



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

GSR15

2015 Global Symposium for Regulators



Overview of Key Discussions and Outcomes



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

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Contents

Pre-event Programme – 8 June 2015	4
9-11 June Global Symposium for Regulators	5
Day One – 9 June: The Global Regulators-Industry Dialogue (GRID)	5
High-level patronage and Opening Ceremony	5
Leadership Debate	6
Session 1: Innovative Investment Strategies	8
Session 2: Mobile payment debate: an empowering tool	11
Day Two – 10 June: The Global Regulators-Industry Dialogue (GRID)	14
Session 3: Spotlight on network sharing business models	15
Session 4: The impact of taxation on the digital economy	17
Lunchtime Information Session	19
Session 5: Internet of Everything: are we ready?	20
Session 6: Interoperability in the Digital Ecosystem: a layered approach	23
Evening Information Session	25



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day Three: Regulator's Day – 11 June	26
Session 7: Fostering e-accessibility: the Regulator as an enabler.....	26
Session 8: Smart regulation.....	29
Session 9: Concluding discussion: How does regulation impact broadband uptake?.....	31
Way Forward and Closing Ceremony	34

ANNEX 1:	36
GSR-15 BEST PRACTICE GUIDELINES ON FACILITATING THE UPTAKE AND WIDESPREAD USE OF MOBILE APPLICATIONS AND SERVICES THROUGH TARGETED REGULATION	36
Stimulating demand	36
Facilitating availability, access and use of m-services and apps	36
Protecting consumers and suppliers	37
Roles of ICT stakeholders	38



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Pre-Event Programme 8 June 2015

The pre-event programme meeting of Chief Regulatory Officers from industry set two key priorities going forward:

- to use mechanisms to adopt relevant, flexible, and measurable policies and tools to enhance both supply and demand-side investment strategies, to achieve an optimal regulatory environment, and
- to foster private sector investment, competition and innovation, which will drive broadband access as a platform for socio-economic development.

The pre-event programme meeting of representatives from the world's Regulatory Associations (RA), which included some 50 participants from 9 Associations (AREGNET, ARTAC, CRASA, EMERG, FRATEL, REGULATTEL, OCCUR, WATRA, SATRC) discussed priorities around harmonizing cross-regional frameworks. Discussions focused on access to international fiber infrastructure and mobile roaming, as well as the experiences of Regulatory Associations on the matter of funding of projects and activities. Regulatory Associations also recognized the need for further collaboration and information exchange, including with ITU. The meeting also recommended that knowledge exchange and collaboration with parliamentarians dealing with ICTs and telecommunications may provide more information to these key players on issues of relevance to the sector so that they may take such information into consideration when participating in the policy making process.

The Pre-event Programme on 8 June also included a seminar organized by the GSMA entitled 'Driving Mobile's Future: Efficient Spectrum Management for Investment and Growth', followed by a luncheon roundtable led by the Global VSAT Forum (GVF) on the topic of 'Satellites and the Connected Ecosystem: Enabling Efficient Global Solution'.



Global Symposium for Regulators 9-11 June 2015

The Global Regulators-Industry Dialogue (GRID)



Day One – 9 June

High-level patronage and Opening Ceremony

The GSR-15 opening ceremony on Tuesday 9 June welcomed a number of distinguished guests including Gabon's Minister of Justice, H.E. Mr Séraphin Moundounga, Minister for Digital Economy and Postes, H.E. Mr Pastor Ngoua Nneme, and President of the National Council and of Communication, Mr Jean-Francois Ndongou, who were joined by Mr Abdoukarim Soumaila, Secretary-General of the African Telecommunications Union (ATU), BDT Director, Mr Brahima Sanou, and ITU Regional Director for Africa, Mr Andrew Rugege.

After having welcomed and warmly thanked participants for their presence at this 15th edition of GSR, GSR-15 Chair Mr Lin Mombo, said that thanks to the enlightened vision of His Excellency Mr Ali Bongo Ondimba, President of the Gabonese Republic, Gabon embarked on a vast programme of modernization and construction of telecommunications infrastructure and broadband in order to achieve full connectivity of the country in the near future.

In his opening remarks to delegates, BDT Director, Mr Brahima Sanou, noted that "All countries need not just a solid base of ICT infrastructure, but the appropriate legal and regulatory frameworks to foster investment and innovation."

H.E. Mr Séraphin Moundounga, Minister of Justice, speaking on behalf of the President, praised GSR as an excellent platform for exchange of information and experiences and to enhance one's knowledge on topical and relevant issues in the area of telecommunications and ICTs. Broadband, he said, has been transformational to society and an engine of development of many sectors. Gabon, too, recognizes the importance of ICTs, which stand at the core of the Emerging Gabon Digital Strategy — Vision 2025 (le Plan Sectoriel Gabon Numérique du Plan Stratégique Gabon Emergent (PSGE)).

Leadership Debate



Moderator: Mr Brahima Sanou, Director, BDT

Keynote speaker: Mr Kemal Huseinovic, ITU BDT IEE Chief of Department,

Panelists:

- Mr Lin Mombo, President of the Regulatory Board, Autorité de Régulation des Communications Electroniques et des Postes (ARCEP), Gabon and GSR15 Chair
- Mr Bocar Ba, President, SAMENA Telecommunications Council, Dubai, UAE
- Mr Christian de Faria, Managing Director, Airtel Africa

The Global Regulators-Industry Dialogue (GRID) component of the event began with the Leadership Debate around 'Funding an Inclusive Digital Society — From Infrastructure to Data'.

In his opening comments to the debate, Mr Sanou emphasised that today's ICT sector is evolving into a fully digital, online ecosystem, with rapid and complex change bringing an array of new issues that need to be addressed as a matter of urgency. The new figures just published by ITU demonstrate that information and communication technologies have seen unprecedented growth over the past 15 years, opening up huge opportunities for social and economic development. There are currently over 7 billion mobile subscriptions worldwide, for a population estimated at 7.2 billion. This means that there will soon be an average of one mobile subscription per inhabitant. The number of Internet users worldwide stands at 3.2 billion, of which 2 billion live in developing countries. In the five years from 2000 to 2015, Internet penetration has increased almost sevenfold, from 6.5 to 43% of the global population. The proportion of households with Internet access has risen from 18% in 2005 to 46% in 2015.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day One – 9 June

In 2015, 69% of the global population will be served by a 3G mobile broadband network, which means that we are now seeing the rapid extension of 3G mobile broadband into rural areas.

Today, Mr. Sanou said, many say that money is not an issue in ICTs — good projects can raise resources. We are facing new ways of raising money, such as crowdfunding and mechanisms that are disruptive to the classical banking systems. We need to be aware of that and prepared for that. Our shared and noble mission is to improve the lives of all the inhabitants of our planet through ICTs. In order to do this, we need both the requisite ICT infrastructure and legal and regulatory frameworks that are conducive to investment and innovation.

“We are working in a sector where the future is today. And reacting today is too late since our deadline is always yesterday. Market and technology developments are now stimulating a move to what we have discussed at past Global Symposiums for Regulators, the 4th generation regulations.”

Mr Kemal Huseinovic set the tone by reminding the audience that 2.3 billion people still live outside 3G coverage zones — a level of ‘digital exclusion’ that is unacceptable in today’s connected world. Industry Leaders, Regulators and Policy Makers attending GSR are ICT leaders, and the network of brains that have changed completely the ICT world!

15 years ago, fixed line penetration was 16% and a mobile cellular subscription penetration was 12%. Today, mobile subscription penetration is 97%, internet user penetration is 43% and 3.2 billion Internet users are online.

However, there is still more to do. Financial and digital exclusion is not acceptable. We need a digital inclusive society, to include all groups of society (including women, youth, persons with disabilities). The question is how to get there, how to create an enabling environment that strikes the right balance between protecting consumers and ensuring that business can thrive and innovate. GSR is there to exchange on challenges, solutions and on what we need.

On the one hand, panelists recognized the need for independent regulation that ensured fair and transparent rules which are applied the same way to all players. “Right now there is an uneven playing field, with OTT players subject to different rules, and operators seen as cash cows... continued investment in infrastructure requires a regulatory framework that is supportive.” Others spoke about the oncoming revolution of the Internet of Things, which will create “a very complex digital future”, and urged all players to focus on a common goal — best serving the customer.

An interactive discussion with members of the audience recognizing that OTTs are part of the ecosystem and providing that there will be a need for operators to review business models to accommodate the reality of the Internet of Things and the existence of OTT services. Regulators cannot simply ignore or prevent OTTs, and, in addition, need to work with stakeholders to craft sustainable regulatory models for this new reality. “We are heading towards a very complex digital future,” added some participants “and will thus require a digital complex collaboration model. Let’s center our objective around the same goal: consumer — customer.”

Others raised the question of whether regulators need to consider adopting a regional approach to OTT regulatory issues, with participants providing that “a single country cannot solve issues on its own, there is a need for a critical mass of regulators to negotiate with operators, such networks could be achieved through regional organizations.”

The moderator closed the debate by urging all players to strive towards an enabling environment founded on mutual trust that will help build and maintain a resilient, affordable, accessible and available infrastructure base for all.

Session 1: Innovative Investment Strategies



Moderator: Mr Abdoukarim Soumaila, Secretary General, ATU

Presenter: Mr Iqbal Singh Bedi, Principal, Analysys Mason

Panelists:

- Dr Natee Sukonrat, Vice Chairman, NBTC, Thailand
- Ms Ebele Okobi, Head of Public Policy, Africa, Facebook
- Mr Steve Collar, CEO, O3b Networks Limited

This session looked at innovative investment strategies developed to support the deployment of broadband and access to the digital economy, recognizing that continued investment is key to deployment and service.

The paper on **“Innovative Investment Strategies”** was presented starting with a description of how traditional and innovative investment strategies have been implemented to support the deployment of broadband infrastructure and access to the digital economy. Based on a number of case studies presented in the paper, a number of trends can be identified, including (1) a focus on developing mobile infrastructure particularly in the developing world, (2) a focus on high-speed broadband provision and investment into LTE networks mainly in the developed world, (3) market consolidation via network sharing or mergers and acquisition, (4) continued use of PPPs for government-funded broadband networks in areas that are commercially unviable, (5) investment into broadband networks and emerging technologies by new market entrants in the developed



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day One – 9 June

and developing world, and (6) the occurrence of innovative investments such as crowd- and community funding, digital currencies and pensions and charities mainly in the developed world. Despite the advent of private and new innovative investment strategies, the presenter concluded that governments and regulators should still be responsible for attracting inward investment and for stimulating the demand for broadband services to drive investment in higher-layer services and connectivity. Moreover, any financial regulations considered in growth markets should safeguard investors and consumers, enable innovation but not restrict business growth

Panelists recognized that while in developing markets, investment is needed to meet service requirement and stimulate demand, in the more developed markets investment is often driven by rollout of new technologies such as LTE with penetration in mobile at 69% and 74% in fixed. More mature markets with high broadband penetration and wider availability of services, are seeking newer technologies as well as quality.

Different investment models have been utilized in the past, and newer models are appearing, from crowdfunding to community projects. Many new players such as OTT service providers (e.g. Google, Facebook), or community projects are also coming on the market, stimulating demand as new entrants become members of the ecosystem and are adding value.

Given the convergence of telecommunications and broadcasting, regulators are seeking to craft measures to continue to promote long term innovative investment. However, it was also recognized that regulators need to be proactive and flexible in their approach so that they can update it regularly.

Panelists stressed that for consumers, the type of infrastructure is unimportant — they just want affordable, reliable connectivity, since being connected means being able to benefit from economic opportunities. There is still a digital divide — between continents, but it is also important not to forget to address the digital divide within countries too.

Panelists also stressed the importance of regulators as enablers — they can create the enabling environment for the supply of infrastructure, and also for the demand for services. Demand — numbers — creation is important for investors since demand creates opportunities for operators.

In addition, regulators should not care about the technology — only a combination of technology can allow for good connectivity, and that is what counts.

When debating Public Private Partnership (PPP), government led intervention was still recommended especially for projects that may not initially be perceived as commercially viable. It was seen as still widely used in both developed and developing countries. Many new partnerships are happening as result of the need to create synergies and to meet the growing demand for investment and market share.

Panelist shared the view that every player has a role to play in the ecosystem. The discussion centered around the multi-stakeholder nature of today's networks, with panelists suggesting that "every player has a role in the ecosystem...those who create demand [for services] also create opportunities for operators." Looking at a layered approach starting from services, OTTs are seen as a valuable contributor to the overall ecosystem as they invest heavily in for example datacenters, and



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

other infrastructure needed to create broadband growth. They focus on what they are strong at, and seek many partnership to complement delivery of quality services.

Satellite operators explained how expensive and high risk the satellite business is, but also how critical this business is to the ecosystem from operators to OTTs. The panel reiterated that customers do not care about what network their services run on. All they care about is the quality and price performance. For satellite it is a challenge of latency, for OTTs the challenge lies in bandwidth access and quality. Customer growth is fueled by the innovation that brings value. Thus as with OTT players, satellite too has a role to play reaching out to the unconnected. In return, satellite operators have some requirements for support from regulators to lower the cost of services for consumers.

Infrastructure sharing was also another theme that surface during this debate, with the panel underlining the role of the regulator to promote sharing through infrastructure sharing regulation as well as a technology neutral licensing framework so as to promote investment in infrastructure. The case of Thailand was cited to illustrate this type of framework: more people were able to access broadband with a technology neutral licensing framework than without (2 million additional subscribers). One recommendation from participants described the need for a complete overhaul of many policies and regulations to make them more technology neutral and service oriented — that is what encourages investment.

Another participant noted that manufacturers too are facing fast changes in the market. The rapid pace of change of everything means that technology at all levels needs to be replaced more rapidly and frequently, which in turn affects the return on investment. Regulators, panelists suggested, should not just consider today's demand but also think of the future.

On the need to regulate OTTs, one panelist shared the view that it is up to the regulator to come up with a strategy on how OTT can contribute to local development, taking into consideration the market environment and realities. OTTs are already contributing to the ecosystem through their investments in datacenters, as well as by developing services for social economic impact like health, education, and numerous other initiatives, in particular in developing countries.

Other issues debated touched on taxation, and regulators were urged to do their part as well by realizing the importance of reducing taxation, including on the import of equipment.

The debate closed with a clear recommendation on the need for more investment, innovative and dynamic regulation, and the importance of the ecosystem to come together to solve the issues collectively.



Session 2: Mobile payment debate: an empowering tool



Day One – 9 June

Moderator: Ms Adrienne Klasa, Executive Editor, This is Africa, Financial Times

Panelists:

- Prof. John Nkoma, Director General, TCRA, Tanzania
- Mr Sunil Kanti Bose, Chairman, BTRC, Bangladesh
- Mr Fabrice Djossou, Senior Sales Director, ABS Africa
- Mr Sacha Polverini, Senior Program Officer, Bill & Melinda Gates Foundation
- Mr Mortimer Hope, Director Spectrum and Public Policy Africa, GSMA

The Mobile Payment debate explored the regulatory implications of emerging digital financial services, with panelists — representing regulators, telecommunication providers, donors and associations — discussing the role of different stakeholders in this emerging ecosystem. Panelists also provided a holistic view of m-payments as an enabler of financial inclusion and a tool for empowerment, particularly for women.

Mobile payments constitute an innovative and fast growing area that spans telecommunication and mobile financial services as well as governments and regulators. However, while there has been much progress and excitement around this area, many challenges still remain. That being said, these innovations have the potential to provide banking services to millions of unbanked persons across the developing world. In many developing countries, the majority of people do not have formal bank accounts and are therefore financially excluded. Thus, mobile banking is seen by many as a potential solution to bring millions into the formal banking sector. As an example, in Africa only 20% of the population currently has access to formal bank accounts. The introduction of m-payments is helping to drive financial inclusion, particularly in rural population.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Issues debated included why mobile money is important for consumers and how to reduce the cost of digital transactions and mobile payments. In order to facilitate financial inclusion through mobile services, the cooperation between ICT/telecommunication regulators and banking regulators, including central banks, is essential. International cooperation is further needed to fully expand the use of mobile payments for those living close to borders, for migrant workers and those working in professions that require frequent crossing of borders, like truck drivers. Thoughts on matters related to standards and interoperability were also shared.

From the perspective of consumers, and especially those living in developing countries, the availability of traditional banking services is low. Thus, there is a real and expressed need amongst citizens for innovative and accessible banking services, for facilitating saving, transacting between personal and/or business purposes among people in rural and urban areas, or for security reasons to avoid carrying money around. In the absence of debit and credit cards, mobile banking products and services serve a need and this is why many countries are seeing demand grow.

In the case of Bangladesh, it was noted that 76 million people in Bangladesh are currently using mobile phones and between 23 and 24 million accounts for mobile banking and payments have been created over the past 3-4 years. However, it is only quite recently that the associated services that really taken off to include poor people and those in rural areas, increasingly allowing more people to access financial services.

While some success stories of early adopters, like mPesa in Kenya, were shared, the panelists highlighted that not all markets and countries have been fast to adopt m-payments. When considering why some countries have been able to accelerate mobile transactions and others not, the advantages of having a favorable environment in terms of less regulation, and an overall enabling regulatory framework, was emphasized. When the financial regulator has allowed the telecommunication providers and non-bank players to provide services without excessive regulation, the market was flourishing. Furthermore, governments that have been able to connect the support for mobile money and the payment of social services to the population have further been able to accelerate uptake. It was noted that there is no clear case where more regulation is better, rather the opposite. When regulation is slow in coming, the government has allowed new services to develop before considering new regulation and this has shown to be conducive to growth.

The debate further emphasized the need to have the right products for the market in question. It was noted that in Kenya, a main reason why mPesa had been successful was that the product and the marketing design were right, and directly responded to a need in the population. The product was able to connect urban and rural areas. Thus, the need to provide the appropriate marketing and product design, together with the supporting case studies was considered key. While access is often not an issue given that the mobile infrastructure is in place, a user-friendly interface, a cultural shift and trust are needed to allow for customers to respond positively. The need to raise awareness of the possible security threats and how to conduct mobile transactions in a secure and responsible way was also mentioned.

When considering what issues from the consumer side that facilitate uptake, the need for a user-friendly interface emerged as critical. On affordability and different factors that are increasing affordability of mobile financial services, it was noted that the appropriate mix of time, money and user-friendly interface are required. Going forward, the development of local content and more generally consumer data protection will also remain important.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day One – 9 June

When discussing challenges that impede the expansion of mobile financial services, the issue of trust was brought up. Trust and security, and the need to ensure that the regulatory frameworks (financial and telecommunications) are secure and well-thought through so that there are no holes that would allow for the loss of trust. Issues related to money laundering and terrorist financing also need to be addressed. The existing GSMA codes of conduct for mobile payment providers which include a code of conduct for customer complaints, and protection of customer data were mentioned as useful tools for operators.

When discussing successful cooperation, it was noted that fostering functional and realistic partnerships between the telecommunication and financial regulators, telecommunication providers and the banks is important. It is also important that these actors work together to implement the national strategy. Participants also highlighted the importance to truly engage with the telecommunication providers and address the concerns of the banking regulators. The example of how the services have evolved in Tanzania was shared. Initially money could only be sent within the same network, but this has now evolved to allowing transfers across the three existing networks, and a solution has also been found to transfer money across borders, especially to cater to the needs of lorry drivers crossing the Tanzania-Rwanda border with the exchange rates worked on by the central bank. As the services are developing further m-payments have become a multi-regulatory issue, with the complexity growing by the day. There is a need for increased collaboration and coordination to ensure that all involved continue to protect the consumer. All panelists acknowledged the need for increased collaboration between the different stakeholders. In light of this, the ITU-T Focus Group on Digital Financial Services which was established in 2014 was also mentioned. The aims of this focus group include identifying the technology trends in digital financial services over the coming years and how the role of various stakeholders in this ecosystem will evolve.

When elaborating on why new players, like foundations and donors, are taking an interest in mobile payments and why they are seen as means to promote pro-poor development, it was noted that access to financial services and proper tools at the right moment can really make a difference. This allows people to seize business opportunities and to deal with the challenges posed by deaths and disasters in the family, as well as weddings. Most people in developing countries transact mainly in cash for all their economic transactions, however, this cash is not free as there are associated costs for transporting, storing and securing the cash. When people have access to a formal bank account through the mobile, more people can be reached.

When asked to react on the provocative statement by the session moderator: “Transaction banking with banks is dead, the future lies with the telcos”, the responsibilities and skills of the different stakeholders were re-emphasized. Central banks and commercial banks have certain responsibilities. When it comes to mobile led activities, some money can be made by banks. Telcos have the technologies and the services in question can be provided. Those providing licenses in the telco area need to ensure that consumers are protected. As has already been seen in other areas like mobile products and services for health, sector regulators now need to work together. The days of one regulator acting on its own is over. While some products such as the provision of savings accounts, and loans are banking products, it was debated that the area that is still rather a blurred area is in mobile payments. Working together across sectors will further open up new market opportunities.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day Two – 10 June

The Global Regulators-Industry Dialogue (GRID)



Day Two started with a speech by ITU Secretary-General, Mr Houlin Zhao, who emphasized the importance of fostering the growth of technology-based small and medium enterprises in growing each country's national digital economy. He also urged countries to invest in youth through education and ICT training. "Young people are natural innovators, and today's youth are also 'digital natives' — using ICTs to solve problems and create useful new services comes naturally to them, so they can become major drivers of socio-economic change," said Mr Zhao. "Far-sighted governments should look to ways of harnessing this energy and creativity to transform their economies through ICTs and help bridge the digital gap."



Session 3: Spotlight on network sharing business models



Day Two – 10 June

Moderator: Mr Marufu Antony Chigaazira, Executive Secretary, CRASA

Presentation: Mr Malcom Webb, Partner, WebbHenderson

Panelists:

- Mr Jacques Stern, Board Member, ARCEP, France
- Mr Mike Jensen, Internet Access Specialist, APC
- Mr Peter Pitsch, Executive Director, Intel
- Mr Mongi Marzoug, Vice President, Internet Governance and Digital development, Orange

This session examined network sharing models that have been developed among various utilities, looking at existing models such as sharing, and co-ownership, as well as at the variety of infrastructure owners and how they too can contribute to infrastructure build out.

The paper on “**Network Sharing**” that was presented, considers whether network sharing (the term commonly used in the mobile sector) and co-investment (the term commonly used in the fixed sector) by multiple industry players and potentially other sources, including the government itself, may be a way to balance and reconcile the complex tensions between the twin goals of broadband investment and competition. The paper firstly describes advantages to governments of network sharing/co-investment both in the mobile and fixed sectors and then presents case studies for both sectors that show various different arrangements from mobile network sharing arrangements involving multiple mobile operators, to requirements of co-investments to mandating network sharing in fixed networks. The paper continues with reasons why there is not more network sharing / co-investment and names (1) loss of independence, (2) partner selection, (3) difficulty in reaching agreement, and (4) incumbent resistance as the main reasons. It then presents ways that governments can encourage or incentivize network sharing/co-investment, including government co-venturing, use of spectrum licensing, regulatory certainty, mandated network sharing, grants and subsidies and open access. Fourthly, the papers sets out downsides to governments of network sharing/co-investments and names reduction in competitive intensity, potential for collusive dealing and information sharing, reduced options for services based competitors and SLA driven performance as the main problems to governments. Fifthly, the paper presents commercial models



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

for sharing, namely discussing joint ventures and infeasible rights of use access. The paper then examines alternatives to sharing that comprise geographic split, network hierarchy split and third-party outsourcing, and lastly, looks at future applications of sharing in relation to smart city environments and dynamic spectrum sharing. The paper closes with the key message that although sustained and successful network sharing or co-investment between operators is undoubtedly a challenge, it will bring a range of benefits for governments as compared to other options. The paper recommends that governments should continue to co-venture with telecom operators to facilitate the rapid rollout of fixed broadband networks.

The Moderator set the tone of the discussion by stating to the audience: “To share or not to share — that is the question!” He reminded participants of the context, which is that today some 4 billion people are still unconnected, and yet there is the realization that ICTs are a key pillar for economic and social development. There is no need for much debate on the need for infrastructure, and sharing is part of the equation. The question relates to the level and cost of sharing.

Panelists agreed that regulators and policy makers can and should guarantee that infrastructure is available and that consumers can use such infrastructure. They have policy and regulatory tools to encourage infrastructure roll out, and these include network sharing. If they get the balance right between focusing on making infrastructure available for consumers, and incentivising investment, then network sharing will make sense to operators and will occur.

With pressure to roll-out new services fast and the cost of infrastructure often a major barrier in developing countries, some form of sharing is inevitable. Policy makers and regulators need to consider the trade-offs of sharing. Although it is clear that infrastructure is needed to ensure connectivity, a balance needs to be struck between meeting public policy connectivity and affordability objectives and incentivising investments. However, policy makers and regulators also have to be cognisant of the fact that the cost model of networks differs between for example copper, fiber or innovative networks, and that this will affect the level of sharing, and the willingness of operators to come to commercial agreements on network sharing. There may also be issues of how existing infrastructure can actually accommodate sharing — for example if existing towers can bear the load.

Operators should see this as an opportunity to gain revenue. Where new networks are being rolled out, network sharing can be seen as a form of co-financing since those sharing the network pay for it and therefore contributes to financing the rollout of new infrastructure.

The example of France was cited where network sharing of 2G and 3G networks was combined with 4G rollout to ensure nationwide coverage. In Tunisia, network sharing contributed to coverage for 2G and 3G mobile networks. The question is how to maintain such collaboration and extend it to other networks, so as to, for example, expand broadband coverage. Whereas in the past, the focus was mainly on coverage, now the focus has shifted to capacity in many countries. That is where both passive and active infrastructure sharing is important since it will have an impact on prices and capacity.

When considering network sharing in different networks — including fixed and mobile — and considering future capacity needs, it is important for regulators and operators to know where there is capacity — including in roads, on power lines, along railroad tracks, etc. — and to plan ahead. The incremental cost of including fiber in new roads, for example, is less than 1%, and on power lines,



even less. Mapping infrastructure can be a powerful tool, as done in Germany where it started as a voluntary commitment from operators and is now a legal obligation that can help governments and operators meet the needs of the public. Mapping also encourages investment since investors have a clear picture of what is available and where they can leverage resources. Quality of service is key, however.

Rwanda has also started mapping all infrastructure, and although there were some issues in relation to whom should provide such information in the beginning, the process has become easier. Rwanda has also imposed passive infrastructure sharing on operators.

The East African Communications Organization (EACO) is presently preparing guidelines on infrastructure sharing –for now the guidelines recommend mandatory passive infrastructure sharing, with active infrastructure sharing being voluntary.

Participants agreed that political will and a clear strategy are key. Regulators can help by analyzing the market and by providing an overview of infrastructure. In addition, regional initiatives can be an encouraging factor in encouraging network sharing, and can give a more complete view of what infrastructure exists and can be leveraged within countries, as well as with neighbouring countries.

In summary, all agreed that network sharing is key. However, the level of sharing is still being discussed. There is a need for regulatory clarity and guidelines, and regulatory and global platforms can be useful to discuss best practices and come to common solutions which can encourage more effective use of infrastructure and ultimately reach the goal of connectivity for all.

Session 4: The impact of taxation on the digital economy

Moderator: Mr Serge Essongue, Executive Secretary, ARCEP, Gabon

Presentation: Dr Raul Katz, President, Telecom Advisory Services LLC and Director, Business Strategy Research, Columbia Institute for Tele-Information

Panelists:

- Mr Souleymane Tamboura, Member of the Board, ARCEP, Burkina Faso
- Prof. Hichem Besbes, President, INTT, Tunisia
- Ms Cynthia Reddock-Downes, Executive Officer, TTAT, Trinidad and Tobago

This session examined how taxation affects the deployment and take-up of services in a digital environment, questioning whether taxation is a tool for social development or a business inhibitor. Participants agreed that it is important to consider and understand the impact of fiscal charges on competition and innovation in a digital economy, since the reality is that taxes can affect demand and broadband uptake. The debate also questioned what, if any, fiscal regime applies to OTT services and applications.

As an introduction to the “**Taxation**” discussion paper, the presenter provided an overview of policy issues related to the taxation of and levies on (1) firms operating within the digital sector and (2) consumers purchasing digital goods and services. As to the study's structure, the study commences with a general discussion of the impact of taxation on consumption and capital



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

investment. It then provides an overview of the different types of taxes imposed on firms that operate in the digital sector as well as levies imposed on consumers that purchase digital goods and services. Taxes and levies include corporate taxes and value-added taxes, import duties and sector-specific taxes. A topology of taxation regimes is then presented, which sets out who pays what types of taxes and when along the value chain. The study continues with a presentation of the distortions that arise from different tax regimes deployed, examines issues regarding tax collections and presents the economic impact of taxation on the performance of the digital economy. The study closes with a comparison of digital sector taxation with other sectors of the economy and presents lessons learned and best practices and puts forward fiscal policy recommendations. The main findings of the study can be summarized as follows: the study finds that in most cases, the burden of taxation is primarily borne by the operator, although in some cases taxes will be passed through to consumers, thereby increasing the cost of acquiring broadband service. In relation to digital fiscal policy two opposing trends at the highest level are identified: one aims to maximize collections based on growing digital flows; the second one recognizes that lowering taxation benefits consumers and businesses. Moreover, evidence is presented that digitization has a significant impact on economic growth. In this context, taxation of digital goods and services might have a detrimental impact on the rate of development of digitization. The main recommendations can be summarized as follows: (1) governments need to consider the trade-offs between revenue generation and the potential negative impact of the development of the digital sector, (2) policy has to be crafted with due consideration of the total cost of ownership of digital devices (e.g. smartphone, PC or tablet) and their related subscription cost, and (3) a balance is needed between short-term revenue schemes and long-term strategies to support industry innovation and growth, so that the effective tax rate of an industrial sector is proportional to its contribution to the economy.

Panelists grappled with the need to balance tax on equipment manufacturers and operators with the need to ensure devices and services as affordable as possible to drive uptake, particularly of mobile broadband.

The Moderator noted the disparity between tax regimes applying to traditional telcos and newer OTT players, some of which are often perceived as successfully avoiding heavy tax burdens. The perception is that OTT players may also affect the revenues of incumbents, and this also complicates the debate. Added to that is the question where OTTs should be taxed — whether it be in the country of origin of services provided or where services are received by consumers.

Panelists also recognized that although governments may see an opportunity to raise more tax revenue from what is essentially seen as a profitable sector, there is a real risk that too high a tax burden does affect investment.

Panelists agreed that any rebalancing nonetheless needed to protect services offered by OTTs, which, in the developing world in particular, are often the main user platform driving network traffic. The question is: Do governments want to increase the burden of taxation on those that are the point of entry to Internet? What we are confronted with is it the way we want to go? Do governments want to maximise the impact of ICTs or do they want to generate more revenues in the short term?

The need for governments to put something back was also raised, with panelists arguing that taxes collected from ICT goods and services should be used to develop each country's ICT sector. Taxes collected in the sector should go to the sector and USF rather than being used for other sectors.



Panelists also argued that the digital economy is important for the economy as a whole. Broadband penetration and roll out provides opportunities to create revenue. Examples show that where taxes are reduced — even by 1%, coverage will increase. Where taxes are too high, innovation will be stifled. Costs also need to be reduced to increase adoption and uptake of services. OTTs are a reality and rules and regulations should be adapted so as to accommodate this new reality. We need to find win-win solutions. The issues are complex and although the solution might seem to be to raise taxes, it is also important to look at long term economic goals for the country and the sector.

The role of the regulator is to balance and manage the expectations of consumers on the one hand, and of operators that invest in infrastructure — and should be encouraged to continue to invest — on the other. Panelists stated that although regulators should not block OTT services, taxation of OTTs is an issue to be considered by regulators. Where OTTs have right to numbers and are providing voice service, they may be competing directly with incumbents.

Questions from the audience also raised the issue of the cost of access to international capacity, which adds to the tax burden. Often costs get passed on to the consumer, so governments should take a holistic approach to taxation, looking at all elements.

Panelists urged participants not to forget the impact of ICTs on society — ICTs facilitate communication, they have enabled the social progress of democratization, m-payment offers new opportunities to the poor. OTTs, they said, were created because of high prices. If prices of roaming are brought down, they claimed, people would not turn so much to OTTs. If taxes are too high, prices will increase, which will simply punish end users. The case of 3G, which is often offered at more attractive prices to consumers than fixed broadband services, illustrates how price does affect uptake. It is therefore necessary to look at the market realities and be dynamic in imposing taxation. Regulators and policy makers should also be creative and innovative to craft solutions.

Within this context, Trinidad and Tobago showcased their example where government no longer imposes import duties on computer equipment, and a number of ICT services are zero tax rated.

Lunchtime Information Session

Day Two also featured a special lunchtime information session led by ITU's Radiocommunication Bureau Director François Rancy on the agenda for the upcoming World Radiocommunication Conference (Geneva, 2-27 November 2015).

Afternoon sessions covered new challenges emerging with the Internet of Things, and the implications of interoperability requirements on regulatory frameworks.

Session 5: Internet of Everything: are we ready?



Moderator: Mr Hodge Semakula, Executive Secretary/CEO, EACO

Presenter: Prof. Ian Brown, Associate Director of Oxford University's Cyber Security Centre and Professor of Information Security and Privacy at the Oxford Internet Institute

Panelists:

- Mr Alain Billerot, Regional Director, IBM Central and West Africa
- Mr Shiv Bakhshi, Vice President, Industry Relations, Ericsson
- Mr Eric Loeb, Vice President, AT&T
- Mr Abderrahim Koumaa, Director General, Gabon Telecom

This Session debated the implications of the convergence of internet-of-everything on policy and regulatory matters. With the rapid proliferation of IoT, the landscape of telecommunication and ICT is changing fast. Driven by the convergence of big data, cloud services, sensors, data analytics, the ICT and telecommunication markets are experiencing tremendous change with new challenges as well as opportunities for all. The benefits, according to some conservative estimate will be in trillions of dollars per year of new opportunities. In the next decade billions of devices are also expected to be deployed to provide innovative new solutions for both developed and developing markets. The value of IoT is greatest when many technologies and solutions are combined to provide new innovative services in industries as low tech as agriculture, to smart homes.

The presenter introduced the discussion paper on the **“Internet of Things”** that explores the concepts, technologies, and societal changes influenced by IoT and related technical developments that are leading to a shift from human-to-human communications, to machine-to-machine (M2M) and everything-to-everything communications. The paper further examines the challenges and



opportunities to understand how these are impacting consumers, businesses, governments and society at large and provides recommendations to regulators of how to create an enabling environment. The discussion paper firstly presents the concept and definition of IoT, then highlights development trends, areas of deployment and application, and moves on to identifying and examining challenges and opportunities of IoT. While the main current areas of applications identified in the paper include smart cities, smart metering & grids, connected vehicles and healthcare, the main impacts that are examined in the paper are felt at the level of society by improving efficiency and sustainability of a whole range of urban activities as well as at the individual level, e.g. increasing transport safety through “connected cars” and enhancing population health and well-being by e.g. enabling care at home. As the main challenges, the presenter identified costs and reliability of sensors, issues of connectivity, user interfaces and addressing, as well as a number of regulatory implications, which include issues in the area of licensing, spectrum management, standards, competition, security and privacy.

Although the increasingly interconnected world of IoT is removing physical barriers, regulatory regimes are still fragmented along old lines, panelists said. One panelist urged African regulators to harmonize frameworks to drive service roll-out: “Like Europe, you are a market of hundreds of millions of people — but unfortunately you are also a market with dozens of different — and sometimes conflicting — sets of rules.”

While debating the possible need for standards, panelist noted that from a manufacturer view point, every industry wants to be smart and connected. They perceived the job of the manufacturer as being to promote innovation. Within this context, a common physical infrastructure can deliver services, promote open standards, and enable trust. The panel noted a fitting African proverb quote to draw the parallel to the need for standards: “If you want to go fast, you go alone; if you want to go far, you go together”.

Security was also seen as an issue — although technological solutions can mitigate the risks, the issue remains important, particularly if one wants to foster innovation and investment.

Panelists noted that the issue of IoT is not necessarily just about individual privacy, but more about collective privacy. The private sector is often identified as a concern for end users due to a perceived lack of control of ordinary citizen on most big private enterprises. The audience added that there is a need to balance the right of users with the speed of transformation of technology. Panelists noted that consumers have rights, and that there are mechanisms to resolve situations simply by enforcing the law.

From a country perspective a number of countries are making investments in IoT. China plans to invest billions in IoT services. Rwanda is investing in Smart Kigali. Most are focusing on rolling out broadband and enhancing capacity of networks.

The issue of fragmentation of markets in many countries in sub-Saharan Africa was also raised, since it was seen as an issue affecting opportunity and thus influence investment. On actual market opportunities, panelists pointed out how difficult it can be to make predictions for IoT. Some earlier figures from Cisco on IoT talked about 50 billion devices, while latest trends puts it upward of 80 billion.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Operators are preparing for IoT. Operators are deploying newer technologies such as 4G, rolling out IPV6, promoting sharing, increasing international bandwidth, and increasing broadband access to enable IoT.

Panelists also shared their views on how IoT is expected to impact several industries, with new business opportunities expected to emerge. IoT is different from what was done before. From innovation processes where changes in manufacturing are taking place on numerous fronts, to development centers, industry is converging and changing. Panelists also noted that although devices may be heterogonous, needs are still changing, as is the ecosystem. Regulation will also need to change and be flexible, especially since the reality will be one where machines “talk” to machines, not humans.

On the debate for how IoT is transforming telcos, operators were urged to be more innovative to monetize their services. Panelists argued that operators already have three necessary ingredients of IoT (cloud, network, mobile) as assets and even likened telcos as the backbone of everything, but also argued that they have to re-invent themselves to benefit from reality.

On the regulatory and policy matters issues, panelists argued that regulators and policy makers should carefully analyze the issue, including emerging technologies, and apply a balanced approach to deliver results. The panel suggested that spectrum should be managed as a pool not dedicated to a service, for example. Spectrum, they said, should also be harmonized to increase market potential for investors. Harmonizing policy and regulations will be a necessary condition to attract investment.

The audience suggested that there is need for policy guidelines for national governments, and toolkits for regulators on IoT. Africa with approximate 1 billion people cannot compare to China with approximate 1 billion, because reaching China is regulated by one regulator, one policymaker — as compared to more than fifty in Africa. In one panelist’s words, “the enthusiasm to regulate should be curbed to allow for emerging technology.”

The debate concluded by affirming that IoT is here to stay, that it can make a big difference in many sectors from agriculture to health, that open data and platform are enablers, and that IPv6 and ubiquitous Broadband should be promoted. The debate also noted that participation from both developed and developing countries is critical, as is the need to promote high speed networks and balance issues such as security of networks and privacy of data, among other things.



Session 6: Interoperability in the Digital Ecosystem: a layered approach



Day Two – 10 June

This session discussed the importance of interoperability to prevent consumers from being locked-in when using apps and services and understand its effects on innovation and competition.

Moderator: Eng Mohammad Al Taani, Chairman of the Board/Chief Executive Officer, Telecommunications Regulatory Commission (TRC), Jordan

Presentation: Prof. Dr Urs Gasser, Professor and Executive Director, Berkman Center for Internet & Society, Harvard University

Panelists:

- Mr Jean-Louis Beh Mengue, Director General, ART, Cameroon
- Mr Sonam Phuntsho, Director, BICMA, Bhutan
- Ms Patricia Cooper, Vice President, Government Affairs and Policy, Intelsat

The moderator opened the session by asking participants to think of interoperability as the cornerstone of IoT. Although it has been around for very long, it seems to have been invisible until now, he said. He asked panelists to talk about the advantages and disadvantages of interoperability, including cost benefits.

The discussion paper on “Interoperability in the Digital Ecosystem” was presented. The paper provides a framework within which an understanding of interop as a concept is introduced. It offers a fundamental definition of interop as “the ability to transfer and render useful data and other information across systems, applications, or components” and identifies interop functions across four broad layers of complex systems, namely: technological, data, human, institutional. The paper sets out examples of some of the many benefits and drawbacks of higher levels of interop, including on the benefits side (1) innovation, (2) competition, (3) choice and (4) access; and on the drawbacks side (1) security and privacy risks, (2) an increase in homogeneity, (3) a decrease in reliability,



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

accountability, accessibility, and (4) a threat to certain existing business models. It offers a taxonomy for considering the various approaches that exist within the toolbox for managing and optimizing the level of interop. These approaches can either be deployed in a more unilateral fashion or they can be deployed in more collaborative ways. Moreover, there are approaches that can be deployed by the private sector and those that are utilized by regulators and other state actors. The paper also considers in more depth the unique role that governments and regulators can play in shaping the interop landscape. Governments as users of technologies can also encourage interoperability — procurements processes can encourage interoperability from manufacturers — national cloud computer strategies have led to interoperability. Finally, the paper concludes by identifying some of the biggest questions and challenges that confront future interoperable technologies. The presenter stressed that the Internet itself is the best example how a network of networks has led to unprecedented innovation! The challenge is to find the best tool to achieve what we desire in terms of interoperability!

Panelists contributed to the discussions with illustrations of how interoperability applies to the infrastructure ecosystem. Satellite operators, for example, can move their services even closer to the consumer through next generation satellites. Changes in costs and speeds — and miniturization of terminals will allow them to play in IoT. They have long been part of the machine-to-machine world. That now has to be brought to the consumer — so interop is part of the equation to become part of IoT — smart cities, etc. compatibility between satellite systems, with terrestrial infrastructure. They also need to reach scale to have manufacturers become aware of the advantages of satellite and bring cost down so that services can be available to consumers — more brings cost down, scales, and then allows bringing systems to consumers. Regulators have an important role to play in raising awareness on where technology can go. In areas of disaster management, for example, there are government incentives that can make sense. In terms of satellite — there is a need for sharing and for systems to work together.

Regulators recalled that interoperability has been raised for many years — there have been resolutions in place since the mid-2000s. Cameroon, for example, has adopted 2 laws — one on electronic communications, and one on cybersecurity and cybercrime. Both pieces of legislation define and frame the issue of interoperability. Regulatory agencies can set the stage — operators must make sure their equipment is certified as per the law.

Bhutan commented that as a landlocked country, interoperability is important. Internally too, the regulator sees interoperability as enhancing competition since services can be more widely available. Resources are limited in Bhutan as in many other developing countries, the panelist stated, which is why regulatory tools are key.

Interoperability is an issue that cannot be ignored — ITU is an institution that can facilitate the definition and implementation of standards. Countries need to take such standards into consideration. At local level national standardization agencies can contribute to regulation as well as the follow up and monitoring of operators and suppliers of services so that interoperability can be achieved.

Service providers can give incentives to equipment manufacturers to create compatibility of equipment. Market incentives may include services provided by operators — for example cars that



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day Two – 10 June

are equipped with broadband that can operate across countries — or broadband on planes that needs to be able to operate around the world — some of those services require interop or build the scale to make interop services more attractive for investors. Collaboration can be more attractive to some — so service providers must contribute so that such interop can be more valued.

Governments can create encouragement for interoperability because there is a public requirement — cases include first responder and disaster management — regulators have a real role to play since systems must be able to function together in emergency situations. The other area is national security — where multiple countries are involved and proprietary national systems are not enough — systems need to be able to work together.

Participants urged manufacturers to build interoperability into networks so that when OTT services are offered, the cost can be better determined. Regulators need to know what is going on in networks in the different layers — when there are machine-to-machine services, value added services, especially on IP based networks — regulators need to understand what is being produced and break down the services and the related costs.

Evening Information Session

A second information session was held at the end of the day, led by Mr. Cosmas Zavazava, Chief ITU PKM, on the value of data in the regulatory environment, ahead of the World Telecommunication / ICT Indicators Symposium (WTIS), which will take place in Hiroshima, Japan, from 30 November — 2 December 2015.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day Three – 11 June

Regulator's Day

Day Three was 'Regulators' Day', with the first session moderated by Ronald Box of TTR Vanuatu on promoting e-accessibility, and a closing debate on how smart regulation can facilitate m-services and applications moderated by Dražen Lučić of the Croatian regulator HAKOM. The Symposium's concluding discussion, led by Magdalena Gaj of UKE Poland, looked at how regulatory frameworks can drive broadband uptake, featuring panelists from Cambodia, Costa Rica and Switzerland.

Session 7: Fostering e-accessibility: the Regulator as an enabler



Moderator: Mr Ronald Box, Regulator, TTR, Vanuatu

Presenter: Ms Sofie Maddens, Head, RME Division, ITU/BDT

Panelists:

- Mr Eng. Hesham El Alaily, Executive President, NTRA, Egypt
- Ms Mignon Clyburn, Commissioner, FCC, United States
- Mr Sanjeev Banzal, Adviser, TRAI, India on behalf of Dr Vijayalakshmy K. Gupta, Member, TRAI, India

The session started with a presentation of the “**ITU Model ICT Accessibility Policy Report**”. The report provides policy guidelines and a legal and regulatory framework on E-Accessibility, which is designed to help countries develop their own accessibility policies and regulations. The report is structured using a modular design, which includes six stand-alone sections on (1) Model ICT legal,



policy and regulatory framework, (2) Model ICT accessibility framework on public access, (3) Model mobile communications accessibility policy framework, (4) Model television/video programming accessibility framework, (5) Model web accessibility policy framework, and (6) Model accessible ICT public procurement policy framework. In all modules the approach is to develop national policies in consultation with persons with disabilities.

E-accessibility is important in order to foster an all-inclusive digital society which includes persons with specific needs, the disadvantaged, disabled, blind, deaf and elderly people in society, people that are unable to join the digital world by conventional means. In this regard, the session examined measures regulators can take to foster accessibility to ICT services for all, to achieve digital inclusion. To ensure that everyone was talking about the same issues, an introduction to what is meant by 'ICT accessibility' and why it is important, was shared and concrete examples of how regulators and policy makers can take action to enable the widespread availability of accessible ICTs in their national markets were provided.

Regulators have a vital role to play in ensuring that ICTs open doors to persons with disabilities, enabling them to benefit from inclusive education and decent employment and to access government services provided electronically and by websites. By removing barriers and achieving ICT accessibility, it can be ensured that persons with disabilities can use ICTs as persons without disabilities. These barriers vary depending on the type of disability a user has and the solutions often depend on the kind of device being accessed — a mobile phone, a website, video programming, and so on. Currently, many ICT regulations aim to address ICT accessibility by including a single sentence like "These regulations should take into account the needs of all users, in particular persons with disabilities."

From the regulators' point of view it was noted that e-accessibility is the most critical goal as regulators. In implementing e-accessibility measures across the country, political will and support is needed to back the regulator. In countries like Vanuatu, there are three policies; the ICT policy sets the goal for roll-out, and includes persons with disabilities and specific/special needs, the universal access policy, and the cybersecurity policy. There was encouragement to make use of the variety of tools for ICT accessibility that are available, like the ITU Model ICT Accessibility Policy Report, and the guidelines on Making Mobile Phones and Services Accessible and on Making TV Accessible.

When further elaborating on how can regulators help promote ICTs for persons with disabilities, including age-related disabilities, it was noted that regulators should put in place clear and easy rules that can be followed by everyone, and reduce discrepancies to allow everyone to have access to the network. Taking specific actions to promote personalized content so that it is relevant for persons with specific needs was also emphasized. Accessibility is not only about providing connectivity, but about making full use of the network and devices, the entire environment. In this regard, users need to know their rights, and responsibilities, and be aware. Fraud is continuing to impact the quality of service and right to access information. The experience from Egypt was shared, mentioning that to better understand and meet the needs, special call centers have been established, providing emergency services, furthermore persons with disabilities have been recruited to work within these centers. This is a win-win, as dedicated people with disabilities are trained to work in the centers and the churn rate is also hoped to decrease.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

The slogan “Nothing about us without us!”, which is often used to communicate the idea that no policy should be decided by any representative without the full and direct participation of members of the specific group affected by that policy, was reiterated with regards to e-accessibility policies. The case of the United States was shared highlighting that in the country, almost every rule that is established, use a federal advisory committee to help with the dialogue on the concepts used and the rules. There is a group that meets on a monthly basis to help meet with manufacturers. Consumers, industry players and those in the local communities are involved in the dialogue. The usefulness of having a law in place was emphasized as was the need to engage with communities, to know what their specific needs are.

Details on a new policy in India were also shared. As nothing happens by accident, but instead needs to be thoughtfully planned and implemented, the useful practice of including the need to provide access to persons with specific needs in the universal service obligation was further considered.

The session panelists agreed that everyone has right to access and accessibility must include all. One stakeholder cannot possibly know what all the needs are and thus breaking types of disabilities down into categories and focusing on specific needs for the groups, as they are distinct, was considered a useful practice to follow. Policies should be established and approaches taken should be inclusive allowing further synergies between the government and the regulator to be found. Empowering the regulator, setting measurable timelines and ensuring that there is a monitoring aspect requiring reports to be provided back to the government was further deemed necessary. Including the specific requirements in the licenses was considered a best practice. By doing this and continuing to raise awareness, educating and providing training can countries take concrete action to ensure that the 1 billion people living with some form of disability can be empowered through accessible ICTs.



Session 8: Smart regulation



Day Three – 11 June

Moderator: Dr Dražen Lučić, President of Council, Croatian Post and Electronic Communications Agency (HAKOM)

Presentor: Ms Mercy Wanjau, Assistant Director, Communications Authority of Kenya

Panelists:

- Ms Kathleen Riviere-Smith, Chief Executive Officer, Utilities Regulation and Competition Authority (URCA), Bahamas
- Ms Katharina Pillay, Councilor, ICASA, South Africa
- Mr Collins Chomba, Manager Interconnection and Competition, on behalf of Ms Chalwe-Mudenda, Director General, ZICTA, Zambia

The paper on “**Smart Regulation**” was presented. It examines regulatory measures needed to facilitate the deployment and diffusion of m-services and applications to achieve social development goals. It provides an overview of the issues at stake and what the key services are to achieve this goal (e.g. m-health, m-education, m-payment, etc). The paper reviews what the main policy and regulatory barriers are, what measures are needed to lift these up in particular with regards to access, costing (including costing of short codes), taxation, security, privacy, content regulation, standards, traffic management, etc. The paper further examines how to address regulation in a cross-sectoral environment, collaboration and coordination measures requested, how to include m-applications and services within universal service policies and ICT/digital broadband plans and how to stimulate uptake.

Panelists argued that m-services are especially significant to island countries since they allow people to stay informed and help governments and policy makers develop overall social goals. For example, in the Bahamas, a country composed on hundreds of islands, having access to financial services through m-services and apps is key. Evenmore when some banks are closing offices in small islands. Others undelined that in many countries mobile operators have a significant share of the market, and that this is something regulators need to look at, together with competition authorities, so that markets can flourish and a wide range of services can be available.



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Panelists also recognized that m-services are tools to promote and encourage economic and social development. Recognizing that regulation is a balancing act, it is important for countries to share success stories, so that others may learn from their experiences and knowledge can be shared. Broadband access is a prerequisite, and high quality mobile broadband networks are part of that equation.

Senegal gave the example of innovative approaches for rural coverage so that end users can benefit from mobile services. The regulator implemented a project to install solar panel for consumers in rural areas to charge their mobile phones. They argued that much of the population in rural areas are still missing access to communications. In addition, in many cases, there is still a lack of knowledge on the benefits of ICTs. Regulators urged participants to recognize that there is a need for holistic projects that address all elements — demand and supply. Universal service strategies and financing are key to reaching the unconnected. In Zambia, towers have been set up in undereconomical areas as part of their Universal service programme to foster access to broadband and therefore access to m-services and apps. This programme provides equal distribution among the operators. Some countries have complex market with developed market segments and underdeveloped market segments. For instance, some parts of the South African market have multiple devices while others have one or no device calling for adapted responses from the regulator to facilitate access to m-services.

Throughout the discussion, participants recognized the social and economic benefits of m-services and apps for societies whilst emphasizing the need to address the regulatory gaps arising from the cross-sectoral nature of m-services. As apps are not restricted by geographical boundaries, it makes the regulatory exercise more complex and calls for cooperation at all levels.



Session 9: Concluding discussion: How does regulation impact broadband uptake?



Day Three – 11 June

Moderator: Ms Magdalena Gaj, President, UKE, Poland

Panelists:

- H.E. Mr Seng Kong, First Member, TRC, Cambodia
- Mr Manuel Emilio Ruiz, Board Member, Sutel, Costa Rica
- Mr René Doenni Kuoni, Director of Telecoms and Board Member, OFCOM, Switzerland

This session offered regulators the opportunity to share their experiences on regulatory measures taken to foster broadband access, ensure quality of service and stimulate broadband uptake. To start the discussion, the moderator reminded participants about the goal and mission of the regulator being to provide country citizens with broadband internet access. She noted that broadband can be compared to the bloodstream in the human body. Broadband is not a luxury, it is a basic human need. The services and what the citizens in any given country can do with broadband are essential, however, having the basic infrastructure in place is a pre-requisite. How to boost investment in infrastructure is therefore very important. Countries need to look ahead, to 2020 and beyond, have long-term strategies, to see how they can enable their people to become mobile citizens of the world. In addition to a broadband strategy, countries will need to have the appropriate laws and legislation in place, and with this create predictability in the market.

The panelists elaborated on what other roles the regulator can play in encouraging broadband uptake. From the perspective of Cambodia, a country in which the telecom regulator has only existed for three years, the task of issuing licenses to the operators, ISPs, and others, is one of the main roles, while ensuring fair market competition, accessibility and affordability to users. One of the future areas of work includes enabling the Cambodian government to adopt the national broadband



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

policy. With this in place, the regulator will have some clear guidelines to follow, regulatory constraints will be removed and there will be provisions in place to review other items.

When elaborating on some of the barriers which have been identified as impeding development of ICTs in rural areas, a panelist noted that the lack of coordination among government entities should be solved early on. Many institutions need the same resources and information, however, if there is no or little communication and no shared vision, the issues will not be solved in a timely manner. This further wastes resources. The lack of incentives for fiscal measures to expand the infrastructure is also important to note. Following the opening up of the market in Costa Rica six years ago, a real boom has been noticed, and with this, a substantial contribution to the fiscal economy. However, thanks to the growth seen, governments may start considering applying further taxes. Applying extended taxes on a sector that has been able to provide jobs and income to the economy may have severe consequences. Therefore, before applying additional taxes, governments should consider the long-term impact this may have.

The need to consider also what works best for each specific situation and each region, and the importance of region-specific development was further highlighted. With this in mind, the adoption of new technologies will be better, and the citizens in those areas will be more aware and more willing as the technologies are helping them directly. Getting closer to the citizens by improving the way the government communicates with them, be it on taxation, or other matters, will allow for the ecosystem to develop.

The role of the regulator in promoting infrastructure deployment, and in some situations subsidizing the operators to go to areas where there is not yet a market, was also noted, with examples provided of access to rural border areas. The benefits of mapping existing infrastructures and as a result learning more about the value of infrastructure sharing of scarce resources were highlighted in this regard. The regulator's role in putting in place the necessary mechanisms to protect end users was emphasized. Consumers purchase what the operators have promised to provide. For quality of service, consumers can pinpoint where they are located and then this will help the regulator to ensure that the operators/providers are providing what they have promised in their service offering. Examples of what quality of service means and different ways to ensure quality of service were provided. In Poland, the regulator has for example also invited academia to sign a memorandum of understanding (MoU), noting that providing end users with good quality services cannot just be determined by a regulatory decision. In the case of Poland, the MoU clarifies key performance indicators and the information is shared on the website thus providing users with information in a clear and transparent manner.

Elaborating further on the usefulness of mapping of existing infrastructure and whether this stimulates demand, Switzerland's experience was shared. Users have the right to receive a minimum level service, noting that 'minimum' is in many cases no longer enough for the end users. Many people want more. In order to provide this, market forces should be relied on and other players need to be involved in the provision of the services. For decision making and planning purposes to map infrastructures, statistics and numbers for Switzerland at the level of regions (cantons) is fairly easy to come by as these are general figures, however, the demand is now to have specific data at the local and individual level. This requires the involvement of these stakeholders in the planning process. Concerning soft regulation, there are no obligations to provide more than the minimum, but as there



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day Three – 11 June

is competition, this drives fiber and cable development. OFCOM has also tried to get market forces up to those areas where there is no inherent competition. By inviting stakeholders to participate in working groups in the different regions and sub-regions, through developing good practices and sharing these with others, progress has been possible. Success has been seen as mapping to the level of individual houses is allowing each household to see how they are being served and what services providers are available to them. The regulator's role was to provide the format for the data gathering and then giving this to providers. This in turn drove consumers to ask providers what services are available. This request, while not mandatory, has pushed everyone to provide data and be part of the initiative. The experiences from similar inventory exercises undertaken and planned in other countries were furthermore shared.

When talking about quality issues, there are often mismatches between promised and delivered bandwidth. The issue being that some providers are cheating. There are many tools available that consumers and end users can use to compare services. Not delivering what has been promised is not accepted in society, and misleading actors will be put in the public eye, criticized, which may take a business a long time to recover from. Participants noted that a good practice for regulators was to openly share statistics with operators and show data of operators that are underperforming. Communicating corrective plans, and fine operators if they do not comply, are considered measures of last resort in Switzerland. The preferred way is for the regulator to work with the operators to improve the situation.

It was further noted that when the discussion on net neutrality started in Switzerland, the need to have transparency was put in focus by customers. Regulators have a role to play here. This question needs a stable basis which goes beyond what is discussed.

Generally, all agreed that coordination is critical and initiating collaboration with all public entities concerned was considered a good starting point. The time when the regulator was working in isolation and giving orders to the market is over, it is now time for co-regulation and discussions. With a sound strategy, providing predictability in the market and by ensuring that the regulator sits around the same table with operators to discuss on how to deliver on the requirements of the end users and citizens is the way forward.

Way Forward and Closing Ceremony:



The Way forward session was moderated by BDT Director, Mr Brahima Sanou.

Following a brief report on the outcomes of the Regulatory Associations' meeting (RA) by the meeting Chair, Mr Lin Mombo, the GSR-15 Best Practice Guidelines on facilitating the uptake and widespread use of mobile applications and services through targeted regulation were adopted.

The coordination of the GSR-15 best practice guidelines was led by Mr Lin Mombo GSR-15 Chair, the Guidelines invite telecom/ICT regulators to identify pro-active policy and innovative regulatory measures to: raise awareness about the potential of m-services and applications to achieve socio-economic opportunities by empowering citizens; lift regulatory and technical barriers and foster access, development and take-up of apps and m-services; to ensure ease of use, trust, privacy and confidence as well as basic security in the use of m-services and applications taking into consideration their transnational nature; and, identify the roles and responsibilities of the government, the telecom/ICT regulator, the industry and consumers to facilitate and stimulate uptake and use in a safe and secure manner.

The GSR-15 closing ceremony was presided over by the BDT Director, Mr Brahima Sanou; GSR-15 Chair Mr Lin Mombo; and Gabon's Minister for Digital Economy and Posts, H. E. Mr Pastor Ngoua Neme.

H. E. Mr Pastor Ngoua Neme said: "Today, telecommunications/ICT is a strategic sector in the creation and distribution of national wealth, and contributes significantly to the improvement of the main macroeconomic indicators and the development of socio-economic activity in Gabon. The ambition of the Gabonese government is to ensure that ICTs not only contribute to the growth of GDP, but are accessible, available and affordable. I assure you that the Gabonese Republic under the leadership of President Ali Bongo Ondimba will take the necessary steps to implement the outcomes of your work. I would also like to reaffirm the commitment and will of my government to support and assist the ITU in its mission to connect the world and transform Africa."



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

Day Three – 11 June

BDT Director, Mr Brahima Sanou emphasized the role that ITU can play in fostering innovation. “In today’s increasingly globalized ICT markets, regulators and policy makers have a need to get together to find common ground and identify innovative ways of working together. Innovation is becoming central to the policy frameworks that will create the right enabling environment to drive growth — and ITU serves as the ideal neutral platform for those discussions.” He thanked the Government of Gabon and the ARCEP team for hosting the symposium, and congratulated Mr Mombo on his remarkable leadership of the event. Mr Sanou nominated Mr Mombo Ambassador for the GSR15 Best Practice Guidelines.

In his closing address, Mr Lin Mombo accepted the role of Ambassador of the GSR-15 Best Practice Guidelines, stating that “They respond to the current needs of ICT development in bridging the digital divide.” He thanked the ITU and further said: “By hosting this meeting, Gabon has shown its commitment to international cooperation in working towards an inclusive information society in the world in general, and in Africa in particular. I would like to express our satisfaction with regard to the excellent results which we have reached after three intensive days of work. I do not doubt for a moment that these results will benefit all actors in the ICT sector. I am particularly delighted with the relevance and quality of the Best-Practice Guidelines that we have just adopted. They respond to the current needs of ICT development in bridging the digital divide.”



ANNEX 1:

GSR-15 BEST PRACTICE GUIDELINES ON FACILITATING THE UPTAKE AND WIDESPREAD USE OF MOBILE APPLICATIONS AND SERVICES THROUGH TARGETED REGULATION

Access to, and the use of, mobile ICT services bring innumerable social opportunities and help stimulate economic growth of nations thereby benefiting the daily lives of all citizens. With such powerful technology and such unprecedented computing power in the palm of our hands it is imperative that we respond to the ongoing dynamic changes in ICTS and markets, craft new regulatory paradigms, and address the challenges relating to infrastructure, spectrum, and privacy. Such “fourth-generation regulation” will create a more enabling environment for the use of ICTs, while ensuring legal certainty and technical reliability thereby enhancing trust of end-users and allow people around the world to harness the opportunities yielded in health, education, public administration, agriculture, commerce, finance, and in everything that will serve humanity and help us achieve sustainable development.

We, the regulators participating in the 2015 Global Symposium for Regulators, recognize that targeted fourth-generation regulation based on a light touch approach promoting healthy (active and sustainable) competition, innovation, consumer protection and empowerment can go a long way towards responding to the dynamic transformation of ICT markets and achieving social and economic goals. Therefore, we have identified and endorsed these regulatory best practice guidelines to facilitate the uptake and widespread use of mobile services (m-services) and applications (apps) in order to foster digital and financial inclusion.

Stimulating demand

Recognizing the potential of m-services and apps for improving the transparency, accountability and efficiency of public services, governments can benefit from the knowledge and experience of stakeholders to draw up holistic strategies to allow users to use m-services and apps. Governments should also innovate and become lead users in this field. Initiatives for connecting public administrations and institutions such as schools, libraries and hospitals can create significant market opportunities and stimulate both the supply of and the demand for m-services and apps.

We recognize the role regulators can play in supporting and encouraging partnerships to facilitate the development of m-services and applications and raise awareness on how they can help increase economic productivity. In particular, social apps for the disadvantaged or unconnected populations can enhance quality of life across all sectors of the economy. Joint efforts with government agencies from other sectors could also generate win-win opportunities, inter alia for promoting education, digital skills, financial inclusion and integration in health-related programmes.

We further stress the importance of promoting the development and distribution of appropriate digital content, including multi-language content and content in local languages.

Facilitating availability, access and use of m-services and apps

New generation networks are the foundation of innovation in the ICT sector and the engine for the development of m-services and applications. Therefore, we believe that unified rules for



facilitating infrastructure deployment and open access to networks at national and regional level can strongly contribute towards stimulating the development of m-services and apps. Cooperation among all public authorities involved at the international, regional, national, and local levels is key to rapid, smooth and efficient implementation.

Policy makers and regulators must be mindful of the importance of designing flexible, incentive-based and market-oriented policy and regulatory frameworks with regard to spectrum allocation and assignment for mobile broadband services, so as to create trust and provide the necessary conditions for m-services and apps markets to thrive.

The development of new markets and the industry for mobile devices need to be sustained through adequate regulatory measures, in particular in developing countries.

Revisiting and reviewing, where necessary, current Government policies to make sure that they are still valid and appropriate for the new environment and ensuring privacy and security of government, business and consumer data may be necessary while open and collaborative regulatory frameworks are needed to promote the development of cross-cutting services such as m-commerce, m-banking and mobile money, as well as m-health.

We recognize that creating a converged reference framework for competition, interconnection and interoperability can effectively facilitate the relationships among the various providers of infrastructure and services, as well as among them and apps and content providers.

Recognizing that it may be commercially attractive to share network elements between service providers to avoid duplication costs, and provide opportunities for more m-services to be made available, regulators may consider promoting network sharing practices in all network and value chain layers while maintaining healthy competition between network providers.

We believe that innovative, out-of-the-box measures should be put in place to stimulate the take-up of m-services and the creation of locally-relevant apps in remote and rural areas. Among other measures, universal service strategies can be defined and the appropriate mechanisms used to create ICT incubators or for funding local developers and locally-relevant apps.

We call for regulatory measures, private initiatives and partnerships to reduce the cost of m-services and apps in order to ensure equal and universal access.

We further recognize that acquiring digital skills is essential for the wide take-up and efficient use of m-services and apps, and inclusive training programmes for different target groups need to be established.

We reiterate the relevance and value of the GSR13 Best practice guidelines on the evolving roles of both regulation and the regulators in a digital environment; and of the GSR14 Best practice guidelines on consumer protection in a digital world.

Protecting consumers and suppliers

We recognize the importance of adopting cross-sectoral regulatory frameworks which address the specificities and requirements of m-services and apps providing for consumer protection, freedom of choice as well as the proper exercise of consumer rights.

We recognize the importance of educating and empowering consumers by various measures and initiatives, including through providing platforms for user-friendly and up-to-date comparisons of service offers and tariffs; informing consumers about legal provisions and complaint/redress



MIND THE DIGITAL GAP – REGULATORY INCENTIVES TO ACHIEVE DIGITAL OPPORTUNITIES

9-11 JUNE 2015, LIBREVILLE, GABON

procedures as well as by promoting a culture of cybersecurity. Furthermore, consumers should not be bound to a specific m-service provider or app, and should retain their ability to choose and switch between providers.

We further recognize that regulators should encourage the adoption of measures aimed at enhancing the security of m-services and apps, creating reliable digital identities, using subscriber identification and registration to protect consumers, to safeguard consumer personal data, protecting minors and vulnerable groups, and promoting transparency of online communications and transactions in particular. Multi-stakeholder collaboration is therefore essential for ensuring that the rights and best interests of both consumers and suppliers are protected.

In addition, we recommend the adoption of a privacy policy with enhanced measures to alert users and give them control over data practices that are not related to the app's basic functionality or that involve sensitive information.

Roles of ICT stakeholders

Regulators and policy makers should work with government agencies, private sector and non-governmental structures to mainstream ICTs, and m-services and apps in particular, into their national social and economic strategies and design holistic policies and regulations allowing for synergies and cross-pollination to occur between the m-services and apps economy and the other sectors. Such policies and regulations should focus on increasing the social well-being of consumers while facilitating the coordination and partnerships among government agencies, private sector and non-governmental structures.

ICT regulators should adopt targeted regulatory measures to promote the development of broadband networks and services and provide for affordable and widespread access to m-services and apps by consumers, guarantee healthy competition between market players while promoting innovation, and ensure consumer protection in a digital environment.

M-services and apps providers should strive to innovate and diversify the range and content of services and apps on offer and make them affordable and accessible to large segments of the population.

Consumer associations also have a role to play in defining a framework for dialogue with other stakeholders, conducting independent research and getting involved in awareness raising campaigns, so as to contribute to the elaboration of informed policies and strategies for the digital economy.

Given the global nature of online services and apps, cross-border harmonization of relevant regulatory policies as well as enhanced collaboration among national government agencies, regional and global organizations is essential for creating a global digital ecosystem while putting in place effective safeguards against fraud and abusive practices.