**Telecommunication
Development Sector**

GSR, Geneva, Switzerland, **10 July 2018**, Room 5+6, from **9:30 to 11:00**

26 June 2018
Original: English

Private Sector Chief Regulatory Officers' (CRO)
and
Industry Advisory Group For Development Issues (IAGDI) Meeting

IAGDI – Industry Roadmap

INTRODUCTION

The Private Sector **Chief Regulatory Officers' (CRO)** meeting provides a platform for industry leaders to debate and identify regulatory challenges and opportunities on emerging issues for raising awareness and advocating the voices of industry to policy-makers and regulators in ICT ecosystem. Upon Resolution 71 adopted at the World Telecommunication Development Conference (WTDC-17), the **Industry Advisory Group for Development Issues (IAGDI)** is to be established as a partnership platform for industry leaders on overall development issues of ICTs which can contribute to achieving the sustainable development goals (SDGs). The 1st IADGI will aim to set an Industry Roadmap for which themes are suggested below.

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Theme: Secure cross border data flows as a key catalyst of digital transformation

Context: From the industry point of view, international data flows are centered on the essence of ICT/telecommunication infrastructure and services as the medium that has enabled the free flow of data across borders, and which has become a key input to the global economy today: most of the research on the economic contribution of international data flows shows that access to ICTs has been a great enabler of increased economic activity, and an engine of growth. This has leveraged new businesses and SMEs to be instantly global, enabling centralized data storage and processing, and thereby enabling businesses to take advantage of economies of scale, for example through cloud computing.

 Governments, however, are becoming more weary of free-flowing data because:
>   (1) they have security and privacy concerns,
>   (2) they want access for law enforcement, or
>   (3) opening to all types of flows, particularly data flows, have the potential to disrupt
traditional industries despite creating new channels for growth.

Consumers are also increasingly aware of their vulnerabilities in the sharing of data on e.g. social networking sites, or from day-to-day online and offline activities, with news of data privacy scandals surfacing every week. If consumers no longer or never feel they can trust service providers with their data, they will stop using the services or the Internet. The EU has reacted and passed the European General Data Protection Regulation on 25 May 2018. EU data protection rules are set out some of the highest standards of data protection in the world. Several countries and regional organisations outside the EU, including in Asia, Latin America and Africa, are also adopting new data protection legislation or updating the existing one, and are referring to GDPR as a reference point and a source of inspiration.[1]

Impact / Challenge: Ensuring privacy and security of data flowing across borders is paramount, given that data is the new fuel of the digital era: users only access and use ICTs, the Internet, and associated services when they trust that their data is safe and secure, and global ICT/telecommunications services are only possible through the monetization of data generated by users that flows across borders. Some people believe that privacy can only be guaranteed when the data stays in the country of origin and is not allowed to be transferred, processed or stored across borders. Others believe that the free flow of data with third countries can continue if there is assurance that a high level of protection (like GDPR type protections) applies when personal data is transferred to these countries. The impact of disrupting cross-border data flows, however - regardless of the state of the development of the country - can be severe in terms of welfare and output losses to the overall economy, and at the firm level can hinder digital transformation of digital value chain stakeholders such as network operators and industry. Governments - in dialogue with the private sector - have to find the right balance between protecting privacy, achieving national economic policy goals, and ensuring the trusted functioning of ICTs/telecommunications.

Way Forward / Key Questions:
- Can industry contribute to greater guarantees of data protection which is as safe across borders as it is in the home country? What are the key arguments to convince policy makers over the security of data storage and processing?

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[1] See e.g. Data Protection Standards of the Ibero-American States',
http://www.redipd.es/documentacion/common/Estandares_eng_Con_logo_RIPD.pdf

- What can the private sector and governments do to instil user confidence, and can we learn from other sectors, such as banking, that amasses and transfers an enormous amount of private data across borders? What is the role of collaborative regulatory approaches between sectors and between stakeholders?
- What is the role of international or regional regulations for data protection (e.g., EU GDPR model solution), which is expected to have impacts on business?

Related to Study Group Questions:

Question 3/2 : "Securing information and communication networks: Best practices for developing a culture of cybersecurity"

Question 6/1 : "Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks"

Question 1/2 "Creating smart cities and society: Employing information and communication technologies for sustainable social and economic development"

Theme: New technologies and enabling policies for better, more inclusive and sustainable development

Context: The Fourth Industrial Revolution ("4IR") is a new chapter for future economic and social developments that is driven by extraordinary technologies such as artificial intelligence ("AI"), robotics, the Internet of Things ("IoT"), autonomous vehicles, 3D printing, nanotechnology, biotechnology, materials science, energy storage, quantum computing, neuroscience, distributed ledger- and manufacturing, 3D printing, VR and AR technologies, all of which can have the potential for more inclusive and sustainable development. All these applications are built on digital infrastructures, which form the fundament of "all things digital". For example, 5G/IoT networks have the great potential to contribute to the achievement of the UN's Sustainable Development Goals (SDGs) through enabling e.g. massive machine-type communications, remote healthcare including real-time surgery, faster broadband speeds for new and advanced services and applications, to name but a few. Moreover, these advances will fundamentally alter the way we live, work, and relate to one another, and have significant implications for our existing values, ethics, and morals, as well as our social and political cohesion – yet they need to be constructively introduced.

Impact / Challenge: Advanced digital infrastructures such as 5G/IoT networks and various applications enabled by AI/IoT such as health, transportation, emergency and humanitarian can contribute toward achieving better, more inclusive and sustainable development. A recent study estimates that the value of network investments needed to keep pace with demand over the next decade is US$ 2 trillion. However, the disruption caused by new global business and operational models has undermined traditional revenue sources and margins for network operators. In addition, from a business perspective at this point in time, the case for 5G is far from clear, especially when a ubiquitous roll-out paradigm is anticipated as was the case for 3G and 4G. 4G at this point in time has not yet started to pay back and there is little in terms of 5G use cases that provide an improvement over and above what can to-date be achieved with LTE and WiMax, which is scaling up to hundreds of megabits and even gigabit-level speeds (up to 2 Gbps). The most promising 5G use case family today is enhanced mobile broadband contributed by cross-industries from mobile and satellite operators, manufacturing companies to SMEs, which can lead – if not, accelerate – towards the 4th Industrial Revolution.

Way Forward / Key Questions:
- What will be the successful business and investment models which will deliver the future digital infrastructure and killer applications – i.e., shifting paradigm towards 4IR?
- What kind of policies and regulations would foster investment into the future digital infrastructure and applications? Do governments need to shift away from a roll-out frame of mind away from ubiquitous coverage to a "local" or hotspot approach or a verticals (service uses or economic sectors) specific approach rather than service silos?
- What does the industry see as the needed dialogue and structural developments needed to guide the desirable deployment of new technologies that minimizes negative externalities? Such guidance could also include the moral role of technologies that concerns ethics and values of technological development?
- Can technological development be ordained in a vision of a long-term future toward achieving that desired vision (technologies for a common goal rather than technologies for the sake of technologies)? What is the industry answer?

Related to Study Group Questions:

Question 1/2 "Creating smart cities and society: Employing information and communication technologies for sustainable social and economic development") for aspects related to IoT and AI in particular

Question 1/1 "Strategies and policies for the deployment of broadband in developing countries") for aspects related to connectivity and broadband network deployment, including 5G

Theme: Sustainable Digital Ecosystems for cross-sectoral development

Context: Digitalization brings great disruption to all industries and ecosystems: banking has gone mobile and cashless, private transportation and accommodation businesses are becoming asset-less, communications providers have less need for physical infrastructure, healthcare can be provided online and through IoT/AI applications, manufacturing can easily be distributed and 3D printing is a revolution, and so much more. They all have one thing in common: they all rely on digital infrastructure and applications.

Since networks have been decoupled from services, network operators' position within the digital ecosystem has changed, competing against often global internet platforms and companies with a light asset base and lean cost structures, significantly affecting revenues on traditional communications services. To adapt to this new reality and to ensure their sustainability as an important player in the digital ecosystem, network operators are transforming in order to survive, by engaging with and seeking new value-added revenue opportunities across previously differentiated sectors.

Impact / Challenge: Legacy national footprints and regulatory regimes need to change and encourage cross-border interactions. National licensing, license and spectrum fees, industry fees and taxes, and retail and wholesale dominance regulation (to name but a few) need to evolve to more welcoming environments which adapt to changing business models and allow for:
(1) creating digital companies which transform people, processes and systems; and
(2) finding new revenue streams further up the value stack and offering platform and data-centric services across different economic sectors across the world.

This impacts the sustainability of the digital ecosystem, and this is exacerbated in the development context, where access to the Internet is still only available to less than 50% of the global population.

Way Forward / Key Questions:
- How are operators positioning themselves going forward within the Digital Ecosystem to ensure their sustainability and prevent ecosystem failure?
- What models of collaboration or partnerships along the digital value chain and across the digital ecosystem and verticals can be adopted, in particular in developing countries?
- From the regulatory perspective, what does regulation need to do or enable for cross-sectoral collaboration to flourish?
- What opinions can industry provide to governments or regulators to ensure that the enabling environment is fit for the Digital Era and is also fostering local value creation?

Related to Study Group Questions:
Question 3/1 "Emerging technologies, including cloud computing: m-services, and OTTs: Challenges and opportunities, economic and policy impact for developing countries"

THEME 4
Theme: Keeping the human at the center of a sustainable digital future

Context: The human is an inherently capable and adaptive being and always has been, using words and symbols as an extension of his abilities and learning to drive and absorb technology. Technology has brought great value to society, has expanded opportunities for global populations and has contributed to enormous wealth creation. New advances such as big data, cloud computing, the Internet of Things, robotics, artificial intelligence (AI) and machine learning (ML), and blockchain hold immense potential to tackle some of our most pressing global challenges. But these capabilities are also dramatically more complex across multiple layers of human-to-human, human-to-machine, and machine-to-machine interaction and require a different set of skills and competencies to deal with them and prosper. Governments and industry have a huge role to improve in areas such as digital literacy, skills development etc. for matching the right jobs and creating more quality jobs.

Impact / Challenge: New technologies, some of which are already widely deployed, fundamentally challenge our ideas about the world and can bring about undesirable externalities such as fracturing social and political cohesion, the exploitation of people's vulnerabilities through data collection on social media, widening inequalities, or even losing jobs. These negative externalities reflect the influence that these technologies have on society and how they were developed and deployed. It is therefore important to understand how technologies are developed and how they are deployed, what values, ethics and morals they should observe to understand how they might impact our lives and whether this impact is desirable in the long term and within different cultural contexts.

Moreover, in the context of developing countries, most digital technologies are imported, which means that the values, ethics and morals that are embedded in those technologies are also imported. This may therefore create challenges or impediments to their dissemination and adoption. Also, new technologies are likely to have a significant impact on the world of work, employment, the types of skills and competencies required for employees of the digital future. The challenge is anticipating and preparing for the types of skills and competencies and social protections that are needed in a future that is highly digital, where old functions and day-to-day processes previously requiring human action and interaction between different systems are automated or require significant transformation.

Way Forward / Key Questions
- How can industry contribute and ensure that the human remains central and continues to have a purpose? Is there sufficient dialogue with policy makers and consultation over ethics and values of technological development? How can this be processed whilst retaining the human element of the technology vision?
- How can humans prepare for the new era? What skills and competencies are required? Where are the intersections and incentives between industry and government?

Related to Study Group Questions:
Question 6/1: "Consumer information, protection and rights: Laws, regulation, economic bases, consumer networks"