

Executive Summary

The Commonwealth Telecommunications Organisation (CTO) Forum 2014 was held from 08 to 10 September 2014 at the Radisson Blu Water Garden Hotel, in Dhaka, Bangladesh, hosted jointly by the Ministry of Posts, Telecommunications & Information Technology of Bangladesh and the Bangladesh Telecommunication Regulatory Commission in Dhaka, Bangladesh, under the theme "ICTs for Development - From Access to Inclusive and Innovative Services".

Being the premier ICT conference of the Commonwealth, the objective of the CTO Forum is to examine the role of ICTs in development and to share best practices and identify priority areas. The 2014 Forum focused on key aspects of ICT access and utilisation including infrastructure, connectivity, applications, value added services, data and security.

The main outcome of 2014 Forum was to improve understanding among stakeholders of the role ICTs could and should play in socio-economic development and the need for equitable ICT access in terms of availability, affordability and accessibility, with particular attention paid to people with disabilities and socially-marginalised groups.

Over three days, 70 resource persons delivered 10 sessions organised into sessions entitled Enhancing ICT development and connectivity; Policy and regulation; Mobile technologies; Mobile commerce revolution; Cloud computing for development; Embracing big data; Empowering women through ICT; ICT and accessibility for people with disabilities; Integrating ICTs into education; and Protecting the young and the vulnerable. This Forum was attended by around 230 participants representing 28 Countries.

2 Opening Ceremony

Mr. Sunil Kanti Bose, Chairman, BTRC highlighted the convergence between mobile communications and Internet. Prof. Tim Unwin, Secretary General, CTO pointed out that while ICTs make a proven impact on development, further effort is needed to ensure inclusion. Hon Abdul Latif Siddique, Minister of Posts, Telecommunications and Information Technology of Bangladesh, highlighted the importance of international fora.

3 Session 1: High-Level Panel of Eminent Persons

A high-level panel discussed "ICTs for Development: Setting the Scene". The panel identified women, rural youth, educational institutes, border inhabitants, people with disabilities, unemployed, illiterate people, prisoners/ inmates as the main underserved groups. The panel identified the following as key aspects in which CTO can play an important role:

- Aggregate national experiences and benchmark to provide guidance
- Address cyber security issues while promoting regional cooperation and collaboration
- Assist in the development of Infrastructure
- Encourage cost effective high speed broadband
- Work in collaboration with policy makers to reconsider tax and tariffs to make broadband affordable.
- An Afro-Asian terrestrial information network could be established, which may be more cost effective than submarine cables

4 Access, Policy and Financing

4.1 Session 2: Gaining Access: Enhancing ICT Development and Connectivity

This session addressed the importance of national ICT broadband backbones for sustainable socio-economic development and preservation of diverse cultures, while ensuring good governance and enhancing the wellbeing and happiness of people. The panel agreed that the investment in ICTs has a direct impact on socio-economic growth. Countries should have targeted policies to reap the potentials of broadband. The key challenges in improving access were identified as differences in geography, low literacy rates, scale of national development, different political priorities, policy and regulatory barriers, cost of international connectivity (particularly for landlocked countries), high cost of access in rural/remote areas and lack of access to long term funding. The session also examined the relevance of infrastructure sharing, which regulators could promote. Optimal use of infrastructure in the face of market liberalization is likely to reduce cost.

Key outcomes of the session:

- The objective of the information society is to create a society that learns how to learn, in which every person is empowered to reach their full potential.
- Innovation, entrepreneurship and multi-stakeholder engagement is needed to accelerate the transition to a connected and digital world.
- Investment, incentives and targeted policies are needed to promote broadband, with affordability being a key consideration. Among the range of measures available are multistakeholder partnerships, use of universal service funds, tax rebates, spectrum management and licensing.
- Policy and regulatory frameworks are needed to foster investments in ICT ecosystem.
- Bilateral, regional and international cooperation can play an important role to address the challenges of landlocked countries as well as small islands.
- Consideration should be given to promote cloud computing to develop platforms for creating multi-lingual local content and applications, taking into account the challenges of security, privacy, data protection, interoperability etc.

4.2 Session 3: Policy and Regulation

Competition is increasing in ICT markets while technology is transforming the lives of everyone, which calls for effective regulations and enabling policy and regulatory frameworks, which takes into account related social issues such as climate change and digital lifestyles. A range of issues including laws and regulations that address new business process, guidelines on sharing of information amongst various public sector agencies and procurement regulations that recognise transaction based services are needed to implement effective e-Government applications. importantly there is an urgent need for regular and effective coordination between ICT regulators and industry.

Key outcomes of the session:

- Policies and regulations need focus on improving quality of service, affordability, rural penetration, effective competition and infrastructure rollout.
- Policies and regulations should based on the country's objectives and the states of the sector
- Policies and regulations must be implemented fairly, firmly and forthrightly.
- Global trends of ICT policies and regulation indicate the importance of market competition, private sector participation and independent regulation.

4.3 Session 4: Financing Infrastructure

Although ICT Access is growing rapidly, challenges remain in broadband rollout, especially in geographically challenged areas such as landlocked countries and islands. Affordability, which is one of the key global broadband targets for 2015, is still an issue for developing countries. ICT infrastructure financing strategies include infrastructure sharing and the use of Universal Service Funds (USF). Mobile broadband (e.g. 3G, 4G, WiMAX) is a more viable option in developing countries. However Mobile

broadband is not growing as expected, primarily in developing countries, due to high spectrum fees and investment cost.

Key outcomes of the session:

- Governments could offer targeted tax and import duty reductions to promote broadband as well as subsidies for end users, to facilitate broadband adoption
- Equipment approval policies should not be too onerous or restrictive;
- Transparent USFs policies could finance Broadband infrastructure as well as content and application development

5 Mobiles, Commerce and Data

5.1 Session 5: Looking to the Future: Mobile Technologies

While there is migration from 2G to 3G there are challenges with affordability, network utilisation and lack of awareness. WiMAX can play an important role in reducing the Digital Divide. Apart from being very flexible and a standard technology which can be deployed faster and economically, WiMAX can provide long range data communications without interruption. Lack of adequate spectrum, competitive devices, a mobility management technology, and 'Economies of Scale' limit the proliferation of WiMAX.

Expanding networks to rural and remote areas pose challenges due to lack of basic infrastructure, difficulty in maintenance due to rough geographical terrain, low return on investment and un-optimized network resources.

Key outcomes of the session:

- Using lower frequencies (i.e. 900/800/700MHz) would provide better coverage for mobile broadband through UMTS / LTE and would make mobile broadband affordable and accessible.
- Standardization of 4G LTE devices has not yet matured. The costs of customer devices are still not affordable compared to 3G devices.
- Though WiMAX hasn't met expectations, it could still contribute to providing services in underserved areas

5.2 Session 6: The Mobile Commerce Revolution

The session had a thorough discussion on capitalising the mobile-commerce, effective integration of mobile technology to boost profitability and latest mobile commerce innovations. Mobile Commerce is becoming bigger than E-Commerce. Banks, Telecom Operators and Retailers need to work together for spread to Mobile Commerce. M-commerce platforms can enable any business entity, i.e. shopping malls, real estate developers, hotel chains etc. to access information on products and services quickly and easily online by making m-commerce transactions. They can consolidate volume from smaller buyers, reducing purchasing costs. Property management companies can build online communities that connect residents of a particular development.

M-Commerce is a key enabler that will connect the formal and informal economies to create an all-inclusive ecosystem in developing countries. The biggest opportunity for the mobile money market is to move beyond person-to-person (P2P) payments, which have comprised the majority of all transactions to date. Mobile operators and mobile financial service companies may work together to integrate mobile payments into daily life and help consumers understand how these services can enrich their lives. Creating a sustainable m-commerce ecosystem in developing countries will mean ensuring an interoperable and standardized ecosystem between mobile and financial service sectors that enables all stakeholders in the financial value chain to effectively monetize the mobile arena. Providing customers with reliable and carrier-grade mobile financial platforms is key to ensure they have a positive experience with these platforms and want to devote their time and money to m-commerce.

The panel discussed overcoming the barriers to the successful adoption of mobile commerce. Governments and regulators must promote and encourage the creation of ecosystems with established players across the value chain that share the vision and see the business benefits. The government must put in place frameworks to overcome the mistrust and assure mobile users that people's privacy is

protected and their information will not be breached and/or sold to third parties. Government should take initiative to develop IT infrastructure in rural areas. Transparency is the most important issue in Mobile commerce. So, government should be monitoring this issue.

Key outcomes of the session:

- Mobile users are subject to additional threats such as identity theft, phishing, and loss of personal data. So, one of the most important requirement for payment systems, as well as e-government and e-health systems, including their mobile variations, is security. International recommendation needs to be complied regarding security and Governments needs to consider this issue through appropriate policies and regulations.
- Main focus needs to given primarily on creation of an enabling environment for increased availability and access to m-Commerce services as well as technical solutions for the safety of transactions.
- Necessary measures, in legislative and regulatory terms, needs to be taken to create an enabling environment for m-Commerce.
- Establishment of confidence and quality assurance for trading over the mobile is required.
- Human capacity development and improvement is required to make citizens aware and able to make use of m-Commerce services.

5.3 Session 7: Cloud Computing for Development

Cloud computing facilitates innovation, productivity, mobility, cost effectiveness, better collaboration and transformative work practices. While BPOs used to focus on process efficiency, emergence of Cloud has enabled new dimensions in BPO applications such as self services and voice recognition. In the future social networking is likely to facilitate people share best practices and learning solutions. Developing countries are likely to benefit more from Cloud computing as it is cost effective, collaborative and transformative.

Key outcomes of the session:

- Although there are some security concerns about the cloud computing, it can be beneficial provided appropriate measures are put in place
- Cloud computing will enable access to the Internet from lightweight portable devices, including mobiles, instead of traditional desktop PCs, with data stored on the Cloud.
- Cloud computing provides access to large-scale remote resources in a very efficient and quick manner. It has the potential to dramatically change business models and the way people interact with one another.
- With Cloud computing as a new type of IT platform, there is possibility to narrow the gap between developed countries and developing countries.
- However strategies and policies are needed to manage risks, ensure continuity of service, specify control, reduce piracy, and assure privacy
- Cloud computing will offer more opportunities to developing countries. More research is necessary in order to make individuals, businesses, and governments in developing countries understand how to benefit from mobile applications enabled via cloud computing.
- Consideration should be given to promote cloud computing to develop platforms for creating multi-lingual local content and applications

5.4 Session 8: Embracing Big Data

Information is multiplying at an exponential rate, generated by sensors, social media, transactions, smart phones, and other sources. Technology has enabled information to be captured, stored and processed faster. This vast pool of data presents enormous business and technical potential.

Key outcomes of the session:

- Opportunities for commercializing data include generating insights and solve specific problems; improving core operating processes; faster and better decisions; new revenue channels and competitive advantages.

- The challenges in commercializing BIG data include data privacy (trust and transparency) and management adaptation.
- Specific skills should be developed and transparent policies put in place to derive the benefits of data

6 Technology and Social Inclusion

6.1 Session 9: Empowering Women through ICTs

Women would benefit from increased inclusion in the digital society, thereby contributing to their social and economic empowerment. Reducing gender inequalities through the use of ICTs is a prime concern. There is a view that ICT should not be looked at from women's perspective, rather it should be looked at from people's perspective and made available irrespective of gender.

Key outcomes of the session:

- Reducing gender inequalities require economic empowerment of women, ensuring education for women and affordable accessibility.
- Women-friendly capacity building is important in which role models play a significant role
- Share knowledge;
- Bring women into the sector;
- Government and stakeholder's intervention is required along with dedicated policies, regulation and strategies to empower women
- Challenges to empowering women include lack of availability, affordability, accessibility, awareness and confidence

6.2 Session 10: ICT and Accessibility for People with Disabilities

Though rights of people with disabilities are guaranteed under various international and national policies, still their access to ICTs is limited. Sustained multistakeholder partnerships are needed to translate into action the expectations of international conventions.

Key outcomes of the session:

- Specific investments, policies and regulations are required to ensure universal accessibility including for those with special needs.
- Coordinated efforts are required at the national, regional and international level for universal accessibility, including technical measures that assist people with special needs
- Awareness should be raised about the rights of people with disabilities to encourage demand

6.3 Session 11: Integrating ICTs into Education

Leveraging the power of ICTs helps improve the quality of education in an increasingly networked society by enabling personalized study, facilitating community-based education and improving access to educational resources.

Key outcomes of the session:

- ICTs need to be included in the educational curriculum and learning environment needs to be updated
- Content should be locally relevant
- Community radio/ television can play a strong role to provide information and entertainment

6.4 Session: Protecting the Young and the Vulnerable

Some Cyber activities place young people and even vulnerable adults at risk. Child helplines have assisted in reducing this harmful effect. Regulators and operators could help improve child helplines by waiving phone charges, according child helplines emergency number status, raising awareness and supporting regional harmonisation of child helpline numbers.