18th Global Symposium for Regulators (Geneva, 2018)

New Regulatory Frontiers

Contributions

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Global Symposium for Regulators (GSR-18)
(Geneva, 2018)

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GSR-18 consultation - Contribution
Afghanistan Telecom Regulatory Authority (ATRA)

Emerging technologies

Policy frameworks should not be limited to telecom only, as emerging technologies encompass many areas that build a country's information and communication infrastructure. New policy frameworks should cover areas such as Internet of Things, M2M, Cloud Computing, 5G and electronics manufacturing. They should also address guidelines for intellectual property rights (IPR), artificial intelligence (A.I.), foreign investments, job creation and cyber and digital security. The following actions might be adopted by regulators regarding emerging technologies:

1. Depart from rigid rules and adopt a "light-touch" approach in order for the regulatory framework to be more responsive to the innovative ecosystem of digital services.
2. Adopt multi-sectoral regulation, due to the cross-cutting nature of disruptive innovation.
3. Implement a flexible, transparent approach that promotes competition and allows innovation to thrive and provides incentives for investment and, ultimately, consumer benefit.

The fast development of electronic devices has brought about the advent of various emerging applications (e.g., big data analysis, artificial intelligence and 3-dimensional (3D) media, Internet of everything, and so on), which requires significant amount of data traffic. While mobile networks are already indispensable to our society for "anywhere anytime connection," one main characteristic of 5G and beyond (B5G) mobile networks is the huge amount of data, which requires very high throughput per device (multiple Gbps) and per area efficiency (bps/km^2). Regulators should facilitate the following 5G spectrum sharing and management schemes to provide additional spectrum when and where needed:

- TV white spaces (TVWS)
- Licensed shared access (LSA)
- Spectrum access system (SAS)
- Carrier aggregation
- Dual connectivity
- Use of unlicensed spectrum

Economic and business approaches

Some regulatory measures aimed at simplifying consumer access to ICT services are:

- Adequate regulatory arrangements for infrastructure-sharing to achieve goals for national access
- Eliminate exclusive arrangements governing m-services and apps, particularly those riding on MNOs and operating systems that raise competition concerns
- Avoid exclusive arrangements on pricing, fostering fair and non-discriminative tariffs
- Identify and consult all relevant stakeholders for input
- Adoption of light-touch regulatory mechanisms to foster the diffusion of new services.

Regarding innovative measures at the international, national and local levels that National Regulatory Authorities (NRAs) could implement or foster, particularly in developing countries, the focus has been shifting lately from infrastructure into connectivity. Connectivity involves 3 sub-dimensions:

- Coverage gives end-users the capacity to use digital services;
- Performance of the networks provides the end users with fast and reliable access;
- Affordability fosters the penetration of new technologies and services.

NRAs need to work in all 3 sub-dimensions in order to promote connectivity, as indicated in Table 1.

Table 1 - Regulatory Measures to Increase Connectivity

Sub-Dimension / Level	Coverage	Performance	Affordability
International	**Promote cross-border fiber networks; Lift barriers for international investment**	**Deployment of international Exchange Points (IXPs)**	**Promote use of Cloud services; Promote regional roaming**
National	**Foster multi-infrastructure deployment; Enable White Spaces spectrum**	**Enforce data-driven regulation; Migrate to IPv6 in preparation for Internet of Things**	**Promote infrastructure sharing; Competitive Telco market; Facilitate MVNOs entrance**
Local	**Work with local governments to lift restrictions on infrastructure**	**Migrate copper to fiber**	**Multiplayer infrastructure competition**

Some of the most successful funding and financing approaches for ICT access are indicated in Table 2.

Table 2 - Investment Approaches

Investment approach	Funding source	Deployment and operations of infrastructure	Ownership of infrastructure
Private DBO*	Public and private sectors	Private sector	Private sector
Public outsourcing	Public sector	Private sector	Public sector
Joint Venture	Public and private sectors	Public and private sectors	Public and private sectors
Public DBO*	Public sector	Public and private sectors	Public sector

*Develop, Build and Operate

Regulatory frameworks for digital transformation

Regulatory frameworks need to be flexible enough to respond to harmonization efforts across sectors and even geographical regions. Clear consideration is needed to ensure that the regulatory approach adopted is not a barrier to future innovation and progress. If in doubt, it is suggested not to prescribe or regulate, because innovation needs time and freedom to blossom. NRAs need to recognize 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, to create trust and provide for the necessary conditions for new services to thrive.
- Revising and reviewing current Government policies to make sure that they are still valid and appropriate, and ensuring privacy and security of government, business and consumer data.
- Open and collaborative regulatory frameworks to promote the development of cross-cutting services such as m-commerce, m-banking and mobile money, as well as m-health.
- Promoting network-sharing practices in all network and value-chain layers, while maintaining healthy competition between network providers.
- Putting in place innovative, out-of-the-box measures to stimulate the take-up of services.
- Acquiring digital skills, which are essential for the wide take-up and efficient use of new services.

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(Geneva, 2018)

Contribution from Communications Regulators Association of Southern Africa (CRASA)
for the GSR-18 consultation

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GSR-18 CONSULTATION

	Best Practice Guidelines- Global Symposium of Regulators

DOCUMENT

Source:	Communications Regulators Association of Southern Africa (CRASA)
Title:	Emerging Technologies

This contribution proposes to provide inputs concerning Emerging Technologies for Digital Transformation as contribution by CRASA towards the Global Symposium of Regulators (GSR) 2018 Best Practice Guidelines. This is in response to the GSR-18 Best Practice consultation launched by the ITU Director BDT, Mr. Brahima Sanou on new regulatory frontiers.

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Introduction

The traditional way of work has been abandoned, and new ways of work are re-designed requiring global participation, including that of regulators and policy makers of various countries. ***Table 1*** below gives a comparison of the most topical discussion topics in 2017 and those anticipated for 2018 in the technological space.

Table 1: Hot Topics for Discussion (in Technology) in 2017 and 2018

RANKING	5 TOP TECHNOLOGY DISCUSSION TOPICS IN 2017	EXPECTED 5 TOP TECHNOLOGY DISCUSSION TOPICS IN 2018
1	Devices	5G
2	AI	Devices
3	IoT	Content
4	5G	AI
5	Regulation	IoT

Source: Huawei Report on Industry Trends # MWC 18

It can be gleaned from Table 1 that the expected trend in the discussion topics is:

Digitization is increasingly and fundamentally changing societies and economies and disrupting most sectors in what has been termed the 4th Industrial Revolution. Government and Public Policy must keep up by ensuring that the disruptions taking place see a revision of the norms in order for the digital transformation to achieve its full potential. This paper seeks to outline some of the policy and regulatory measures needed in response to the changing landscape to protect consumers and ensure trust. However, the first two questions that beg for answers are: (1) which are the key emerging technologies? (2) What regulatory measures are needed to respond to the changing landscape? and (3) What are the appropriate regulatory frameworks for digital transformation?

1. REGULATORY MEASURES NEEDED TO RESPOND TO CHANGING LANDSCAPE

- Regulatory measures to be adopted should aim to eliminate barriers to infrastructure deployment (particularly small cells which are expected to be widely utilised in 5G networks). In addition, policies should encourage viable infrastructure sharing arrangements that develop organically and commercially over time and avoid than introducing rules that could slow down the pace of deployment.

- Spectrum allocations should be made in blocks large enough so as to avoid spectrum fragmentation and support new services requirements e.g. IoT. Spectrum fragmentation results in inefficient use of spectrum, higher network costs and lower throughput for end-users;
- Spectrum prices should not be too costly for operators;
- The life of spectrum should be longer and public subsidies should be neutral.
- Regulators should ensure a level playing field that promotes both investment and competition;
- The Regulators should not permit a regulatory holiday for dominant players however, they should also avoid over regulation; and
- Antitrust legislation should be dynamic, to avert dominance by a few Internet giants.

2. SUGGESTIONS FOR REGULATORY FRAMEWORKS FOR DIGITAL TRANSFORMATION

5.1. Economic

Ideally, an investment friendly policy framework is necessary before consideration can be made for a regulatory framework that supports digital transformation. The most appropriate regulatory framework should go beyond mere regulatory directives when seeking to level the playing field. This entails a framework that goes beyond regulating net neutrality, but also tries to set the

foundation of a digital bill of rights. Another requirement is for a long-term policy view because this ensures the predictability and regulatory certainty that is needed in order to encourage investment in the emerging technology networks and deliver connectivity for all use cases. In addition, policies must not only promote effective competition among sector players in the ecosystem but also encourage innovation.

Policy makers should also consider pro-investment economic reforms. This is because in several jurisdictions there is a need to change some archaic tax laws and introduce new laws and policies that help to promote investments in infrastructure and increase business activity in other industries and ensure greater demand for services provided by ICT solution providers.

5.2. Spectrum

Spectrum plays a critical role in the growth of emerging technologies. US mobile operators believe there is there is a need for a regulatory framework that prioritises and supports the timely and sufficient availability of spectrum for 5G, particularly in the frequency ranges (sub-1 GHz, 1–6 GHz and above 6 GHz) the should include the mmWave frequencies, as well as licensed and license-exempt bands. It is recommended that new spectrum auctions should allocate blocks of at least 5MHz (or even 10MHz) in order to avoid spectrum fragmentation. In cases of licence renewals, the recommendation is for re-organization of spectrum allocations to ensure as much as possible, a contiguous block of spectrum for each operator. It is also recommended for existing licences, that spectrum swaps be permitted among operators in order to ensure a contiguous block for each operator. Telecom regulators should continue to pursue a “Technology Neutral” strategy in the allocation of spectrum resources because this allows operators to apply spectrum re-farming whenever it is necessary.

For the spectrum bands prioritised for 5G, it is recommended that some “light touch” regulations be applied to ensure some coverage obligations are met and guarantee certain minimum speeds as stipulated for both low and high spectrum bands. In the final analysis, it is recommended that governments and regulatory authorities should treat 5G infrastructures in a similar manner as transportation infrastructure and energy grids, and always implement positive and progressive spectrum policies.

5.3. Enabling Policy and Self- Regulation Balance

The most ideal regulatory approach should be “light touch” and not have excessive control and does

not stifle innovation in order to enable the emerging technologies. In addition, government policy is needed in order to facilitate physical network deployment. Regulatory and policy frameworks also need to favour “smart pipe” and discourage operators from offering the “dumb pipe” given that “light touch” regulation is intended to spur investment without harming internet freedom. Development of Standards should be timeous and progressive.

- END -

Global Symposium for Regulators (GSR-18)
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Contribution from ARCEP France for the GSR-18 consultation

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ARCEP response to the Global Symposium for Regulators (GSR-18) best practice guidelines consultation on new regulatory frontiers to achieve digital transformation

The French electronic communications sector has in recent years undergone very rapid evolution marked by the country's digital transformation and the rapid emergence of the Internet of Things (IoT). It is now preparing to implement the fifth generation of mobile communications (5G), which is likely to be a disruptive technology. These developments call for a change in the regulator's approach, in particular **by encouraging operators to invest, giving priority to innovation and developing new modes of intervention.**

The digital transformation of France requires the construction of suitable infrastructure as well as an effort to meet the challenges of modernization of the economy and the ever-increasing demand for connectivity. ARCEP has accordingly sought to place investment in next-generation infrastructure at the focus of its priorities by establishing **pro-investment regulation**. ARCEP also takes the view that the regulator, in carrying out its mandate, must also **promote innovation, the development of new services, and adaptation of those services to users' needs**.

Promoting investment in fixed and mobile networks: Improving connectivity and meeting users' expectations

In the light of the situation of the French telecom market, ARCEP has opened up access to existing infrastructure and defined a stable and legible framework for the deployment of future superfast fixed networks (FTTH network) and mobile networks (4G, with 5G on its way). The regulator still seeks to strike a balance between competition for infrastructure and infrastructure sharing so as to ensure efficient use of resources. That approach has been given concrete expression by measures to support mobile network sharing through guidelines, regulation of the optical fibre market that favours a model of co-investment and of regulated access to civil engineering works, as well as an agreement between the Government and operators to speed up expansion of superfast mobile coverage. The latter was signed at the beginning of 2018, and in return the Government has agreed to auction frequency bands that are due to expire in the near future.

An approach that is flexible and appropriate in order to promote innovation

Innovation is a key lever for achieving long-term growth in a sector. The possibility of decentralized innovation in networks is essential for the development of digital tools and services based on innovative business models. In addition, increased speed of networks gives rise to a virtuous cycle of development of new uses, which in turn encourages further innovations in the networks.

This means, in ARCEP's view, that innovation should not be impeded, and nor is it within the regulator's remit to determine or choose what the future industry should look like. That is why ARCEP, with a view to preparing the way for these future technological revolutions, has preferred to adopt a flexible approach appropriate to these new technologies in their early stages of development. This means above all an effort to promote understanding, openness and clarity. In the interest of promoting innovation, **the regulator's role should be, above all, to enable and facilitate**. The regulator's primary job is not, by its actions, to influence the choice of technologies, which must as far as possible be determined by the market. The regulator's activity must therefore be as neutral as possible and offer the best possible protection for

innovation, and must pay due regard to consumers' interests. Proactive measures and exchanges with all players in the value chain in the sector (start-ups, competition hubs, manufacturers, operators, as well as users) are thus key elements for knowing and understanding the emerging ecosystem. The aim is to ensure that there is no impediment to the latter's effective self-organization, and to identify the potential framework measures that may be needed to enable innovation to develop.

By the same token, when ARCEP, in its role as guarantor of network neutrality, emphasized that terminals enabling users to access and provide content and services on line might be a "weak link" in efforts to open up the Internet, **the broad areas of action envisaged to ensure the open nature of the Internet were intended to respect the goal of making government intervention flexible and responsive**.

ARCEP accordingly has proposed, first, introducing greater transparency into the sector's practices as regards opening up the Internet. Secondly, it has proposed that virtuous behaviour in bringing about Internet openness should be encouraged, by easing migrations between operating systems. Thirdly, it has proposed direct intervention to remove restrictions though targeted action with the aim of maintaining a vibrant and diverse Internet. Lastly, ARCEP has proposed to establish a rapid-intervention dispute settlement procedure where disputes arise.

Another important lever which the regulator can use to encourage innovation is provided by **rules of access to scarce resources** (frequencies, telephone numbers, IP addresses, and so on). The aim is to prevent moves to preempt the value chain by certain resource holders and to keep sufficient flexibility to set innovation free, so that new uses and new technologies can be conceived, designed, tested and deployed. Access to spectrum resources in particular is essential for proposing effective and innovative communication services. Beyond the question of mobile connectivity, ARCEP should therefore make available to the entire ecosystem enough frequencies to meet all the challenges and define the relevant conditions of use and technical parameters according to specific uses. As regards IP addresses, the success of the Internet, the diversity of usages, and the proliferation of connected objects have resulted in the progressive depletion of IPv4 addresses. It is for this reason that ARCEP wants to help speed up deployments of IPv6 in France, in particular through its observatory.

New tools available to ARCEP: "5G pilot projects" interface, "start-ups and experiments" interface, the "regulatory sandpit" and the "free frequencies" site.

ARCEP has launched a number of ongoing projects such as the "5G pilot projects" interface enabling all players in the 5G value chain to learn about specific cases of use and future challenges of this next generation under real-life conditions, and to allocate frequencies to interested players for the purpose of full-scale deployments and obtain initial feedback to aid reflection and design of future ARCEP allocations; a "start-ups and experiments" interface to support start-ups, enterprises and communities in their experimental initiatives; a regulatory "sandpit" for enterprises wishing to test a given technology or innovative service without being bound by all the regulations that would normally apply; and a "free frequencies" site dedicated to bands subject to general authorization for informing stakeholders and for hosting information provided by IoT stakeholders or for reporting on quality of service issues in these bands.

New means of intervention: Regulation by *data*

In order to ensure the sector's competitiveness through investment-friendly competition, ARCEP has sought to develop its means of action and intervention. In order to carry out its mandate in the current age, ARCEP has to listen to its fixed and mobile Internet users, be able to pick up faint signals, and provide the most detailed and transparent information in order **to make every citizen a micro-regulator**. Regulation by *data* complements the regulator's traditional tools. Its principle is: exploit the power of information to nudge the market in the right director. Two ARCEP projects embody this approach: maps available at the site "monreseaumobile.fr" enable users to compare coverage and quality of service of mobile networks; and the reporting platform "*J'alerte l'Arcep*" enables every user to trace malfunctions in links with operators. ARCEP also runs a "crowdsourcing" ecosystem for measuring Internet quality. These tools need to be further developed. ARCEP is also currently

developing an observatory for mapping territorial coverage of fixed networks and services with a view to providing consumers, businesses and communities with a better overview of current networks and of new ones as they emerge. This innovative regulation can also be applied to the new regulatory frontiers initially by collecting information and monitoring practices of digital stakeholders with regard to users. Soft regulation tools, using scoring and other such means of presenting feedback, could provide a means of disciplining the conduct of the most powerful players.

Colloque mondiale des régulateurs (GSR-18)
(Genève, 2018)

Contribution d'ARCEP France pour la GSR-18 consultation

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Réponse de l'Arcep à la consultation relative aux lignes directrices sur les bonnes pratiques du colloque mondial des régulateurs (GSR-18) portant sur les nouvelles frontières réglementaires au service de la transformation numérique

Le secteur français des communications électroniques connaît depuis ces dernières années une évolution extrêmement rapide, caractérisée par une transformation numérique du pays, l'essor de l'internet des objets et s'apprête à mettre en œuvre la cinquième génération de communications mobiles (5G) se présentant comme la génération de rupture. Ces évolutions appellent à un changement d'approche du régulateur, notamment en **incitant les opérateurs à investir**, **en favorisant l'innovation et en développant de nouveaux modes d'intervention**.

La transformation numérique de la France passe par la construction d'infrastructures adaptées, à même de répondre aux enjeux de modernisation de l'économie et à la demande de connectivité de plus en plus accrue. Dès lors, l'Arcep a souhaité placer l'investissement dans les infrastructures de nouvelle génération au cœur de ses priorités en mettant en place une **régulation pro-investissement**. Par ailleurs, l'Arcep considère que, dans l'accomplissement de ses missions, le régulateur doit, également, veiller à **favoriser l'innovation**, **le développement de nouveaux services et l'adaptation de ces derniers aux besoins des utilisateurs.**

Promotion de l'investissement dans les réseaux fixes et mobiles : améliorer la connectivité et répondre aux attentes des utilisateurs

Compte tenu de la situation du marché télécom français, l'Arcep a imposé l'ouverture de l'accès aux infrastructures existantes et défini un cadre stable et lisible pour le déploiement des futurs réseaux très haut débit fixes (réseau FTTH) et mobiles (réseau 4G et bientôt 5G). Le régulateur cherche toujours un équilibre entre concurrence par les infrastructures et partage d'infrastructures, qui garantisse une utilisation efficace des ressources. Cette approche s'est matérialisée par l'encadrement du partage des réseaux mobiles au travers de lignes directrices, la régulation du marché de la fibre en plaidant pour un modèle de co-investissement et de régulation de l'accès au génie civil ou encore, l'accord entre le gouvernement et les opérateurs pour accélérer la couverture en très haut débit mobile. Ce dernier a été signé début 2018 en échange du renoncement de l'État à ne pas mettre aux enchères les bandes de fréquences qui arrivaient prochainement à échéance.

Approche souple et adaptée pour favoriser l'innovation

L'innovation est un levier essentiel pour la croissance de long terme d'un secteur. L'existence d'une possibilité d'innover de façon décentralisée sur les réseaux est un facteur indispensable à l'émergence d'outils et de services numériques aux modèles économiques innovants. En outre, la montée en débit des réseaux engendre un cercle vertueux de développement de nouveaux usages, appelant à leur tour à de nouvelles innovations sur les réseaux.

Dès lors, selon l'Arcep, il convient de ne pas entraver l'innovation ; il n'est en outre pas du ressort du régulateur de définir ou choisir précisément quel doit être l'état stable de l'industrie future. C'est la raison pour laquelle afin de préparer ces nouvelles révolutions technologiques, l'Arcep a souhaité privilégier une approche souple, adaptée aux premiers balbutiements de ces nouvelles technologies. Il s'agit avant tout de comprendre, d'ouvrir et d'éclairer. Pour favoriser l'innovation**, le régulateur doit avant tout avoir pour rôle de permettre et de faciliter**. Le rôle premier du régulateur n'est pas d'influencer par ses actions le choix des technologies, qui doivent autant que possible être arbitrées en premier lieu par le marché. L'action du régulateur doit donc être la plus neutre possible, et permettre de protéger au mieux l'innovation, dans le respect de l'intérêt des consommateurs. L'anticipation et l'échange avec l'ensemble de la chaîne de valeur du secteur (start-ups, pôle de compétitivité, constructeurs, opérateurs, mais aussi utilisateurs) sont ainsi des éléments essentiels pour connaître et comprendre l'écosystème en émergence. L'objectif est de s'assurer qu'il n'y ait pas d'obstacle à son auto-organisation efficace, voire d'identifier les potentielles actions structurantes pouvant s'avérer nécessaires pour permettre à l'innovation de se développer.

De la même manière, lorsque l'Arcep a souligné, dans son rôle de garant de la neutralité des réseaux, que les terminaux permettant aux utilisateurs d'accéder et de fournir des contenus et services en ligne pouvaient constituer un maillon faible de l'ouverture d'internet, **les pistes d'actions envisagées pour assurer le caractère ouvert d'internet visaient à respecter cet objectif de souplesse et de réactivité de l'intervention publique**.

L'Arcep a ainsi proposé en premier lieu de rendre plus transparentes les pratiques du secteur en matière d'ouverture d'internet. Elle a proposé en deuxième lieu de stimuler les comportements vertueux en matière d'ouverture d'internet, en fluidifiant principalement les migrations entre systèmes d'exploitation. En troisième lieu, il a été proposé d'intervenir directement pour lever les limitations via des actions ciblées visant à préserver le foisonnement d'internet. En dernier lieu, l'Autorité a proposé de mettre en place une procédure de règlement de différends pour intervenir rapidement en cas de litiges.

Un autre levier important du régulateur pour favoriser l'innovation est celui **des règles d'accès aux ressources rares** (fréquences, numéros de téléphone, adresses IP etc.). Il s'agit d'éviter la préemption de la chaîne de valeur par quelques titulaires, et de garder suffisamment de flexibilité pour libérer l'innovation, afin que les nouveaux usages et les nouvelles technologies soient imaginés, conçus, expérimentés et déployés. En particulier, l'accès aux ressources spectrales est essentiel pour proposer des services de communications performants et innovants. Au-delà de la question de la connectivité mobile, l'Arcep se doit donc de mettre à disposition de l'ensemble de l'écosystème suffisamment de fréquences pour répondre à l'ensemble des enjeux et en définir les conditions d'utilisation et paramètres techniques selon les usages. Pour l'adressage IP, le succès d'internet, la diversité des usages et la multiplication des objets connectés ont eu pour conséquence l'épuisement progressif des adresses IPv4. C'est la raison pour laquelle, l'Arcep souhaite favoriser l'accélération des déploiements du protocole IPv6 en France, au travers notamment de son observatoire.

Les nouveaux outils à disposition de l'Arcep : guichet « pilotes 5G », guichet « start-ups & expérimentations », le « bac à sable réglementaire » ou encore le portail des fréquences libres

L'Arcep a lancé différents chantiers comme le guichet « pilotes 5G » en vue de permettre à l'ensemble des acteurs de la chaine de valeur 5G de s'approprier les cas d'usages et les enjeux futurs de cette nouvelle génération en condition réelle, d'attribuer des fréquences aux acteurs intéressés pour mener des déploiements grandeur nature et obtenir de premiers retours d'expérience pour réfléchir et dessiner les futurs attributions de l'Arcep ; un guichet « Start-ups & expérimentations » pour accompagner les start-ups, entreprises et collectivité dans leur démarche d'expérimentation ; un « bac à sable » réglementaire pour les entreprises qui souhaitent tester une technologie ou un service innovant sans devoir nécessairement respecter l'ensemble du cadre réglementaire qui s'appliquerait normalement ; un portail des fréquences libres dédiées aux bandes sous autorisation générale pour informer les acteurs, recueillir, sur base volontaire, les informations des acteurs de l'IoT ou signaler tout problème de qualité de service sur ces bandes.

Nouveau mode d'intervention : régulation par la *data*

Afin de veiller à la compétitivité du secteur à travers une concurrence favorable à l'investissement, l'Arcep a souhaité faire évoluer ses modalités d'action et d'intervention. Pour exercer ses missions à « l'âge de la multitude », l'Arcep doit être à l'écoute des utilisateurs des réseaux internet fixes et mobiles, savoir détecter les signaux faibles et informer de la manière la plus fine et la plus transparence possible pour **faire de chaque citoyen un micro-régulateur**. La régulation par la *data* complète les outils traditionnels du régulateur. Son principe : utiliser la puissance de l'information afin d'orienter le marché dans la bonne direction. Deux chantiers menés par l'Arcep concrétisent cette approche : les cartes du site « monreseaumobile.fr » qui permettent aux utilisateurs de comparer les couvertures et la qualité de service des réseaux mobiles et la plateforme de signalement « J'alerte l'Arcep », qui donne à chacun le pouvoir de remonter un dysfonctionnement dans ses relations avec les opérateurs. L'Arcep anime par ailleurs un écosystème d'acteurs du *crowdsourcing* pour la mesure de la qualité sur internet. Ces outils, sont amenés à évoluer et être complétés. L'Autorité développe ainsi actuellement un observatoire cartographique de la couverture du territoire par les réseaux et les services fixes pour donner aux consommateurs, aux entreprises et aux collectivités plus de visibilité sur les réseaux actuels et ainsi que sur l'arrivée des nouveaux réseaux. Cette régulation innovante peut également trouver à s'appliquer aux nouvelles frontières réglementaires en collectant des informations et surveillant les pratiques des acteurs du numérique à l'égard des utilisateurs, dans un premier temps. Des outils de régulation souple (« *soft regulation* ») en utilisant l'information en recourant à des formes de restitution telles que la notation pourraient potentiellement discipliner les comportements des acteurs les plus puissants.

Global Symposium for Regulators (GSR-18)
(Geneva, 2018)

Contribution from Comision de Regulacion de Comunicaciones, Colombia
for the GSR-18 consultation

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CONTRIBUTION TO GSR-18
FROM COMISION DE REGULACION DE COMUNICACIONES COLOMBIA

We would like to contribute the following observations on the subject of "regulatory frontiers".

Emerging technologies

- As regulators we need to keep pace with advances in technology. It is time to move on from the traditional telephony-based setup and grasp how the world is moving towards convergence in all aspects: infrastructure, services and users.

- As regulators we need to anticipate the challenges of digital transformation. For this reason our standards relating to quality and broadband must provide incentives for operators to invest in infrastructure that will support AI, IoT and M2M services.

- As regulators we need to work on a set of standards that will facilitate infrastructure sharing, interconnectivity and cross-border roaming.

Economic and business approaches

- Circumstances have changed and disruptive forces such as the power of information and technology, human talent and digital confidence, have led to major advances; physical products are offered as a service; we are moving away from a disconnected society to one in which modularity is the norm; individuality is giving way to multifaceted markets; and vertical integration within a single sector is giving way to convergence between sectors. As regulators we thus need to examine the different forms of vertical integration in order to prevent concentrations and failures in these new emerging markets.

- The telecommunication sector is a booster and enabler of digital transformation in other economies. In recent years we have witnessed a change in the nature of operators' business, a change which is both a challenge and a major opportunity: according to the World Economic Forum the digital transformation of telecommunications is a $2 trillion opportunity for industry and society.[1] This is reflected in the development of new networks, new businesses, and in the redefinition of relations with customers. Regulators need to evolve with the sector.

[1] http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/dti-telecommunications-industry-white-paper.pdf

- Digital transformation requires multi-sector regulation: the challenge concerns all regulators, not just those in the ICT sector. This requires coordination at the highest level in order to harmonize public policies and regulations and direct them towards a single objective – that of successful transition to the digital economy.

- The regulator has evolved from liberalizing markets to facilitating development of the digital economy.

- **Regulatory frameworks for digital transformation**

  - First, it is important to chart and understand these challenges:
    - Collaborative economy
    - Taxation for the digital economy
    - Measurement of the digital economy
    - Protection of personal data
    - Cross-border digital market
    - Protection for digital users in cross-border services
    - Working arrangements
    - Education focusing on the challenges of the digital economy
    - Emerging technologies, including: blockchain, artificial intelligence - machine learning, Internet of Things
    - Data administration and use
    - Connectivity for half the world
    - Network neutrality

  - Regulators can support development of public policy by:

    - Defining the digital skills that are needed to prevent social exclusion and foster employment
    - Indicating the needs of all digital ecosystem players
    - Characterizing the digital consumer
    - Developing recommendations on use, privacy and data protection
    - Quantifying the value of information
    - Developing recommendations on the use and generation of algorithms.

Simposio Mundial para Organismos Reguladores (GSR-18)
(Ginebra, 2018)

Contribucion de Comision de Regulation de Comunicaciones Colombia para GSR-18 consultacion

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CONTRIBUCIÓN GSR 2018
DE LA COMISION DE REGULACION DE COMUNICACIONES COLOMBIA

Mediante el siguiente escrito nos permitimos hacer las siguientes contribuciones entorno a las "Fronteras Reglamentarias"

Tecnologías emergentes

- Los reguladores debemos ir al ritmo que avanza la tecnología. Ya es hora de salirnos del molde del mundo de la telefonía y entender cómo el mundo va hacia la convergencia en todos los aspectos: infraestructura, servicios y usuarios.

- Los reguladores debemos adelantarnos a los retos que conlleva la transformación digital, por esta razón es importante que nuestras normas relacionados con calidad y banda ancha incentiven en los operadores la inversión en infraestructura que soporte los servicios en IA, IoT, M2M.

- Los reguladores debemos trabajar en para expedir normas en conjunto que permitan la compartición de infraestructura, interconexión y el roaming transfronterizo.

Enfoques económicos y empresariales

- La realidad cambió, y fuerzas disruptivas como el poder de la información y la tecnología, del talento humano, y de la confianza digital, han producido grandes avances, los productos físicos se ofrecen como servicio, pasamos de una sociedad desconectada a una donde la modularidad es la regla, la individualidad desaparece para darle paso a los mercados de varios lados, las integraciones verticales de un solo sector ceden ante la convergencia entre sectores. Es así que los reguladores, debemos analizar las integraciones verticales para evitar concentraciones y fallas en estos nuevos mercados nacientes.

- El sector de telecomunicaciones es un jalonador y habilitador de la transformación digital en otras economías. En los últimos años hemos visto un cambio en el negocio de los operadores que, si bien representa un reto, también es una gran oportunidad: según el Foro Económico Mundial, la transformación digital de las telecomunicaciones representa una oportunidad para la industria y la sociedad de 2 trillones de dólares1. Ello se refleja en el desarrollo de nuevas redes, el desarrollo de nuevos negocios y en redefinir su relación con sus clientes. Es así que los reguladores debemos evolucionar como lo hace el sector.

[1] http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/dti-telecommunications-industry-white-paper.pdf

- La transformación digital implica regulación multisectorial: el reto no sólo es de los reguladores del sector TIC, sino de todos los reguladores. Esto requiere de una coordinación al más alto nivel para lograr armonizar las políticas públicas y regulaciones que vayan enfocadas con un solo objetivo: encaminarse con éxito hacia la economía digital.

- El Regulador evoluciono de liberalizar mercados a ser un facilitador en el desarrollo de la economía digital.

- **Marcos reglamentarios para la transformación digital**

  - Primero hay que mapear y conocer estos retos
    - Economía colaborativa
    - Régimen tributario para la economía digital
    - Medición de economía digital
    - Protección de datos personales
    - Mercado digital transfronterizo
    - Protección de usuarios digitales en servicios transfronterizos
    - Régimen laboral
    - Formación académica enfocada hacia los retos de la economía digital
    - Tecnologías emergentes como: blockchain, Inteligencia artificial – machine learning, Internet de las cosas
    - Administración y uso de los datos
    - Conectividad para la mitad del mundo
    - Neutralidad de red

  - Los reguladores podemos apoyar el desarrollo de Política Pública así:

    - Definiendo las habilidades digitales necesarias para evitar exclusión social y fomentar el empleo.
    - Mostar las necesidades de todos los actores del ecosistema digital
    - Caracterizar el consumidor digital
    - Desarrollando recomendaciones sobre el uso, privacidad, y protección de los datos
    - Cuantificar el valor de la información
    - Desarrollar recomendaciones entorno al uso y generación de algoritmos

Global Symposium for Regulators (GSR-18)
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Contribution from National Telecom Regulatory Authority, Egypt for the GSR-18 consultation

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Global Symposium for Regulators (GSR) 2018

Best Practice Guidelines Consultation

On

"New Regulatory Frontiers to achieve Digital Transformation"

From

National Telecom Regulatory Authority, Egypt

Emerging technologies - including 5G, artificial intelligence, IoT, cloud services, big data analytics, etc. – are reshaping our life and ushering new and competitive opportunities, challenges, and risks. These technologies accelerated the pace at which today's businesses are evolving and the degree to which businesses innovate, operate, and serve customers. Accordingly, with such powerful technologies on the way, all stakeholders need to rethink how they value it.

Significantly, 5G represents an overhaul in the way that networks are run and managed. 5G wants to be the disruptive generation, the generation that no longer only caters to the needs of mobile operators and consumer communications, but which opens up new prospects and enables an extremely wide diversity of applications and use, unified within a single technology. However, in contrast to the hardware-based networks of the past, the technology takes advantage of virtualization and cloud systems, leaving it more vulnerable to breaches if not properly secured.

The Internet of Things (IoT) will fundamentally change all industries, from agriculture to transportation to healthcare. In the next few decades, everything in our world will become connected. Recent studies expects municipalities around the world to increase their spending on IoT systems, generate tremendous returns, and create around $241 billion in economic value for these cities by 2019. However, IoT will also generate immense amounts of data, which

will put pressure on the Internet and force us to come up with more efficient ways to transmit, store, and secure this data.

Policymakers all over the world are now recognizing these challenges and working to implement reforms that will protect competition and consumers without impeding social and economic progress. In the digital world, regulators need to be flexible to keep up with rapid changes in the market, open to new ideas, aware of financial aspects of the business, and understand of consumer issues.

In doing so, it is important for policymakers to provide transparent, innovative and pro-investment policy frameworks. Regulations should be functionality-based rather than based on technology, industry structure or legacy regulatory regime. In addition, regulations need to be flexible to accommodate rapidly changing markets and technologies and create enough regulatory confidence for companies to take risks.

New regulatory regimes should differ from previous ones in the emphasis they place on consumer protection and access to broadband networks. Regulators must oversee an increased range of services, delivered over multiple broadband and converged networks that form the digital ecosystem. More than ever before, regulators are now being asked to protect consumers from misusing of information and personal data, inappropriate content, and fraudulent online activities.

Standards and specifications will certainly help on the way to securing emerging network and services. Robust cybersecurity must include the network, the device, and the data, taking into account the unique issues that emerging technologies and networks bring.

Regulatory frameworks should encourage efficient management of scarce resource and innovative spectrum and infrastructure sharing models given the heavy investment required to deliver emerging technologies.

Policymakers should also avail incentives in order to encourage corporates at all stages of growth and expansion. A special emphasis should be placed on small businesses and SMEs, which cannot afford long and costly efforts but nonetheless are the backbone of the economy.

Finally, through effective cooperation and collaborative regulations among all stakeholders nationally, regionally, and internationally, we can overcome the negative activities occurring in the digital ecosystem and maximize the immense benefits it can bring to people around the world.

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GSR 2018
Contribution from
Telecommunications Regulatory Commission (TRC)
Jordan

Digital Transformation can be described as a new ICT ecosystem for things, machines and Artificial Intelligence (AI), which has a tremendous effect on all sectors and daily lives, providing on-going business opportunities, enhancing delivery of public services, while improving the way citizens interact with their governments.

To achieve this desirable transformation, policy makers and regulators play a major role that promotes competition, foster continued technological and service innovation, and encourages investments in broadband infrastructure, services and new technology applications.

The role of Governments (policy makers) and Regulators can be described through the following major points;

I. Emerging Technologies (M2M, IoT, AI, 5G…etc.) :

Governments and Regulators should work together to;

- Encourage entrance of Emerging technologies in their countries.
- Prepare healthy and proper environment for these Emerging technologies.
- Prepare secure and reliable ICT infrastructure and access to and delivery of digital services.

II. Economic and business approaches:

Governments are required to:

- Support SMEs through reducing barriers to entry such as complicated Licensing regimes, taxation regimes, and by supporting Intellectual Property rights, Business Incubators, and Economic Incentives that are necessary for Economic and Business development.

- Support Economic and business approaches for the different elements in the value chain through applying Free Market Principles and reducing market intervention by the regulators, unless there is a market failure or special

requirements concerning scarce resources (Numbering, Spectrum and Right of way).

III. Regulatory frameworks for Digital Transformation:
This requires:

a) The governments (as policy makers) to identify new collaborative approaches, developing cross-sectorial digital policies and strategies, and defining innovative regulatory tools and sandboxes. For Example,

- Drafting Law(s) related to General Data Privacy and Security, Cyber-Security that are necessary for all Emerging Technologies (AI, IoT, 5G, M2M …etc.).
- Require regulators to modify licensing regimes to cope with all Emerging Technologies (AI, IoT, 5G, M2M …etc.).
- Work with other Utilities Governmental Authorities, such as; Power, Electricity, Water, Sewage, and Transportations, and other supportive Ministries such as; Finance, Planning, Municipalities …etc.

b) The regulators to work on and modify the Regulatory Tools Kits to cope with this Digital Transformation. The Regulatory Tools Kit includes the following regulations that are required to facilitate the introduction of new services and the reduction of barriers to entry for the new Emerging Technologies (M2M,IoT, AI, 5G …etc):

1. The National Numbering Plan.
2. The Interconnection Regulations.
3. The Licensing Regime.
4. The Spectrum polices.
5. The Quality of Service Regulations.
6. Consumer Protection Regulations in terms of data privacy and security.
7. Conformance and Interoperability requirements regarding approving genuine (AI, M2M, IoT) products and avoiding counterfeit products.
8. Telecom Network Security, which is considered to be one of the most important issues in the Emerging Technologies (M2M, IoT, AI, 5G …etc.).

TRC experience:

TRC believes that its current existing Licensing Regime is capable of accommodating new technologies such as IoT/M2M since it is a technology neutral regime and thus any qualified party can apply to this existing licensing regime.

TRC will keep encouraging investment in new technologies and networks and will revisit the requirement of additional spectrum for access services to meet the connected devices spectrum requirements by M2M and IoT.

TRC will also make all resource available to provide information and help for those seeking the provision of IoT/M2M services.

TRC has published an updated Green paper document on its website with the recommendation about major criteria that affect IoT adoption in Jordan, in specific: spectrum, security, privacy, competition and legal issues.

TRC is currently reviewing its regulations to evaluate to what extent they meet the requirements of the new emerging technologies and applications.

TRC is in the process of consultation with the stakeholders to set up a regulatory framework for OTT services and applications.

TRC endeavours to develop and promote favourable policies and regulatory steps to ensure a fair, transparent, stable, predictable and non-discriminatory environment that promotes competition, fosters continued technological and service innovation, and encourages investments in broadband infrastructure, services and new technology applications.

TRC ensures that all stakeholders are informed about potential security and privacy challenges that they may face with online services and have access to timely and accurate information, including information about speeds and data traffic management.

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Contribution from «Autorité Malienne de Régulation des Télécommunications/TIC et des postes (AMRTP)» for the GSR-18 consultation

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CONSULTATION ON BEST PRACTICES REGARDING THE NEW REGULATORY FRONTIERS SERVING DIGITAL TRANSFORMATION

FROM AUTORITÉ MALIENNE DE RÉGULATION DES TÉLÉCOMMUNICATIONS/TIC ET DES POSTES (AMRTP)

The digital economy unquestionably offers consumers new and exciting possibilities, as well as fascinating challenges on which regulators need to focus particular attention.

Consumers face new challenges linked to the broad availability of new information and communication technologies (ICTs) in the form of numerous online and offline products and services (devices, equipment, applications etc.). In order to protect users in this open, transparent and inclusive digital world, it is essential to define in advance new policies and regulatory measures to complement solutions and initiatives involving co-regulation and self-regulation with a view to educating, raising the awareness of and empowering consumers and promoting accountability among them.

It would be helpful to achieve a balance between the rights of all stakeholders in this new digital process to ensure that everyone, users, businesses and governments alike, can enjoy the benefits of digital. Consequently guidelines on best regulatory practices serving digital transformation should be developed and approved in order to protect consumers' and governments' interests, while ensuring equal opportunity for existing and new market players, while promoting a collaborative and harmonized regulatory approach.

1 Regulatory framework for digital transformation

Governments must continue to play a leading role in the protection of consumers at all levels through the development of dedicated legislation and government policies, such as national ICT and universal access policies, specific consumer protection legislation, cybersecurity and cybercrime legislation, including on child online protection, regulations on quality of service and electromagnetic exposure limit regulations, as well as complementary initiatives, such as guidelines on prohibited acts and best practices in tackling various issues, such as hacking, transmission of personal data (between service and/or content providers) and online fraud.

In addition, measures can be prioritized to establish self-adaptive regulatory mechanisms in order to ensure a secure and reliable cyberspace. Cross-border initiatives might also be developed to foster greater cooperation and the implementation of complementary policies on an international scale.

Regulations should redefine legitimate consumer rights and interests, which include but should not be limited to: access to publically available information and services over the Internet, quality of service, privacy, confidentiality and protection of personal data, the possibility to opt-out of functions and services; the right to file a complaint; number portability; and intellectual property rights. Regulators and policy makers should strive to protect those rights universally and equally within the scope of laws and regulations.

To ensure the proper and effective implementation of measures, regulators and policy makers must establish effective mechanisms for cooperation (such as memoranda of cooperation) with dedicated consumer protection authorities, service providers and other relevant bodies at the

national, regional and international levels. In doing so, it is crucial to define roles and responsibilities clearly and to share information and resources, as appropriate.

Furthermore, multinational cooperation and harmonization are required in order to deal effectively with cross-border phenomena such as issues related to content and services provided by “over-the-top” players (OTTs), such as privacy, online fraud and cybercrime related to e-commerce and social media activities. Likewise, specialized regional entities can be empowered to deal with matters affecting multiple countries in a harmonized and focused manner.

Thus, establishing an integrated legal system for effectively protecting personal data and information is paramount for the digital world to thrive.

OTT service providers, and social media-based service providers in particular, are committing themselves to greater transparency in data processing and request the consent of their customers before sharing their data and provide users with the option to clearly choose the nature (public or private) of their communications. Users should be able to make informed decisions about the degree to which their data can be accessed by others and the use that third parties may make of that data.

The online world exposes children and youth to specific risks, notably in terms of adult-only content and sexual predation. Thus, it is important to supplement existing legal tools with a series of measures that include public advocacy, dubious content alerts and industry self-regulation initiatives while engaging further efforts in consumer education for targeted user groups, such as women, children, youth, parents and teachers.

Establishing a cybersecurity emergency response team (CERT) can be extremely beneficial to consumers in terms of providing, inter alia, an early warning service on threats and possible cyberattacks to both the general public and government agencies.

2 Commercial and economic approach

Legal and regulatory frameworks need to be kept open, forward-looking, neutral and flexible to allow leveraging on new technologies, innovative services and new business practices, such as cloud computing, social media, mobile broadband, “Big Data”, and the Internet of Things, for users to benefit from a variety of services provided at all levels of the ICT markets.

With regards to the storage and transmission of information, regulated telecom and ICT market players and OTT service providers not subject to regulation should be treated on an equal footing when it comes to the enforcement of legal instruments concerning the protection of consumers and their data.

Private sector enterprises have a vital role to play not only in ensuring transparency and accountability in their business practices, but also in willingly adopting measures geared towards protecting the rights of consumers, such as protecting personal data, fighting unfair and misleading mass advertising, spam, the permanency of data and child online protection.

Regulators should encourage the development of Codes of Practice for service providers, including OTTs, to ensure that content, offer, promotion and operation of services comply with all the rules of fair and healthy competition.

It is good practice to legally prohibit the use of general terms and conditions that provide to the customer’s detriment. Furthermore, unjustified and disproportionate differences between the

rights and obligations arising under the contract for ICT services should be prohibited irrespective as to whether or not it was concluded online.

There is a need to draw up transparent rules on the terms and conditions for concluding contracts online, the form of such contracts as well as the related procedures (e.g. user identification and order confirmation, cancellation and termination).

3 New technologies

A series of measures can be taken to ensure that the consumer has easy, reliable and affordable access to ICT services and web content. This could involve developing and regularly reviewing minimum quality of service standards and specifications of new technologies and services; monitoring the activities of network service providers; regularly assessing the quality of telecom/ICT services and publishing the results.

ICT regulators should be proactive in leading promotional, educational and awareness raising campaigns for stakeholders on the benefits and challenges of a permanently connected broadband world. At this stage, it is important to recognize the need to protect and educate consumers with different access needs who may be particularly vulnerable to deceptive commercial practices or have difficulties understanding proposed terms and conditions of service (e.g., the illiterate, the disabled, children and youth). In addition, a bottom-up approach targeted at citizens through the involvement of schools, community centres and NGOs – particularly an approach supported by social media – could greatly contribute to raising consumer awareness. Also, it is necessary to create discussion forums bringing together all stakeholders, including representatives of consumer associations, allowing consumers to take part in the decision making process and the development of policies and regulations. In such an approach, consumers are able to make themselves heard in an ongoing dialogue.

Regulators need to ensure that all service providers make available timely and accurate information on their products and services in a clear, transparent and comparable manner that is conducive to rational decision making. Consumers would thus be in a position to understand not only their rights and obligations, but also the nature of the services, including the prices, and how they are calculated, and the quality of service provided. All regulations related to the consumer's right to information should be systematically and regularly updated so that they can be enforced in practice.

ICT regulators are increasingly seen as a partner to market players and an advocate for consumers' rights. Their decisions are taken based on evidence and technical expertise to foster access to and use of ICTs, competitiveness of the markets and overall social and economic development.

It is, therefore, necessary to reconsider the mandate of ICT regulators with a view to strategically strengthening their enforcement power to respond to the challenges of the dynamic digital environment both through collaboration with structures such as banks, central banks, competition and price and quality control services etc. and through the harmonization of national texts with international, regional and subregional texts.

Bamako, 21 May 2018

Issiaka Alhabibou

Colloque mondiale des régulateurs (GSR-18)
(Genève, 2018)

Contribution d'Autorité Malienne de Régulation des Télécommunications/TIC et des postes (AMRTP) pour la GSR-18 consultation

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CONSULTATION RELATIVE AUX BONNES PRATIQUES SUR LES NOUVELLES FRONTIERES REGLEMENTAIRES AU SERVICE DE LA TRANSFORMATION NUMERIQUE

Contribution de l'Autorité Malienne de Régulation des Télécommunications/TIC et des Postes (AMRTP)

Incontestablement, l'économie numérique ouvre aux populations des nouvelles perspectives très prometteuses, en même temps que des défis passionnants, auxquels les régulateurs devront accorder une attention particulière.

Les populations font face à des nouveaux enjeux liés à la mise à disposition généralisée des nouvelles technologies de l'information et de la communication (TIC), sous forme de nombreux produits et services en ligne ou non (appareils, équipements, applications…). Pour protéger les utilisateurs de ce nouveau monde numérique ouvert, transparent et inclusif, il est impératif de définir par avance des nouvelles politiques et des mesures réglementaires, en complément de solutions et d'initiatives faisant appel à la coréglementation et à l'autorégulation en vue d'éduquer, de sensibiliser et de responsabiliser les populations.

En effet, il est utile de concilier les droits de toutes les parties prenantes dans ce nouveau processus numérique pour que tous, usagers comme entreprises et gouvernements bénéficient des avantages du numérique. En conséquence, il y a lieu de définir et approuver des lignes directrices relatives aux bonnes pratiques réglementaires au service de la transformation numérique afin de protéger les intérêts des consommateurs, gouvernements tout en veillant à assurer l'égalité des chances entre les concurrents implantés sur le marché et les nouveaux concurrents tout en encourageant une approche réglementaire collaborative et harmonisée.

1- Le Cadre réglementaire de la transformation numérique :

Les Etats doivent continuer à jouer un rôle de premier plan dans la protection des citoyens à tous les niveaux, en élaborant des législations et des politiques publiques adaptées, par exemple des politiques nationales en matière de TIC et des politiques d'accès universel, une législation destinée à protéger le consommateur, une législation sur la cybersécurité et sur la cybercriminalité, y compris sur la protection en ligne des enfants, la qualité de service et une réglementation limitant l'exposition aux champs électromagnétiques, et d'autres initiatives complémentaires: lignes directrices sur les actes interdits et bonnes pratiques pour le traitement de diverses questions (piratage informatique, transmission de données personnelles (entre fournisseurs de services et/ou de contenus) et fraude en ligne).

En outre, il est possible d'établir des priorités entre ces différentes mesures pour mettre en place des mécanismes réglementaires qui s'adaptent d'eux-mêmes afin de garantir la sécurité et la fiabilité du cyberespace. Les initiatives transfrontalières peuvent être développées pour encourager davantage la coopération et la mise en œuvre des politiques harmonisée à l'échelle internationale.

La réglementation devrait redéfinir les droits et intérêts légitimes des citoyens, entre autres les suivants (la liste n'est pas exhaustive): accès aux informations et services mis à la disposition du public sur l'Internet, qualité de service, respect de la vie privée et de la confidentialité et protection des données personnelles, possibilité de refuser des fonctionnalités et des services; droit de recours; portabilité des numéros et droits de propriété intellectuelle. Les régulateurs et les décideurs doivent s'efforcer de protéger ces droits universellement et à égalité, dans les cadre des législations et réglementations existantes.

Pour une application correcte et efficace des différentes mesures, les régulateurs et les décideurs doivent mettre en place des mécanismes efficaces de coopération (exemple, mémorandums de coopération), d'entente avec les organismes chargés de la protection du consommateur, les prestataires de services et d'autres organismes compétents aux niveaux national, régional et international. Dans cette démarche, il est fondamental de définir clairement les rôles et responsabilités et de partager les informations et les ressources, selon les cas.

Par ailleurs la nécessité d'une coopération et d'une harmonisation entre les pays pour lutter efficacement contre les phénomènes transfrontalières tels que les problèmes liés à la fourniture de contenus et de services par les opérateurs "over-the-top" (OTT), par exemple le respect de la vie privée, la fraude en ligne et la cybercriminalité dans le commerce en ligne et les médias sociaux. De même, des entités régionales spécialisées pourraient être habilitées à traiter des questions communes à plusieurs pays de manière ciblée et harmonisée.

Donc, il est impératif, pour assurer la prospérité du monde numérique, de mettre en place un système juridique intégré qui protège efficacement les données et informations à caractère personnel.

Les fournisseurs de services OTT, et en particulier les fournisseurs de services utilisant les médias sociaux, s'engagent en faveur d'une plus grande transparence des procédures de traitement des données, obtiennent expressément le consentement de leurs clients avant de publier les données à leur sujet et leur donnent la possibilité de choisir clairement le statut, privé ou public, de leurs communications. Les utilisateurs devraient être en mesure de prendre des décisions éclairées quant au degré d'accessibilité des données les concernant à d'autres personnes et à l'usage que des tierces parties peuvent en faire.

L'univers en ligne expose les enfants, les jeunes et les femmes à des risques spécifiques, notamment à des contenus qui ne sont pas de leur âge et à des prédateurs sexuels. Il importe donc, de compléter les outils juridiques existants par une série de mesures qui incluent des campagnes de sensibilisation du public, des alertes en cas de contenu douteux et des initiatives d'autorégulation du secteur, tout en poursuivant les efforts d'éducation des associations des consommateurs à destination des groupes cibles comme les femmes, les enfants, les jeunes, les parents et les enseignants.

La création d'équipe d'intervention rapide en cas d'urgence informatique (CERT) pourrait être très bénéfique pour les utilisateurs en ce sens qu'elle comprendrait, entre autres, un service d'alerte avancée prévenant le grand public et les organismes gouvernementaux des menaces et des éventuelles cyberattaques.

2- L'Approche économique et commerciale

Les cadres juridiques et réglementaires doivent conserver leur caractère ouvert, tourné vers l'avenir, neutre et souple pour pouvoir tirer parti des technologies nouvelles, des services innovants et des nouvelles pratiques commerciales telles que l'informatique en nuage, les médias sociaux, le large bande mobile, les "big data" et l'Internet des objets, afin que les utilisateurs profitent des divers services offerts à tous les niveaux sur les marchés des TIC.

En ce qui concerne le stockage et la transmission de l'information, les acteurs du secteur des télécommunications et des TIC assujettis à réglementation et les prestataires de services OTT non soumis à réglementation devraient être traités à égalité pour ce qui est de la mise en application des instruments juridiques relatifs à la protection des usagers et de leurs données.

Les entreprises du secteur privé ont un rôle crucial à jouer: non seulement elles doivent assurer la transparence et la responsabilité dans leurs pratiques commerciales, mais aussi elles doivent adopter volontairement des mesures visant à protéger les droits des usagers, par exemple concernant la protection des données personnelles, la lutte contre la publicité de masse déloyale et fallacieuse, le spam, la pérennité des données et la protection en ligne des enfants.

Les régulateurs doivent encourager la rédaction des codes de bonnes conduites et pratiques destinés aux prestataires de services, OTT compris, afin de garantir que les contenus, les offres, les promotions et le fonctionnement même des services respectent toutes les règles d'une concurrence loyale et saine.

L'interdiction légale de l'utilisation des modalités et conditions générales rédigées au détriment du consommateur relève des bonnes conduites et pratiques. En outre, il faudrait interdire les différences injustifiées et disproportionnées entre les droits et obligations aux

termes du contrat portant sur des services TIC que celui-ci ait été conclu en ligne ou autrement.

La nécessité de formuler des règles transparentes relatives aux modalités et conditions régissant la conclusion des contrats en ligne, la forme de ces contrats ainsi que les procédures connexes (par exemple, identification de l'utilisateur, confirmation, annulation ou résiliation de commande).

3- Les technologies nouvelles

Plusieurs mesures peuvent être prises pour garantir que les citoyens, aient facilement un accès fiable et abordables aux services TIC et aux contenus sur le web. Il peut s'agir, par exemple, d'élaborer et de revoir périodiquement les normes de qualité de service minimale et les spécifications des nouvelles technologies et des nouveaux services; de surveiller les activités des fournisseurs de services de réseau; d'évaluer à intervalles réguliers la qualité des services de télécommunication/TIC et de publier les résultats de cette évaluation.

Les régulateurs des TIC devraient faire preuve de dynamisme et mener des campagnes de promotion, informer, encourager et sensibiliser les parties prenantes aux avantages et enjeux d'un univers large bande connecté en permanence. A ce stade, il importe de reconnaître la nécessité de protéger et d'éduquer des utilisateurs qui n'ont pas tous les mêmes besoins en matière d'accès, et peuvent être particulièrement vulnérables aux pratiques commerciales trompeuses ou éprouver des difficultés à comprendre les modalités et conditions du service proposé (par exemple, personnes illettrées, personnes handicapées, enfants et jeunes). De surcroît, une approche partant de la base et centrée sur les citoyens, avec la participation d'écoles, de centres communautaires et d'ONG, en particulier s'appuyant sur les médias sociaux, pourrait contribuer pour beaucoup à mieux sensibiliser l'utilisateur. Aussi, créer des tribunes de discussion réunissant des parties prenantes, dont des représentants des associations des consommateurs, qui permettront à ces derniers de prendre part à la prise de décisions et à l'élaboration des politiques et règlements. Ainsi, les consommateurs pourront faire entendre leur voix dans le cadre d'un dialogue permanent.

Les régulateurs doivent s'assurer que tous les prestataires de services mettent rapidement à disposition des informations exactes sur leurs produits et services, de manière claire, transparente et comparable, propice à la prise de décisions rationnelles. Les consommateurs seraient ainsi en mesure de comprendre non seulement quels sont leurs droits et responsabilités mais aussi quelle est la nature des services, y compris les prix et, comment ils sont calculés, et quelle est la qualité de service fournie. Toutes les réglementations liées au droit des consommateurs à l'information doivent être systématiquement et régulièrement mises à jour pour pouvoir être applicables dans la pratique.

Le régulateur des TIC est de plus en plus considéré comme un partenaire des concurrents sur le marché et un défenseur des droits des consommateurs. Ces décisions sont prises sur la base des faits et des compétences techniques, l'objectif étant d'encourager l'accès aux TIC et l'utilisation de ces technologies, la compétitivité des marchés et, plus généralement, le développement socio-économique.

Pourquoi, il est nécessaire de repenser le mandat des régulateurs des TIC en vue de renforcer stratégiquement leurs capacités de mise en œuvre face aux enjeux de l'environnement numérique dynamique tant par la collaboration avec des structures comme les banques, banques centrales, les services de concurrences, de contrôles des prix et qualités… que par l'harmonisation des textes nationaux aux textes sous régionaux, régionaux et internationaux.

Bamako, le 21 mai 2018

Issiaka Alhabibou

Global Symposium for Regulators (GSR-18)
(Geneva, 2018)

Contribution from Federal Institute of Telecommunications, México for the GSR-18 consultation

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New regulatory frontiers to achieve Digital Transformation
Federal Institute of Telecommunications – México

The Federal Institute of Telecommunications (IFT, by its acronym in Spanish), in its capacity as regulator and competition authority in the telecommunications and broadcasting sectors in Mexico, presents this contribution with a great interest to participate in the international collaboration and study to identify the practices and tools that facilitate the materialization of the benefits of Digital Transformation. The emphasis is on the regulatory frameworks for digital transformation.

Digital Transformation

This term refers to a multidimensional and global event that can be defined in many ways. Therefore, without being exhaustive and for purposes of this contribution, Digital Transformation is understood as the process through which digital technologies are integrated and transform our activities and, even, our culture. This process transforms the productive chains and distribution of value, the business models and the relations between economic agents and people at accelerated rates.

In this process, regulators are called to facilitate the process of Digital Transformation in conditions that allow taking advantage of the benefits and reducing the risks' incidence.

It is worth to point out that some of the main challenges that the governments need to face, and are currently facing regarding the digital transformation, are listed in the document "OECD Digital Economy Outlook 2017: Setting the Foundations for Digital Transformation". Currently, governments should contribute with each other and share their best practices on the awareness, implementation and enforcement of the digital transformation as well as working on the skills, training and education of their citizens. It is very important to be coordinated and foment the participation among the governments to improve:

- Policy design measures
- Laws or regulation
- Technical, including standards and interoperability
- ICT adoption, business digitalization, innovation
- Policy investment or funding
- Private investment or access to finance
- Trust, including privacy, security and consumer protection.
- Laws and regulation

In addition, the report explain the priorities that the governments should have and coherence with their objectives. OCDE, list the main digital policy objectives as follows:

- Strengthening e-government services
- Further developing telecommunication infrastructure
- Promoting ICT-related skills and competences
- Strengthen security
- Enhancing access to data, including PSI and OGD
- Encouraging the adoption of ICT by businesses and SMEs in particular
- Encouraging ICT adoption in specific sectors e.g. healthcare, education
- Strengthening privacy
- Strengthening digital identities
- Promoting ICT sector, including internationalization
- Promoting e-commerce across the economy
- Tackling global challenges as internet governance, climate change

- Strengthening consumer protection
- Advancing e-inclusion
- Preserving Internet Openness

By other hand, according with to the "2017, Internet Society Global Internet Report" We are on the verge of a transformation technology and that will cause the disruption of economic structures and will oblige all companies to think and act like companies technologies, as billions of devices and sensors connect to the network. The resulting hyperconnected Internet economy. All of us, will see the transformation of traditional industries, the flourishing of emerging economies and new market leaders driving innovation and entrepreneurship around the world.

The report shows that the economic transformation driven by automation and data to large scale (big data) will generate new challenges around the displacement of jobs and economic inequality. However, in the history there is a history of transformations of economic activities at a similar scale called "The Fourth Industrial Revolution". And although it does not exist consensus on the speed with which the change, there is widespread agreement, and even anxiety, about the fact that on the horizon important changes are foreseen that will have consequences for the whole society.

In this sense, the IFT considers that the main challenge for the regulation in the Digital Transformation process, is doing enough to reduce the risks of negative impacts on society, without imposing unnecessary restrictions.

The approach adopted by the IFT on Regulation and Digital Transformation, consists mainly of: (i) removing barriers to entry and expansion; (ii) impose ex ante and/or ex post regulations to the extent that is determined necessary and opportune to prevent or reduce the risks to society; (iii) promote dialogue and participation of other authorities and agents in the review and regulatory design; and (iv) adopt the principles of competition, net neutrality, convergence, competitive neutrality and administrative simplification.

Regulatory frameworks for digital transformation

Digital Transformation is closely linked and depends on the development of ICT and technological convergence. Under this premise, the Mexican Government began a large-scale structural reform in 2013 with the purpose of creating a favorable converging legal and institutional framework for the development of ICT networks and services, whose recent results include:

a) Reduction in barriers to entry and expansion. The statutory restrictions on foreign investment were eliminated and a participation of up to 49% in broadcasting and 100% in telecommunications is allowed.

   Also, given the accelerated growth in demand for radio spectrum mainly for IMT, the Institute has increased the availability of this resource from 222 MHz in 2013 to 449 MHz through public tenders. In addition, actions are taken to reorder some bands and enable others, which has positioned Mexico as one of the countries that has identified the most IMT spectrum. Taking into consideration the proximity in the massive adoption of digital technologies - IoT, 5G, IA and M2M among others - it is seen as a necessary practice to work in each jurisdiction and between jurisdictions to enable the radio spectrum in high bands, in order to be able to face the estimated demands.

b) A review of the regulatory framework with a convergent and dynamic vision. In 2014, for the first time, a law applicable to the telecommunications and broadcasting sectors was issued, recognizing their convergence. Based on this new legal framework, the Institute has conducted revisions of the existing regulatory framework to, when deemed necessary, modify it or issue new provisions that avoid unjustified regulatory asymmetries between actors under equal conditions - before the Digital Transformation process, it is possible that the identification of agents under equal conditions becomes an increasingly complex task.

Among the topics currently under analysis there are standouts like net neutrality and the traffic management protocols. Likewise, the process of migration from the IPv4 protocol to the IPv6 is promoted, allowing the growth of the Internet, especially given the proximity in the mass adoption of IoT, AI and M2M that will boost the demand of IP addresses for each machine and device connected to the network. In addition, the assessment of the regulatory inventory applicable to traditional infrastructures, products and services that are increasingly facing competitive pressures from innovative digital products, services and platforms. Collaboration —national and supranational— is maintained with other authorities in the field of cybersecurity and the protection of privacy and personal data, regarding the worldwide array of digital platforms.

c) Transversal application of the policy and principles of competition, with a dynamic and prospective vision. As of 2013, the Institute was established as the convergent authority on economic and regulatory competition in the telecommunications and broadcasting sectors, providing it with a vast set of ex ante and ex post application tools.

In its regulatory practice, the IFT has implemented the principles and policy of competition transversally in the telecommunications and broadcasting sectors, thus simplifying the design and implementation of the regulations, being able to select the most effective ex ante or ex post measure, to address a specific risk and, thereby, preventing very early or late participations that may inhibit the dynamism of Digital Transformation.

Likewise, the economic competition analysis or evaluation takes into consideration that the borders between traditional markets are blurring and new services and business models emerge, generating competitive pressures to traditional services. This prospective approach allows incorporating the effects in the competition dynamics of the emergence of new alternatives that can modify the conclusions of the analysis and regulatory design.

d) Control of market power, through the imposition of asymmetric regulation on the dominant economic agents in a market or preponderant in a sector, as well as before the existence of essential inputs. The Constitution and the sectoral and competition laws jointly provide for the possibility of declaring the existence of an economic agent with substantial power in a market and of essential inputs, but also those who hold a preponderant position in a sector.

The preponderance figure in a sector is unique in the world and has allowed the Institute to be more effective in imposing asymmetric measures to the same economic agent that holds a position of power in various markets. These measures can be maintained, modified or suppressed, subject to a biennial review in which their impact on the competition conditions of the regulated activities is evaluated. These comprehensive assessments of multiple markets allow us to evaluate the interrelations to identify where and in what manner regulatory intervention is necessary. In a nutshell, the imposed measures include mandatory Access to wholesale services and sharing of the passive infrastructure (i.e. poles, sites and towers).

In 2018, as part of the measures imposed to the preponderant economic agent in telecommunications, the Institute ordered a functional separation (legal) in the fixed services to separate the provision of wholesale access services to the local network, local leased lines and to the associated passive infrastructure, in order to guarantee the provision of these access services under non-discriminatory conditions. Likewise, technical and economic replicability obligations were established to guarantee the equivalence of inputs.

Prospectively, it will be necessary to identify viable alternatives for network sharing taking into consideration existent and new generation networks and platforms, as well as market drivers and conditions.

e) The State's participation in the development of infrastructure, subject to the Competitive Neutrality principle guaranteeing the other participants power to compete under equal conditions.

In this regard, the *Red Compartida* (a wholesale network) is a project promoted by the Mexican Government with the purpose of reducing the digital gap, improving the accessibility and availability of ICTs and constituting a provider of wholesale services that promotes competition in the sector. It is developed based on a public-private partnership agreement (APP, by its acronym in Spanish). The State contributed 90 MHz of radio spectrum and the possibility of using dark fiber, while a private consortium provides the necessary investment for the deployment of the network, subject to compliance with coverage goals of 92.2% and the use of technology 4.5 G- LTE or higher. The purpose of this project is to increase access to high-speed, high-capacity services and to encourage the implementation of digital inclusion strategies, nationwide. The Institute and the Ministry of Telecommunications and Transportation participated in its design; and the APP contract was assigned through a public and open tender process, subject to a broad public consultation process and attending the doubts of the interested parties. This project obtained in 2017 the ICT Excellence Award granted by the World Information Technology & Services Alliance (WITSA) "as it reflects a commitment on behalf of the Mexican government and the private sector to embrace the Digital Age for all its citizens".[1]

f) The constitution of the Telecommunications Information Bank (BIT, by its acronym in Spanish),[2] which is an open access interactive portal that allows consulting, analyzing, exploring and downloading disaggregated data on telecommunications provided by operators in standardized and comparable forms, at the request of the IFT. This bank provides reliable quantitative information to facilitate the decision-making of the different agents that participate in the sector and to strengthen the design of public policies. This project received in 2017 the Good Practices prize, granted by the National Evaluation Council of Social Development Policy of México.

g) Empowerment of users. The IFT has enabled various resources to promote ICT literacy, which includes the Mobile Unit project, [3] equipped to promote the rights of audiences and users. Probably this aspect is one where coordination is significantly required among the authorities, to ensure the effective protection of users' privacy and security in a digital environment, while optimizing the possibilities of benefiting from this transformation.

h) Participation in the regulatory process. The Digital Transformation is a multidimensional event whose development requires consistent, harmonious, complete and integrated policies and regulations to generate the levels of reliability that provide predictability and legal certainty. Under this premise, the IFT generally submits its regulatory projects to public consultation processes that, from 2013 to date, total more than 90.

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[1] Information available in: https://witsa.org/press-releases/witsas-chairman-presents-ict-excellence-award-to-mexico-government-for-its-project-red-compartida/.
[2] Information available in Spanish in: https://bit.ift.org.mx/BitWebApp/.
[3] Information available in Spanish in:: http://www.ift.org.mx/comunicacion-y-medios/unidad-movil-ift.

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GLOBAL SYMPOZIUM FOR REGULATORS (GSR-18)
Contribution to consultation process from National Regulatory Agency for Electronic Communications and Information Technology of the Republic of Moldova

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

The technological neutrality has been declared in the Republic of Moldova, by relevant legislation, for the purpose of development of electronic communications networks and services, thus complying with the European Commission Decisions on harmonization of the radio frequency bands, including by amending the National Table of Frequency Allocations, which establishes the radio frequency bands, the electronic communications services, the conditions of use, as well as the ITU Resolutions to be observed when operating the corresponding systems. Moldova also approved Radio Spectrum Management Program for 2013-2020, which includes radio frequency bands 800 MHz, 900 MHz, 1800 MHz; 2100 MHz; 2600 MHz and 3400-3800 MHz, for which ANRCETI, upon request, issued corresponding license.

In order to fulfill the regulatory duties provided by law, especially those aimed at ensuring effective competition and the development of networks and services, ANRCETI ensures the neutrality of its regulations in terms of the technology applied.

By means of the special licensing conditions for the use of those frequency bands, ANRCETI granted the providers the right to use the frequencies in the [800/900/1800 MHz] bands for the provision of mobile wireless networks, covered by the following technologies: GSM, UMTS, LTE, WiMAX or other technologies the use of which is not contrary to the obligations to comply with technical and operational conditions provided by the special license conditions and the National Table of Frequency Allocations:

- frequencies of [2100 MHz] band for public wireless networks based on IMT terrestrial wireless technology standards, including IMT-2000 and IMT-Advanced;
- frequencies of [2500 MHz] band for the provision of broadband mobile wireless networks based on the IMT-2000/UMTS (WCDMA) and/or LTE and/or IMT-Advanced
- frequencies of [3400-3800 MHz] for the provision of public broadband (BWA) and/or fixed wireless networks (FWA).

Thus, for the first time in Europe and for the first time within the Orange Group, Orange Moldova and Nokia, on 17.12.2018, made the first VoLTE phone call in Moldova, through a core virtualized network, unique in its kind. Orange implemented Nokia Voice over LTE technology in Moldova, in order to significantly enhance the quality of its mobile voice services. The VoLTE service will be available to Orange Moldova customers in 2018. As a result, Orange Moldova customers will benefit from almost instant call connections, much higher quality clarity, reduced battery consumption, and will be able to make concurrent calls while using mobile data at 4G speeds. For the first time in the Group, Orange Moldova uses Nokia's Cloud-based IP Multimedia

Subsystem (IMS), which includes Telecom Application Server (TAS), a native cloud application, to deliver full-featured 4G network calls.

Through this implementation, Orange is also delivering a virtualization of its core network - a key milestone for the launch of 5G. Thus, Orange-Moldova customers will benefit from an extraordinary experience, having the ability to navigate at 4G speeds even during the call. Migrating to new generations of voice technologies for all customers is an important step toward 5G. As a result, new services will be introduced, such as VoLTE, at a faster pace and significantly lower operating costs.

Also, for the implementation of the 5G networks and services in the Republic of Moldova, the National Table of Frequency Allocations *provides in particular for the frequency bands, as follows:*

694 – 790 MHz – National footnote RN032 applying provisions of the ECC Decision ECC/DEC/(15)01 on harmonized technical conditions for mobile/fixed communications networks (MFCN) in the band 694-790 MHz including a paired frequency arrangement (Frequency Division Duplex 2x30 MHz) and an optional unpaired frequency arrangement (Supplemental Downlink) and Recommendation ECC/REC/(15)01 on cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz. Also, provisions of the Resolution 760 (WRC-15) and Resolution 224 (rev. WRC-15) are applied.

3400 – 3800 MHz – National footnote RN048B applying provisions of the ECC Decision ECC/DEC/(11)06 on harmonized frequency arrangements for mobile/fixed communications networks (MFCN) operating in the bands 3400-3600 MHz and 3600-3800 MHz and Recommendation ECC/REC/(15)01 on cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1452-1492 MHz, 3400-3600 MHz and 3600-3800 MHz.

24,25 – 27,5 GHz – will be implemented after the final approval of the ECC Decision (18)FF on harmonized technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 24,25-27,5 GHz and provisions of the Final Acts of the ITU World Radio Communication Conference 2019.

Machine-to-machine (M2M) solutions, innovations in business process automation

Starting with 2013, Moldova mobile telephony providers Orange Moldova JSC and Moldcell JSC launched web-based communication platforms dedicated to M2M business solutions. Their corporate customers, partners, and all interested parties can access this permanently updated informative portal, in order to keep up-to-date with the latest innovations in automating data transfer, monitoring and control.

The M2M services are solutions for integrating various devices, sensors and industrial or mass devices to automate data transfer, to monitor and control various software applications. Due to the complexity of implementation, M2M solutions include tools that provide centralized management for providers and integrators, as well as end-users. The M2M solutions are implemented to provide businesses with the ability to deliver higher quality services and products and reduce operational costs. M2M-connected equipment not only provides informational data but can also

be remotely controlled, enabling automation of work processes, creating a new opportunity for business development for business development in general, as well as for customers.

The M2M solutions offered by Moldovan providers can be applied in the following areas:

1. ***Transport and Logistics***, monitoring the speed, route and efficiency of vehicles.
2. ***Automation of processes in Industry and Agriculture,*** obtaining, during technological processes, the overall image of the production equipment condition and possibility to react quickly when a fault occurs.
3. ***Monitoring and security,*** simplifying and automating the process of monitoring and managing alarm systems, offering a possible reduction in installation costs.,
4. ***Financial Services,*** integration and provision of data transport for cash-in terminals, POS terminals, ATMs, etc.
5. ***Utility services,*** user control of consumption, planning costs and saving money and time.
6. ***Household equipment,*** self- and remote-handling of household equipment, allowing the collection of detailed information about their operation.
7. ***Distribution and Trade,*** improving the sales organization process and productivity gains, focusing on increasing the sales and distribution teams' efficiency
8. ***Medicine and health,*** diversifying the offers of these types of services and offering equal access to healthcare throughout the country.

In 2017 the number of M2M subscribers of Orange Moldova JSC and Moldcell JSC reached 34856, with revenues of these providers of about US $ 620 million.

II. Economic and business approaches: addressing market access across the value chain, fostering innovative and sustainable business and investment models across platforms, and identifying economic incentives to support digital transformation

The medium- and long-term public policy framework for ICT in the Republic of Moldova consists of:

i) ***Strategic Program for Technological Modernization of Governance (E-Transformation)*** *(Government Decision no.710 of 20 September 2011);*

ii) ***National Strategy for Information Society Development " Digital Moldova 2020"*** *(Government Decision no. 857 of 31.10.2013);*

iii) ***Strategy for increasing the competitiveness of the IT industry for 2015-2021 (****Government Decision No. 254 of 14.05.2015****)****,*

and offers modern and innovative solutions to overcome all the challenges existing in the sector and a horizontal approach to the priorities of the development.

Strategic Program for Technological Modernization of Governance (E-Transformation) sets out the objectives of this process and provides a unified vision of modernizing public services and streamlining IT governance through information technology (IT). At the same time, this document provides the basis for a systemic approach to smart IT investments and IT capacity building in the public sector. The overall objective is to make the Government more transparent, more efficient and responsive by 2020, thanks to intelligent IT investment and massive use in the public sector. The specific objectives of this document are the following

a. Modernizing public services by digitizing and reengineering of operational processes. Citizens and businesses will be able to access electronic information and services offered by central public authorities via a single governmental portal. These services will be accessible through various channels: internet, mobile telephony, kiosks, interactive terminals, etc.
b. streamlining governance by ensuring the interoperability of IT systems and by strengthening and reusing IT resources. Public institutions will overcome departmental isolation and operate and interact on a common technologic platform. Citizens will only once provide personal data to public authorities, and public institutions will reuse these data for service delivery

National Strategy for Information Society Development "Digital Moldova 2020", is designed towards creating conditions, with minimal intervention of the state, but with maximum effect for the development of the information society, concentrating the efforts on three pillars:

1) **Pillar I: Infrastructure and access** – improving network access and connectivity;

2) **Pillar II: Digital content and electronic services** – Digital content and electronic services;

3) **Pillar III: Capacities and use** – enhancing digital literacy and skills to enable innovation and stimulate use.

These three dimensions have a major beneficial impact on the three society components:

a. communities/population will enjoy a better, more comfortable life;
b. businesses will increase their competitiveness;
c. governance will improve its performance and become a governance for citizens, providing services anytime, anywhere, and by any terminal equipment.

The Strategy for increasing the competitiveness of the IT industry for 2015-2021 envisages the creation of an ICT competitive on regional and international levels, based on knowledge and innovation, where companies create added value and offer complex products and services integrating research and development outcomes. The overall objective of the Strategy is to create the conditions for the development of the IT industry and to increase the international competitiveness of IT products and services from Moldova. In order to achieve the objectives defined in the Strategy, based on the evaluation of the situation, the proposed interventions and activities will focus on three areas of intervention, such as education and research; business environment; international markets and partnerships.

Also, by Government Decision no. 4 of 14.01.2014 the Roadmap for Improving the Competitiveness of the Republic of Moldova as approved, for the purpose of strategic preparation of the country's economy and economic processes for the qualitative and successful implementation of the Association Agreement between the Republic of Moldova and the European Union, including the Agreement establishing a Deep and Comprehensive Free Trade Area between the Republic of Moldova and the European Union, as well as to intensify trade with traditional key partners to ensure the achievement of the European integration goal.

The document also includes measures aimed at facilitating innovation and developing the value chain at company level in the country as well as adopting more sophisticated production processes and business models. Some of the components of the Roadmap are also the Information Society,

Science, Technology and Innovation, Competitiveness. Factors that influence competitiveness are classified into three broad categories, depending on the level they are influencing: the factors that affect the overall competitiveness of the country, factors that influence a particular industry and factors that affect businesses individually. The Roadmap takes this into account and starts from the hypothesis that the manner in which the Government can intervene varies between country-level, industry-wide and enterprise-level factors.

The Republic of Moldova has no deposits of oil, coal, ores, extensive forests, or other natural wealth that it could be exploited. The only valuable resources they possess are the land and the people, which should be used effectively and efficiently to ensure the prosperity of the country. From this perspective, the building of a society based on knowledge, information and technology, which requires the maximum use of human potential based on the benefits of information and communication technology - an amplifier of people's intellectual capacities - is an imminent solution for increasing the competitiveness of the economy as a whole and the ICT sector.

The Roadmap reflects this approach and recommends further actions developed jointly with the private sector: producer associations and enterprises in sectors of primary agricultural products, processed agricultural products, industrial products, information technology, transport, education, health and financial services. This collaboration aims to further identify the existing constraints and priority actions that can be implemented along the value chain in each sector, while the Roadmap will continue to be targeted at horizontal competitiveness constraints at country level. Concerning the planned collaboration with the private sector, it involves assessing the features and identifying the constraints specific to the different sectors or industries, for better intervention and prioritization of remedial measures, with special attention to sectors with higher export potential.

II. Regulatory frameworks for digital transformation: identifying new and evolving collaborative approaches, developing across- sector digital policies strategies, and defining innovative regulatory tools and sandboxes

In order to ensure the implementation of public policies in the field, especially related to digital transformation, it is important to create an effective regulatory framework on the one hand and avoid imposing unnecessary restrictions and barriers to entrepreneurial activity on the other, in particular, for the development of electronic communications networks and services and for consumer and state protection, which in fact is a specific objective and is to be achieved, including by the regulator.

With a view to streamlining and rationalizing the authorization process for the provision of electronic communications services, ANRCETI has applied, since 2008, the general authorization regime based on the notification by persons intending operate in electronic communications without any decision or any other administrative act issued by the regulatory authority. The general authorization regime mainly grants to authorized service providers the right of access and interconnection, as well as the right of access to properties for the development of electronic communications networks and services

Thus, among the most important vectors of activity of the regulatory authority for ensuring digital transformation is to facilitate the process of developing broadband electronic communications networks and to ensure the transparency of access to public properties and shared use of infrastructure, associated with electronic communications networks. In this respect, ANRCETI mainly aims to create and make publicly available a database that will include the conditions of access to public properties, including for shared use of infrastructure associated with the electronic communications networks, as well as the entities responsible for granting the right of access and/or shared use of this infrastructure, and to create the information system "Digital Infrastructure Map" (detailed inventory of public electronic communications networks and associated infrastructure elements).

Another direction of ANRCETI activity focuses on the continuation of the necessary regulatory process by transposing the provisions of the EU Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA), while monitoring the compliance with the obligations imposed on providers with significant market power (SMP) on relevant markets, where there is no effective competition, regarding: access to electronic communications networks and associated infrastructure; access pricing and interconnection charges, including the obligations of cost-orientation and transparency, non-discrimination and accounting separation.

Also, ANRCETI continues to issue and update the existing regulations in order to harmonize them with European and international standards in information and communication technologies, to ensure adequate security of public networks and publicly available electronic communications services and to improve the quality of services offered to end users.

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Contribution from Office of Electronic Communications (UKE), Poland for the GSR-18 consultation

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GSR18 Consultation – Contribution from Office of Electronic Communications (UKE), Poland

THE OFFICE OF ELECTRONIC COMMUNICATIONS ACTIONS TOWARDS ENSURING DIGITAL TRANSFORMATION AND DIGITAL SKILLS IN NEW AREAS

It is observed that digital transformation is sweeping across extending regulatory frontiers beyond ICTs and impacting on all aspects of human daily lives. It causes the need to improve the security and digital skills needed in the new, different areas. This is the reason why regulators should be active in protection and building the digital skills of people not only as consumers but also as citizens. Recognizing that needs the President of UKE is in favor to enlargement the area which is regulated in connection to the topic of digitalization. As well UKE took several actions in the context of dealing with the problems that have already appeared or may appear in the future.

As the impact of the digital transformation is growing, it affects all social groups. UKE, as a national regulator for communications, runs several campaigns dedicated to empower the children and older generation – educational activity of UKE experts helps them to deal with new challenges in the digital world. Digital competencies allow to fully benefit from existing and emerging technologies as well as to deal with security risks.

Implementation of 5G in Poland

Global economies face a new industrial revolution, which will be based on mobile ICT technologies. 5G will be the main tool of a revolution that will change the way we live. Despite the final 5G network and device standards are still in development, there are ongoing preparations to deploy 5G networks in Poland. A multistakeholder agreement on the 5G was signed in 2017 and is addressed to all interested parties: telecommunications operators, economic chambers, providers of telecommunications services, equipment and solutions, research and development institutions, and technical universities and Polish start-ups. It is also important to increase effectiveness of frequency use – development of the implementation scenario, reframing and optimization of frequency resources, making the frequencies available. We also have to work on international regulations in radio spectrum management (includes active participation in the work of ITU)
The 5G standard characterizes by throughput of at least 1 Gb/s, latency lower than 5 ms and more than 100 devices per m2. We work on achieving the 5G KPIs for Europe, which are that by 2020 there should be a commercial launch of 5G in one major city in every EU country, finally by 2025 there should be 5G in major cities and transport routes. Another thing are 2025 KPIs for Poland - 1 Gbit/s Internet access for industry. There should at least be 100 Mbit/s for all households in Europe, in both rural and urban areas, with the ability to upgrade to gigabit speeds. The deployment of 5G requires investments, however the new technology will generate revenue streams and will be the key driver for the Internet of Things sector and the Industry 4.0

Capacity building

Every year UKE conducts the Consumer Survey. Individuals and enterprises are asked about their usage of telecommunication services. The popularity of new technologies like IoT/M2M increases rapidly. In 2015 only 1,5% of individuals used IoT/M2M devices in Polandand in 2017 it was almost 11%.

UKE tries to reach all users to build their competences in the digital world. Projects are aimed to develop skills and awareness among the youth and the elderly to build their security and to teach them how to deal with new challenges.

“Coding with UKE”

This campaign run by UKE focused on supporting the development of digital competences among the youth. It contains several subjects, such as coding in SCRATCH language, Smart City Programming, Robotics, 3D Design. From the beginning it achieved concrete and noticeable results. In 2017 there were organized 35 workshops for over 700 pupils. In 2018 it is planned to almost triple this figure. This project is carried out in cooperation with a wide range of entities -not only primary schools, but also private sector and public sector parties.

“I know what I'm signing”

This campaign is to advise people on how to conclude contracts. It is directed especially to the elderly. In 2017, there were over 100 meetings with 8 000 senior participants. Plans for 2018 include 150 meetings for over 10 000 seniors.

“I Click Sensibly”

This campaign is dedicated to specific social group due to the fact that some younger people face the problem how to surf online and use telecommunications devices safely. Another thing is how to deal with online aggression, protect personal data and avoid high bills. This project is directed to children. It is conducted with lessons for primary school pupils. In 2017 about 1 500 lessons were organized for over 41 000 children. For 2018 lessons for another 50 000 children are planned.

Last year UKE adopted a new regulatory strategy. It contains the subject of the protection of consumer interests and within it promoting safe use of electronic communications devices in cyberspace. Moreover, it includes, among the information and education – Development of the Consumer Information Centre and promoting safe use of electronic communications devices in cyberspace.

Bearing in mind the theme of GSR-18 “Regulatory Frontiers”, it is important to underline the growing need for international cooperation. The competencies of regulatory authorities should be also broadened in view of the emerging technologies. In the age of digital transformation we face new challenges. Today the subject of digital regulations not only crosses the borders of countries, but as well different areas of human life. This is the reason why regulators should take proper actions appropriate to the circumstances.

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Contribution from Rwanda Utilities Regulatory Authority (RURA), Republic of Rwanda
for the GSR-18 consultation

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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

Rwanda Utilities Regulatory Authority (RURA)

Republic of Rwanda

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 builiding in emerging technologies: Rwanda is hosting two strategic African centers of Excellence: one in IoT and another one in data sciences. The country is commited 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 technlogies. As a result, other

knowledge hubs such the African Institute of Mathmatics, 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 Fnnovation 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 effecient networking for Africa and the World.

Global Symposium for Regulators (GSR-18)
(Geneva, 2018)

Contribution from Office Federal de la Communication, Switzerland for the GSR-18 consultation

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GSR 2018 – Consultation:
Contribution from OFFICE FEDERAL DE LA COMMUNICATION, Switzerland

Since liberalization of the market in 1998, Switzerland has enjoyed a dynamic telecom market conducive to promoting competition and the deployment of infrastructure. In recent years, significant investment has been made in the expansion of both fixed and mobile networks. According to Akamai´s report "State of the Internet", Switzerland is one of the leading countries in the world in terms of internet connectivity. Switzerland reports a next generation access network (NGA) population coverage rate of 94% and a long-term evolution (LTE, 4G) mobile population coverage rate of almost 99%. The fixed broadband subscription rate in Switzerland is almost 46%, placing the country at the head of international comparison according to the OECD.

The Swiss Telecommunications Act of 1998 aimed to ensure that a range of cost-effective, high quality and nationally and internationally competitive telecommunications services are available to private individuals and the business community. *Inter alia,* it should promote effective competition in the provision of telecommunications services and ensure the provision of a reliable universal service at affordable prices, for all sections of the population and in all parts of the country. The fixed broadband market in Switzerland is today characterized by a strong incumbent, high DOCSIS 3.0 cable population coverage and considerable Fibre-to-the-Home (FTTH) investments by the incumbent and major local utility companies (see box at the end). The historic network operator is currently rolling out FTTH, FTTS (Fibre-to-the-Street) or FTTC (Fibre-to-the-Cabinet) in connection with vectoring or G.fast, ensuring that almost the entire population will soon have coverage with a modern fixed network technology. Some 200 cable operators cover approximately 85% of the population with DOCSIS 3.0 and several cable operators have announced plans to deploy DOCSIS 3.1 in the near future.
The entire population can access the universal broadband service which is currently 3 Mbit/s. Some 94% of all dwellings and businesses can obtain fixed broadband services with at least 30 Mbit/s and 85% can access 100 Mbit/s or more. FTTH is currently deployed in more than 31% of households. However, the take-up of FTTH is currently still rather limited.

The LTE 4G coverage of all three mobile network operators in Switzerland is high, resulting in almost 100% coverage of the population. LTE advancements have been widely deployed and now offer bandwidths of up to 1 Gbit/s. Mobile network operators announced to begin with the introduction of the latest mobile technology, 5G, at the end of 2018.

In April 2016, the Swiss Federal Council adopted its "Digital Switzerland" strategy, whereby the Swiss government seeks to support the ongoing digitization which affects all areas of life, in order for Switzerland to exploit the resulting opportunities and address the associated challenges. The "Digital Switzerland" strategy provides the guidelines for government action and indicates where and how authorities, academia, the private sector, civil society and politics must work together in order to shape the transformation process for the benefit of everyone on Switzerland. In terms of infrastructure, the government has set the goal of ensuring that ultra-high-speed broadband will be market-driven and available in all Swiss municipalities by 2020. The expansion of mobile networks (5G), to be undertaken by the market players, and the frequency resources required for 5G, which will be awarded by the national regulator by end of this year (2018), will play an important role in this context.

Maintaining an up-do-date regulatory framework, which promotes competition and investment in NGA technologies, is now crucial in order to prepare for future challenges and to give Switzerland excellent foundations for developing a smart society. That is why in September 2017, the Swiss Federal Council adopted a revision of the Swiss Telecommunications Act. The last revision of the law occurred in 2007. The now suggested revision seeks to adapt the law to new technological developments and market evolution whilst improving transparency and consumer protection. The ultimate ambition, to adopt a market-driven approach, which fosters competition and thereby promotes investment and innovation, remains unchanged.

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Contribution from TRR - Telecommunications & Radiocommunications Regulator, Republic of Vanuatu for the GSR-18 consultation

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25 May, 2018

Mr. Brahima Sanou
International Telecommunications Union
Place des Nations, CH-1211 Geneva 20
Switzerland

Dear Mr. Sanou,

TRR's Participation on Best Practices Guidelines Consultation on New Regulatory Frontiers to Achieve Digital Transformation – GSR18

We thank you for the invitation for TRR to be part of the GSR18 consultation process to identify new and innovative policy, regulatory and business measures that are needed to respond to the changing landscape, protect consumers and things, and ensure trust to enable the digital transformation to achieve its full potential.

As the ITU, through your Office has rightly pointed out, Governments and Regulators have a key role to play in extending regulatory frontiers to new horizons and to create an enabling and trusted environment to achieve digital transformation.

TRR agrees with the statement and the direction the ITU is taking in guiding regulators bodies to focus towards that objective. In fact, TRR is of the view that the role played by Governments and Regulators needs to be a *proactive and lead role,* to facilitate and enable the objective to be implemented appropriately and effectively maintained. Below is the list of Vanuatu's contributions on experienced best practices:

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

    a. At a national level, the Minister/Ministry responsible for Telecommunications/ICT to proactively monitor the expected outcomes of the Government's National Telecommunications/ICT Policy and consider biennial

review of that Policy and the need for other related/linking sectorial policy/policies;

b. Building on from the approval of the biennial review of the National ICT/Telecommunications and other related sectorial Policies, the Government proactively promotes the critical need for community-wide telecommunications/ICT awareness and readiness, and establishes a mechanism for all respective, and appropriate, sectorial authorities to, work collaboratively with the Regulator and for them to promote and deliver increased, wide-spread educational and awareness campaigns on the need for understanding and the positive impact of the AI, IoT, 5G, M2M communications at the end user level that will assist with and contribute to a positive impact on and delivery of Development Sustainable goals. (See also item e);

c. Harmonization of existing related legislations such as the E-commerce legislation, Broadcasting legislation, Intellectual property Rights and other specific legislations that are linked to digital services, AI, IoT, 5G and M2M communications;

d. Harmonization of sectorial regulatory frameworks and consistency with application must be ensured, and any inconsistencies identified and acted on, where and when required;

e. Identify specifically required Capacity Building on knowledge and the application of, to leverage the benefits of using AI, IoT, 5G, M2M communications. The capacity building exercise be applied at the national level targeting decision makers, policy implementers, and those in the industry. This could be applied using both bottom-up and top-down approaches to ensure wide awareness, knowledge and a common approach, and key information is clearly and transparently passed on and understood before any decisions are taken.

2. **Economic and business approaches** - Addressing market access across the value chain, fostering innovative and sustainable business and investment models across platforms, and identifying economic incentives to support digital transformation:

   a. First and foremost, the national Universal Access Policy, the national ICT policy and other related policies must always be implemented by all respective parties, proactively monitored, reviewed and updated taking into considerations required improvements as required to ensure emerging technologies and technological pressures surrounding consumers are considered and provided for;

b. Establish and implement a Digital Economy Policy outlining high-level objectives, scope of services and KPI's and strategies for achievement of objectives. The Policy would need to give a mandate to all sectors to consider and provide for building and locking in of mechanisms and budget for the required digital services that will transform lives from poor to rich, from unhealthy to healthy and from uneducated to educated population. The digital economy policy will trigger disruption and innovation in multiple sectors within local communities;

c. Building on from the Digital Economy Policy, establish legislation and required Regulations ensuring that each has a clear link to all other sectorial policies on the need for and application of using AI, IoT, 5G, M2M communications;

d. Effectively apply and promote regulatory adaptation responding to rapid technological changes that impact infrastructure competition and the related downstream and upstream markets. And the regulatory powers that apply to the telecommunications sector, within the background of a wider competitive landscape that now includes Over-The-Top players, Internet of Things, AI, 5G and M2M machines;

e. The Government needs to identify, establish and implement incentives that are attractive to both the public and private sectors and that will promote uptake and effective utilization of digital services across the nation; particularly in rural and remote areas where the population is;

f. Apply and promote consultative and monitoring approach at all levels of Government Agencies/sectors and the Regulatory regime to promote good governance, integrity, balance, fair and appropriate decisions;

g. The Regulators need to be involved in consultations and meetings on trade development so regulatory views are considered and incorporated as deemed necessary. (This enables consideration of past and current experiences on what is workable, and is or may not be workable in respect of market competition and consumer choice).

3. **Regulatory frameworks for digital transformation** - Identifying new and evolving collaborative approaches, developing cross-sectoral digital policies and strategies, and defining innovative regulatory tools and sandboxes:

a. Given there is a desire in many countries to reduce regulatory frameworks on the anticipation that it will improve economic development, there is a critical need to undertake a review on which sectors might/will need regulatory frameworks into the future in the digital age, and ensure that those remain in place, or be established;

b. Apply and promote independent and, where required, specific Sectorial Regulatory Regimes to cater for all levels and layers of players in the development of the widened business community and economy;

c. Adapt and develop clear, concise and cross-sector national consumer protection and privacy directives to account for internet and mobile based communications and services, and encourage sector specific approaches to build on the telecommunications/ICT Policies and any general policies if stricter requirements are required;

d. Responsible Regulators can partner with appropriate bodies/agencies by establishing working relationships or a taskforce to work closely with Government and other required stakeholders (such as other regulatory agencies) to support the use, availability, and access to telecommunications/ICT services. In so doing, so, it is important to consider establishing mechanisms such as a Memorandum of Agreement or Memorandum of Understanding and to work cooperatively and obtain input to and advice on relevant developments, harmonization and common implementation of approaches, consultation and monitoring exercises where and when required;

e. Discuss the challenges with Government, stakeholders and the respective service providers on determine how Regulators can best position themselves and take appropriate approaches/actions to facilitate and support understanding of the wide economic and human impact the change evolution of the digital economy is having, and will continue to have; to, desirably ascertain win-win situations;

f. The Government needs to take the lead and provide for increased uptake of online services and inclusive digital services, and for responsible institutions and authorities to be aware of and educated on digital transformation and its impacts in order to assist awareness, understanding and stimulation of uptake;

g. Building synergies and fostering collaboration among telecom other sectorial regulators at the national level, regional and international levels;

h. Discussions on and consideration of a common understanding of digital transformation and its social and economic impacts, and identification of

potential regional approaches across Pacific nations to provide for Regulations that ease the way of doing business in each country;

i. Harmonization of the Telecommunications/ICT Act with relevant Financial legislation(s) and Rules, including Cybercrime Act and Financial Intelligence rules and regulations and other required Digital Services;

j. Regulators need to ensure tighter mechanisms are in place to secure trust and development of digital means other sectorial services and facilitation of uptake.

We hope the above provides some interesting approaches that could be considered for the best practice guidelines, and look forward to discussing them with ITU Members.

Yours faithfully,

REPUBLIC OF VANUATU
OFFICE OF THE TELECOMMUNICATIONS REGULATOR
BUREAU POUR LE RÈGLEMENT DE TÉLÉCOMMUNICATIONS
RÉPUBLIQUE DE VANUATU

Dalsie Baniala

Telecommunications and Radiocommunications Regulator

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Contribution from Regulatory Authority of Zimbabwe (POTRAZ) for the GSR-18 consultation

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'creating a level playing field'

ZIMBABWE CONTRIBUTION TO THE GLOBAL SYMPOSIUM FOR REGULATORS (GSR -18)

TAKING COLLABORATIVE REGULATION A STEP FURTHER

TAKING COLLABORATIVE REGULATION, A STEP FURTHER:

Digital technologies are enabling new platforms and business models that are beyond the expectations of regulators. This has increased the cases and potential for worsening regulatory disconnect. The evolving digital landscape is full of pleasant surprises as well as damning risks. Emerging technologies such as Artificial Intelligence (AI), Internet of Thing (IoT), 5G and M2M have potential to captivate and capture humanity but also with potential to compromise or even destroy humanity. The biggest risk is the dominion of technology over humanity.

In setting themselves for the "Big Show", regulators need to make a quick turn-about from a transactional approach to regulation, whereby decision making powers are vested only in them, and not their regulatory subjects. This calls for the adoption of human-centric regulatory principles whereby all the digital participants are involved in the crafting of the necessary governance protocols. This means a transformational approach focused on deepening and widening collaborative regulation so that it is not only confined to regulators only but also includes technology companies, service/ content providers and consumers. In essence, regulation should no longer be a job for regulators only, but also the responsibility of all the digital participants.

Under such an arrangement, regulators, technology companies, service providers and consumers should all contribute towards stimulating innovation by setting high expectations on the envisioned abstract future. Technology companies should work on standards that guarantee data privacy and safety of human life. Service providers on their part, should take a more pro-active role and embrace self -regulation by coming up with industry codes of conduct. Consumer bodies must ensure that consumers are well educated on their rights and responsibilities. Consumer should play an increasing role in the regulatory process by setting their own standards and also using their power to protect themselves by shunning products and services that are not up to scratch with their expectations. Regulators on their part should foster values, beliefs and behaviours that are all focused on attaining the envisioned abstract situation.

In essence, digital participants should be their own regulators, responsible for making the rules and enforcing them. Such rules should give clarity on each party's rights and responsibilities as well as on who should be liable for any harm caused by digital platforms. On their part, regulators should play an oversight role by enforcing regulations that are set by the digital participants. Such an approach will stimulate innovation of more effective and less costly ways of achieving goals and making sure the results are accountable to the public interest. The all- inclusive collaborative approach to regulation will ensure more flexibility and dynamism, drawing from the diverse interests of the digital participants. This provides a diagnostic framework for defining the scope and scale of regulation and facilitates innovation.

In conclusion, regulators should not write rules themselves, but define what they want to achieve and ask the entities that are going to be affected by the rules to write them. Collaborative regulation should not be confined to the various sector regulators, but should be deepened to include all digital participants.