

# **ITU Global Symposium for Regulators (GSR) 2009**

**Habtoor Grand Hotel Convention Center**

**Beirut, Lebanon,**

**10-12 November 2009**

## **Chairman's Report**



**ITU 9<sup>th</sup> Global  
Symposium  
for Regulators**  
**10-12 November 2009**  
**B e i r u t**  
**L E B A N O N**

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## Executive Summary

The ninth **Global Symposium for Regulators (GSR)** was held at the Habtoor Grand Hotel Convention Center in Beirut, Lebanon on 10-12 November 2009, in conjunction with the **Global Industry Leaders' Forum (GILF)**, which preceded the GSR 2009 in the same venue on 9 November 2009. It attracted over 648 participants, uniting regulators, policy-makers and telecommunication service providers from 89 countries, including over 50 heads of regulatory bodies, Ministers and other VIPs, as well as 95 ITU-D Sector Members. Participants debated the challenges of convergence and changing role of regulators in a converged telecommunication environment. The GSR was organized by ITU in collaboration with the Ministry of Telecommunications and the Telecommunication Regulatory Authority (TRA) of the Republic of Lebanon, under the chairmanship of Dr. Kamal Shahadi, Chairman and CEO of TRA.

GSR 09 addressed the theme "Hands on or Hands Off? Stimulating Growth through effective ICT regulation" and explored the impact of the transformation of the ICT sector, fuelled by a combination of technological, market and regulatory developments. Against this background, regulators around the world need to ensure that there is free and open competition between all players in the ICT market, without favoring one technology over another. To address the policy implications which arise from convergence, GSR-09 covered a variety of related topics such as creating an enabling environment for investment, IP interconnection, consumer protection, regulation of mobile termination rates and VoIP. The first day was open to regulators, policy-makers, ITU-D Sector Members, GILF participants and other invited guests. The second and third days were reserved for regulators and policy-makers only.

As in previous GSRs, consensus was reached on a series of "[Best Practice Guidelines on innovative regulatory approaches in a converged world to strengthen the foundation of a global Information Society](#)". These guidelines were the subject of broad consultations and express the consensus reached at the meeting by the many National Regulatory Authorities (NRAs) present. The final text of the Guidelines is attached to this report.

A series of GSR discussion papers exploring the impact of convergence on the changing role of regulators were prepared before the GSR and presented at the meeting to inform participants, explore the background issues and spark debate. These GSR discussion papers are available at: <http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR09/papers.html>.

## Joint Opening Ceremony – 9 November 2009

A joint opening ceremony was held on the 9 November 2009 for the GSR and GILF.

**Mr. Sami Al-Basheer Al Morshid, Director, ITU Telecommunication Development Bureau (BDT)** made opening remarks. He expressed his sincerest gratitude to the Republic of Lebanon and to His Excellency General Michel Sleiman, President of the Republic of Lebanon, who placed this conference under his high Patronage. GSR 2009 and GILF 2009 are unique in exchanging views on vital regulatory issues. ICTs are essential to socio-economic development. He stressed that the need to work to create the necessary environment for telecom development, which is only achievable through good regulation. This involves a delicate balance between a hands-on and hands-off approach to bear in mind the needs of sustainable development, while creating an environment conducive to investment. Intelligent regulation is more essential today than ever before. To achieve this, we need to ensure that all stakeholders are aware of the needs of the sector and telecom industry.

**Dr. Kamal Shehadi, Chairman and CEO of the TRA and Chairman of the ninth GSR** stressed the importance of the private sector in the development of the telecom sector. Since the appointment of the TRA in 2007, it has worked hard to achieve considerable results through fruitful consultations with the private sector. Lebanon is ready to liberalize telecoms, mobile and international, and deal with bottlenecks. TRA is working on licensing and is committed to the privatization of mobile telephony in a transparent way to create the foundations for competitive industry in the years to come, for legality, fairness, transparency.

**Dr. Saad Al Barrak, CEO of Zain Group, and Chairman of the GILF**, noted that mobile telephony is now a necessity, no longer a luxury, and is a pillar of economic development. All stakeholders are responsible for developing the telecom sector, where government can work hand in hand with the private sector to guarantee investment flows. We are now experiencing a crisis and difficult times due to climate change. It is essential to work together to get through this crisis, by decreasing tariffs and improving licensing. Broadband is very important – it is no longer a choice, it is a necessity. There is a need for clear standards and norms so operators can work in a healthy environment and can use clear frequencies for broadband.

**Dr. Hamadoun Touré, Secretary-General, ITU**, thanked His Excellency General Suleiman, President of the Republic of Lebanon for his Patronage and Dr. Kamal Shehadi and the Lebanese hosts at TRA for their support. GSR is an excellent opportunity to engage in dialogue and this year's theme is very appropriate in the current economic climate. Dr. Touré was pleased to see regulators from around the world coming together to discuss key issues, including climate change, online child protection and cybersecurity. ICTs are vital to socioeconomic development and connecting people. In every crisis we face, ICTs are part of the answer. ICTs are directly responsible for job creation. He noted the call made by Mr. Al Barrak to create an enabling environment and asked regulators to meet this challenge.

**Mr. Gebran Bassil, Minister of Telecommunications of the Republic of Lebanon**, then set out his vision of the environment for telecommunications, in which the government designs the framework and policy, the operator builds it and the regulator manages traffic under the tollbooth and may fine those who break the rules. We are trying to bridge the digital divide between Lebanon and Western countries and domestic divides. A three-step policy has been developed – Lebanon is currently in the first phase of correcting past errors, the second phase is based on reform and the third phase is the development phase. We are committed to move forward, to ensure stability and to be among the telecom leaders in the world. Lebanon has achieved a great deal in recent years – it has doubled the mobile penetration rate, tripled the Internet penetration rate and reduced the cost of service by 40%. Lebanon is preparing to make more leaps forward; these goals are important to ensure that all Lebanese can communicate.

## **Opening Remarks – 10 November 2009**

**Mr. Sami Al-Basheer Al Morshid, Director, ITU Telecommunication Development Bureau (BDT)** gave welcoming remarks in which expressed his sincerest gratitude to His Excellency General Michel Sleiman, President of the Republic of Lebanon, for his high Patronage of the GSR, as well as the outgoing Minister of Telecommunications, His Excellency .Mr Gebran Bassil, and new Minister for their support. He congratulated Lebanon on the establishment of the Government. He thanked the TRA and Dr. Kamal Shehadi for chairing the GSR 2009. He noted that 153 countries have introduced ICT regulatory bodies and then introduced the theme, "Hands on or Hands Off? Stimulating Growth through effective ICT regulation". He noted that regulation is extremely important for development and for ICT markets in developing countries to remain attractive, despite the global

downturn. The GILF yesterday established a useful dialogue between regulators and industry. Regulators are charged with changing regulatory approaches to create a conducive environment addressing the challenges of convergence, while facilitating universal access to ICTs for the benefit of all citizens.

**Dr. Kamal Shehadi, Chairman and CEO of the TRA and Chairman of the GSR,** declared the ninth GSR open and expressed his gratitude to ITU for their trust and support, thanking Dr. Touré and Mr. Sami Al Basheer, Director of BDT. He noted that the world is witnessing great changes, but has been scarred by the financial crisis. However, the Lebanese economy is resilient and growing at 7-8% p.a. and progressing quickly, although telecommunications has to catch up and can leapfrog. He noted that governments and regulators must redefine their role for appropriate regulation for a level playing-field to reap the benefits of convergence, although there are no easy answers. Regulators face great uncertainty - we have to think outside the box and deal with unexpected changes. He looked forward to further discussions in an open spirit.

**Mr. Mario Maniewicz, Chief, BDT Policies and Strategies Dept.,** introduced the theme of the GSR. Regulation is important in ensuring a level playing-field, promoting transparency, and creating an environment that nurtures innovation, while ensuring consumer protection and furthering universal access. Convergence is blurring boundaries. While services continue under service-specific licenses, new digital platforms are enabling service providers to launch into new markets, for example unbundled offerings. Different services have generally evolved under different regulatory frameworks. For today's regulators, this means facing the huge challenge of minimizing market distortions, so markets can develop and adopt the best technologies, with a great deal at stake. Open networks have boosted challenges to privacy and security, forcing regulators to adapt, whilst striking the right balance between hands on and hands off. He talked through the programme, discussion papers, access to GSR sessions and outputs of the GSR. ITU has launched a consultation among stakeholders for best practices, to which 20 countries have contributed. He thanked Dr. Shahadi, who consolidated the draft set of [best practice guidelines](#) and invited all participants to review the draft guidelines.

### **Reporting Session from the Global Industry Leaders Forum and the Informal Meeting of the Regional Regulators' Associations**

**Dr. Saad Al Barrak, CEO of Zain Group and Chairman of the GILF,** presented the report of the GILF 2009, held the preceding day. He highlighted the focus of the preceding day's discussions on spectrum, the need for a stable and predictable regulatory environment and light-touch, flexible regulation. He noted the need to avoid taxation which could inhibit investors, and observed that ICTs are part of the solution to mitigating climate change. He emphasized the need for more spectrum and the need to optimize spectrum allocation, noting that many countries still suffer 'divine rights' to spectrum – for example, by the military in the name of security. He noted that Universal Service Funds (USFs) are a good concept, but need greater industry involvement in implementation. He called for greater technological neutrality – regulators should not repeat old mistakes – and called for more sustainable business models. He concluded that industry is ready and willing to work with regulators and Ministries and is seeking collaborative engagement in areas of common interest to create a vibrant sector to help connect the unconnected. The debate following Dr. Al Barrak's presentation highlighted the need for connectivity, incentives to invest in emerging markets and the need for incumbents to work cooperatively with new entrants to the benefit of all, citing the concept of "coopetition".

**Mr. David Gomez, Director General, Agência Nacional das Comunicações (ANAC), Cape Verde**, and Chairman of the Association of Communications and Telecommunications Regulators of the Portuguese Speaking Countries (ARCTEL-CPLP), presented the report from the informal meeting of the Regional Regulators' Associations. The meeting was chaired by Dr. Abdulrahman Bin Ahmed Al-Jaafari, Governor of the Communications and Information Technology Commission of Saudi Arabia (CITC), and President of AREGNET, and moderated by Mr. David Gomez. Twenty eight participants, from seven regional regulators' associations, discussed pressing issues, shared their views and experiences and addressed the following topics: 21st Century Regulation: Is there a path to regional regulation? And Convergence and Regional Integration: Future regulation. The Associations noted that they face common problems and share the same goals– the need for greater harmonization and regional cooperation. The following future actions were outlined: to organize annual meetings in parallel with GSR; to establish a Regional Association Secretariat Network in collaboration with ITU; and to use the G-REX forum as a platform for a Regional Association Secretariat Network. These initiatives were welcomed by Mr. Sami Al-Basheer Al Morshid, BDT Director.

**Mr. Sami Al-Basheer Al Morshid, BDT Director** on behalf of the ITU Secretary-General, paid tribute to the very generous donation by the United Arab Emirates (UAE). He recognized their very generous donation of USD two million, announced at a signing ceremony in Abu Dhabi on 8<sup>th</sup> November 2009 and attended by Dr. H. I. Touré, ITU Secretary-General, to support the realization of the new Museum that the ITU plans to develop at its headquarters in Geneva, the ICT Exploratorium. The ICT Exploratorium will highlight the past, present and future of ICT technologies. He extended his thanks to Mr. Mohamed Al Ghanim, Director-General of the Telecommunications Regulatory Authority (TRA) of the UAE and assured him ITU is looking forward to working with the UAE administration on this initiative.

The Telecommunications Regulatory Authority (TRA) of the UAE expressed the great honor it was for the country to support ITU in all its initiatives targeting ICT reinforcement.

## Session 1: Effective Regulation in a Converged World - New Challenges for Regulators

**Dr. K. Shehadi** (Chairman and CEO, TRA, Lebanon and Chairman of the GSR) moderated this session. **Mr. Rory Macmillan**, Founding Partner of Macmillan Keck, gave a presentation summarizing his GSR Discussion Paper on *Connectivity, Openness and Vulnerability: Challenges facing Regulators*. Today, regulators are balancing the expectations of different stakeholders - operators, consumers and governments. One-to-one communications is moving to many-to-many communications, based on revolutions in network architecture. Regulators must weigh up connectivity with openness and vulnerability, while harnessing competition for connectivity, optimizing use of spectrum, while addressing market failures. There is a lot at stake, so disputes are likely, but transparency is key - regulators should consult with stakeholders frankly and honestly.

Panellists addressed issues such as the separation of infrastructure and content.

**Mr. Hector Osuna** (President, COFETEL, Mexico) emphasized that content should move freely across infrastructure - regulators should promote neutrality and openness to allow this to happen. Regulators should also be open-minded and forward-looking to anticipate change and committed to a stable and transparent framework for convergence.

**Dr. A. Badawi** (President, NTRA, Egypt) highlighted that technological innovations happen faster than regulatory change, so regulation may be ineffective. To reap the benefits of convergence, the regulatory environment must develop at the same pace as technology. Technology-neutral laws are needed, taking account of international developments and different constituents' needs. Convergence needs cross-product and cross-service regulation and licensing. Regulators should cooperate to develop cross-product standards for interoperability.

**Mr. N. Curien** (Board Member, ARCEP, France), described the regulatory structure in France, with separate regulators for audiovisual communications and telecommunications. He indicated that the digital dividend is a major issue and both separate regulators have different views. A Digital Coordination Council will be set up to allocate the new digital frequencies as efficiently as possible. He stressed that content is no longer just audio-visual, it is also Internet content and that it makes sense to have coordination.

**Mr. R. Mangtani** (Director of Regulation, GSMA) emphasized that intelligence is not just at the edge, it is everywhere throughout today's intelligent IP networks and that mobile Internet is not a closed environment. The debate covered issues of control and ownership of mobile subscribers (moving from a closed quasi-monopoly situation where operators are gatekeepers to the opening up of open up mobile channels for communications because end-users are demanding it), spectrum refarming and tariff structure.

## Session 2: Impact of the Financial Crisis on Regulation – Lessons Learned

The Moderator, **Mr. J. Genachowski**, (Chairman, FCC, United States), noted that the ICT sector has the potential to lead the world out of crisis. He sees three main issues: 1) the costs of not being connected are now even more significant; 2) high costs of building out infrastructure. 3) Policy-makers are addressing difficult issues with tools from analogue world. The FCC has five main goals:

- (1) Extending broadband access for universal availability;
- (2) Mobile - broadband is the future of mobile and mobile is key to broadband.

**Mr. David Gomez, Director General, Agência Nacional das Comunicações (ANAC), Cape Verde**, and Chairman of the Association of Communications and Telecommunications Regulators of the Portuguese Speaking Countries (ARCTEL-CPLP), presented the report from the informal meeting of the Regional Regulators' Associations. The meeting was chaired by Dr. Abdulrahman Bin Ahmed Al-Jaafari, Governor of the Communications and Information Technology Commission of Saudi Arabia (CITC), and President of AREGNET, and moderated by Mr. David Gomez. Twenty eight participants, from seven regional regulators' associations, discussed pressing issues, shared their views and experiences and addressed the following topics: 21st Century Regulation: Is there a path to regional regulation? And Convergence and Regional Integration: Future regulation. The Associations noted that they face common problems and share the same goals– the need for greater harmonization and regional cooperation. The following future actions were outlined: to organize annual meetings in parallel with GSR; to establish a Regional Association Secretariat Network in collaboration with ITU; and to use the G-REX forum as a platform for a Regional Association Secretariat Network. These initiatives were welcomed by Mr. Sami Al-Basheer Al Morshid, BDT Director.

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- (3) Promoting competition is vital to promote investment and innovation.
- (4) Preserving a free, open and robust Internet.
- (5) Improving FCC's openness, transparency and engagement with stakeholders and public.

**Ms. Lynne Dorward**, CRO of Zain Group, presented her paper on *the Impact of effective regulation on investment: an investor's perspective*. The current crisis has reduced investment capital available. Investors invest in ICTs for growth, new revenue streams, more customers or in response to competition. Key risks are: transparency, existing/planned telecom laws, licensing regime, interconnection regime, competitive safeguards, regulatory fees and taxation. Markets are cyclical. There is now greater focus on strategic capital. The availability of capital is unlikely to affect how investors view regulatory risk – what changes is how regulatory risk is factored into the decision process (because bankers are now more stringent).

**Ms. Mandla Msimang**, Managing Director, Pygma Consulting, presented her paper on *Effective regulation: the "stimulus plan" for the ICT sector* examining the role of regulation in increasing confidence, reducing risk and encouraging investment. She proposed a two-pronged approach towards regulatory responses to the crisis in lending financial support (e.g. mechanisms for public sector participation and PPPs) and measures lowering the costs of doing business and promoting efficiency. Regulators should consider ways to encourage competition in the sector. The global financial crisis has not changed concepts of good regulation of the ICT sector.

**Mr. M. Kurth** (President, Federal Network Agency, Germany), noted that the telecom industry already survived the dot.com crisis - this is not a crisis in ICT, it is a financial crisis affecting the ICT sector. Public money should only be used where private funds are insufficient and where market forces are not working properly – otherwise, we risk market distortion. We should not discuss more or less regulation, we need effective targeted regulation.

**Dr. A. Hiasat** (Board Chairman and CEO, TRC, Jordan) noted that crises typically last 1-2 years, but regulatory decisions and licenses are based on 15-20 time horizons. With regards to mergers, Dr. A. Hiasat referred to indirect financial support – delayed payments, switching from high acquisition fees to revenue-sharing models to reduce risk. Exemptions for investors could include reduced roll-out obligations in licenses. Giving spectrum more cheaply can facilitate market entry by more players, so making spectrum available here is even more important.

**Mr. C. Lopez-Blanco** (Director of International Office, Telefonica, Spain) noted that one of the causes of the financial crisis was the absence of regulation. He suggested that the ICT sector is resilient to the crisis and suffering less, but not immune.

Participants noted that many developed countries and nearly all OECD member countries have put in place stimulus packages. Although affected by the crisis, few developing countries have stimulus plans. However, the G20 April 2009 meeting allocated multilateral development banks USD 100 billion of support lending to developing countries. Some participants at GSR suggested that G20 funds, as well as unallocated USFs, should be used for ICT projects in developing countries.

### **Session 3: Consumer Protection – Meeting the Expectations of the Connected**

The moderator, **Mr C. Cheah** (Deputy Chair, ACMA, Australia) noted that much of what regulators do is geared to protecting consumers. Telecoms rates poorly in consumer surveys versus other sectors. The consumer experience is a good example of convergence at work. Firstly, *who* - do we mean by consumer? We have moved from subscribers to customers – those with basic needs, those exploring their choices and savvy consumers. The trade-off is between innovation for the savvy and safety for less confident. Also *what*? Subject matter is growing – scam, fraud, billing were all issues, but now, spam, cybersafety, identity management and e-security are hot topics.

**Ms. Rosalind Stevens**, Senior Telecom Expert, presented her paper on *Consumer protection: meeting the expectations of the connected*, which considers the changing needs and expectations of ICT consumers. There are a number of ways in which regulators can meet those needs and expectations, including providing price and QoS information, educating consumers or handling complaints. It is not enough to ensure that information asymmetries are addressed – consumer protection is essential for a proactive approach. The biggest challenge for regulators is the threats of online security – as more services are delivered over the Internet, it is vital to ensure that the connections underlying them are secure and reliable. Information overload can be confusing. Regulators need to consider the best way to address trust and security issues.

**Mr. C. Njoroge** (Director General, CCK, Kenya) noted that modern technology is moving at a fast pace, but it is difficult for consumers to get the right information. He highlighted the activities of the Kenyan regulator in consumer education, by information dissemination (through roadshows and media) and interpreting the information, so it reaches everyone.

**Ms. M. Ajam** (Board Member and Head of Information and Consumer Affairs Unit, TRA, Lebanon) highlighted that one of TRA's top priorities objectives is to protect consumers. TRA issued a consultation paper in early 2007 and the results of this consultation will be completed soon. It has conducted a consultation on value-added services and work on complaint handling. TRA has signed a MoU with the Ministry of Trade & Economy. A hotline has now been established for complaints and another public-private consultation is underway with ISPs. TRA also plans a national awareness campaign in 2010 informing consumers about their rights.

**Mr. D. Gross** (Partner, Wiley Rein LLP) noted that the situation is very complex in the US. Apart from cities, counties and states that are very active, there are telecommunication-specific groups, various groups and lawyers, the Federal Trade Commission and the FCC. All these groups try to balance the interest of consumers and society as a whole. The number of complaints is increasing, while the services are more complex. Regulators should ensure that there is sufficient competition, allowing consumers to choose among different service providers.

**Mr. Md. Mahbubor Rahman** (Commissioner, BTRC, Bangladesh) noted that BTRC has imposed fines.

Many regulators have developed specific regulations or laws. In some cases, the regulator has primary responsibility; in others, it is shared with, or assigned to, a specific agency. Service providers also have to shoulder some responsibility, with the TRA, through self-regulation and codes of practice. But consumers also need to be aware, and take

responsibility for, their choice of provider and online security. Educating consumers is vital. In most developing countries (e.g., Kenya), this is being done through awareness-raising campaigns. Controlling the transmission of harmful content is a difficult area for regulators. Some participants underlined the need for international cooperation in order to enforce laws in the borderless world of the Internet.

Participants urged governments to be active in dealing with criminals. Reference was also made to the call centre in Egypt. Participants were interested in the volume of traffic of complaints handled through the centre. Bahrain underlined that cybercrime was the most important threat to users of the Internet and that law-enforcement bodies were needed to investigate such crimes and to impose penalties. But Bahrain also noted how difficult it would be to implement this, as there are no boundaries in cyberspace. For India, cybercrime is an issue for the court and police. It could also help to create a global inventory of consumer-protection measures that could be used to evaluate objectively the most effective ways for regulators to respond to the challenges of a converging, multimedia environment.

#### **Session 4: Universal Access Policies in the 21st Century**

**Ms S. Scholze**, (Executive Superintendent, ANATEL, Brazil), moderated this Session. Concepts of universal access have evolved significantly; however, international frameworks have not kept pace. Digital inclusion is understood as the democratization of access to ICTs, but there are no firm answers on priorities or the best model. Are governments responsible, or are there other means of promoting universal access? Which technologies – voice or broadband? How much regulation is optimal? Can USFs be best used for boosting penetration in populated areas or connecting unserved areas? Public efforts are key, but industry participation is also vital. In Brazil, 65,000 schools are being connected by PPPs, USOs were included in the 3G auction and Brazil's National Broadband Plan (*Br  zil Digital*) will be announced by President Lula.

**Mr E. San Roman**, Senior Telecom Expert, Peru, presented his background paper on *Bringing broadband to rural areas: a step-by-step approach* and described the experience of Dominican Republic in connecting villages with community ICT centres. The economic impact of ICTs is even greater in rural areas. In communities with limited or no access, Internet can substitute for voice. Mobile telephony can account for 4.5% of GDP in developing countries. In villages, hundreds of children now have ICT access with life-changing consequences.

**Prof. I. Kadi**, (Senior Advisor, CITC, Saudi Arabia), emphasized that rural communities are in greatest need of connectivity and communications to support local economies – or risk dire social consequences or migration to cities for work. The Kingdom of Saudi Arabia is big, with low population density – the challenge is how to connect this population dispersed over a large area. CITC is looking at whether to proceed with broadband or voice services. Voice services are easy to install, thanks to fixed lines. However, most rural users are poor, so mobile unit costs per minute are high for them. He stressed the need to extend USFs to rural communities, but recognizing that this is not easily achieved.

**Gustavo Pe  a**, (Secretary General, REGULATEL) described the Latin American Forum study of telecom regulation and universal access to telecom services, financed by the World Bank, the European Commission (EC) and the Economic Commission for Latin America (ECLA). It analyzes the status of universal service in Latin America (LAM) and how the market can bridge gaps. Access to voice has been resolved in most countries through mobile, but extremely wide access gaps in Internet and broadband persist, which cannot be bridged by existing market mechanisms – state participation and support are critical. Twelve Latin

American countries have USFs, but they need to be more effective and resources need to be allocated bottom-up at the grassroots level.

**Mr. Mohsen Jaziri**, (Vice-President, INTT, Tunisia), described Tunisia's experience in defining and providing universal access. The regulator has affirmed citizens' rights to access to telecoms and defined minimum essential services. There are other target populations/groups with specific needs in need of universal access e.g. people with special needs and persons with disabilities.

**Dr. E. Spio-Garbrah**, (CEO, CTO), introduced the CTO. Policy frameworks are often disjointed and political support must be converted into an overarching policy framework for universal access. The Commonwealth African Rural Connectivity Initiative (COMARSI) provides a compendium of universal access arrangements. Affordability and availability are both vital. Technology and funding are not really the issue - governments, multilateral institutions and aid agencies are increasingly willing to invest in backbone infrastructure and fibre – e.g. there are 5-6 projects currently ongoing in Africa with over 10 billion dollars available. Rural areas are not necessarily poor areas and can provide good revenues, despite low Average Revenue Per User (ARPU). Coherent policy frameworks are needed to engage youth, women and people with special needs.

Floor discussions emphasized the importance of collective access to ICTs and community participation and ownership for maintaining services and infrastructure. To be sustainable, projects must have a good business case with market forces at the forefront, not just rely on government help. In Cyprus, income gaps have proved the most important barriers to universal access, rather than geographical gaps *per se*. The panel emphasized that broadband access will be increasingly important in the future, rather than investments in narrowband.

## **Session 5: IP and Traditional Telecom Interconnection - A World of Divergence**

**Mr. A. Horne**, (General Director, TRA, Bahrain), moderated this session and briefly overviewed the development of interconnection, observing that all customers must be able to connect to all other customers over any network. Wholesale tariffs for interconnection must be proportional to cost, usage and QoS. It is also essential to ensure that there is no anti-competitive behaviour or discriminatory agreements. The Internet model is built on Sender Keeps All and peering. The PSTN has driven incumbents to cut costs, through more efficient IP-based NGNs and NGA. VoIP has required QoS issues to be dealt with – what is the future model for interconnection?

**Ms. Natalija Gelvanovska**, Head, Network and Access Division, Communications Regulatory Authority, Lithuania, presented her paper on the *coexistence of traditional and IP interconnection*, which explores the technical bases of interconnection, describes trends in interconnection regulatory approaches and highlights regulatory issues relating to interconnection. Two different models of interconnection coexist and there is potential to provide more symmetric regulation of interconnection to ensure it is available where needed.

**Mr. C. Lizcano Ortiz**, (Executive Director, CRC, Colombia), described Colombia's approach to regulating convergent networks. In 2009, a regulatory framework was adopted to determine whether/when the regulator should intervene to promote competitiveness. A new Act for ICTs was adopted three months ago, which made citizens' appropriation and use of ICTs state policy. To promote NGN development, three principles are vital: neutrality, non-discriminatory treatment and transparency. Five elements exist within these three principles:

(1) QoS; (2) network security; (3) interaction between content and application providers; (4) effectiveness for users; (5) payment process over networks. Regulators play a critical role in developing NGN and must create a balance between competition and the creation of these networks is important for development.

**Mr. S. A. M'Poue**, (Secretary-General, ATCI, Côte d'Ivoire), gave insights into interconnection in Côte d'Ivoire, where the laws are now generic and refer to interconnection generally, rather than IP interconnection. There are physical and tariff aspects to interconnection, with minimum regulation. IP is not a hot topic in Cote d'Ivoire, but should it become so, ATCI will get involved.

**Mr. Hirohisa Furuichi**, (Director, Tariff Division, Telecommunication Bureau, MIC, Japan), described Japan's experience revising its interconnection rules. Japan introduced unbundled network access for DSL services in 2000 and unbundled access networks in 2001. These revised interconnection rules have clearly boosted the uptake of broadband. Interconnection rules for NGN were introduced in 2008, with a key challenge to divide and calculate network costs among NGN services. Each NGN service is provided within the same IP network with different QoS. It is necessary to establish new cost calculation rules to divide, calculate and allocate network costs for each NGN service (in Japan, this is based on possible traffic capacity, modified by differences in QoS level). Another issue is to deal with Points of interconnection (PoIs) - the number of PoIs for NGN interconnection was very limited – in Japan, MIC required operators and the incumbent to increase the number of PoIs. Regulators need to strike a balance between facilities-based and service-based competition.

The floor discussion focused on the merits of introducing Bill & Keep and its impact on current user tariff and user services provided by existing carriers, based on Calling Party Pays (CPP). The B&K system would allow existing dominant carriers not to set cost-based interconnection pricing, potentially undermining the effectiveness of existing interconnection charges. Participants underlined the need for QoS monitoring and measures to ease congestion and traffic imbalances (e.g. Japan has promoted IXPs, Internet data centres and servers in different areas and conducted experiments using P2P technologies to deal with congestion), although QoS may no longer be a major issue, as contention ratios can be adjusted and traffic grooming achieved through deep packet inspection.

In NGN cost modeling and calculating and allocating network costs, it is important to choose the right cost driver to divide the network cost for each facility for NGN service provision (e.g. Japan provides the volume of the port at the edge of the NGN network for each NGN service and then modifies the network cost allocations by differences in QoS). Panellists emphasized that NGN interconnection rules need to be reviewed and updated constantly.

In terms of symmetrical versus asymmetrical interconnection, Japan applies both symmetrical and asymmetrical rules. In terms of symmetrical rules, all facilities-based carriers should have the obligation to interconnect with each other. For asymmetrical rules, MIC pays attention to network bottlenecks to prevent dominant market power by dominant carriers. For symmetrical rules, MIC monitors network neutrality, as any carriers or ISPs can hinder or intervene or limit Internet usage. MIC has established clear rules for packet-shaping to address the extent to which ISPs or carriers can limit usage for the sake of stable network operation, without hindering impartial network usage or the secrecy of communications.

In his summary of the Session, the moderator pointed out that there are no incumbent operators on the Internet. In the telecom world, regulators had to monitor how the incumbent was operating. Incumbents are adopting NGN and still have significant market power, even after many years of liberalization – there is still a role for the regulator and a need to continue examining costing.

### Sharing and networking lunch session

The sharing and networking lunch session addressed the following topics:

1. Building consumer confidence in electronic communications: what works? What doesn't?
2. Redefining universal access in an era of convergence: why and how? Country experiences.
3. Cybersecurity regulation is there a role for the regulator?
4. Public Private Partnership to promote broadband development in rural areas.
5. Understanding the impact of good/bad or no regulation on market developments: sharing experiences.
6. NRA's and the International Radio Regulations.

### Session 6: Mobile Termination: To Regulate or not to Regulate?

**Dr. M. Treschow** (Director General, NPTA, Sweden) moderated this session. She underlined that mobile termination rates are a vital issue, as we stand "at a crossroad" in converging markets. The shift to NGN is lowering production costs for competitive operators. VoIP and Skype will affect mobile voice services. The moderator highlighted the EU recommendation on termination rates and described Sweden's experience in relation to the development of the mobile market and MTRs. She emphasized that MTRs should be harmonized between EU member states, while minimizing the need for regulatory intervention through more effective competition. Monopoly returns should be made less important by narrowing the gap between MTRs and FTRs. The objective of regulation should be to stimulate this process and eliminate market barriers.

**Dr. Vaiva Lazauskaite**, Economic Analyst, ITU, presented her paper on *Mobile termination: to regulate or not?* summarizing the results of ITU's global survey of mobile termination rates (MTRs), which revealed significant variations across countries and regions. In many countries, operators set mobile interconnection rates through negotiation and commercial agreements and the regulator may act as a mediator or arbiter in settling interconnection charges when parties fail to agree. MTRs are regulated in some countries (e.g. Austria, Portugal and Cuba). In others, MTRs are left to the market (e.g. Brazil, El Salvador and Guatemala). Mobile markets are changing fast in many African countries with new entrants. Disputes between operators over interconnection rates have become common and some African regulators are responding by imposing *ex ante* price regulation on interconnection rates.

**Mr. A. Haire**, (Deputy Director General, Telecoms & Post, IDA, Singapore) described the experience of Singapore in setting MTRs. He questioned the definition of regulation, which amounts to any decision that a regulator makes – including a decision to do nothing. Singapore set the framework for a competitive market ten years ago. Firstly, IDA regulates parties with Significant Market Power (SMP); as well as those with control over an economic bottleneck. The concept of communication has three dimensions: the ability to get on the network, to go across the network and to get off the network. Interconnection is more complicated – MTRs relate to the third part of getting off the network. The mobile operators have an incentive to set prices high - IDA (in a very competitive market) has set the termination rate at nearly zero, equivalent to Bill & Keep. The wholesale layer (where Mobile PP) feeds a retail layer (where Called PP), creating incentives for arbitrage (where operators can have free termination), so the regulator had to get involved. Singapore is completing its national broadband network merging the new NGN, the mobile network and the Internet. IDA is aiming for an all-open interconnection framework.

**Mr. A. Alfehaid**, (Deputy Governor, CITC, Saudi Arabia), stated that in his view, once the market is mature, regulation will not be necessary. In Saudi Arabia, regulation is changing with NGN. Existing regulation has to be reviewed thoroughly in the face of any technological change. Saudi Arabia gives parties a two-month grace period for negotiations, if no agreement is reached, then the regulator intervenes on matters of pricing and tariffs.

**Mr. J. Salvat**, (CEO, STA, Andorra) - Andorra holds the view that markets have to be controlled and not regulated, especially if they are mature, as is the case in Europe. Andorra is against regulation of mobile termination rates and believes that it should be left to market operators to enter arrangements or agreements. In the case of Andorra, for example, the market is so small that it does not need more than one operator.

Floor discussions focused on the role of regulators. For Colombia, regulators should be like arbiters and only regulate when the market fails. Liberia said it had commercial agreements, and wanted to know what should be done when there are disputes. That country's regulator was keen on using a hands-off approach, but feared the repercussions on consumers, if network operators shut down a service. Some recent examples suggest regulators may be moving from "hands on" to "hands off" approach to regulation e.g. the Office of the Telecommunications Authority (OFTA) of Hong Kong, China. In April 2009, OFTA announced the deregulation of fixed-mobile interconnection charges, leaving them to be settled among operators by commercial agreements.

The rationale for MTRs is that there were based on TDMA technologies requiring important resources. In some countries, an initial market assessment has to be done to determine the market power. It is important to maintain the status quo until there is a balance between operators - the regulator can then decide to take a hands-on or hands-off approach. Convergence may result in complex situations, and it is difficult to judge now which regulatory model is better for mobile termination. Looking ahead, regulators should base their approach on protecting consumer interests.

## **Session 7: Market Entry in a Converged World**

**Dr. J. Sarma**, (Chairman, TRAI, India), moderated this Session. He noted the potential of convergence in new opportunities and reducing costs. Regulators must be sensitive to promoting competition. Interconnection, licensing, spectrum arrangement, universal service obligations, numbering, security are all likely to change. Regulators need to respond to these challenges. Convergence also impacts categorization and makes it difficult to grant licenses in the traditional way. New concepts of network facilities, application and service providers and content application and service providers have been adopted. Occasions like this are enabling us to share our views.

**Ms. Mindel De La Torre**, ITU-D Study Group 1 Rapporteur, Question 10-2/1, presented the draft Report from ITU-D Study Group 1, *Question 10-2/1 on regulation for licensing and authorization of converging services*. She presented the results of SG 1's global survey on trends in licensing. Traditional frameworks consisted of separate licenses for different services. Now, countries are moving to network and service licenses or unified licensing e.g. India. Formal market entry requirements are being reduced or eliminated, while deregulation has eliminated the need for many licenses/concessions altogether. From the survey, 11 countries were introducing unified licensing for some services; 81 still had individual licenses; 28 had general licenses; and 10 had some services exempt from licenses (but definitions differed). She examined some country case studies in more depth (including licensing regimes in Malaysia and Tanzania).

**Mr. R. Rodriguez-Illera**, (President, CMT, Spain), observed that regulatory regimes are the conclusion of a process of convergence of fixed services, mobile telephony, and Internet. These three walls that were very different in origin are now offering one contract to customers. In Spain, 15-20% of users now have bundled services and he questioned the impact on the licensing system.

**Prof. J. Nkoma**, (Director-General, TCRA, Tanzania), described Tanzania's experience in introducing unified licensing in 2005. He noted that the challenge is to make the transition – most licenses were of long duration and TCRA had to give incentives to the old licenses to be able to migrate. TCRA defined a transition matrix – mobile licenses have all been transited, while data, fixed line to network facility and technology neutrality. Technological neutrality allows all these licenses to coexist.

**Dr. I. Hoballah**, (Board Member and Head of TTU, TRA, Lebanon), described the current state of the market and licensing in Lebanon. TRA has been working steadily to fulfill its mandate and commitments. Technical management is now an economic discipline – spectrum farming is one way forward and TRA is hoping to get to unified licenses. TRA issued licenses recently which left an open choice of technology in the national broadband carrier license.

**Mr. I. Ursu**, (Deputy Director, ANRCETI, Moldova) described Moldova's recent experience with changes to the regulatory and licensing systems to cut costs, foster competition and attract investment. ANRCETI has experienced problems, as a result of all the licenses being issued before the new licensing regime came into force. Further, new licenses are not issued as fast as ANRCETI would like. However, ANRCETI is monitoring the situation and maintaining its principles of non-discrimination and the LRIC principle of estimated cost.

Floor discussions focused on the importance of technological neutrality and management of content in a converged environment, especially given the digital switchover. In Spain's view, technological neutrality may no longer be relevant after the switchover, as all TVs will be digital and only one technology applies. There are many countries following the principle of general licensing, but many are now moving towards unified licensing.

## **Session 8: A VoIP World?**

The moderator, **Mr. P. Masambu**, (Executive Director, UCC, Uganda), introduced the Session. He noted that it is possible for regulators to take a more passive approach or to be proactive. Key issues in relation to VoIP include licensing numbering, access to emergency services and universal services, but QoS is not such an issue nowadays.

**Ms. Phillippa Biggs**, Economist, ITU, presented her paper on *VoIP: Enemy or Ally?* exploring the changing regulatory landscape for the provision and transmission of VoIP services. She presented ITU's annual regulatory survey and global survey of the evolution in VoIP regulation for 191 countries from 2004-2009. VoIP is growing strongly - by mid-2009, two-thirds of 191 countries permitted or tolerated VoIP favourably, up from half of all countries in mid-2004. After initial problems with QoS and availability, VoIP has now gained broad market acceptance among service providers, consumers and businesses alike. However, regulatory issues with number portability, the security of VoIP transmissions and net neutrality/network management persist.

**Mr. Rudolf Van der Berg**, Consultant, Logica Management Consulting, presented a paper on *The future of VoIP interconnection* examining how VoIP is changing interconnection. VoIP can support all traditional interconnection processes, including look-up, signaling, transcoding and transfer. He suggested that using ENUM for look-up would enable innovation. VoIP can support similar methods of interconnection to E.164 numbers as fixed



and mobile networks, and offer new services. ENUM could represent a new look-up mechanism for VoIP services and could support a national E.164 database and number portability platform. VoIP providers will likely move to specialized interconnection platforms. For regulators, look-up warrants the most attention. Signalling, transcoding and transfer may not need extensive regulatory attention.

**Mr. W. Dorji**, (Head, Telecommunications, BICMA, Bhutan), described Bhutan's experience with recent regulatory reforms. BICMA is studying how it should be legalized and conducted consultations in June 2008 on VoIP and its impact on the national numbering plan (likely to be non-geographic). In 2006, the Bhutan Information and Communication Media Act transformed the ICT sector by moving from sector-specific to converged regulation. It also made BICMA a converged regulator responsible for printed media, broadcasting and telecoms. Local VoIP is not yet legal in Bhutan, which has experienced problems with the incumbent blocking international long distance VoIP calling cards.

**Mr. P. Eid**, (Board Member and Head of Market and Competition Unit, TRA, Lebanon), made a comparison of PSTN and VoIP – he noted that VoIP and PSTN share the same purpose, but have many differences in transmission, signaling and interconnection. Incumbents may experience a drop in incoming call revenues, but could potentially compensate this by widening their services. VoIP creates challenges for regulators in striving for common ENUM infrastructure and federation for connectivity and transcoding. VoIP services are not currently legal in Lebanon, but are tolerated. TRA is studying how to license and regulate managed VoIP services.

**Dr. M. Jankovic**, (Executive Director, RATEL, Serbia), summarized Serbia's experience with licensing and interconnection for VoIP. RATEL established obligations for VoIP services on QoS, numbering and interconnection to avoid bypass of incoming international traffic. He observed that growth in broadband and NGN is driving growth in VoIP as one in a bundle of services, and the future of these services requires that end-user demands be met for all services, not just voice. The end-user is at the center of all these services and should be aware of QoS issues in advance.

Floor discussions covered the relevance of technological neutrality, as technology-agnostic licensing regimes may not even necessarily recognize VoIP. Participants highlighted issues of monitoring QoS in VoIP, numbering and location information in localizing VoIP callers in responding to emergency services. In some countries, international revenues have continued to grow despite the legalization of VoIP, as the telecom market is dynamic and growing (e.g. Bahrain). Participants raised issues of defining VoIP, as well as the reliability of VoIP statistics, which may omit corporate VoIP services and PC-to-PC services as these are difficult to measure.

## **Way Forward & Closing**

**Mr. Sami Al-Basheer Al Morshid, BDT Director** introduced the proposed "[Best Practice Guidelines](#)" and thanked the TRA for all its work, before giving the floor to Dr. Shahadi.

**Dr. Kamal Shehadi, Chairman and CEO of the TRA and Chairman of the GSR** presented the draft best practice guidelines, putting them in context of changes to the market and regulation. He reviewed the guidelines for promoting convergence, building effective regulation institutions, using regulatory tools to stimulate investment, growth and innovation. He thanked participants for their contributions to the consultation on the Guidelines. Regulators need to be attentive to the challenges stemming from convergence and need to adapt their regulatory environment and play an active role in setting standards for convergence (e.g. on interoperability).

Saudi Arabia pledged its support for the best practice guidelines, noting that technical advances will accelerate, requiring regulators to respond. Switzerland and Lebanon expressed their gratitude and suggested some amendments. Lithuania proposed an additional clause. Dr. Shehadi then noted consensus by the meeting and adopted the best practice guidelines.

**Mr. Mario Maniewicz, Chief, BDT Policies and Strategies Dept.,** then introduced the [Global Regulators Exchange \(GREX\)](#) and explained its functions and use. He summarized key topics over the course of the GSR09 for future topics for follow-up in 2010. He acknowledged the most active users of GREX during 2009 and encouraged all regulators to participate actively in GREX.

**Senegal** expressed its gratitude to the hosts of GSR09 for their warm welcome and hard work and expressed its interest to host the tenth GSR in 2010, inviting all participants to come to Senegal.

**Mr. Sami Al-Basheer Al Morshid, BDT Director** expressed his sincere thanks to Senegal for their kind invitation and noted the warm response of GSR participants for holding GSR 2010 in Senegal, a decision which will be taken shortly. He opened the floor to participants on the theme of GSR 2010. **Dr. Shehadi** then asked for suggestions from the floor on the topic and noted that this is an open issue for the next few weeks. Mr. Al-Basheer expressed his satisfaction with the GSR09. Lebanon proved an extremely popular venue, attracting a record number of participants. The hosts have been extremely productive.

**Dr. Shehadi** expressed his thanks to H.E. General Michel Sleiman, President of the Republic of Lebanon for his Patronage, Prime Ministers Fouad Senora and Saad Hariri, as well as the Minister of Telecommunications Mr. Bassil. He thanked Dr. H.I. Touré, Mr. S. Al Basheer ITU, the IFP team and TRA colleagues.

**Mr. Sami Al-Basheer Al Morshid** added his thanks to those expressed by Dr Shehadi. He then he extended his warm thanks to Dr Shehadi, the TRA team and the Ministry of Telecommunications of Lebanon for the excellent organization of the event. The BDT Director reiterated his deep appreciation for the wonderful gala dinner TRA organized and thanked TRA's sponsors. He also extended his thanks to all participants, moderators, panelists, speakers and GSR discussion paper authors and concluded by thanking his staff and the interpreters. He expressed his pride in the 2009 edition of the GSR and gratitude for suggestions for future work.

**Dr. Shehadi** declared the meeting closed.

## LIST OF ACRONYMS

ACMA	Australian Communications and Media Authority
ANATEL	Agência Nacional de Telecomunicações or National Telecommunications Agency of Brazil
ARCEP	Autorité de Régulation des Communications Electroniques et des Postes
ANRCETI	National Regulatory Agency for Electronic Communications & IT of Moldova
ATCI	Agence des Télécommunications de Côte d'Ivoire
BDT	Telecommunication Development Bureau (of ITU)
BICMA	Bhutan InfoComm and Media Authority
BTRC	Bangladesh Telecommunications Regulatory Commission
B&K	Bill & Keep
CCK	Communications Commission of Kenya
CEO	Chief Executive Officer
CITC	Communications and Information Technology Commission of Saudi Arabia
CMT	Comisión del Mercado de las Telecomunicaciones of Spain
COFETEL	Comisión Federal de Telecomunicaciones of Mexico
COMARSI	Commonwealth African Rural Connectivity Initiative
CPP	Calling Party Pays
CRC	Comisión de Regulación de Comunicaciones (of Colombia)
CRO	Chief Regulatory Officer
CTO	Commonwealth Telecommunications Organization
DSL	Digital Subscriber Line
FCC	Federal Communications Commission of the United States of America
FTRs	Fixed Termination Rates
GILF	Global Industry Leaders' Forum
GSMA	GSM Association
GSR	Global Symposium for Regulators
ICT	Information and Communication Technology
IDA	InfoComm Development Authority of Singapore
INTT	Instance Nationale des Télécommunications of Tunisia
IP	Internet Protocol
ITU	International Telecommunication Union
IXP	Internet Exchange Point
MIC	Ministry of Internal Affairs and Communications of the Government of Japan
MTRs	Mobile Termination Rates
NGN	Next-Generation Network
NPTA	National Post and Telecom Agency of Sweden
NRA	National Regulatory Authority
NTRA	National Telecom Regulatory Authority of Egypt
OECD	Organisation for Economic Cooperation and Development
PoI	Point of Interconnection
PPP	Public-Private Partnership
PSTN	Public Switched Telephone Network
P2P	Peer to Peer
QoS	Quality of Service
RATEL	Republic Telecommunication Agency of Serbia
REGULATEL	Latin American Forum of Telecom Regulators
SMP	Significant Market Power
STA	Servei de Telecomunicacions d'Andorra or Telecommunications Service of Andorra
TCRA	Tanzania Communications Regulatory Authority

TRA	Telecommunications Regulatory Authority (of Lebanon)
TRAI	Telecommunications Regulatory Authority of India
TRC	Telecommunications Regulatory Commission of Jordan
UCC	Uganda Communications Commission
USF	Universal Service Fund
VoIP	Voice over Internet Protocol



## **Annex 1 - GSR09 –Best Practice Guidelines on innovative regulatory approaches in a converged world to strengthen the foundation of a global Information Society<sup>1</sup>**

The technological and market changes that have taken place recently in the sector with the convergence of networks, advent of IP technologies and broadband developments, have blurred the boundaries between the once-separate telecom, Internet, broadcasting and electronic media worlds, bringing new players as well as driving new opportunities and challenges. Today, convergence of markets, applications, services and users' terminals looks inevitable, being both convenient for consumers and promising for market players in creating new opportunities and revenue streams.

Meeting the expectations of all information and communication technology (ICT) stakeholders by creating an environment conducive to investment is critical to stimulating growth of converged markets. This also calls for further regulatory reforms, which may require innovative and forward-looking regulatory action. Yet, countries around the world may follow different paths of development and use different strategies to promote convergence based on the state of development and nature of their markets.

We, the regulators participating in the 2009 Global Symposium for Regulators, have identified, and put forward the following best practice guidelines for innovative regulatory approaches in a converged world to strengthen the foundation of a global Information Society.

### **I. Promoting convergence to further develop ICT and broadcasting markets**

- 1.** We recognize that convergence is a technology and market-driven process.
- 2.** We recognize that convergence is most likely to thrive in an environment which allows competition between broadband networks and infrastructure and service providers.
- 3.** Nevertheless, we note that regulators need to be particularly attentive to the challenges stemming from convergence, in order to pave the way for the establishment of a regulatory environment that is transparent, is conducive to investment and growth, fosters fair and greater competition as well as innovation, stimulates the deployment of infrastructure, promotes the development of new services, is security conscious, and protects and benefits consumers.
- 4.** We believe that, in doing so, policy-makers and regulators need to:

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<sup>1</sup> The Best Practice Guidelines were developed based on input received from: Armenia, Bahrain, Brazil, Chile, Dominican Republic, Equatorial Guinea, India, Jordan, Lithuania, Peru, Poland, Portugal, Saudi Arabia, Spain, Switzerland, Thailand, Togo, Tunisia, Turkey, United Kingdom.

- a. Establish appropriate policy goals and refrain from imposing regulatory restrictions except when strictly necessary to promote competition and consumer protection, and that are proportionate to the established policy goals.
  - b. Adopt a technology-neutral approach, including in frequency spectrum allocations and assignments, to facilitate the use of all transport mechanisms, whether wireline or wireless, and to promote the utilization of new and emerging technologies.
  - c. Promote innovation and research and development.
- 5. Regulators need to adopt appropriate regulation on interconnection and access, including pricing, taking into account the relevant technological market developments including the roll-out of Next Generation Networks in the core (NGN) and in the access layer (NGA).
- 6. We note that NGNs and IP-based services may offer the opportunity for operators to take advantage of market convergence and create new revenue streams while expanding access to ICT services at lower costs to consumers.
- 7. We recognize that regulators should take an active part in setting international standards relating to convergence in order, for example, to ensure an optimum level of quality of service and increased interoperability between different networks, applications, services and devices, in a constantly changing technological and market environment, whilst taking utmost account of the primary role that the industry has in developing effective standards.
- 8. We note that voice services, no matter which technology they use, should benefit from a flexible numbering plan and simple assignment and reservation procedures both at national and international levels. A coordinated approach to numbering plan development will foster effective market entry for new players, flexible and effective number portability and fixed-mobile convergence.
- 9. Regulators may consider developing adequate provisions both in the fixed and the mobile Internet access services to ensure technology neutrality and effective management of Internet traffic.
- 10. We recognize the importance of promoting universal access to broadband services, notably by developing a broadband policy and a targeted universal access strategy and by cooperating with governments and international organizations. These strategies need to be aligned with policies of other sectors and programmes (such as e-governance, e-education, e-government, e-health, e-commerce), as appropriate.
- 11. With the growing dependence of government, businesses and society on converged ICT services we recognize the importance of working with other agencies to ensure the resilience of networks and services and that contingency plans are in place to safeguard critical national infrastructures, as well as during times of national emergencies.
- 12. We recognize that regulators need to pay particular attention to all environmental issues and where required issue guidelines on the use of ICTs to support meeting environmental commitment.

## **II. Building effective regulatory institutions**

- 1. We recognize the importance of regulatory authorities being able to carry out their mandate efficiently, while ensuring consistency and transparency of regulation, equal treatment of market players and accountability of regulatory decisions.

2. We stress the importance for regulatory authorities to be empowered with suitable tools to ensure enforcement of the various laws, by-laws, regulations and procedures.
3. We recognize that the creation of a converged regulator in charge of ICTs and broadcasting could be an effective step towards enabling market integration in a converged environment. Should this not be feasible, closer coordination and collaboration between the sector-specific regulatory authorities in charge of telecom, broadcasting and electronic media, as well as authorities in charge of competition is essential.
4. We recognize that a converged regulator will require skilled human resources and adequate financial resources in order to perform its extended mandate successfully.
5. We stress the importance of integrating into the mandate of the converged regulator strategic and policy activities to build the information society and to play an inter-sectoral coordinating role.
6. We recognize the importance of close collaboration with other concerned agencies to ensure that appropriate measures and tools are put in place to safeguard Intellectual Property Rights (IPR), Internet safety covering such issues as the protection of the children online and fraudulent activities.
7. We note the importance of further observing and examining the evolution of regulatory institutions to reach efficient regulation for the development of domestic markets and consumer welfare and share best practices....
8. We recognize the importance of international cooperation between national and regional regulatory authorities in building a harmonized and coordinated approach to oversee the evolution of the converged markets.

### **III. Using regulatory tools to stimulate investment in a converged world**

We recognize that, in order to stimulate investment to grow converged markets, regulators need to further:

1. Build an adaptive regulatory framework by adopting a technology neutral approach, administratively simplified and flexible licensing regime providing for easy market entry of new players, such as through general authorizations and multiservice/unified licences.
2. Encourage the roll-out of broadband infrastructure (especially in remote and underserved areas) by providing suitable incentive schemes such as tax incentives, lower regulatory or spectrum fees and by facilitating access to rights of way.
3. Foster competition in converged services over wireless networks through efficient and integrated spectrum management, using market based tools such as auctioning to assign spectrum more efficiently while recognizing that spectrum is a public good.
4. Shift regulatory attention from retail to wholesale markets, i.e., by ensuring that alternative operators have access to dominant players' infrastructure (through passive sharing such as duct sharing, local loop unbundling, local sub-loop unbundling, bitstream access, network and facility sharing, etc.) to offer competitive converged services, therefore avoiding unnecessary duplication of infrastructure and reducing costs.

5. Apply effective, proportionate and non-discriminatory regulatory measures to enable the development of convergent bundled services while promoting competition among market players, and offering a level playing field for small niche players.
6. Raise awareness of the benefits and risks of technological progress for the market and consumers and consider regulatory measures to address issues such as personal and data protection, consumer rights, protection of minors and vulnerable segments of the society and protection of end-users.
7. Involve all stakeholders in policy setting, improve transparency, conduct public consultations and consider other collaboration mechanisms to further dialogue with industry, consumers and other stakeholders, employing self-regulatory measures to the widest extent feasible.
8. Conduct periodic regulatory and market review that may include regulatory impact assessment, making the outcomes widely available and using them to refocus national policies and strategies.

#### **IV. Stimulating growth in innovative services, applications and devices towards connecting the unconnected and for the benefit of consumers**

1. We believe that Governments and regulators have a key role to play in stimulating demand for ICT services and applications, in the framework of broader strategic goals, such as connecting public institutions (especially public administrations, schools, libraries and hospitals), businesses and residential users with broadband, promoting economic development, digital inclusion, social cohesion and equality of opportunity.
  2. We recognize the key role regulators and other relevant agencies play in overcoming connectivity challenges, increasing ICT literacy and awareness of security issues, fostering the development of content in local languages (including on regulators' websites), promoting the availability of low-cost multifunctional devices, encouraging innovative public private partnerships (PPPs) and using universal access/universal service mechanisms to connect underserved areas more quickly while involving all stakeholders.
  3. We suggest that governments may consider using public funds to finance infrastructure roll-out in areas where private sector investment is insufficient.
  4. We recognize that the deployment of NGN and NGA and the more rational use of resources, such as sharing of common infrastructure and scarce resources may stimulate the development of new services and applications available to users, lower prices to consumers and is also likely to have a leveraging effect on other sectors and the entire economy.
  5. We recognize that increasing competition and the move towards convergence raise the importance of consumer protection and consumer education with respect to both the opportunities and challenges that Internet connectivity brings.
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