

Global Symposium for Regulators (GSR) 2018

Best Practice Guidelines Consultation

On

Emerging technologies: preparing for AI, IoT, 5G, M2M communications to improve secure and reliable ICT infrastructure and access to and delivery of digital services.

From

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The interaction between human and technology has created a closer relationship and dependency/partnership that today access and usage of ICT applications and services has become fundamental and is currently considered as basic need. Technology is now firmly embedded in our everyday activities, but its reach is larger than that: it's reshaping pieces of our society. The rapid advancements in technologies brought about by emerging technologies (AI, IoT, 5G, M2M, cloud computing) applied in all sectors of economy and society are improving the way people work and live by creating innovative products and services, new way of doing businesses to satisfy new requirements of service delivery.

Anticipative and research-driven regulations: in order to smoothly integrate these rapid changes Companies, Institutions, Governments and regulators have to adapt to the changing environment. In fact, regulatory authorities are requested to integrate intensive research in their activities for more anticipation for them to be leaders and not laggards. To this end, lifelong-learning and skills upgrade are highly needed. This can be attained through close collaboration and partnership with Universities.

Innovation as driver of change: Regulatory authorities need also to continuously rethink their approaches, reinvent their business processes and how they transact with their stakeholders/clients. For this, it is necessary to promote innovation and establish a more adaptive regulatory framework that is critical to coping with the requirements of emerging technologies.

Enhanced smart partnership: there is need to promote smart partnership that strengthens the already existing knowledge sharing approach within the ITU community. There is no need to reinvent the wheel. In fact the learning curve can be significantly shortened by empowering knowledge sharing networks to allow effective transfer of knowledge and experience. This is key, for instance, to facilitate the dissemination and sharing of best practices. Channels such as ITU's Working Groups can expand their activities with increased reach out up to the regional and national levels.

Governments are adopting policies that foster digital transformation and ICT is being imbedded in every socio-economic development plan. It is in that framework that Rwanda has adopted the data revolution policy and Smart Rwanda master plan Strategy in 2015.

The data revolution policy vision is to Build an innovation-data-enabled industry to harness rapid social economic development whereas the SMART Rwanda Vision Statement is to enable "a prosperous and knowledgeable society through SMART ICT" with the scope of securing national ICT execution capability, expanding ICT accessibility, and establishing programs to enhance economic growth.

The main focus is to secure country's reliance on ICT by upgrading protection and security, agreeing on rights and responsibilities for data use on the basis of context, and driving accountability and

enforcement. The National Strategy for Transformation (2017-2024) has ICT as a cross cutting pillar for the achievement of the country vision which is to build a knowledge-based economy.

In rapid change of ICT landscape, where everything is becoming interconnected, the role of intelligent systems to manage complex systems, data flow to help in process accomplishment and decision making are becoming crucial.

Artificial intelligence, big data analytics are playing important role in service delivery, helping in prediction for reliable services. In fact, artificial Intelligence is taking on more sophisticated roles within technology interfaces. The applications are covering all socio-economic sectors like education, health, agriculture, government services delivery.

The impact of emerging technologies in the financial sector is increasingly very important and has constituted a competitive advantage and cost-effective channels of service delivery. For instance, the digital transformation in the financial (banking and insurance) sector is ever changing the whole process of world trading, financial services provisions and the introduction cryptocurrency is expected to completely change the international and national transactions models, with the effect of reducing the role of Governments in monetary policies and money market regulations.

The 4th industrial revolution characterized by smart production, smart services, smart cities is the result of application of artificial intelligence to efficiently manage resources, increase productivity and service delivery.

The application of artificial intelligence and Big data analytics apply from autonomous driving vehicles that use computer vision, to live translations made possible by artificial neural networks, Artificial Intelligence is making every interface both simple and smart—and setting a high bar for how future interactions will work.

In such a continuously changing environment, the regulator's challenges include setting up a regulatory framework that is encouraging innovation, attracting investments for the development of applications and services to increase access and reliability of the systems, while protecting consumers interests which include quality of services, reliability and affordability.

On the other side, for the system to be trusted by consumers, cybersecurity, data protection and transparency are key elements that the regulator has to consider when establishing rules and regulations for Operators to comply with.

The today market environment comprises various business models such as Operators with physical presence, Service providers with only digital presence (UBER, AIRBNB, NETFLIX, etc ..), partnership or revenue sharing models to deliver some of the services and applications.

With the transformation towards digital economy more and more services are online necessitating a secured and reliable working space. Cybersecurity is crucial to create consumers' confidence to embrace digital economy while protecting already existing investments (Networks, Systems, Applications and content).

Rwanda's best practices in smart regulations, capacity building and Innovations

Smart regulations: Rwanda established smart and flexible regulations in the domain of spectrum, interference and space security to rapidly accommodate the the use of Drones for blood logistics.

Initiative for capacity building in emerging technologies: Rwanda is hosting two strategic African centers of Excellence: one in IoT and another one in data sciences. The country is committed to strengthen regional efforts in human capital development in order to train a critical mass of engineers and researchers that fit for purpose in context of emerging technologies. As a result, other

knowledge hubs such the African Institute of Mathematics, African Leadership Institute, and Carnegie Mellon University have chosen Rwanda as home for their operations.

Creation of innovation spaces to leverage the youth demographic dividend: Rwanda has facilitated the establishment of innovation spaces such a Knowledge Lab (KLab) and FabLab to support innovation, particularly among the youth. The objective is to promote the development of innovative ICT solutions by nurturing a vivid community of entrepreneurs and mentors.

Funding research and Innovation: The country has established a National Research and Innovation Fund for supporting research and technology with particular emphasis to link o young innovators with the labour market,” in order to become a competitive knowledge-based economy.

Enhance networking: Rwanda has consistently host for the Transform Africa Summit (TAS) which is now a well-established platform for knowledge sharing and a forum of efficient networking for Africa and the World.
