



INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION DEVELOPMENT BUREAU

DEVELOPMENT SYMPOSIUM FOR REGULATORS
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Salle B, ITU Tower

CHAIRPERSON'S REPORT

At the invitation of the ITU Development Bureau (BDT) Director, Hamadoun I. Touré, the Development Symposium for Regulators (DSR) was held in Geneva from 20-22 November to launch a global dialogue among national communications regulators. The DSR was organized by the BDT Sector Reform Unit (SRU) within the scope of the Valletta Action Plan programme on Reform, Regulation and Legislation. Some 215 participants from 80 different countries participated in the meeting, representing national communications regulators, policy makers, heads of regional regulatory organizations and regulatory and policy experts. In order to facilitate a fair and frank exchange among national regulators, participation was limited to regulators, policy makers and selected experts. Members of the private sector were not invited to attend. Mr. Cuthbert Lekaukau, Executive Chairman of the Botswana Telecommunications Authority, chaired the meeting. Mr. Jorge Kunigami, Chairman of the Board of Peru's OSIPTEL (Organismo Supervisor de Inversión Privada en Telecomunicaciones), was the vice chairman of the meeting. Pierre Gagné, Chief BDT Policies, Strategies and Financing Department, served as the Executive Secretary of the DSR.

The DSR marked a milestone for ITU. It was the first time ITU organized an event just for national communications regulators and policy-makers interested in establishing a regulatory body. The world now numbers 96 regulatory bodies, up from 30 in 1994 and 12 in 1990. Twenty-five more nations have indicated that they plan to establish a regulatory body in the coming years. Many of these fledgling agencies are striving to increase their knowledge base to become more effective regulators. At the same time, all regulators – from those that are well established to those that are brand new – are struggling to keep up with the technological changes that are revolutionizing the information and communications technology (ICT) industry.

The DSR succeeded in launching a global dialogue in which all the world's regulators can share their experiences and views in order to learn from each other. The DSR also agreed to a four-point action plan to continue the global dialogue. The global exchange mechanism calls for each regulatory agency to identify a focal point responsible for coordinating the exchange of regulatory experiences with other regulators. It also calls for BDT to:

- Create a website for the exchange of regulatory and policy experiences;
- Establish a regulators' hotline to provide rapid responses to urgent regulatory issues; and
- Hold annual global regulators meetings.

The DSR brought together regulators from industrialized countries and developing countries, big and small countries, countries with more than a billion inhabitants and sparsely populated small island nations. It included William Kennard, Chairman of the United States Federal

Communications Commission (FCC), one of the world's oldest independent regulatory agencies, and Fatih Mehmet Yurdal, Chairman of Turkey's Telecommunications Authority, one of the world's newest regulatory bodies. High-level regulatory officials from each of the five regions of the world participated actively in the DSR.

BDT decided to hold the DSR because it views sector reform as the key to bridging the digital divide. BDT is convinced that promoting a global dialogue among the world's regulators will serve to strengthen these key players in the new telecommunications landscape and thereby help them as they strive to bring a broader array of ICT products and services to more of the world's people.

Many countries – driven by a concern that their citizens will be shut out of the Information Society – are restructuring their markets by opening them to competition and private investment. Competition and private investment are not only helping to develop networks for basic telecommunication services, they are fueling the rollout of innovative new technologies such as mobile cellular, the Internet and the marriage of mobile and the Internet – third-generation mobile services called IMT-2000 services.

But nations have also discovered that they must establish the proper legislative and regulatory environment in order to attract private investment and promote competition. It is for this reason that most ITU Member States have created – or are in the process of creating – regulatory bodies. They realize that regulators are leading the fight to close the gap between the Information haves and the Information have-nots. Competitive markets require referees. Markets that continue to be dominated by former monopoly operators do not automatically become competitive simply because a new law mandates competition. Strong, independent regulators are needed to allow competition to flourish so that end users' needs are met.

The role of regulators is to promote the best interests of consumers – those who are already using telecommunications services as well as those who have yet to place their first phone call, send their first email message or complete their first e-commerce transaction. The aim of regulation is to facilitate, to stimulate and to boost telecommunication markets to meet customer demands enabling end users to communicate or do business from anywhere, at anytime and at the lowest prices.

MONDAY 20 NOVEMBER 2000

Opening Ceremony

ITU Secretary-General Yoshio Utsumi and BDT Director Hamadoun I. Touré made welcoming addresses. FCC Chairman William Kennard, Maya Shanker Verma, Chairman of the Telecom Regulatory Authority of India, and Cuthbert Lekaukau, Executive Chairman of the Botswana Telecommunications Authority, delivered keynote addresses. Each of their presentations is available on the TREG website: <http://www.itu.int/treg>

- Mr. Utsumi remarked that ITU can play an important role in helping to strengthen regulators through three main vehicles: providing a forum for regulators to discuss the most current issues, providing a knowledge center or repository of global expertise and acting as a conduit for the transfer of regulatory expertise.
- Mr. Touré stressed the BDT's interest in helping to strengthen regulators in an effort to bridge the digital divide. He encouraged them to use the DSR to launch a global dialogue among the world's regulators. Mr. Touré outlined some of the products and services BDT is already providing for regulators and challenged the participants to identify new products and services they would like BDT to offer. He also invited the participants to identify issues for future global regulators' forums.
- Mr. Kennard underscored the importance of launching a global dialogue among regulators, noting that shared experience leads to shared progress for all the people regulators serve, helping to close the global digital divide. He mentioned that regulatory initiatives taken in one country have a positive impact in other countries. While he acknowledged that this positive impact often redounds to the benefit of U.S. companies, he said the U.S. also has an obligation to share its hard-earned knowledge about making a transition to a competitive market with developing countries. At the same time, he noted that the U.S. is becoming a student of developing countries. Mr. Kennard also spoke of global cooperation among regulators as necessary, given the global activities of operators. Incumbent operators may argue against competition in their home market while pushing for competition in countries where they are active as new market entrants. Regulators cooperating on a global basis can help keep operators "honest," he noted.
- Mr. Verma said that the ultimate source of strength for a regulator comes from his knowledge of the market and a thorough understanding of policy issues. Regulators in developing countries need empirical information on how other countries have addressed key regulatory issues. He called for co-operation among all regulatory authorities and proposed that the DSR be used to elaborate a list of the most pressing issues regulators face today. The next step would be for regulators to exchange information on how they have addressed these issues, together with the difficulties they encountered and innovative ways of tackling these key issues. Such an initiative would require a focal point within each regulatory body to coordinate and facilitate the exchange of information. He asked ITU/BDT to process the responses and provide follow-up action in the form of a regulator's website. Mr. Verma also backed creation of a regulators' hotline and called for six-monthly or annual global regulators' meetings.
- Mr. Lekaukau described the challenges of regulating a telecommunications market in his home country, a vast landmass with few inhabitants. He also highlighted the challenges facing regulators in all countries – including unrealistic expectations of immediately fostering a competitive environment, building independence and regulatory expertise while addressing the daunting task of starting a regulatory body. He backed greater regional and global cooperation to help strengthen regulators.

Rise of National Regulatory Authorities (morning session)

Jean-Michel Hubert, President of L'Autorité de Régulation des Télécommunications de France (ART), made a keynote presentation. Four other national regulators delivered presentations on the challenges they face: Gabor Frischmann, President, Hungarian Communications Authority, Keng Thai Leong, Director General (Telecom) Info-communications Development Authority of Singapore, Vilmar Freitas, Member of the Governing Board of Advisors of Brazil's Agencia Nacional de Telecomunicacoes (ANATEL) and Fatih Mehmet Yurdal, Chairman, Turkey's Telecommunications Authority. Each of their presentations is available on the TREG website: <http://www.itu.int/treg>.

- Mr. Hubert spoke of the crucial role regulators play in a liberalized telecommunication market and the need for regulatory independence. He distinguished the French word “réglementation” – or law making process – from – “régulation” or implementation – which falls to regulators. He noted that the objective of telecommunications regulation is to satisfy consumer needs, as well as to promote employment, innovation and competitiveness in the telecommunications industry. He noted that it would be difficult for developing countries to launch 3G mobile services without having first launched 2G mobile services. He added that established regulators should provide their expertise to regulators from developing countries, for example in working to provide widespread Internet connectivity. Mr. Hubert noted that ART is exchanging views and experiences with other francophone regulators.
- Mr. Frischmann spoke of the challenges facing a country in transition from a monopoly environment to full competition, identifying three transitional phases. In the first phase, challenges include balancing the goals of introducing competition and maintaining trust in the government in light of the incumbent's exclusivity period. The first phase requires open and transparent regulatory behaviour and continuous contacts with all parties. In the second phase, the challenges relate to enacting tariff rebalancing while not bankrupting the incumbent and continuing to meet universal service goals. This second phase requires good public relations activity with politicians, the public and the operators. The third phase requires the regulators to step back, let, watch and intervene if necessary – especially where the dominant operator uses its power to limit competition. This requires a qualified regulatory staff with legal, economic and technical experts.
- Mr. Leong described the evolution of regulation in Singapore, including advancing full market liberalization by two years and described the new Telecom Code of Competition introduced on 15 September 2000. The new Code reflects the different bargaining and market positions of different market players and places a greater regulatory burden on those with dominant market power.
- Mr. Freitas provided an historical insight into Brazil's market restructuring, including the creation of ANATEL and increased teledensity levels and infrastructure investment achieved as a result of restructuring.
- Mr. Yurdal discussed the establishment of Turkey's Telecommunications Authority, its structure, financial independence (through license and spectrum usage fees, etc.) and responsibilities. Mr. Yurdal also identified two new initiatives expected to be implemented in Turkey: creation of a Telecommunication Policy Council -- made up of government bodies, industry, universities and consumers -- to act as a consultative body, and transferring licensing and frequency planning responsibilities to the regulator.

Rise of National Regulatory Authorities Roundtable Discussion (afternoon session)

Each of the above regulators formed a roundtable that also included Peter Fischer, Deputy Director General, OFCOM (Switzerland), Chun Koo Han, Commissioner, Korea Communications Commission and Mamoun Balqar, Director General of the Telecommunications Regulatory Commission of Jordan. Each of these regulators was asked to identify the five most pressing issues they face today. These issues were collated in Document 41 of the DSR. A revised version of this document (Document 41Rev) – taking into consideration comments made during the closing session – is attached as Annex 1 to this report.

Regional/International Cooperation

Heads of five regional regulatory organizations plus representatives of the League of Arab States made presentations about their organizations and the need for regional cooperation among regulators. E.J. Namanja, Director General, Malawi Communications Regulatory Authority, spoke as the Chairman of the Telecommunications Regulators' Association of Southern Africa (TRASA). Robert Rowe spoke as President, National Association of Regulatory Utility Commissioners (NARUC). Donnie DeFreitas, Project Manager for the Organization of Eastern Caribbean States (OECS) Project in St. Lucia, spoke on behalf of the Eastern Caribbean Telecommunications Authority (ECTEL). Nils Gunner Billinger, Director General of the National Post & Telecom Agency of Sweden, spoke as the chairman of Europe's Independent Regulators Group (IRG). Datuk Hod Parman, Director of the Malaysian Communications and Multimedia Commission, spoke as the chairman of the Association of South East Asian Nations (ASEAN) Telecommunications Regulators Council (ATRC). Mrs. Nefertiti Mohamed A. Aziz Ali, a telecommunications expert, and Mrs. Dina Ahmed Kamel, an economic expert, both spoke on behalf of the League of Arab States. Each of their presentations is available on the TREG website: <http://www.itu.int/treg>. While Mr. Jorge Nicolin, President of REGULATEL (Foro de Entes Reguladores Latinoamericanos de Telecomunicaciones), could not participate an information document was submitted and is posted on the TREG website.

TRASA

TRASA was formed in an effort to promote regional collaboration and integration in an effort to create an enlarged market that attracts investment. TRASA members recognized that, individually, they lacked resources to meet the needs of their people. Its main objectives are to provide:

- adequate telecom services for users
- universal service, especially basic telecom services; and
- cooperative regional activities.

TRASA was established in 1997. Regulatory authorities, which have been set up separately from operators and from government ministries responsible for telecommunication policy, are eligible for full TRASA membership. At present 11 out of 14 Southern African countries hold full membership. In 1999, TRASA formed a three year Action Plan (1999-2001) which includes promotion of TRASA, development of human resources, development of information systems, and development of policy guidelines and model legislation (e.g., licensing, competition etc.).

Its main challenge is lack of financial and human resources, which require cooperation among partners. Its prime achievements include completion of model policy guidelines (e.g., regulation, tariffs, interconnection, frequency band plan etc.) and harmonization among members regarding empowerment of women and self-sustainability. TRASA is willing to share experience, exchange information and actively participate in global activities like the ITU.

Although TRASA members have drafted model legislation, each TRASA Member is free to adopt its own laws to meet its own national and constitutional requirements. Individual governments may modify or accept as much of the guidelines as they choose, respecting national sovereignty. Enforcement power is left to each country.

NARUC

NARUC is a national association composed of multi-sector regulatory commissions in the 50 States of the U.S., the District of Columbia, U.S. territories and 23 national regulatory commissions from around the world. Its main functions include regulation of utilities (e.g., telecom, gas, electricity, nuclear sectors etc.), research, training, policy development, advice on regulation, legislation and policy and on-line communications in collaboration with sector and international committees.

Joint service regulatory bodies combine some or all of telecom, electric, gas, water, and transportation. Goals are economies of scale and scope, dynamic efficiencies, common evolution toward competition and convergence among industries. Joint service bodies may combine functions in one entity but retain separate offices for each sector, recognizing industry convergence. Joint service regulatory bodies can be organized by economics, consumer protection and education, accounting and auditing, engineering, and complaints and enforcement. They may evolve as markets, technology, and policies evolve.

OECS/ECTEL

OECS is composed of 9 Caribbean countries, with a total population of 600,000. All of these small island nations are undergoing a similar liberalization process due to the fact that the same private entity – rather than the government – has held the monopoly in each country. The OECS project, which started two years ago, has created new legislation for five Member States and will lead to the formation of a regional regulatory body for these countries, the Eastern Caribbean Telecommunications Authority (ECTEL). The five countries are the Commonwealth of Dominica, Grenada, St. Kitts/Nevis, St. Lucia and St. Vincent and the Grenadines. Its goals are to achieve a regional regulatory framework, cost-oriented tariffs, effective spectrum management, an assessment of the capabilities and potential of the network and the development of a trained skills-base for informatics.

Model legislation has been harmonized and passed in the five participating nations and a common set of regulations is now being developed. ECTEL's independence is critical. It should be independent from service providers as well as from government.

ECTEL is a legal entity with power. It will be given more power in two years, although national bodies will retain enforcement powers. In the case of licensing, for example, all licenses will be sent to the country in which the applicant wishes to operate. The individual licenses will be forwarded to ECTEL for a recommendation. The countries would be required to take into account the recommendation of ECTEL, but such recommendations would not be the sole basis for making decisions on the award of licenses.

IRG

IRG is an informal organization made up of the directors general of the national regulatory authorities in 18 European countries that are independent from their governments and have a liberalized telecom market according to European Union standards. These countries include regulators from the 15 European Union Member States, Iceland, Liechtenstein and Switzerland. It is a flexible organization headed by a Director-General whose term runs for 4 years. Its working method is mainly through regular and extra meetings and through working groups. IRG

uses two kinds of working groups – one that develops common positions and one that serves as a forum for sharing information and experiences.

IRG aims at harmonizing the regulatory practice in Europe based on practical experience by means of exchanging views and opinions and, when appropriate, formulating common positions and practices.

IRG intends to develop and publish its common understanding of the principles of implementation and best practice on unbundled access to the local loop, based on NRA's practical experience. IRG members noted that they have also been in regular email contact with each other on 3G licensing issues.

ATRC was formed in July 1995 in recognition of the dynamic global telecommunications environment within which the ASEAN nations operate. ASEAN members include Brunei Darussalam, Indonesia, Lao People's Democratic Republic, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. It was formed to provide national regulators in ASEAN countries the opportunity to work together to develop the industry and serve consumers. ATRC has no permanent secretariat. The chairman's seat rotates every year, passing to the host country of the next council meeting.

Its prime functions are:

- Policies, strategies, and regulatory issues that are of mutual interest to ASEAN countries (e.g., standards, frequency, international affairs etc.);
- Promoting areas of cooperation; and
- Exchanging information through seminars, workshops and other forums.

Its five major interested areas are:

- Harmonization of frequency spectrum allocation (e.g., mobile, cellular etc.);
- Harmonization of technical/standards for manufacturers in ASEAN countries to promote the use of local equipment;
- International activities on a joint or cooperative base;
- Interoperability among members; and
- Human Resource Development for regional requirements such as skill training and enhancement of manpower.

Several areas of standardization and cooperation have been pursued, e.g., the formulation of a mutual framework for type approval arrangement (MRA) and common ASEAN frequency bands for paging, cellular and trunk radio. ATRC seeks a closer partnership with ITU and other regional forums for regulators.

League of Arab States (LAS)

The League of Arab States (LAS) created 10 pan-Arab free trade areas such as:

- customs and tariffs, which have been reduced up to 10% in 10 years;
- competition law;
- the completion and distribution in February and September 1999 of two documents on economic implication;
- protection of consumers and SMEs from the incumbents or large companies;
- focusing on competition for development; and
- meetings on capacity building.

LAS also has introduced sector reforms since 1995 in which national regulatory agencies were established: e.g.

- Jordan in 1995;
- Sudan in 1996;
- Morocco in 1998; and
- Mauritania in 1999

The establishment of other national regulatory agencies is expected to follow. The next strategy is to unify policy and exchange information in Arab States.

TUESDAY 21 NOVEMBER 2000

Interconnection Session: Trends in Telecommunication Reform Roundtable Discussion

This session was dedicated to the subject of interconnection, one of the topics identified as “most pressing” for regulators on the first day of the meeting. DSR Vice-Chairperson Kunigami (OSIPTEL, Peru) moderated the session. The draft report *Trends in Telecommunication Reform 2000/2001* was the main document under consideration in the session. The author of each chapter was asked to present a summary of his/her chapter and the main findings. Ben Petrazzini, Strategies and Policy Unit, ITU, Hank Intven, Partner, McCarthy Tétrault, Canada, Susan Schorr, Sector Reform Unit, ITU, David Townsend, President David N. Townsend Associates, U.S., Dr. Tim Kelly, Strategies and Policy Unit, ITU, Saburo Tanaka, ITU Standardization Bureau, John Alden, Vice President, Freedom Technologies, Inc., U.S., Lara Srivastava, Strategies and Policy Unit, ITU and Anthony Brooks, Reality Engineer, Future Foundation, South Africa were this year’s *Trends* authors. Each of the author’s presentations was followed by a roundtable discussion among our distinguished panelists. Panelists included Peter Fischer, Deputy Director General OFCOM (Switzerland), Edmundo Matarazzo, Superintendent of Public Services ANATEL (Brazil), Ravi Kant, Member TRAI (India), Guillermo Klein, Director, CNC (Argentina), Keng Thai Leong, Director General (Telecom) IDA (Singapore), Patrick Masambu, Executive Director UCC (Uganda) and Ari Fitzgerald, Deputy Bureau Chief, FCC (USA).

Global Trends in Market Reform

Ben Petrazzini provided an overview of global trends in the sector. By the year 2000, there were more operators with private than public capital. This has had an impact on all the other reform elements, such as a country’s level of competition.

While most countries maintain a monopoly for the provision of basic services, the number of countries allowing competition is increasing. Developing countries have allowed more competition in local than international services. Competition is predominant in mobile, ISP and CATV services. More than 85 countries allow Internet competition.

Participants raised concerns about the effect of market reforms on universal service goals. Panelists identified universal service funds, bidding processes, and incorporating build-out requirements in operator licenses as means to finance and ensure the provision of universal service.

The Importance of Interconnection, Regulatory & Technical Issues

Hank Intven explained the importance of interconnection. Effective interconnection arrangements are essential for the development of today’s integrated global telecommunication networks. Interconnection is one of the foundations of viable competition, which in turn is the main driver of growth and innovation in telecommunication markets. The ultimate beneficiaries of well-designed interconnection policies are end-users. Efficient interconnection regimes help to promote universal service goals. In the digital age, efficient interconnection regimes also help to promote the deployment and accessibility of a growing range of innovative services.

In the beginning of the 90’s, very few countries had interconnection regulatory frameworks. Today, according to the ITU annual survey, more than 95 countries have some kind of interconnection framework. The rise in the number of frameworks has led to the harmonization of approaches due, in part, to the WTO reference paper as well as similar equipment, network architecture, and software. The EU, TRASA, APEC, and CITEL have all elaborated regional guidelines.

Many countries have an incentive to adopt interconnection regimes similar to those of developed markets in order to attract increased investment and technological expertise. Adoption of existing interconnection models, in whole or in part, can significantly ease the workload of regulators and operators around the world.

Without guidelines or by relying solely on *ex post* regulations, interconnection negotiations are frequently protracted, delaying the introduction of competition. This engenders regulatory uncertainty and discourages investment. Interconnection arrangements that are negotiated in such an environment often reflect the unequal bargaining power of the incumbent operator and may not be optimal for developing an efficient competitive marketplace. Previously, commercial negotiations were left to the operators with the risk of having an agreement favoring the incumbent. There appears to be a growing consensus that advance regulatory guidelines (*ex ante*) may be necessary to establish the proper environment to facilitate interconnection.

Countries seeking to introduce competition usually require “dominant” carriers to interconnect with other carriers and service providers. Dominant carriers must interconnect in a timely fashion, at standard interconnection points (or at any technically feasible point in the incumbent’s or dominant operator’s network -- providing that the requesting operator or service supplier pays for the costs of interconnecting at such additional points).

As markets become increasingly competitive, deregulation of interconnection arrangements with once-dominant carriers is likely to become more widespread. However, during the transition to full competition, a degree of asymmetric regulation may be required in order to level the playing field that is now tilted in favour of incumbent operators.

Some countries are now imposing interconnection obligations on all network operators, including non-dominant fixed-line and mobile network operators. Attention is increasingly turning to data or cable network operators and Internet service providers.

The WTO Reference Paper outlines key interconnection rules: interconnection with major suppliers must be available; procedures must be public; agreements and/or Reference Interconnection Offers (RIOs) must be made public; and a dispute resolution mechanism must be made available.

The panelists were asked about the necessity to develop detailed interconnection guidelines in their countries or whether it should be left up to the operator.

- Uganda developed a duopoly and established a default interconnection agreement which would kick in if negotiations failed. The second operator was licensed before the incumbent was privatized. The second operator uses GSM.
- Switzerland relies on *ex poste* regulation to resolve interconnection disputes. Operators turn to the regulator if there is a problem.
- In India, interconnection is supposed to be a commercial negotiation between operators, but often these negotiations don’t succeed. Certain intervention by regulators is useful. WTO Reference paper is useful.
- In Peru, interconnection delays are normally the result of lack of agreement on interconnection prices. OSIPTEL has established a fixed price that is used if the parties cannot agree to a lower rate. This practice has helped to speed negotiations.
- In Brazil, the regulator intervenes when the parties fail to reach agreement. There are two approaches: mediation (helpful at the beginning) and arbitration. For arbitration, the head of ANATEL appoints a three-person council to make a determination, which must then be followed by both parties. Disputes normally arise on: number of interconnection points, collocation, and who should build links between points.

The panellists urged *ex ante* regulation based on principles of transparency, non-discrimination, and cost-orientation. They emphasized the importance of RIOs as well as the regulator's power to arbitrate or intervene. Mr. Fitzgerald also suggested including performance indicators in interconnection agreements.

Economic Issues in Interconnection

David Townsend identified the economic issues to be addressed in interconnection. When looking at cost issues, there is no single cost model, and no single way to look at costs.

Cost of interconnection can be looked at through various lenses: categories of costs (e.g., fixed vs. variable; direct vs. indirect), types of interconnection (e.g., local and long distance, fixed and mobile, and data/IP networks), etc.

Measuring costs is not an exact science. Several factors need to be taken into consideration that will vary from country to country depending on local conditions.

There are two main theoretical frameworks used to measure costs: fully distributed costs, or FDC, which uses historical data, and forward looking, incremental costs (such as LRIC, TSLRIC, FL-LRAIC, etc.) which estimate what the cost for a service would be in the future, in a fully competitive market. In reality, cost models are based on a mixture of both theories.

Three categories of costs are taken into consideration and should be equally analyzed (up to now capital expenditure has mainly been considered). These categories are capital investment (plant whose acquisition cost is depreciated or amortized over a number of years); operating expenses (outlays for goods and services that are paid from the current budget); and personnel costs (salaries, wages and benefits of regular employees).

Cost studies should be as thorough as possible, given the available data. Three general approaches to cost studies can be pursued, either separately or in combination: *Bottom-Up*, *Top-Down*, and *Outside-In*. The *bottom-up* approach is based on the idea that service costs can be identified from the facilities and other inputs needed to provide the services. The costs of the inputs are combined in proportion to their utilization in providing each service, and then divided by the number of total units of service, resulting in per-unit facility costs. The *top-down* approach begins with aggregate, company-wide cost data. The goal of a top-down study is to take these aggregate costs and allocate them among all services provided by the carrier. The *outside-in approach* is to use "proxy" estimates from outside sources, establishing cost "benchmarks," or ranges of costs, for services or facilities.

Three cost recovery principles have been applied to interconnection charges: efficiency, equity and competitive balance. Some regimes have also adopted a "laissez-faire" approach.

Interconnection fees should mirror both the network operators' costs and the regulatory policies that governments wish to pursue. There are several options to choose from in setting interconnection charges. These can be *cost-based charges* (set to recover costs in roughly the manner in which carriers incur them); *retail-based charges* (basing interconnection charges directly on a carrier's retail collection rates), *price caps* (placing a ceiling or cap on charges for a group of services that are placed together in a conceptual "basket."); *"Bill and Keep"* or *"Sender Keeps All"* (each carrier "bills" its own customers for outgoing traffic that it "sends" to the other network, and "keeps" all the revenue that results), and *Revenue Sharing* (sometimes used in place of paying an explicit interconnection charges).

Participants were asked their view on international benchmarks. It was suggested that it be seen as a transition, replacement solution by countries lacking data collection. International benchmarks can be used as a comparison tool in association with the top-down and bottom-up approaches. The delegate of Malta further suggested that a dynamic database for benchmarks should be established to serve as a repository of information.

Network Unbundling

John Alden described the evolution of local service provision from state-owned/state-supported to competition as a growing new paradigm. Legalizing local competition doesn't mean effective competition is taking place in practice. Why? The incumbent has distinct advantages (e.g., history, network build out, and dominance).

How can new market entrants compete? Lower prices, market innovation, and new technologies for "last mile" local access transmission. In several countries, these factors are now coming together in the form of network unbundling policies. Unbundling is the offering of discrete network facilities, functions, or services on a stand-alone basis. It is the conceptual opposite of service bundling or packaging. Unbundling allows someone to purchase network elements on an *a la carte* basis, paying only for the facilities or functions that they need.

The concept of unbundling is an enhanced form of interconnection. Without unbundling, a competing carrier may be able to interconnect with an incumbent carrier at various network points. But the competitor still must construct its own network, complete with switching, interoffice transport, and local loop facilities to every customer it wishes to serve. Unbundling allows the competitor to use parts of the incumbent's network.

The term *unbundling* in many countries is meant as *local loop unbundling*. The local loop is at the heart of the critical bottleneck that incumbent carriers still control, in most places around the world.

Unbundling in many countries connotes accessing local loops in order to use them to provide advanced, Internet protocol (IP) services using asymmetrical digital subscriber line (ADSL) and other xDSL technologies. Competitors increasingly seek to use incumbents' local loops, equipped with xDSL technologies, to offer Internet access and, eventually, IP voice services.

Unbundling in the United States has been one of the basic tools for fostering local exchange service competition. The first wave of unbundling focused on voice services. With the second wave of the late 1990s, the focus shifted to advanced services such as xDSL which could revolutionize the local services market.

Once a country decides that requiring the unbundling of an incumbent's network is necessary to promote competition, it must decide how much unbundling is needed. Local loop unbundling can include any one of the following approaches: providing fully unbundled local loops; offering bit-stream unbundling, in which the incumbent operator sells wholesale xDSL service to competitors for resale; reselling local traffic, in which the competitor purchases part or all of the incumbent's retail service and resells it locally; offering "permanent virtual circuit access," which allows a competitor to provide the service while the incumbent continues to provide the connectivity to the customer; allowing shared access (also called "line sharing") for two operators to provide their own services over the same copper pair; and providing enhanced or ancillary services that support competitive offerings, such as operator services, directory assistance, or billing and collection.

Once the scope of unbundling is determined, it must be decided how competitors will collocate their equipment to take advantage of unbundling, and how prices will be set for unbundled network elements and collocation space.

Unbundling is not a solution but a transition for new entrants until they build their own network. It is a complement and not a substitute to network building. It enhances access of end users to broadband Internet services. It should also be kept in mind that alternative infrastructures can be more suitable for certain markets.

In the discussion, unbundling of wireless local loop (WLL) was seen as a complementary solution to unbundling. The development of WLL is rapid and compatible with ADSL. It supplements the role of alternative infrastructures in allowing competitive choice for end users.

On the question of small markets, unbundling was seen as a practical proposition, as new operators would not have to build their own network to start operating. Duplication would be prevented.

Interconnection/Mobile Networks

Lara Srivastava explained that we are witnessing a mobile revolution, a mobile information society. By 2003, mobile services will overtake fixed services and 75 percent of all calls will be placed to or from a mobile terminal.

Mobile carriers' are increasingly adopting pre-paid card offerings. Pre-paid calling has attracted customers who otherwise might never have subscribed to mobile or even fixed-line services. Pre-paid plans are effective in countries using the "calling party pays" (CPP) pricing structure, which allows mobile service users to receive incoming calls free of charge on their home networks.

However, calling party pays schemes lack tariff transparency. Consequently, mobile operators do not lose customers if they maintain high termination rates. High termination rates for fixed-to-mobile calls in a CPP environment are the product of both market structure and the lack of transparency in pricing. Analysts have determined that approximately 70 per cent of the costs of completing a fixed-to-mobile call costs occur in the termination portion of the call, largely because the called party must be located in a mobile environment. High costs are also the result of state-owned incumbents, lack of regulatory intervention and limited competition. A caller has no choice as to which operator terminates the call.

Fixed-to-mobile interconnection rates usually take the form of per-minute or unit-based termination fees, along with assorted charges for the physical links connecting the networks, including leased lines and collocation arrangements.

Mobile-to-mobile interconnection rates are the product of commercial negotiations, not regulatory intervention. Mobile-to-mobile interconnection charges have tended to be significantly lower than fixed-to-mobile charges.

Mobile operators continue to face technical barriers to entry in some countries. Incumbent fixed-line operators have imposed costly and time-consuming technical prerequisites on interconnecting mobile carriers, threatening the development of mobile markets. National regulators often must intervene to ensure the most efficient and equitable interconnection arrangements.

The question was raised whether countries should move to a CPP scheme. Mr. Fitzgerald commented that in the US, CPP is neither mandated nor prohibited. However, most U.S. mobile operators offer pricing plans that include a "bucket" of minutes. Mr. Klein noted that an Argentine court struck down CPP on the grounds that it violated the operator's license; the court found that operators using the CPP scheme would not have any incentive to lower costs even in the face of declining prices. Pakistan noted that it introduced a CPP regime on 3 November. A paper describing Pakistan's new CPP regime is available on the TREG website: <http://www.itu.int/treg>.

Pakistan has three active mobile operators and a fourth operator will launch its service in January 2001. Pakistan introduced CPP because it concluded that mobile growth was decreasing under its RPP scheme.

Internet Interconnection

Anthony Brooks explained that the Internet industry, like other segments of the communications sector, relies on interconnection. While regulators have played a key role in establishing interconnection principles for telephone networks, so far they have played only a minimal role in the development of the Internet. This may be due to the fact that the technology of a packet-switched Internet network is fundamentally different from the technology involved in a circuit-switched telephone network.

The Internet market in developing countries is often composed of local and national ISPs with no connection (peering) between them at a national or regional level. In order to connect to each other, ISPs in developing countries often have to send their Internet traffic through the U.S. or Canada. The establishment of a national/regional Internet exchange point allows ISPs to peer without having to route the traffic to and from the U.S. This allows ISPs to reduce costs and provide faster access.

There are various forms of interconnection that currently exist among Internet operators of various sizes. The most common form of interconnection is that between an ISP and a customer (the customer pays the ISP and gains a connection to the Internet usually via a dial-up PSTN connection or a leased line). Another form is the interconnection of ISP-to-ISP without one being a clear customer of the other (e.g., the traditional peering agreements between ISPs of similar size). When several ISPs need to interconnect in the same city or other locality, they may make use of an Internet Exchange Point (IXP). This type of joint interconnection is more efficient than forming separate interconnection agreements among all interconnecting carriers.

Mr. Brooks argued that implementing balance of payments and Internet accounting rates between countries might not be the solution. He noted that the less regulators intervene the better it may be for the Internet market.

Although few regulators have intervened in Internet interconnection issues, there is certainly a role for government to play in ensuring fair competition (monitoring the dominant players), increased transparency and, above all, increased competition. All players seem to agree on this point: Telecommunication competition is good for Internet development.

Future trends in Internet interconnection are evident:

- the move from historical “peering” to interconnection rates based on traffic flows or other perceived value will continue;
- prices for international Internet interconnection will continue to drop steadily;
- Despite falling costs, Internet access may not become available in all geographic locations on an equitable basis;
- new protocols and more careful traffic management will allow ISPs to offer increasingly differentiated services to customers.

International Interconnection

Dr. Kelly explained that in the past, the only kind of interconnection was for international services. International interconnection was settled through a bilateral accounting rate system. In the new world of bandwidth exchanges, the focus has moved to trading minutes.

Prices for international calling have fallen due to the decline in settlement rates. Settlement rates, in turn, have been tumbling because of competition and least-cost routing. Despite the price reduction,

the growth in international calling has appeared to stagnate. One reason is that consumers have spent increasingly less time making fixed-line calls.

The retail prices of international calls are converging with those of local calls. Increasingly, there will be little distinction between the price of national and international calls, at least in liberalized markets.

The accounting rate regime has begun to unravel. With market liberalization, net settlements are increasing, creating incentives for operators receiving more traffic than they send to keep the prices high. Pressure for a multilateral agreement is growing (the current WTO agreement avoids discussing accounting rates). While accounting rates are falling, the decline has been too slow resulting in bypass via the Internet, refile, or bandwidth exchanges.

In 1990, 60 percent of all traffic originated in monopoly markets, now 20 percent originates in monopolies.

In an effort to speed up the reduction of accounting rates towards costs, the ITU's Standardization Sector's Study Group 3 adopted Recommendation D.140 in 1992 which contains, inter alia, the principles of transparency, non-discrimination and cost-orientation. Recommendation D.150 was revised in 1998, to include three new procedures for compensating carriers that terminate international traffic. The first was the termination charge procedure, which allows governments or operators to establish a single charge for terminating traffic in their country, provided the charge meets certain multilaterally agreed criteria. The second, the settlement rate procedure, allows operators to negotiate cost-oriented and asymmetric settlement rates that would be better suited to the new market situation. The third procedure allows any other bilaterally negotiated commercial arrangement between international carrier correspondents.

It is hoped that the adoption of these three new compensation procedures can be regarded as a real breakthrough in the reform of the accounting rate system. They should facilitate market reforms, benefiting the entire telecommunication community—particularly end users.

Dr. Kelly suggests that we avoid protecting operators from competition. Even in monopoly situations, it is possible to introduce resale so that the operator will be in a better position once the market is open. This is a form of “soft competition”.

Mr. Matarazzo of Brazil emphasized the importance of transparency in settlement rates and/or interconnection rates.

For more detailed information on any of the topics discussed in the interconnection session, consult *Trends in Telecommunication Reform 2000/2001* or <http://www.itu.int/treg>.

Gender Perspectives in Telecommunications

Sonia Jorge presented a snapshot of a curriculum addressing gender perspectives in telecommunications. Jorge emphasized the crucial need for a gender perspective in all areas of policy making. The ITU Task force on Gender Issues (TFGI) has taken the lead to promote a gender-awareness mode of operation among its member states.

A training curriculum on gender perspectives in telecommunications policy provides an important opportunity for regulators and policy makers to participate in specialized training that will assist them to effectively integrate gender perspectives in telecommunications policy.

The curriculum's aim is to promote a better understanding on the implications of integrating gender perspectives in distinct social, cultural, economic and political environments through the exchange of information. A special workshop was organized immediately following the closing of the symposium on Ensuring Affordable Access: Gender Perspectives in Telecommunication Policy. For more information, see <http://www.itu.int/ITU-D-Gender/>

Regulatory Strategies to Increase Internet Connectivity

Mr. Guy Girardet (CTO) explained how increased access to the Internet is hindered by high access charges. He emphasized the importance of telecentres as a means to bridge the digital divide. The proliferation of telecentres brought about by competition has driven down prices and resulted in better services and higher Internet usage.

To increase Internet connectivity governments, municipalities and policy makers need to increase telecentres to serve mostly poor populations. Such telecentres should ensure sustainability.

Mr. Vicente Rodriguez (Conatel, Venezuela) outlined their action plan for increasing Internet connectivity. This action plan has led to an increase in service providers and interconnectivity. The new legislative framework (June 2000) defines the role of the regulator and liberalizes the provision of Internet services, encourages interconnectivity, and increased the legal security, thereby favouring investments. National objectives to increase Internet connectivity are:

- Expand the national network to interconnect with the global network;
- Expand telecommunication services;
- Promote the development of information infrastructure;
- Provide incentives for the application of convergent technologies;
- Promote the production of national content. This increased the need for users to connect, use and invest in the Internet;
- Develop educational programmes and information on the use and applications of the internet;
- Creation of a national universal service fund;
- Creation of multipurpose community telecentres with internet services;
- E-government programmes.

In the question and answer period, the Venezuelan delegate was asked to explain what was being done in the area of universal service (for basic services). Venezuela employs subsidies and also imposes universal service obligations on operators; these obligations are detailed in operator licenses. Venezuela also has a Universal Access Fund. It distributes universal access funds that are to be used for rural communities through a public tender process. Standards and criteria are outlined in the legal framework.

Participants expressed interest in the role of the regulator in the establishment of telecentres in Peru and Venezuela. It was explained that while the regulator did not play a direct role, the overall establishment of a competitive environment facilitated the development of the telecentres.

Workshop A: The Impact of Convergence on Regulators

Mr. Kunigami served as the workshop chairman. Panelists included Mr. Leong (IDA Singapore), Mandla Msimang, Special Advisor for Council of the Independent Communications Authority of South Africa, Alison Birkett, Head of Sector, International Regulatory Aspects, European Commission and Luiz Fernando Ferreira Silva, Manager Service Regulation, Anatel, Brazil.

Panelists and participants identified a number of issues related to the impact of convergence on regulators. In spite of the diversity of issues, most attendees agreed on a number of challenges posed by convergence that are common to all regulators.

- The world has fundamentally changed

Workshop participants noted that convergence has made redundant the artificial boundaries regulators used in the past. The distinction between value added services and basic services no longer applies. People can now surf the Internet on mobile phones and use the Internet to place phone calls. These fundamental changes bring new risks and new challenges. They require a new regulatory approach. The only certainty is change. Staying with the status quo is not an option. Some countries are adopting new models to promote their national markets as ICT hubs.

- Convergence is Increasing Demand For Proactive Regulation

All workshop participants agreed that technological and service convergence has been coupled with greater demand for proactive regulatory agencies—at least in the early days of service and market convergence.

The convergence of service, technologies, and operators of varying size and strength has generated considerable asymmetries in most markets experiencing convergence. Such asymmetry requires a referee that has the tools and the capabilities to create a fair and level playing field for new entrants and small players.

Some participants noted that regulatory intervention is the only guarantee that small players and new entrants will bring competition and with it a variety of new converged communication services.

- Regulation should be technologically neutral

Workshop participants agreed that convergence takes place easier and faster in those markets in which policy and regulation have not intervened to pick winners and losers in the technology marketplace. All policy and regulation should aim to remain technologically neutral and let operators pick and choose the technology that better fits the service they are trying to provide to satisfy the needs of consumers. Singapore's new Competition Code and the European Commission's proposed regulatory framework are examples of technologically neutral regulatory regimes.

- Licenses should migrate towards general authorizations

Participants noted that the traditional practice of requiring separate licenses for different services and restricting the operations of service providers to the type of services permitted by such separate licenses undermines the potential of developing converged services. New entrants should only be required to obtain general authorizations to operate. They should use such general authorizations to provide any kind of service, especially services in which

there is unsatisfied demand. This is one example of a technologically neutral approach to regulation.

- Once full competition is reached, regulation should be *ex-post*

The role of the regulator in a converged environment is to promote and monitor, rather than to control and restrict. Workshop participants therefore emphasized that regulation should aim to be *ex-post* rather than *ex-ante* – at least once full competition has been established. The key function of regulation in a converged marketplace is that of monitoring the degree of effective competition and intervening only in those cases in which the desired level of competition has been harmed by the significant market power (SMP) or dominance of one of the players.

Until full competition is established, some workshop participants backed the use of asymmetric regulation in which a greater regulatory burden is placed on SMP or dominant market players than on new market entrants. Both Singapore's new Competition Code and the proposed European Commission regulatory framework adopt this approach.

- Content regulation should remain separate

Participants questioned whether the regulator's mandate should include content control. Some of the panelists argued that content regulation should not be included in the ICT regulator's mandate. One of the main mandates of a regulator in the converged environment is to find legal and regulatory tools to promote and stimulate the production of content and the flow of such content through ICT networks. Content promotion is at odds with content control. Some participants noted, therefore, that -- to the extent a country wishes to control content -- a different institution should be responsible for content control.

- A converged regulator is not essential

Based on the experience of those regulatory agencies that have merged their telecom, information technology, and broadcasting agencies, some panellists noted that the establishment of a "converged" regulator – or a regulator that merges these functions -- is not an inevitable mandate in the evolution of the communications marketplace.

Several countries, mindful of the technology and service convergence that is taking place in the local market, are managing the transformation through a stronger and better coordination and cooperation of the existing institutions—i.e., telecom, broadcasting, and information technology regulatory and policy agencies.

Some participants and panelists highlighted the fact that some regulatory bodies that have integrated their institutions (the former broadcasting and telecom regulatory agencies) into one single entity have, in some cases, nevertheless kept them functionally separate as two separate divisions or departments. South Africa, for example, has undergone institutional convergence but its regulatory framework has lagged behind the institutional restructuring. Thus, although all South African regulators are now under one institutional umbrella, the main sector legislation and the overall regulatory framework for the sector remains separate and unchanged.

Workshop B: Institutional framework, legislative reforms and establishing and independent regulator

This workshop was designed to address the issues to be considered when establishing a regulator or trying to strengthen an existing regulator.

David Souter of the CTO explained the relevance of a regulatory regime. He emphasized that regulatory independence should be looked at not only from the operator, but also from the government. He focused on the impact of the regulatory regime on universal services and market evolution.

When looking at regulatory governance, we must look at the relationship between the regulator and the government, operators and consumers. The relationship between the government and the regulator should show a clear separation of powers, whereas the relationship between the regulator and the operators should ensure that decisions are transparent (a dialogue between the regulator and operators is key for a constructive engagement).

When it comes to staffing a new regulator, highly qualified professionals should be sought. Proper wages for regulatory officials is key.

Becoming an effective regulatory referee

Fred Bigham of Industry Canada looked at how to become an effective regulatory “referee”. He explained that it was like putting together a theatrical piece:

You have a *script* which includes:

- legislation (national policy and regulatory powers)
- creation of an agency
- funding mechanisms
- rules of procedures
- dispute resolution methods
- appeal processes

Then, of course, you have your stage. The stage includes:

- accommodations
- staff competencies
- decision making structures
- analysis support structures

And finally, the performance. This includes:

- privatization
- licensing
- universal access
- interconnection
- pricing
- costing, etc.

As a referee, a good regulator is hardly noticed. Intervention must be rare, transparent, and reasoned.

Where is help available?

- Experience: countries may wish to look to those that have long experiences (e.g., US, Canada, UK, Australia, and regulatory associations)
- Funding: World Bank, CIDA, CTO, TEMIC, etc.

- Training: Canada (CRTC/IC, TEMIC), CTO, USA (FCC, Universities, USTTI), Australian Communications Authority, ITU Centers of Excellence, and consulting firms.

Knowledge transfer is not easy. A given country may have experience that is not appropriate in another country. We must all develop solutions that suit our national situations.

Establishing an independent regulatory authority: the Austrian example

Stefan Bernhardt of Telekom-Control explained that Austria established an independent regulatory authority three years ago. It is composed of two bodies: Telekom Control (management level) and Telecom Control Commission (judge and decision making). Telekom Control is a non-profit limited liability company owned by the state. It has a normal capital of over 3 million euros which gives financial independence. Wages are at level between government and industry.

Based on the Austrian experience, the key factors to develop a successful regulator are competence, independence, and objectivity which are established by:

- collaboration between Control and the Commission;
- cooperation between policy makers;
- IT based culture of information sharing;
- good human resources, team work, and culture of cooperation.

Regulatory Entity: the Brazilian example

Mr. Freitas of ANATEL explained that the institutional model is critical in the establishment of a regulatory entity, and it should be in accordance with the country context and with the future scenario that is desired. ANATEL was created in November 1997. The government's first objective in the reform process was to separate roles, hence the creation of ANATEL and the privatization of the incumbent operator.

The pillars of a regulator can be defined as follows: public credibility (great mediation capacity is key); technical capacity (staff of highly qualified professionals and salaries compatible with the market becomes fundamental); and independence (management autonomy, own resources, no hierarchical dependence, no hierarchical revision of its acts).

To assure its own resources, a Telecom Inspection Fund was created to maintain ANATEL, which raises money from authorizations to provide telecom services, radio frequency allocations, etc. While the regulator is independent, there is some form of control (i.e., administrative control which is applied to the public regime, as well as activity control through an ombudsman and an advisory board).

During the question and answer period, much debate ensued on the subject of "independence" and the resulting confusion based on the WTO Reference Paper definition. The WTO Reference Paper calls for independence from operators, not from government. Participants agreed that independence from government was desirable and is a key factor for the effectiveness of a regulator. Financial independence from government funds is also desirable, as well as non-interference by the government in the regulators decisions.

Participants also discussed the importance of transparency, not only in the regulatory process, but also on the way officials are appointed in the regulatory body.

In addressing the role of the ITU and WTO, it was stated that the two institutions have complementary but different roles. The WTO is obviously concerned with "trade" issues in the equipment and services area, while in ITU there are best practices, expertise, and experiences that can allow for an in-depth approach.

Some participants from developing countries expressed interest in reference manuals, models for licensing, and special approaches for small markets. It was mentioned that the BDT Sector Reform Unit was ready to assist the membership in sectoral reform and regulatory related issues.

Closing Session: Where Do We Go From Here?

BDT Director Hamadoun I. Touré moderated the closing session. Mr. Touré noted that the goal of the DSR was to launch a global dialogue among regulators and declared that this goal had been accomplished. He requested participants to discuss the best way forward to continue the global dialogue among regulators. In addition, DSR Chairman Lekaukau gave a report on the highlights of Workshop B. Workshop A Secretary, Ben Petrazzini, gave a report on the highlights of Workshop A. (See discussion above).

A four-point action plan was proposed by TRAI Chairman Maya Shanker Verma and backed by the participants. See page one of this report. In addition, participants agreed that future regulators' meetings would be three days long, one of which would be open to the private sector. The agenda should be as open as possible so that regulators can discuss the burning issues of the day.

Other comments made during the closing session are highlighted below:

- Muhammad Akram Khan, Member Finance, Pakistan Telecommunication Authority, proposed the creation of a committee to establish guidelines for international benchmarks to assist regulators and service providers in determining the cost of each element of a telecommunication system. The committee could follow the models used by the International Accounting Standards Committee (IASC) or UNCTAD's International Standards for Accounting and Reporting (ASAR). This proposal was backed by Brazil.
- Nabil Kisrawi (Syria) recommended updating DSR Document 41 to reflect the need to elaborate on the definition of independent regulators. Mr. Kisrawi's proposal is reflected in Document 41Rev attached as Annex 1 to this report. The Syrian delegate also requested that all results of the DSR be provided to Study Group 1, Questions 6/1, 8/1 and 9/1. In addition, he spoke of the need for ITU to treat regulators as a unique category within ITU (as private sector members and governments are currently treated). Syria also suggested the question of whether to invite industry to future meetings should be made in consultation with TDAG and the Members.
- Elizabeth Nzagi (Tanzania) requested BDT to conduct regulatory case studies covering some of the pressing regulatory issues identified in Document 41.
- Russia called for a regulators' meeting at least once a year, if not more often, and requested 2-3 case studies for each region.
- Many participants congratulated BDT for the quality and structure of the meeting and its initiative in hosting such an event. BDT was requested to allow more time for questions in the next meeting and also to have documents translated so that all delegates could participate equally.
- Kenya requested adding frequency planning management as point 8 to Document 41. This request is reflected in Document 41Rev attached as Annex 1 to this report.
- Switzerland noted that regulators are already collecting regulatory information in their regions through regional regulatory bodies. Europe's IRG information could be provided to BDT, Switzerland added.
- Maya Shanker Verma, Chairman TRAI noted that "the crux of the whole matter is unhesitating cooperation [among regulators] on an on-going basis." He noted that while regulators should share information with each other, each regulator has to find its own answers. There are no ready-made answers. In the case of convergence, for example, he

said that not every country is moving at the same speed. Nevertheless, BDT can help regulators to decide which solution is applicable for each country. BDT should also offer several mechanisms to solve problems, not just one solution.

- ATU recommended that cost-setting by regulatory agencies be taken up as a priority, and requested that BDT help to develop cost models. BDT should develop software and disseminate it through developing countries.
- Brazil noted that ITU Centres of Excellence should be used for training regulators.
- Malaysia suggested that ITU organize regional regulatory meetings and use these to discuss the timing of annual global meetings.

In closing the meeting, Mr. Touré declared the Development Symposium for Regulators “a complete success,” echoing comments from participants from all regions of the world. He noted that he was committed to harness the energy unleashed in the first global regulators’ meeting and to focus it on the four-point action plan agreed by the world’s regulators. He challenged the regulators to do the same. In addition, he remarked that BDT’s work in strengthening regulators holds the key to bridging the digital divide. He thanked the chairman and vice chairman, all participants and speakers and encouraged the participants to attend the afternoon gender perspectives workshop.

Chairman Lekaukau noted that regulators can only be successful if they cooperate with each other. He encouraged all regulators to exchange information, noting that this task would now be easier since they have all met each other at the DSR.

Roberto Blois, ITU Deputy Secretary General, formally closed the meeting, calling it a great success. Mr. Blois said that ITU had clearly filled a pent up demand among regulators to launch a global dialogue. He noted that the DSR had been used to identify the most pressing issues facing regulators and a mechanism to tackle these issues. He encouraged all participants to continue the dialogue to strengthen regulators worldwide.