, said that satellites have an important role to play in providing universal access and service. They do away with geographic boundaries. They also do away with infrastructure build-out costs. The problems inhibiting satellite technology more often involve regulation and identifying business opportunity.

Neil Gough said the concepts of market efficiency gap and true access gap are very important—the key now is for regulators to determine what the relative size of the gaps are in any given country or area. He noted the rapid increase in mobile service penetration rates and posed the question of why it occurred. The answer is in the alignment of interests between operators, promoting new technology and pricing plans, and consumers, whose needs corresponded to those actions by suppliers. The key to eliminating the market efficiency gap, he added, is found in sound interconnection, licensing and regulatory policies—applied with transparency and fairness. Regulators are vital in setting this environment. The regimes that don't work are those that fight market forces or try to mold them to a preexisting idea of market structure.

Edwin San Roman said the Peruvian experience shows substantial differences between the early and later stages of minimum-subsidy bidding projects, because of learning along the way. Some problems remain to be corrected—for example, estimates of demand. In some cases, early estimates did not take into account substitutable services and the need to discount rates in remote areas. Coverage for mobile phones was much higher than had been expected. So after the public phones were installed, there was competition for callers who also had mobile phones—to receive calls, if not to make them.

Pre-paid systems work best, he said. This is not because of lack of credit, as is commonly thought. Generally, the poorer the customer, the better the risk, because poor clients pay their bills. They have to budget and calculate their resources just to survive. Pre-paid gives them a way to buy just what they need.

Erkki Ormala urged the audience not to underestimate the development of technology, in reducing costs and promoting market demand. He estimated that the mobile subscriber base will reach 2 billion globally by 2008. That's a full one-third of humankind. Meanwhile, new affordable handset technologies are in the pipeline that will cost roughly USD50 a piece, allowing all kinds of innovative business cases to be made to serve a variety of populations. Today the dominant services are voice and SMS, but technology will make broadband data services more and more affordable, allowing them to be offered in places where they were never accessible before.

Moustapha Muhammed related how, in Mauritania, the distribution of two GSM licenses revolutionized the rural telephone market. Mobile services matched the core needs of much of the population, which is nomadic. Among nomad populations, individuals who obtained mobile phones were able to market per-call services, which were much in demand between widely separated and itinerant groups and families.

Ernest Ndukwe noted that if traditional PTTs had been able to provide sufficient services, there would be no need for private market competitors and no clamor for private capital to fund network build-outs. Given the clear need for market liberalization to achieve universal access, it makes little sense, he added, to engage in "half-hearted" liberalization. Half-measures in this regard may have, in fact, handicapped countries searching for international capital investment. Regulators should never over-protect incumbents at the expense of developing competitors, he said.

One participant asked how regulators can reach the goal of establishing fully functional markets. Ms. Abernathy conceded that this was, in fact, the hardest job regulators face. They must prevent abuses by former monopolists, while balancing the need to retain incentives for investment in new technologies and networks. The smoothest experience for U.S. regulators was with mobile services, a market that had no entrenched incumbent. The hardest has been dealing with wireline local carriers, she added.

Another question concerned who should be allowed to bid for subsidies. Mr. Sepúlveda said that in theory, everyone who is qualified should be allowed to bid, including "business houses." Administrators have to ensure, however, that bidders are adequately pre-qualified to make sure they have the technical expertise to provide service. Ms. Oestmann noted that regulators may wish, in some cases, to promote bidding by the existing licensees. New entrants, particular if they are offshore bidders, may not have good knowledge of the country.

A delegate from Lebanon suggested that what many regulators need is a model that represents countries that are in a middle tier—they have an existing level of service delivery and network build-out that places them in a different category from least-developed economies. In these countries, the incumbent must continue to be important because it is providing the existing level of service. While regulators do not want to over-protect the incumbent, they also need to provide incentives to the incumbent to continue the existing level of service and expand it. Otherwise, these countries risk losing years of development before new market entrants are in a position to improve the situation appreciably. In this mid-range of economies, a suitable mixed approach needs to be defined, he said.

Moderator: Armi Jane R. Borje, Commissioner, National Telecommunications Commission, Philippines

Presenters: David N. Townsend, President, DNTA; and Michael Best, Research Scientist, Massachusetts Institute of Technology Media Lab

Panelists:

- Christian Delebarre, Vice President, Corporate International Public Affairs, France Telecom Group;
- Ashok Jhunjhunwala, Professor, Indian Institute of Technology-Madras;
- Orlando Jorge Mera, President of the Board of Directors, INDOTEL, Dominican Republic;
- Alaa Fahmy, Executive President, National Telecommunication Regulatory Authority of Egypt;
- Patrick Masambu, Executive Director, Uganda Communications Commission

David Townsend referred to the trend in many countries of establishing Internet cafes for public access to ICT services. This kind of access can be extended to rural areas in the form of public access "telecenters," either on a community or regional level and can be undertaken as business ventures. In terms of sustainability, preliminary results of pilot projects in many places demonstrate this is a viable business model.

The next stage concerns how to extend the telecenter operator model. Can we reach out from a central location to extend access further? Can the telecenter be the hub of a local communications network? This may be particularly promising where the telecenter brings broadband access that may be extended further into the access network. This could allow local entrepreneurs to gradually scale up their service offerings and operations. Rather than requiring the incumbent to build out networks everywhere at once, a country could decentralize its overall build-out strategy and place at least partial emphasis on the domain of the small community service point. Eventually, the local entrepreneur could scale up to a regional phone provider and compete directly with the incumbent.

Michael Best unveiled a "pop quiz" on the audience, asking them to identify whether, in their jurisdiction, Wi-Fi (Wireless Fidelity) devices may be operated without a license. He noted that he has learned, from experience, that in India, 2.4 GHz for Wi-Fi is allowed indoors without a license—but this has only recently been clarified. Seeking further information on this issue, the ITU polled members on the use of unlicensed frequencies, with varying responses (these have been reported in the 2003 edition of *Trends in Telecommunications Reform*). For example, in Ghana, all operators are required to get licenses, with fees associated.

There can be a revolution in rural Internet access from unlicensed uses, Mr. Best said. Also, there can be a revolution in decentralizing the control over the last mile, away from the incumbent or other major operators.

Mr. Best also sought to clear up confusion about the term "Wi-Fi." Wi-Fi is thought of as a way to create a "hotspot" of about a 100-metre radius of wireless broadband Internet access using a wireless LAN (local area network). On a larger scale, a wireless MAN (metro area network) employs a single point, fixed antenna that may provide coverage of up to tens of kilometers. This can be combined with wireless backhaul facilities. The standards that can be used are 802.11b (wireless LANs), 802.15 (wireless backhaul) and corDECT (wireless MANs).

Mobile wireless networks can cover entire communities. The SARI project in India for example, indicates that for about USD 3 a day, these systems can cover their costs, including payments to Internet Service Providers for Internet capacity. Revenues of USD 4 to USD 5 may constitute a flourishing business. These costs are revolutionary, he said—and they are not possible for large operators with extensive sunk costs and overheads.

In response to a question about the importance of infrastructure, **Christian Delebarre** said competition in telecom markets is likely to come from operators employing different kinds of infrastructure. By the end of this decade, he added, 90 percent of France will be covered by DSL, provided by France Telecom—the traditional operator. But there are areas of the country where DSL is not profitable. France Telecom has done a research project (which it must share with others) indicating that these areas can be served by Wi-Fi and satellite technologies—once there is a threshold level of demand.

What will be useful at this juncture are business models, said **Ashok Jhunjhunwala**. Indians have explored various business models in efforts to connect the disadvantaged to the public switched network. Finally, what worked was a small-scale concept of shops and kiosks, where people can use telephones on a per-call basis. There can be a shop on every street, making a phone available every 50 meters in urban areas. There are a million such call shops now in India, and they generate fully 25 percent of annual telecom revenues. The key is in aggregating the demand. Another lesson India has learned is that following market liberalization, the incumbents and even the new market entrants will look only at cities for their marketing efforts. A distinct and different business model must be adopted for rural areas to enable local business people to provide services. This requires special licenses for rural operators .

Orlando Jorge also reported that community telecenters are working well in the Dominican Republic. They work best when they serve to integrate and energize communities, he said. This can mean providing space for meetings and involving the support of town leaders and religious leaders. A community that claims "ownership" of its telecenter, as a community center, will be more likely to sustain its operation. Mr. Jorge also noted that the Dominican Republic's tele-education project has used Wi-Fi technology to connect public schools.

Egypt has subsidized free ISP subscriptions (although there is a 0.15 USD per hour dial-up charge), said **Alaa Fahmy**. This has been a joint effort of the government and service providers. It has paid off for the operators by increasing usage and revenues. This partnership shows that a good business model linking the incumbent, ISPs and the regulator can be fruitful. Meanwhile, Egypt also has an initiative to provide low-cost PCs to all homes, which include local content and software, paid on an installment plan through the bill for wireline service.

Patrick Masambu reported that Uganda licenses 2.4 GHz spectrum for ISPs, and the regulator is determining whether quality deteriorates with more ISPs using the spectrum. Uganda is participating with ITU on a project to use Wi-Fi to provide rural access because it sees cost-effective opportunities with Wi-Fi. Uganda is also financing Internet Points of Presence (POPs) to bring Internet access to rural areas.

The panelists discussed one barrier to creating demand for ICT services: the lack of native-language or locally pertinent content. Much Internet content continues to be heavily text-oriented and is often in English. The panelists agreed that countries will have to work with institutions inside and outside government to develop local content that will conform to local needs and cultural norms. Mr. Best noted, however, that one of the most attractive online applications is access to chat rooms, where people may communicate in local languages through text. Other popular services involve email with voice mail attachments. These are all more conducive to the local villagers. Content developers need to think beyond just translating material from English to local languages.

Tuesday, 9 December, 2003

Regulators' Day

Session IV (09:00 – 10:30) — Identifying Regulatory Principles for Achieving Universal Service

Moderator: Muna Nijem, Chairman and CEO of the Telecommunications Regulatory Commission of Jordan

Panelists:

- Kathleen Q. Abernathy, Commissioner, FCC, USA
- Pradip Baijal, Chairman, TRAI, India
- Audrey Baudrier, Autorité de Régulation des Télécommunications (ART), France
- John R.K. Tandoh, Director General, National Communications Authority, Ghana
- Mohammed Alghatam, Chairman of the Board of Directors, Telecommunications Regulatory Authority, Bahrain
- Ernest Ndukwe, Chief Executive Officer, Nigerian Communications Commission
- George Alexandrov, Chairman, Communications Regulation Commission, Bulgaria
- Gustavo Pena, Secretary General, REGULATEL, Colombia
- Luiz Guilherme Schymura de Oliveira, President, ANATEL, Brazil
- Shahzada Alam Malik, Chairman, Pakistan Telecommunication Authority

Muna Nijem asked the panelists to discuss developments in their countries that personified the elements of the universal access *Guidelines* document to be sent to the WSIS. She also asked for any comments on the document and, further, sought any suggestions for topics to be developed by the RRU for the next GSR.

Kathleen Abernathy described the U.S. program of providing targeted universal service funding for schools and libraries. The libraries serve as public access points for households and individuals who do not have home PCs. The U.S. is also subsidizing broadband access for rural health care facilities. Ms. Abernathy also expressed support for the *Guidelines*.

Pradip Baijal discussed the establishment of a universal service fund in a multi-operator environment. He noted that the telephone service penetration rate is only 7% in India. Because of that, a fund was set up in 2002 to support public access plans. The goal is to provide additional rural communities with telephones. A total of 5 percent of fees paid by the operators go into the fund. After a year, the fund has become too large and efforts are being made to reduce it.

Audrey Baudrier gave a brief description of the work of ITU-D Study Group 1 dealing with universal access. She also noted that in France, in order to provide network access in rural areas, there is a system of "local roaming" and infrastructure sharing among the three mobile carriers. The government also is developing a training programme on universal service.

John Tandoh said that Ghana had established an independent regulator and a universal access fund. Government policy is to promote mobile telecenters, and a major priority has been placed upon Internet access and broadband networks.

Mohammed Alghatam expressed Bahrain's support for the universal access *Guidelines* document. Reflecting Bahrain's experience, he said there is no one regulatory model to suit all countries. Rather, the best solution depends on various elements within each country.   He noted that Bahrain's telecommunications regulatory authority is a fully independent body, funded through various license fees. At present, regulators are consulting with all stakeholders on universal access policies.

Ernest Ndukwe urged regulators to establish predictable regulatory regimes. Moreover, fully competitive markets will provide more opportunities for universal access, he said.

George Alexandrov said that in Bulgaria, universal service obligations are imposed on the incumbent carrier. Meanwhile, other operators could participate in universal service provision. Options for providing universal access include through alternative infrastructures such as satellite and cable TV.

Possible topics for next GSR were raised by India, France and Nigeria. These were:

1) Promotion of cost effective broadband and Internet services

2) Regulating scarce resources

3) Licensing in the era of convergence.

4) Study and identify needs and synergies amongst regulators in order to share information and practices. .

5) Possibility of having breakout session during the main GSR to allow regulators from around the world to get together.

During the panel discussion, several participants expressed support for the universal access *Guidelines* document, which achieved consensus among the GSR participants.

Session V (10:45-12:00) — From Principles to Practice: Country Presentations Promoting ICTs

Moderator: John Alden, Vice President, Freedom Technologies, Inc.

Presenters:

- Surapong Suebwonglee, Minister of Information and Communication Technology, Thailand;
- Modibo Camara, Director, Telecommunications Regulatory Committee, Mali;
- Audrey Baudrier, Telecommunications Regulatory Authority, France
- Ashok Jhunjhunwala, Professor, Indian Institute of Technology—Madras, India
- Tensin Tobgyl, Rural Telecommunications Analyst, ITU

Surapong Suebwonglee began by providing figures related to Thailand's ICT market, which he described as the most attractive market in Asia. In 2003:

- The market was valued at USD 1.9 billion (excluding the telecom sector);
- Compound annual growth rate was 17%;
- PC penetration rate was at 4% of population;
- Estimated 6 million Internet users;
- International bandwidth totaled 1,437.625 Mbps;
- Over 20 million mobile subscribers.

The Thai government intends to bridge the Digital Divide using a plan to increase widely the use of ICTs nationwide through the following steps:

- Provide affordable computers for the non-computer literate;
- Lower the cost of Internet access to new users;
- Promote broadband Internet access to knowledge workers at competitive cost;
- Utilize existing Internet cafés as "e-government" service points for non-computer literate users;
- "E-revenue" (Revenue department services).

Thai Budget PC Project is the largest single PC Project in 2003 (involving over 120,000 units of desktop PCs and over 20,000 units of notebook computers). The lowest desktop PC price is only 250 USD with Linux O/S, or 290 USD for PC with Microsoft Windows XP Home & Office XP. Future initiatives planned include:

- Smartcard for Citizen ID project
- Promoting three ICT Cities in Phuket, Chiangmai and Khonkhaen;

Organizing the 1st Thailand Animation & Multimedia show in Bangkok (8-11 January 2004).

Modibo Camara related statistics in the Mali telecommunications market, as of June 2003, as follows:

- 58,000 fixed telephone lines;
- 174,000 mobile subscribers;
- 232,000 subscribers in total (1.98% from all population);
- 41,500 Internet users
- 50 Cyber cafés in Bamako;
- 2-3 Cyber cafés in established Telecenters.

The main universal access activities in Mali have included implementation of a legal framework, with the support of the World Bank, and the organization of an international ICT Seminar in Bamako (2002), as well as a regional conference (PrepCom for Africa Region) for WSIS.

Other programs that have been or will be implemented include establishing the following:

- Telecenters for youth, students, etc. in Tombouctou;
- An ICT center for Francophone people;
- An intranet in Bamako University;
- A telemedicine Project;
- Regional CISCO Academy;
- Internet in schools;
- Elaboration of the National ICT Policy in Mali;
- Governmental Intranet and Electronic Archiving;
- Virtual University and Pilot Centers for E-learning;

Audrey Baudrier provided more detailed information on the universal service program involving France's three mobile operators (Bouygues Telecom, Orange France and SFR) and the role of the French Telecommunications Regulatory Authority in providing fair roaming competition among the operators and coverage of "white zones" (zones without terrestrial mobile service coverage).

In the next period, the French government plans to expand coverage in two phases:

- 2003-2004, Phase 1, 1250 cities (1600 communities);
- 2005-2006, Phase 2, (1400 communities).

The state will support these activities with EUR 44 million.

In his presentation, **Ashok Jhunjhunwala** noted that India had more than 600,000 villages, with 700 million people who require innovative technology to connect to ICT capabilities. He said he has worked to develop sustainable business models for local entrepreneurs to drive ICT market development. Experience in India indicates universal access requires an organization that thinks and acts "rural."

In rural areas, efforts are made in establishing appropriate connections (satellite where there is no fiber backbone or others) with the intention to help people in these areas and provide them universal access and advantages of "e-applications" (e-agriculture, e-health, e-education, etc.) and telemedicine services.

Among the innovative applications mentioned were:

- Kiosk ATMs;
- Biometric verification;
- Low-cost LCD projector systems;
- Multiparty videoconferencing;
- Rural banking software.

Dr. Jhunjhunwala concluded that finance, commerce, training and information are key for driving health, education and entrepreneurship. Wireless Internet access, with fiber backhaul, can enable this (sparse areas require special technologies and efforts). Large numbers of innovative technologies and applications need to be developed to cater specifically to rural areas.

Tensin Tobgyl described wireless network projects in Bhutan, which is situated in the heart of the Himalayan range, bordered by Tibet and India, and has a teledensity of roughly 3.38 telephones per 100 inhabitants. In view of the difficulties of mountainous terrain, the lack of infrastructure and the fact that line-of-sight technologies over long distance are not possible, VoIP over WLAN was deemed a good possible solution for better communications, especially in rural areas.

Already, two networks have been implemented. Stable and regularized power supply is needed and grounding of equipment is essential, as is training of staff. There is no regulation on the use of the 2.4 Ghz band or on IP telephony in Bhutan. However, rural areas in the country do not have too much spectrum usage, minimizing the potential for interference problems.

Ms. Tobgyl concluded that the cost-effectiveness, reasonable quality, fast and easy installation, flexibility and scaleability make voice-over-wireless LAN (VoWLAN) technology a likely candidate for rural communications. The low power consumption of the repeaters is a comparative advantage, and the system is functional and workable, although fine-tuning is necessary on an individual line/fault basis. Moreover, the world is generally moving towards IP transmission, meaning the technology will only get better and cheaper.

Session VI (13:30-15:30) — Regulatory Dispute Settlement

Moderator: David Satola, Senior Counsel, Legal Department, World Bank

Presenters: Hank Intven, Partner, McCarthy Tetrault LLP; and Robert Bruce, Partner, Debevoise and Plimpton

Panelists:

- M.O. Tamasiga, Director, Market Development and Analysis, Botswana Telecommunications Authority;
- Jean-Louis Beh Mengue, Director General, Telecommunications Regulatory Authority, Cameroon;
- Jorgen Abild Andersen, Director General, National IT and Telecom Agency, Denmark;
- Pradip Baijal, Chairman, TRAI, India
- Shigeki Suzuki, Director of International Economic Affairs Division, Telecommunications Bureau, MPHPT, Japan;
- Massoun Shocair, Commissioner, TRC, Jordan;
- Swee Hoe Toh, General Manager and Head of the Monitoring and Enforcement Division, MCMC, Malaysia;
- Saltuk Duzyol, Telecommunications Expert, Telecommunications Authority, Turkey.

In his opening comments, **David Satola** said the session was not designed to teach people about the differences between arbitration, mediation and litigation. Rather, it is designed to discuss how to use different types of dispute resolution techniques in telecommunications to promote investment, competition and greater end-user access. He expressed hope that the participants would come away from this session with ideas of:

- How to develop a meaningful dispute resolution process;
- Models for dispute resolution for different types of disputes; and
- Different technologies that can be used in the dispute resolution process.

Before passing the floor to the presenters, a video clip from the Nigerian Communications Commission Consumer Parliament was shown.

The presentations of Messrs. Intven and Bruce draw from a joint discussion paper prepared by the World Bank and the ITU, entitled Dispute Resolution in the Telecommunications Sector: Current Practices and Future Directions. Comments on this paper are welcome by 30January 2004. The paper is available on http://www.itu.int/ITU-D/treg/Events/Seminars/2003/GSR/Documents/DRS_Final_GSR_5.pdf

Hank Intven said that policy-makers and regulators are recognizing that effective dispute resolution is an increasingly important objective of telecom policy and regulation. Failure to resolve disputes quickly and effectively can:

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

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

Robert Bruce noted that in 2003, the ITU conducted mini-case studies of interconnection dispute resolution in Botswana, Denmark, India, Jordan and Malaysia, with the involvement of the telecommunication regulators in those countries. Those case studies are available at http://www.itu.int/ITU-D/treg/.

The preparation of the mini-case studies was followed by an on-line discussion of interconnection dispute resolution among regulators worldwide on the ITU Global Regulators' Exchange (G-REX) forum. The ITU then hosted a live "virtual conference" for regulators globally on 10 November 2003 in which the principal countries involved presented and discussed their perspectives on and experiences of interconnection dispute resolution. This process revealed that:

- Interconnection dispute resolution is now a core strategic issue in telecommunication sector regulation. Interconnection disputes raise issues that are fundamental to sector development. They concern the very availability, on a cost-effective basis, of the infrastructure necessary to provide competitive services. Prolonged unresolved disputes can make interconnection effectively unavailable. This can seriously hamper investment and competition.
- More fundamental market structure issues often underlie interconnection disputes. For example, regulators commonly seek to achieve cost-based pricing of interconnection charges. Insufficient retail price rebalancing, however, can render this effectively unachievable. This can sometimes be beyond the scope of the regulator's immediate power to change, given political circumstances.

There are several ways in which regulators are drawing upon available external resources where their resources are not sufficient alone for efficient and effective solutions:

- Using data from other markets to benchmark information, such as cost-models, where reliable data is not available in the domestic market (e.g., Botswana, Jordan);
- Employing external consultants to gather such information and to assist in reaching decisions to supplement and strengthen in-house expertise (e.g., Botswana);
- Allocating external costs incurred by regulators in the dispute resolution process to the parties (e.g., Jordan);
- Encouraging the use of non-officials, such as arbitrators, to resolve disputes (e.g., Jordan, Australia);
- Initiating industry consultation focused on identifying key underlying sector issues the resolution of which may result in an overall less contentious sector (e.g., Denmark);
- Trying self-regulatory structures whereby industry bodies can anticipate issues that will arise in disputes (e.g., Malaysia, Australia).

Pradip Baijal linked effective dispute resolution with sector growth. Once the disputes that have arisen in the telecom sector are settled, India could easily add 4 million new users a month. **Saltuk Duzyol** related Turkey's experience with a national roaming dispute, which illustrated how dangerous it can be for regulators to intervene in disputes that should be settled by the carriers. The dispute was brought to the table as a strategic move to keep out competition. The regulator immediately put into effect its dispute settlement procedure. But it was not easy for the regulator to provide a settlement, because the two parties attempted to block any settlement that did not meet all of their objectives. It became clear the issues were not technical but economic. After receiving the terms and conditions set by the regulator, the disputing parties challenged the settlement and took the case to the international arbitration authority.

The lessons learned included:

- It is often difficult to convince disputing parties to cooperate; Try to make use of outside mediators so that you will not be accused of bias by the parties;
- Share resources with other mediators; and
- Take into account the cultural differences in doing business.

Jorgen Andersen said it is important to discuss first what can replace traditional litigation. Regulators should find methods that are not reactive but proactive. It is also important to let the market evolve freely. Regulators may wish to enter into a productive dialogue with the industry—perhaps by setting up an interconnection forum. Convergence makes traditional dispute resolution more difficult, as well. The other parts of the ICT sector do not accept traditional mechanisms, so the regulator must become more flexible and find creative means of regulation.

Malaysia uses industry-based solutions, said **Swee Hoe Toh**. There is an industry forum made up of access seekers and providers. They work out the terms and conditions together. The codes are submitted to the regulator to be used as standards for future interconnection agreements. Using this approach, no disputes have come to the regulator yet, he said. Sometimes the regulator clarifies the regulatory rules during the process.

In Botswana, an interconnection dispute was settled using international benchmarks, according to **M.O. Tamasiga**. The regulator in Botswana is the court of last resort for settling interconnection disputes. A best practices approach was used to settle two interconnection disputes.

Shigeki Suzuki said that in Japan, interconnection disputes are between service providers. In order to resolve them, there must be transparent rules and alternative dispute resolution methods. When the rules are clear everyone knows the rules and this keeps disputes low. Case studies also give guidance for settling disputes. He recommended setting up a dispute settlement commission with two functions: mediation and arbitration. The commission should publish a set of rules and cases as examples.

Moderator: Alison Birkett, International Affairs Unit, European Commission

Presenter: Gustavo Tamayo, Partner, Jose Lloreda Camacho & Co., Colombia

Panelists:

- Robert Horton, Acting Chair, Australian Communications Authority;
- Jose Leite Pereira Filho, Commissioner, ANATEL, Brazil;
- Carlos Eduardo Balen y Valenzuela, Commissioner, Telecommunications Regulatory Commission, Colombia;
- Edvins Karnitis, Commissioner, Public Utility Commission of Latvia;
- Peter Fischer, Deputy Director, OFCOM, Switzerland

Moderator **Alison Birkett** discussed what the EU is doing in the area of convergence. The convergence between telecommunications, IT and broadcasting has been analyzed. Voice services, data services, telecom and broadcasting services can be provided on any platform. It has become hard to draw distinctions between different services according to which technology is involved. As a result, EU member states no longer will give different licenses for different services.

There is a distinction between transport and content regulation. The EU only regulates transport. If competition is not effective, the EU imposes additional conditions, such as obligations for transparency or open network access. Convergence issues have been addressed in some countries (South Africa, Malaysia, Hong Kong China, Singapore, Switzerland) and other countries have started to address the question of convergence.

Gustavo Tamayo **discussed "mini case studies" in Latin America:**

1) Brazil: multimedia communication services.
2) Venezuela: Short Message service Interconnection.
3) Colombia: Capacity based interconnection charges.

Robert Horton was asked whether "spam" concerns regulators in Australia and many other countries. In the EU, spam is an issue that is related to the legislation for data protection. How should regulators combat it?

Mr. Horton responded that the issue is critical. Some 24 percent of e-mails are now junk transmissions. Regulators must deal with this. A number of governments are implementing anti-spam legislation. A new law in Australia will be effective from this year on. Some regulators fear that spam is beyond the control of national regulatory agencies. The solution must be an international solution, requiring cooperation between all regulators around the word. Mr. Horton proposed a G-REX virtual conference in the first quarter of 2004 to discuss the challenge of spam and to consider a potential MoU or code between regulators. The world will thank regulators, he added, for taking action on this issue.

Jose Pereira was asked how to construct a multimedia licensing system. He responded that convergence has created a problem for regulators. All agree that stability of the rules is essential to give confidence to investors. Technology has made it possible to provide any service with any platform. In Brazil, regulators are aware that they must adopt a simple and neutral system. The problem is legal. Each operator's license constitutes a specific contract with rights and obligations, and is not easy to transition to a system in which all operators have the same contract. Establishing a specific multimedia service license is a starting point to go to full convergence services.

In response to a question from the Ugandan delegate, Mr. Pereira stated that it is entirely possible to distinguish between regulating infrastructure used to transmit content, and regulating the content itself. In Brazil, content regulation is not within the competence of the telecom regulator, he added.

Peter Fischer cited three reasons for the convergence of regulation:

1) To regulate the market and provide the consumers with the best services according to their needs;

2) To fulfill public policy goals dealing with universal service/access; and

3) To protect the integrity of services from things like spam.

Adequate regulation intervention is needed to deal with this, he said. Switzerland does not foresee creating any special convergence license system. In a digital environment, there is no distinction between data and voice — these distinctions no longer make sense in terms of regulation.

Closing Ceremonies

Commencing the closing ceremonies of the GSR, BDT Director **Hamadoun Touré** announced the creation of a new set of awards, the G-REX Certificates of Appreciation, which he said will be awarded each year to individual regulators who have made valuable contributions to the dialogue in the G-REX forum. Awards for 2003 were given to the following:

- Neils Henrik Jensen of Denmark,
- Cuthbert Lekaukau of Botswana,
- Elaine Hui of Hong Kong, China,
- Ayse Inaloz of Turkey,
- Edwin San Ramon of Peru,
- Robert Horton of Australia, and
- Massoun Shocair of Jordan

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

Proceeding with his closing remarks, Mr. Touré thanked the participants in the informal meeting of regulatory associations held 7 December, 2003 and reiterated his commitment to hosting a similar meeting at the 2004 GSR and future GSRs. He added that he will support efforts to coordinate the associations' work through the G-REX forum and the TREG website. Mr. Touré stated that the BDT will create within G-REX a "virtual forum" for regional regulatory associations to maintain their dialogue.

Mr. Touré thanked the industry for attending the first day of the GSR and also thanked several sponsors of events surrounding the GSR, including Detecon International, Lockheed Martin and Vodafone (for sponsoring coffee breaks), and Nokia for an evening reception held on 8 December 2003. 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.

Recognizing the proposals for work leading up to next year's GSR, he thanked the delegates, including those from India, Nigeria, France and Australia, for their proposals on future work cited above in this report as well as a recommendation to take the "next step" on dispute resolution with dissemination of information through workshops and training.

Noting questions and inquiries about further study on universal service financing, Mr. Touré referred delegates to the 5th edition of *Trends in Telecommunication Reform* (2003), which contains detailed information and guidance regarding this issue. He added that the BDT is open to suggestions for additional information.

Finally, Mr. Touré thanked **GSR Chairman Muna Nijem** for her leadership in guiding the discussions on the *Best Practice Guidelines for Achieving Universal Access* and in chairing the GSR, which he termed an overwhelming success.

In her concluding remarks, Ms. Nijem thanked the delegates for the privilege of serving as Chairperson for the GSR and congratulated them on the quality and scope of their discussions. She noted that the GSR has become a valuable and unique resource for regulators around the world to share information and build ties with their colleagues. When delegates leave the GSR, she said, they can expect to return rededicated to their tasks and bolstered by new conceptual and practical tools shared among the delegates.

This year's GSR was particularly important, she added, because it coincided with the meeting of the WSIS. This underlined the role that regulators have played, and will continue to play, in building the Information Society in their own countries. It also allowed the GSR delegates, through the *Guidelines* document, to pass along to the WSIS the benefit of regulators' combined, real-world experience in working toward universal access and universal service. She added that the effort to create universal access to ICT services is integral to the construction of a global Information Society. Any initiative that failed to embrace un-served or underserved areas of the globe would represent neither full freedom of information nor society itself. She expressed confidence that WSIS delegates would embrace the vision of an inclusive Information Society.

Ms. Nijem noted that the guidelines forwarded to the WSIS were reflected in the presentations and discussions of universal access issues at the GSR. Efforts to promote universal access must be grounded in actions designed to create the proper regulatory framework and environment for growth—including sector reform that harnesses market forces to stimulate greater supply of network services and greater demand for those services. She noted that many presentations discussed new applications and network projects based on low-cost, scaleable technologies that may provide avenues for local entrepreneurs and content producers to create sustainable commercial ventures. Where the "true access gap" remains, however, targeted funding mechanisms are being pioneered to subsidize or "kick-start" services in remote or high-cost areas.

Meanwhile, it has become apparent, Ms. Nijem said, that universal access goals will increasingly include broadband capabilities. These capabilities, made available in public telecenters or homes, will allow the provision of high-value content, such as "e-medicine" or "e-education" programs, that will be the most valuable for consumers.

Ms. Nijem indicated that the GSR discussions show that much progress has been made, in many countries, toward universal access goals. A key element of that progress, she said, may well be the shift in thinking away from viewing universal access solely as an obligation imposed on the industry, toward portraying it as an opportunity for operators to mine new markets and serve more customers. Regulators, too, have an opportunity to establish the best regulatory environment for universal access to be achieved. Ms. Nijem concluded by saying that the regulators' devotion to discussing these issues at the GSR sends a signal that the world's ICT regulators will not let this opportunity slip away.

After thanking Mr. Touré and the staff of the ITU, Ms. Nijem gaveled the fourth GSR to a close.