



17th Global Symposium for Regulators (Nassau, 2017)

Living in a World of Digital Opportunities

Contributions

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Global Symposium for Regulators (GSR-17) (Nassau, 2017)

Contribution from Afghanistan Telecom Regulatory Authority (ATRA) for the GSR-17 consultation

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CONTRIBUTION

Infrastructure and connectivity

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

Level	Sub-Dimension	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

Consumer access

Consumer access to ICT services (subscription, plans, platforms and apps) and devices (smartphones, tablets, computed-based, etc.), which was traditionally left to market players such as operators and equipment providers, is nowadays an area where NRAs are increasingly becoming involved. The following actions might be adopted by regulators regarding consumer access:

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 m-services and apps.
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.

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 m-services and apps.

Regulatory approaches 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 these 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 and the creation of locally-relevant apps.
- Acquiring digital skills, which are essential for the wide take-up and efficient use of m-services and apps.

Market and business opportunities

Over the years some market and business opportunities have emerged and have a proven track of success, particularly in the fixed and mobile broadband sectors.

Winning formulas for fixed broadband

- Competition in DSL/cable
- Fixed number portability enabled
- Infrastructure sharing for fixed either allowed or mandated
- Converged licensing framework in place
- National broadband plan adopted

Winning formulas for mobile broadband

- Competition in mobile broadband
- Competition in international gateways
- Mobile number portability enabled
- Band migration allowed
- Infrastructure sharing for mobile (either allowed or mandated), including MVNOs
- National broadband plan adopted

Funding and financing

Some of the most successful funding and financing approaches 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



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**Contribution from National Communications Agency (ENACOM), Argentina
for the GSR-17 consultation**

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Contribution from the National Communications Agency (ENACOM), Argentina, for the GSR-17 consultation

This document presents three cases of policies and measures in which ENACOM is involved in the interests of advancing the collaboration needed to lift the barriers and achieve affordable access to the digital world.

Consumer access

Measures adopted under the “We care” campaign in Argentina to combat device theft

ENACOM and the Ministry of Communications (Mincom), together with the Global System for Mobile Association (GSMA) and the mobile telephony companies, launched the “We care (*Nos importa*)” campaign with a view to fostering actions in favour of user protection. This initiative serves as a space within which mobile operators will be able to collaborate with one another and with government authorities to maximize the potential of mobile technology and contribute to economic and social well-being in Latin America. A key concern of this agency is to combat mobile device theft and eliminate the existence of anonymous SIM cards by implementing personal registration.

One specific solution consists in a system, available via the ENACOM website (<http://www.enacom.gob.ar/imei>), whereby any user wishing to purchase a new mobile can find out, by means of the device’s IMEI code (unique worldwide identifier), whether it may have been stolen.

By helping to eliminate the illegal circulation and trafficking of devices, this checking facility discourages theft. ENACOM’s Resolution 2459 requires operators to maintain a blacklist, while at the same time highlighting the duty of users to report any robbery, theft or loss. It is important that the public be made aware of such campaigns on our part.

Last but not least, users in Argentina can call the nationwide number *910, accessible from mobile devices, to report the loss or theft of their device to the corresponding mobile telephony provider. The data thus received is added to the aforementioned blacklist.

Infrastructure and connectivity

National Broadband Plan

The National Broadband Plan was established under Joint Resolution 2/17 of 19 April 2017 with the central aim of providing for the needs of the many communities in Argentina that are without a fibre-optic infrastructure for the provision of telecommunication services. In pursuit of this objective, the State will guarantee the deployment of fibre-optic cabling from the backbone to households that are still without it.

This new programme is underpinned by, among other things, the need to expand “access to technological tools and to services which enable the full exercise of citizenship, contribute to the socialization of knowledge and stimulate development of the productive sector, in line with the objectives of communicative democratization and reduction of socio-economic divides throughout the national territory”.

While Argentina is among the countries with the highest levels of Internet access in Latin America, private investment in telecommunication access infrastructure has focused on the major urban centres, resulting in significant regional disparities that run counter to the policy of equitable development among social groups and productive sectors nationwide.

For some time, the Argentine State has recognized as state policy the digital inclusion of all its citizens, making the federalization of communication services a pillar in the achievement of that objective. The aim is to reduce costs, broaden coverage and improve quality of service, particularly for areas currently unserved by the private sector.

Funding and financing

Telecommunication network deployment in rural and vulnerable areas with the aid of universal service funds

In the Argentine Republic work is under way, using universal service funds, on the development of telecommunication networks in the most vulnerable and disadvantaged areas so that all the country's inhabitants can have access to information and communication technologies (ICTs).

The Argentine State, as the guarantor of universal service, i.e. the body of ICT services to be provided to all the country's inhabitants, ensures quality and affordable access thereto at fair and reasonable prices, irrespective of geographic location, income or capability. ENACOM is the entity responsible for elaborating, establishing and monitoring the implementation of the corresponding programmes.

The foregoing is established in ENACOM's Resolution 2.642 of 17 May 2016, approving the "General Regulations governing Universal Service", Article 19 of which summarizes the programmes which could be implemented:

- 1 Provision to groups of users which, on account of their special social needs or of physical, economic or other considerations, are limited in their access to services, irrespective of their geographic location.
- 2 Connectivity for public institutions.
- 3 Connectivity in rural areas and areas whose geographic conditions are unfavourable to the development of ICT services.
- 4 Financial support for cooperatives and for small and medium-sized enterprises (SMEs) providing ICT services, to enable them to expand and modernize their existing networks.
- 5 Connection of licence-holders, cooperatives and SMEs to the Federal Fibre-Optic Network (REFEFO).
- 6 Any works, project or technological advance which contributes to the development of universal service.

The "Connectivity Programme", adopted by ENACOM's Resolution 3.597 of 8 June 2016, can serve to supplement other universal service programmes with the aim of fostering the implementation of projects for the provision of wholesale and/or retail services in areas with unsatisfied needs, through the development of transport networks and/or strengthening of existing access networks and/or generation of economic conditions conducive to the deployment of new access networks.

The programme is being created with the following aims:

- Generate equitable access to telecommunication services.
- Foster the development and social integration of the various regions.
- Stimulate competitiveness, trade, investment and integration of the productive apparatus in the domestic and global markets.

- Promote access to information technologies and foster digital training processes for the public.
- Promote competition within the sector at the wholesale and retail levels.

To be eligible under the programme, projects must display the following attributes:

- Sustainability: must not need subsidization to ensure their operation or maintenance.
- Services comparable to those in metropolitan areas: the services to be provided in each project coverage area must be generally comparable, in terms of performance, quality and pricing, to those provided in the country's main urban centres.
- Technological neutrality: providers may freely choose their technology provided that it complies with domestic and international standards and that the expertise is on hand to ensure its robustness and proper functioning.
- Open access: other operators must be able to access the active and passive infrastructure constructed under each project.
- Transparency: providers having been awarded a project shall provide information regarding the various aspects of its implementation and progress.

The contract awarded will require, among other things, the submission of reports on the following:

- Achievement of the targets specified in the schedule of work.
- Request for access by other providers.
- Agreements giving access to other providers.
- Evolution of wholesale services.

The Connectivity Programme includes two important programmes that are currently under way through the universal service fund:

- 1 Project for access to ICT services through the Federal Fibre-Optic Network (REFEFO).
- 2 Competition for non-reimbursable contributions.



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Contribution from Fair Trading Commission, Barbados for the GSR-17 consultation

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**Contribution from the Fair Trading Commission, Barbados to the GSR-17
Consultation**

**Lifting Barriers to Affordable Information & Communication
Technology (ICT) Services Access.**

While there has been significant progress worldwide with respect to the diffusion of and universal access to ICT services, there still exist underserved areas, for example, more remote and/or rural areas of certain countries. The virtues of access to the new converged ICT space have been extolled to such an extent that a lack of access is now being seen as a significant disadvantage. New developments in the sector have been happening at a startling pace and the world has moved from an era where telecommunications policy focused mainly on the development of fixed line telephony, to one where mobile telephony, internet protocol (IP) communications and media/broadcast technologies have converged. This has significant implications for access to content and information. As a result, telecommunications policy now has to make way for overarching ICT policies which seek to ensure that mobile, broadband and IP technologies are available to as wide a cross section of users as possible.

It is a widely held theory among economists and other researchers that the more widespread and well-developed the level of ICT is in a particular country, the greater the rate of that country's economic growth. According to the theory, ICT has a number of positive effects on a country's society and business environment. Higher productivity and a widened scope with respect to potential markets for products and services are two notable effects.

The prevailing school of thought in the published literature on the subject is that, for ICT to grow and flourish in a country and thereby facilitate greater economic opportunity, the regulatory environment in said country must be conducive to access and innovation. One of the most important steps in this process is the promotion of robust competition in ICT sectors. Increased competition can open the door for new

providers and services, such as Over the Top (OTT) services like Whatsapp and Skype, to drive down ICT costs and facilitate increased access. Regulators need to continually monitor and guard against anti-competitive behaviour in ICT markets. Low rates of broadband penetration observed in various Caribbean territories are said to be as a result of minimal competition, lack of infrastructure and high prices for services. The following is a brief discussion of various ways in which regulators can positively influence the level of access and uptake of ICT services in their respective countries.

As alluded to above, one of the major factors which serves to restrict access is price. Regulators can play an active role in advancing measures aimed at reducing retail prices for ICT services and devices. Directly connected to pricing is the issue of creating regulatory frameworks that encourage fair competition. The absence of competition gives rise to monopoly power, which in turn leads to higher prices, reduced access and potentially lower quality of service. In response to these issues, regulators have a number of tools at their disposal including:

- Removing barriers to entry especially in markets related to international gateways and submarine cables.
- Reductions in license fees.
- Incentives for infrastructure sharing. This often has the effect of lowering costs to service providers, which can then be passed along to the consumer.

To promote greater access to ICT services across the board, several additional factors come into play. From the regulator's point of view, every effort should be made to compensate for and mitigate against the absence of a fully competitive market. A dominant incumbent provider should always be required to provide wholesale, unbiased access to its network for the purposes of interconnection, which facilitates competition. This was observed in many Caribbean territories, most notable of which is Jamaica where the mobile sector was characterized by robust competition between Digicel, Claro and C&W prior to Digicel's purchase of Claro's operations. Additionally, countries must work to ensure that legislation is in place to afford regulators the power

to make important decisions. For example, the OUR and FTC in Jamaica did not have the power to block the Digicel/Claro merger in the same way that the FCC had the power to block AT&T's bid to purchase T Mobile in the US. Regulators must also be able to effectively set and monitor interconnection rates and provide for the existence of number portability if a competitive environment is to be created and sustained. A dominant provider must not be allowed to charge unnecessarily high termination rates as was the case with Digicel in Jamaica at one stage. Since the dominant provider has the largest number of subscriptions, under these conditions, more and more consumers may be encouraged to switch in order to avoid the higher charges, resulting in potential decimation of any existing competition.

Arguably one of the most significant ways of encouraging ICT development lies in attracting direct investment and ensuring investors' confidence in the regulatory environment. There may be a need to review and reform spectrum allocation systems. Incumbent providers often try to discourage this new as entrants are potential threats to their profitability. However regulators ought to incrementally reform the traditional model of spectrum allocation, which has a high cost of access, to make market entry and growth simpler. Another potential measure is eliminating the restrictions on technology which often form parts of spectrum licenses. This can aid in allowing regulations to be in concert with the new converged ICT environment and remove barriers to growth and innovation.

Perhaps one of the simplest tasks of a regulator in creating a more enabling regulatory framework is understanding that regulation itself is not the end. Where certain regulatory measures, for example, maintaining strict regulations on an incumbent provider even after the development of effective competition in the market, become obsolete, regulators need to recognize that taking a step back may be better for the market. There is a tendency for the pace of technological development to outstrip that of legislation and regulation and this gap needs to be bridged as often as possible,

especially in an environment where traditional voice telephony is now confronted with both mobile telephony and IP technology.



Global Symposium for Regulators (GSR-17) (Nassau, 2017)

**Contribution from Communications Regulatory Commission (CRC) of Colombia
for the GSR-17 consultation**

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Simposio Mundial para Organismos Reguladores (GSR-17)

CONTRIBUCION DE LA COMISIÓN DE REGULACIÓN DE COMUNICACIONES (CRC),
COLOMBIA, A LA CONSULTACION DE GSR-17

Resumen. la presente contribución tiene como objetivo mostrar la importancia del desarrollo de la economía digital para generar oportunidades de desarrollo en las naciones.

Primero, se describirá la relación de la economía digital con la conectividad, el acceso, los mercados y las formas de financiación; luego se describirán las acciones de la Comisión de Regulación de Comunicaciones (CRC) para contribuir a que en Colombia se viva en un mundo de oportunidades.

Desde el año 2000, con el cambio de milenio, los gobiernos han puesto en marcha sus agendas digitales, primero brindando la infraestructura necesaria para acceder a Internet, luego generando aplicaciones y servicios para que los usuarios puedan apropiarse las ventajas de la conectividad; más adelante, en las naciones se fueron generando transformaciones en las industrias tradicionales gracias al uso y apropiación de Internet; este fenómeno es conocido como el ecosistema digital y el valor de este ecosistema genera la economía digital.

En la actualidad, todas las naciones tenemos una gran oportunidad de desarrollo gracias a la democratización de la información y a la facilidad con la que nuestros ciudadanos se adaptan a estos cambios tecnológicos. Para que el ecosistema digital en nuestras naciones genere valor, primero debemos contar con una robusta infraestructura de telecomunicaciones que permita la conectividad con excelente calidad. Para lograrlo, las alianzas público-privadas son fundamentales, así como las medidas regulatorias que no coarten la innovación, sino que la repotencien.

Nuestros ciudadanos se han convertido en prosumidores¹, y gracias a las TIC cuentan con mayor acceso a servicios y aplicaciones que hace unos pocos años eran inimaginables. Para lograr el equilibrio en el ecosistema digital, es importante contar con normatividad que empodere a los usuarios para ejercer sus derechos como usuarios de la economía digital. Contando con una buena infraestructura y con unos ciudadanos bien capacitados, se generan las oportunidades de negocio y nacen nuevos mercados; es en punto donde el gobierno junto con el regulador debe realizar medidas que motiven la inversión privada asociada a la economía digital. Cuando los cuatro componentes del ecosistema digital interactúan, a los países ingresan nuevos recursos que pueden ser invertidos en el progreso de los mismos.

¹ Prosumidor (del término en inglés *prosumer*) acrónimo de *producer* (productor) y *consumer* (consumidor)

La CRC, como ente regulador, ha apoyado las metas de la agenda digital de Colombia "Vive Digital para la Gente" con regulaciones, estudios y proyecciones que aportan al desarrollo del ecosistema digital así:

- **Infraestructura y conectividad:** Estableciendo medidas que permitan la verdadera convergencia como regímenes de acceso e interconexión, reglas para la compartición de infraestructura para los servicios de telefonías, Internet y televisión. De igual forma, analizando una nueva senda de banda ancha con la cual se pretende definir cuánto sería una banda ancha mínima capaz de sostener la economía digital.
- **Acceso de los consumidores:** Como reguladores hemos estudiado los beneficios de los subsidios, y cuidamos que con la expedición de normas no se incrementen los valores de los terminales. Adicionalmente, hemos actualizado el Régimen de Protección de Usuarios para hacerlo convergente y adaptado a las necesidades de los prosumidores basado, entre otros, en un estudio del comportamiento del consumidor.
- **Mercado y oportunidades de negocio:** La CRC está realizando una guía para que los reguladores de los sectores tradicionales se articulen con las innovaciones fruto de la economía digital. Así mismo, se analizaron las barreras del comercio electrónico en el país y el estado actual del mismo. De otra parte, actualmente se estudia cómo medir la economía digital.
- **Obtención de fondos y financiación:** Con todas estas acciones será más fácil generar fuentes de financiación originadas en la economía digital.

Invitamos a todos los regulares de las telecomunicaciones a dar el salto hacia la innovación y permitir que la economía digital sea un factor de desarrollo.

Global Symposium for Regulators (GSR-17)

Contribution from the Communications Regulatory Commission (CRC) of Colombia for the GSR-17 consultation

Summary

This contribution is intended to highlight the importance of developing the digital economy in order to create development opportunities within countries.

First, it will describe the relationship between the digital economy and connectivity, access, markets and forms of financing. It will then describe the steps taken by the Communications Regulatory Commission (CRC) to ensure that Colombians live in an environment defined by opportunities.

Since the turn of the millennium in 2000, governments have been implementing their digital agendas, first providing the infrastructure needed for Internet access and then developing applications and services to enable users to enjoy the benefits of connectivity. Traditional industries subsequently underwent transformation thanks to the use and appropriation of the Internet. This phenomenon is known as the digital ecosystem, and the value of this ecosystem generates the digital economy.

All countries currently have a great opportunity for development thanks to the democratization of information and the ease with which our citizens adapt to these technological changes. In order to ensure that our national digital ecosystems generate value, we first need to have a robust telecommunication infrastructure that will provide very high-quality connectivity. To achieve this, public-private partnerships are crucial, as are regulatory measures that stimulate innovation rather than stifle it.

Our citizens have become “prosumers”¹ and, thanks to ICTs, enjoy increasing access to services and applications which only a few years ago could not have been imagined. To achieve balance in the digital ecosystem, it is essential to have standards that will empower users to enforce their rights as users in the digital economy. With sound infrastructure and well-trained citizens, business opportunities are created and new markets emerge: it is here that governments and regulators must implement measures to encourage the private investment needed for the digital economy. When the four components of the digital ecosystem interact, countries acquire new resources that can be invested in their own advancement.

CRC, as a regulatory authority, has endorsed Colombia’s digital agenda goals under its “*Vive Digital para la Gente*” (Live digital plan for the people) programme, with regulations, studies and forecasts that contribute to the development of the digital ecosystem in the following ways:

- Infrastructure and connectivity. By defining measures that can promote real convergence such as access and interconnectivity systems and rules on infrastructure sharing for telephony, Internet and TV services; and by exploring a new approach to broadband which should help to define minimum broadband requirements for sustaining the digital economy.
- Consumer access. As regulators we have studied the benefits of subsidies, and we are taking care that adopting standards does not increase terminal costs. We have also updated the user

¹ An English acronym formed from “producer” and “consumer”.

protection regime to make it convergent and better adapted to the needs of “prosumers” in the light of a study of consumer behaviour and other factors.

- Market and business opportunities. The CRC is producing guidelines to help regulators of traditional sectors to take account of the innovations emerging from the digital economy. Current barriers to e-commerce in the country will be analysed. There are also ongoing studies on ways of measuring the digital economy.
 - Funding and finance. All these measures will make it easier to generate sources of funding derived from the digital economy.
 - We invite all telecommunication regulators to take a major step forward in terms of innovation and enable the digital economy to be a factor in development.
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Réponse de l'Arcep France à la consultation relative aux lignes directrices sur les bonnes pratiques du colloque mondial des régulateurs (GSR-17) portant sur des mesures réglementaires innovantes visant à offrir un accès abordable au monde numérique

Les réseaux d'échanges internet, télécom fixes, mobiles, constituent une « **infrastructure de libertés** ». Liberté d'expression et de communication, liberté d'accès au savoir et de partage, mais aussi liberté d'entreprise et d'innovation, enjeu clé pour la compétitivité des pays, la croissance et l'emploi. Parce que le plein exercice de ces libertés est essentiel dans une société ouverte, innovante et démocratique, les institutions nationales et internationales doivent veiller à ce que les réseaux d'échanges se développent comme un « **bien commun** », quel que soit leur régime de propriété, c'est-à-dire qu'ils répondent à des exigences fortes en termes d'accessibilité, d'universalité, de performance, de neutralité, de confiance et de loyauté.

La très forte demande de connectivité des utilisateurs en termes de débits, volume et de qualité de service et le soutien à la transformation numérique de la société passent par la construction d'infrastructures adaptées mais aussi par l'évolution des modes d'intervention du régulateur.

Afin de répondre à ces aspirations croissantes de connectivité, les objectifs prioritaires de l'Arcep ont été :

- l'incitation de l'investissement privé efficace dans les nouvelles infrastructures y compris dans les zones moins denses du territoire ;
- la promotion d'une concurrence fondée sur les infrastructures tout en tenant compte de la diversité des situations dans les différentes zones géographiques.

l'Arcep considère qu'une panoplie de leviers d'action doit être à disposition du régulateur pour remplir ses objectifs sans toutefois perturber la concurrence et les investissements des opérateurs privés.

Promotion de l'investissement dans les réseaux fixes et mobiles : Accès aux infrastructures existantes et organisation des déploiements des nouveaux réseaux très haut débit

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).

Concrètement, dans le cas où il existe plusieurs opérateurs qui déploient des réseaux de fibre optique, la régulation des réseaux fixes doit pouvoir se reposer, d'une part, sur la réutilisation à grande échelle des infrastructures existantes, notamment de génie civil et sur l'ouverture de la boucle locale de l'opérateur historique et, d'autre part, sur la **mutualisation** de la partie terminale de la boucle locale optique au travers d'une **régulation symétrique**, afin d'amorcer la couverture du territoire national. Pour les réseaux mobiles, l'Arcep a pris des mesures de réduction de coûts au travers du partage des équipements passifs ou de l'incitation à la convergence fixe-mobile et pris position sur le **partage de réseaux** des opérateurs (mutualisation des équipements actifs/passifs ou itinérance). Enfin, compte tenu des carences de l'initiative pour assurer la complétude de l'aménagement numérique du pays, les pouvoirs politiques ont encouragé les initiatives publiques, au travers notamment de l'intervention des collectivités territoriales ou de programmes publics d'amélioration de la couverture mobile. Il convient, néanmoins, de veiller à la cohérence entre les initiatives publiques et les investissements des opérateurs privés afin que les investissements publics n'entravent pas l'initiative privée en « remonopolisant » des infrastructures essentielles.

La régulation par la data pour favoriser la lisibilité des offres

L'Arcep considère que **la transparence des acteurs, sur leurs offres mais aussi sur leurs pratiques, est essentielle pour une concurrence saine**. Ce partage d'information est d'autant plus important que les offres peuvent aujourd'hui être considérées comme des biens complexes, disposant de nombreuses caractéristiques (prix, couverture, débit minimal et moyen, temps de réparation, etc.), et des biens d'expérience, c'est-à-dire que la valeur de la plupart de ces caractéristiques n'est révélée qu'*a posteriori*. En outre, enrichir et partager l'information sur les réseaux numériques permet d'inciter les opérateurs à renforcer l'adéquation de leurs offres avec les besoins des utilisateurs et, le plus souvent, à investir pour améliorer leurs services.

La production d'informations partagées sur les réseaux est une mission historique des régulateurs. Il est toutefois nécessaire d'adapter en permanence le contenu des enquêtes de qualité de services afin de maintenir le plus haut niveau possible d'utilité et de fournir aux utilisateurs des informations claires, fiables et proches de leurs besoins.

Dans l'objectif de donner une information toujours plus individualisée aux utilisateurs, le régulateur ne peut toutefois pas se reposer uniquement sur les données qu'il produit. L'Arcep a mené des réflexions pour développer en ce sens des approches permettant d'inciter ou d'obliger les opérateurs à publier les données dont ils disposent sur la qualité et la couverture de leur réseau. Dans cette approche que l'on pourrait qualifier de « **dégroupage de données** », l'Arcep considère que le rôle du régulateur est, d'une part, de normaliser les informations produites par les acteurs de manière à les rendre comparables. C'est aussi, d'autre part, d'assurer un contrôle sur l'exactitude de ces données, en menant notamment des enquêtes de vérification et en supervisant des audits à partir des données présentes dans les systèmes d'information des opérateurs.

Selon l'Arcep, le régulateur peut aussi utiliser les nouveaux outils numériques pour détecter plus efficacement les imperfections du marché en s'appuyant sur l'intelligence collective. L'objectif est de diversifier les sources d'information sur les performances des réseaux, les évolutions des usages ou les comportements des opérateurs : en complétant l'approche centralisée actuelle par une approche distribuée, au plus proche de l'expérience effective des utilisateurs. Ces outils permettront de replacer les citoyens au cœur de la régulation, pour renforcer son ancrage démocratique et développer la confiance dans l'économie numérique. Un axe de travail de l'Autorité consiste à **utiliser les outils de crowdsourcing pour automatiser une partie du travail de surveillance**. La mise en place de dispositifs de signalement et d'outils de remontée directe d'information de la part des utilisateurs permettrait en effet au régulateur d'être mieux informé des problèmes que rencontrent les utilisateurs dans le numérique.

Co-construire la régulation

Toujours afin de répondre à cet objectif de promotion de l'investissement privé dans le déploiement de nouvelles infrastructures de qualité, l'Arcep a été amenée à adapter ses méthodes de travail et son mode d'interaction avec le secteur à la multiplicité de ses interlocuteurs. Il importe d'adopter une approche permettant à la fois la transmission d'information à ses interlocuteurs mais aussi l'écoute de ceux-ci. Pour renforcer la communication du régulateur avec le secteur, il semble essentiel, à l'Arcep, non seulement qu'il s'attache à faire œuvre de pédagogie sur ses décisions, mais également qu'il veille, dans une exigence d'efficacité, à trouver des relais d'information pour faciliter l'échange avec les acteurs dont la taille rend difficiles des rencontres régulières avec lui. Par ailleurs, une régulation partagée entre acteurs du secteur et les régulateurs devrait permettre de faciliter la mise en œuvre des décisions en ce qu'elle autorise les acteurs à définir eux-mêmes les processus et protocoles à mettre en place sur le marché pour répondre aux objectifs réglementaires. Cette **co-régulation** s'est concrétisée par la mise en place de comités d'experts, d'ateliers ou groupes de travail thématiques, l'organisation d'événements entre l'Arcep et les acteurs du marché ou encore par des rencontres bilatérales ou des déplacements sur le terrain.



Global Symposium for Regulators (GSR-17) (Nassau, 2017)

Contribution from India for the GSR-17 consultation

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ICT driving convergence of services and the need for collaboration between regulators to build trust

The Internet has facilitated searching, matching, and sharing of information and contributed to greater collaboration among economic agents.¹ Qiang et al. (2009) at the World Bank did a cross sectional analysis to examine the impact of various ICTs including fixed broadband on GDP growth during the period 1980-2006 for 120 developing and developed countries.² The study finds that a 10 percentage point increase in fixed broadband penetration would increase GDP growth by 1.21 percent in developed economies and 1.38 percent in developing ones. This study was updated using more recent data (Scott 2012), deploying the same model but with data for 86 countries for 1980–2011. The results saw a 10 percentage point increase in fixed broadband generating a 1.35 percent increase in per capita GDP for developing countries and a 1.19 percent increase for developed countries.³ Thus, Broadband is increasingly being regarded as a powerful general-purpose technology.

The digital world today offers a host of opportunities in various sectors of the economy such as agriculture, e-governance, health, digital financial services including mobile banking, online education etc. These services offer great promise for the goal of sustainable growth by opening doors to economic growth and the socio-economic development of the society. As noted in a recent report on ICTs and Sustainable Development Goals (SDGs),⁴ ICTs can implement SDGs by efficient up-scaling of critical services in health, education, financial services and agriculture; reducing deployment costs in urban and rural settings; enhanced public awareness and faster upgrading of services and jobs.

The convergence of technologies and services and increasing interconnectedness between telecom and other sectors, also prompts the need to rethink the inter-relationship between the different agencies that regulate these sectors. This convergence of delivery of services through the use of internet involves the social media, digital market places, digital payments etc. and this has thrust on the sectoral regulators the responsibility to broaden their domain and ability to influence regulation and policy across sectors.

A case in point could be the Digital Financial Services that are being delivered using the internet technology either through mobiles or other devices. The provision of seamless

¹World Bank Group, World Development Report 2016: Digital Dividends, 2016.

²Qiang, Christine Zhen Wei, Carlo Rossotto, and Kaoru Kimura., Economic Impacts of Broadband, *in* Information and Communications for Development, World Bank, 2009.

³Scott, Colin, Does Broadband Internet Access Actually Spur Economic Growth, 2012.

⁴ The Earth Institute Columbia University & Ericsson, ICTs and SDGs, 2016.

connectivity may fall within the domain of the telecommunication regulator but the financial sector regulators may enable multiple regulated financial services providers (banks and non-banks alike) to compete or partner to offer a range of responsible, secure financial services using the digital technology. Openness of access by many providers both telecom as well financial service, will encourage competition, promote innovation, and reduce prices. This would however, require the regulators of both sectors to put in place mechanism for formal cooperation either through setting up of Standing Committees, signing of MoUs, periodic review meetings etc.

Regulators need to collaborate proactively as pace of services being provided using digital platforms is increasing exponentially and so are the “trust” issues. The regulators need to convince the consumers about the security and reliability of the systems that they are using and it could be one of the collaborative areas of engagement between the regulators.

A robust regulatory framework, appropriate regulations, active surveillance, effective enforcement of rules and regulations and appropriate consumer redress mechanism for the services delivered using digital technology is possible through collaboration cross-sectoral regulators.



Simposio Mundial para Organismos Reguladores (GSR-17) (Nassau, 2017)

Contribucion del Instituto Federal de Telecomunicaciones (IFT), Mexico para GSR-17 consultacion

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9 de mayo 2017

Consulta del Simposio Mundial para Organismos Reguladores (GSR-17)

El Instituto Federal de Telecomunicaciones (IFT) es un organismo autónomo cuyo objeto es el desarrollo eficiente de las telecomunicaciones y la radiodifusión para lo cual regula, promueve y supervisa el uso aprovechamiento y explotación del espectro radioeléctrico, las redes y la prestación de los servicios de telecomunicaciones y la radiodifusión en México, así como el acceso a infraestructura y otros insumos esenciales, contribuyendo a garantizar el derecho a la información y el acceso universal a dichos servicios. Asimismo, el Instituto Federal de Telecomunicaciones es la autoridad en materia de competencia económica de los sectores de radiodifusión y telecomunicaciones.

Por consiguiente, respecto a la consulta de referencia, se identifican las siguientes medidas políticas y reglamentarias implementadas para levantar las barreras y lograr un acceso asequible al mundo digital en los siguientes ámbitos:

- En materia de **infraestructura y conectividad** se destaca que el IFT ha emitido diversas medidas en materia de **compartición de infraestructura**. A raíz de la reforma constitucional en materia de telecomunicaciones, la Ley Federal de Telecomunicaciones y Radiodifusión establece, en su artículo 139, que el IFT “fomentará la celebración de convenios entre concesionarios para la coubicación y el uso compartido de infraestructura”. Estos convenios de deberán celebrar entre los concesionarios, y a falta de acuerdo, el Instituto puede establecer las condiciones de uso, la compartición del espacio físico y la tarifa correspondiente.
- El 6 de marzo de 2014, el Pleno del Instituto Federal de Telecomunicaciones determinó como Agente Económico Preponderante en el sector de telecomunicaciones a las empresas América Móvil S.A.B. de C.V.; Teléfonos de México, S.A.B. de C.V. (Telmex); Teléfonos del Noroeste, S.A. de C.V. (Telnor); Radiomóvil Dipsa, S.A.B. de C.V.; (Telcel), Grupo Carso, S.A.B. de C.V.; y Grupo Financiero Inbursa, S.A.B. de C.V. y como Agente Económico Preponderante en el sector de radiofusión a rupo Televisa S.A.B. y diversas empresas relacionadas; determinación, que impuso una serie de medidas necesarias para evitar que se afecte la competencia y la libre concurrencia, entre las que se destacan el establecimiento de una regulación asimétrica en diversos aspectos, en las que destaca para los efectos de la presente consulta la obligación de someter anualmente ofertas públicas de referencia para los servicios de interconexión, compartición de infraestructura pasiva y desagregación efectiva de la red pública de telecomunicaciones. En aras de garantizar el cumplimiento de lo dispuesto tanto por la Constitución Política de los Estados Unidos Mexicanos como por la Ley Federal de Telecomunicaciones y Radiodifusión (LFTR), el IFT se autoimpuso realizar una revisión bienal de la efectividad de dichas medidas, por lo que en marzo del presente año el IFT aprobó la resolución mediante la cual suprime, modifica y adiciona las medidas impuestas a los Agentes Económicos Preponderantes en dichos sectores.
- De igual manera, se destaca la emisión del Acuerdo por el que se establecen las condiciones técnicas mínimas entre concesionarios que operen redes públicas telecomunicaciones y determina las tarifas de interconexión resultado de la metodología para el cálculo de costos de interconexión que estarán vigentes del 1 de enero al 31 de diciembre de 2017, por medio del cual se busca equilibrar las fuerzas de competencia de las empresas rivales en el sector telecomunicaciones, es decir, aminorar las desventajas derivadas del tamaño de red y que permita a las empresas de menor tamaño contar con planes tarifarios que las posicionen de una manera competitiva en la provisión de servicios.

En **materia de acceso a consumidores**, se destacan el **Comparador de Servicios de Telecomunicaciones** (comparador.ift.org.mx): Herramienta que permite consultar los diferentes planes y paquetes que ofrecen los prestadores de servicios de telefonía móvil, fija, televisión de paga e Internet

en México, con la finalidad de que los usuarios puedan conocer y comparar los servicios que existen, los componentes y características de los paquetes incluyendo sus precios, a fin de escoger el que mejor se adapte a sus necesidades y presupuesto. Se trata de la única herramienta en el país avalada por una institución pública. Fue implementada en junio de 2015 a abril de 2017, y ha registrado 294, 555 visitas. Misma que fue reconocida como “*Champion*” en los premios WSIS 2016, por la revista especializada en informática u-GOB y obtuvo el segundo lugar en la categoría Calidad de Atención al Usuario del concurso anual de Buenas Prácticas 2016 de Regulatel.

- **Soy Usuario:** Herramienta (www.soyusuario.ift.org.mx) que permite que los usuarios de servicios de telecomunicaciones presenten inconformidades en contra de los proveedores de dichos servicios cuando consideran que éstos han vulnerado sus derechos. Fue implementada en julio de 2015 a marzo de 2017 y se tienen registradas a la fecha 17,742 inconformidades. Soy Usuario obtuvo el primer lugar en la categoría Calidad de Atención al Usuario del concurso anual de Buenas Prácticas 2016 de Regulatel.

- **Simulador de Consumo de Datos:** (simulador.ift.org.mx/simulador.php) permite calcular la cantidad de datos que los usuarios consumen al realizar distintas actividades en su celular. Con ella, pueden calcular un aproximado de su consumo mensual y con ello seleccionar el plan móvil más adecuado a sus necesidades ya que los direcciona directamente al Comparador de Servicios de Telecomunicaciones.

- **Mapas de Cobertura Garantizada Móvil:** (<http://www.ift.org.mx/usuarios-y-audiencias/siumapa>) Permite consultar la cobertura garantizada que los operadores móviles han reportado al Instituto, permitiendo hacer zoom hasta nivel calle. Únicamente se requiere seleccionar la empresa, el Estado y la tecnología que se desea consultar y la herramienta despliega el mapa mostrando la cobertura correspondiente.

- **Catálogo de Equipos Homologados:** (<http://www.ift.org.mx/usuarios-y-audiencias/catalogo-de-equipos-homologados>) Facilita la consulta de los equipos terminales móviles que se encuentran homologados ante el Instituto, así como sus principales características. Únicamente se requiere seleccionar la marca y el modelo que se desea consultar y la herramienta despliega las características más importantes de los equipos.

- **Lineamientos Generales de Accesibilidad a Servicios de Telecomunicaciones para Usuarios con Discapacidad:** Ordenamiento que tiene por objeto garantizar la protección de los derechos de los usuarios con discapacidad y promover que tengan acceso a los servicios de telecomunicaciones en igualdad de condiciones. Establece obligaciones para los concesionarios y autorizados relacionadas con: la publicación en sus portales de Internet de diferentes documentos en formatos accesibles; adaptaciones en centros de atención a fin de que las personas con discapacidad puedan recibir atención; contar con personal de atención capacitado que proporcione información útil a estos usuarios; contar con funcionalidades de accesibilidad en sus páginas de Internet, entre otros. Dichos Lineamientos son los primeros que en América Latina establecen de manera integral diversas disposiciones relacionadas con accesibilidad (páginas web, centros de atención, capacitación de personal, provisión de equipos terminales con funcionalidades de accesibilidad).

- **Catálogo de Dispositivos Móviles Accesibles:** Facilita que las personas con discapacidad identifiquen el dispositivo móvil que mejor se ajuste a sus necesidades previo a su compra. Una persona con dificultades de visión, por ejemplo, puede buscar a través de la herramienta, los dispositivos que ofrezcan comandos de voz para llamar o acceder a las funciones del teléfono y con modo de alto contraste.

- **Me Informo:** Herramienta (www.meinformo.ift.org.mx) que tiene como finalidad explicar de manera clara y sencilla, información útil para los usuarios de servicios de telecomunicaciones. A través del sitio, los usuarios aprenden sobre sus derechos y la forma de hacerlos valer y consejos útiles sobre la utilización

de sus servicios, así como aprovechar las herramientas que el IFT ha creado para ellos. Lo anterior, mediante cápsulas interactivas que enseñan a los usuarios respecto a temáticas de su interés; webinars que imparten expertos en la materia; así como tests de conocimiento que permiten al usuario conocer “que tanto sabe de...” determinado tema relacionado con sus derechos y servicios.

Finalmente, en materia de **mercado y oportunidades de negocio**, el IFT ha implementado diversas medidas y estrategias, entre las que se destacan los **Lineamientos para la comercialización de servicios móviles por parte de operadores móviles virtuales**: su objetivo es regular la prestación, comercialización y reventa de Servicios Móviles por parte de concesionarios y autorizados para establecer y operar o explotar una comercializadora de servicios de telecomunicaciones. La emisión de estos Lineamientos permitirá fomentar un entorno de competencia mediante el establecimiento de nuevos esquemas para la prestación de los servicios, con lo cual se expandirá la oferta de servicios de telecomunicaciones mediante el uso y aprovechamiento de la capacidad e infraestructura de telecomunicaciones ya instalada, de tal modo que se fomentará el desarrollo y crecimiento socio-económico del país.

Asimismo, recientemente se lanzó el **Banco de Información de Telecomunicaciones-BIT** que el IFT puso a disposición del público, esta herramienta interactiva permite consultar, analizar, explorar y descargar de manera fácil y oportuna la información estadística de los sectores de las telecomunicaciones y la radiodifusión en México. Mediante ese Banco de Información se podrá consultar información referente al entorno macroeconómico de dichos sectores como la portabilidad, ingresos e inversión de los operadores, así como indicadores relacionados con los distintos servicios como los de telefonía fija y móvil, banda ancha fija y móvil, y televisión restringido. Con dicha medida, se fomentarán las oportunidades de negocio para los nuevos operadores y concesionarios que deseen ingresar al mercado mexicano.



FEDERAL TELECOMMUNICATIONS
INSTITUTE, MEXICO

9 May 2017

Global Symposium for Regulators (GSR-17) Consultation

The Federal Telecommunications Institute (IFT) is an autonomous entity charged with the efficient development of telecommunications and broadcasting, to which end it regulates, promotes and supervises the use, development and exploitation of the radio spectrum, networks, and the provision of telecommunication services and broadcasting in Mexico, as well as access to infrastructure and other essential inputs, thereby ensuring the right to information and universal access to those services. In addition, it is the authority in regard to economic competition in the broadcasting and telecommunication sectors.

With respect to the GSR-17 consultation, we therefore identify the following policy and regulatory measures that are being implemented in order to lift the barriers and achieve affordable access to the digital world in the following areas:

Infrastructure and connectivity

- IFT has issued a range of measures relating to **infrastructure sharing**. In the context of the constitutional reform in the field of telecommunications, the Federal Law on Telecommunications and Broadcasting establishes, in its Article 139, that IFT "shall foster the conclusion of agreements between licensees for the co-location and shared use of infrastructure". In cases where licensees fail to reach such agreement, IFT may stipulate the conditions in respect of usage, the sharing of physical space and the corresponding tariff.
- On 6 March 2014, the Plenary of IFT identified the following companies as predominant economic agents within the telecommunication sector: América Móvil S.A.B. de C.V., Teléfonos de México, S.A.B. de C.V. (Telmex), Teléfonos del Noroeste, S.A. de C.V. (Telnor), Radiomóvil Dipsa, S.A.B. de C.V. (Telcel), Grupo Carso, S.A.B. de C.V. and Grupo Financiero Inbursa, S.A.B. de C.V. As a predominant economic agent within the broadcasting sector it identified Grupo Televisa S.A.B. and a number of related companies. This in turn prompted the imposition of a series of measures designed to avoid such predominance having an impact on competition and the free market, including the establishment of asymmetric regulation in a number of areas, among which, for the purposes of this consultation, we would highlight the obligation to submit, annually, public reference offers for interconnection services, passive infrastructure sharing and the effective unbundling of the public telecommunication network.

In the interests of ensuring compliance with the relevant provisions of the Political Constitution of the United Mexican States and of the Federal Law on Telecommunications and Broadcasting, IFT assigned itself the task of conducting a biennial review of the

effectiveness of the above measures, further to which, in March of this year, it adopted a resolution enabling it to cancel, modify or expand the measures imposed on the predominant economic agents in the sectors in question.

- We would likewise highlight the conclusion of an agreement establishing minimum technical conditions between licensees operating public telecommunication networks and on determination of the interconnection tariffs resulting from the calculation methodology for interconnection costs to be applied from 1 January to 31 December 2017, the purpose of which is to seek to balance the competitive forces of the rival companies in the telecommunication sector, or in other words to offset the disadvantages associated with network size and enable smaller companies to offer tariff plans that make them competitive in terms of service provision.

Consumer access

- **Telecommunication service comparator** (*Comparador de servicios de telecomunicaciones* – <http://comparador.ift.org.mx>). This is a tool whereby users can consult the different plans and packages being offered by Mexico's mobile telephony, fixed telephony, pay television and Internet service providers in order to select the one that best meets their requirements and budget. It is the only such tool to be endorsed by a government entity. Introduced in June 2015, it has recorded 294 555 visits up until April 2017. It achieved "WSIS Prize Champion" status in 2016, was recognized by the u-GOB IT specialist magazine, and came second in the "user-care quality" category of the 2016 edition of Regulatel's annual Best Practices Competition.
- **I am a user** (*Soy usuario* – www.soyusuario.ift.org.mx). Through this tool, telecommunication service users are able to convey complaints to the providers of those services in cases where they consider their rights to have been violated. It was implemented in July 2015 and by March 2017 a total of 17 742 complaints had been registered. It came first in the "user-care quality" category of the 2016 edition of Regulatel's annual Best Practices Competition.
- **Data consumption simulator** (*Simulador de consumo de datos* – <http://simulador.ift.org.mx/simulador.php>). This tool allows users to calculate the volume of data they consume when using various applications on their mobile device. Once they have an approximate idea of their monthly consumption they are better equipped to select the mobile plan most suited to their requirements, to which end the simulator directs them to the Telecommunication Service Comparator.
- **Guaranteed mobile coverage maps** (*Mapas de cobertura garantizada móvil* – <http://www.ift.org.mx/usuarios-y-audiencias/siumapa>). By means of this tool, users can view the guaranteed coverage that mobile operators have reported to IFT, zooming right down to the individual street level. All they have to do is select the company, the State and the technology in question, and the tool displays a map with the corresponding coverage superimposed.
- **Catalogue of type-approved equipment** (*Catálogo de equipos homologados* – www.ift.org.mx/usuarios-y-audiencias/catalogo-deequipos-homologados). This tool facilitates the consultation of data regarding mobile terminal equipment that has been type-approved with IFT, including the main features thereof. It is simply a matter of selecting the brand and model of the terminal in question, and the tool displays its key characteristics.

- **General guidelines on telecommunication service accessibility for users with disabilities** (*Lineamientos generales de accesibilidad a servicios de telecomunicaciones para usuarios con discapacidad*). This is a set of regulatory provisions that is designed to ensure protection for the rights of users with disabilities and promote their access to telecommunication services on an equal footing with other users. It establishes obligations for licensees and authorized entities in respect of, among other things, the publication on their Internet portals of documentation in alternative formats; adaptation of customer-care centres to ensure that persons with disabilities can be served; specially-trained staff capable of providing relevant information to such users; and accessibility features on Internet pages. The guidelines are the first in Latin America to embody a comprehensive range of provisions dedicated to accessibility (web pages, customer-care centres, staff training, provision of terminal equipment with accessibility features).
- **Catalogue of accessible mobile devices** (*Catálogo de dispositivos móviles accesibles*). Helps persons with disabilities wishing to purchase a mobile device to identify the one most suited to their needs. For example, a sight-impaired person can use the tool to search for devices featuring voice commands for making calls and activating functions, and with a high-contrast mode.
- **I find out** (*Me informo* – www.meinformo.ift.org.mx). The purpose of this tool is to provide telecommunication service users with relevant information that is clear and simple. Through the website, users can learn about their rights and how to assert them, and obtain useful advice on how to use both the services on offer and the tools that IFT has made available. This is done through: interactive sections which teach users about topics of interest; webinars delivered by experts; and awareness tests which enable users to see how much they know about given topics relating to their rights and to the services they use.

Market and business opportunities

- IFT has implemented a number of measures and strategies, including the **Guidelines for the marketing of mobile services by virtual mobile operators**, the purpose of which is to regulate the provision, marketing and resale of mobile services by licensees and authorized entities seeking to establish and operate or exploit a telecommunication services trading company. The issuance of these guidelines will help to foster a competitive environment through the establishment of new frameworks for service provision, resulting in expansion of the telecommunication services offer through the use and development of the already-installed telecommunication capacity and infrastructure, and in benefits for the country's socio-economic development and growth.
- Another recent launch has been that of the **Telecommunication information bank** which IFT has made available to the public. This interactive tool enables the user to consult, analyse, explore and download, simply and rapidly, statistical data relating to Mexico's telecommunication and broadcasting sectors. It can be used to consult information pertaining to the macroeconomic environment of those sectors, such as portability, operator revenue and investment, and indicators relating to services such as fixed and mobile telephony, fixed and mobile broadband, and pay television. This initiative will serve to foster business opportunities for new operators and licensees wishing to enter the Mexican market.



Simposio Mundial para Organismos Reguladores (GSR-17) (Nassau, 2017)

Contribuição de informação de Moçambique para GSR-17 consulta

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Contribuição de Informação de Moçambique para Simpósio Global de Reguladores (GSR-17)

Introdução

Com base no convite formulado pela União Internacional das Telecomunicações (UIT), em que os os países membros são chamados a dar a sua contribuição sobre os pontos a serem debatidos no Simpósio Global para os Reguladores (GSR-17), Moçambique sentiu-se motivado a partilhar a sua experiência sobre a conectividade e o desenvolvimento das infraestruturas. É uma experiência como a de muitos outros países, inacabada, com os seus contornos, mas que merece a sua apreciação.

Infraestrutura e conectividade

O serviço de telefonia móvel celular, no mercado Moçambicano, é fornecido por três empresas e cobre todas as capitais provinciais, sedes distritais e alguns postos administrativos.

A primeira operadora de telefonia móvel celular iniciou a operação em Novembro de 1997, a segunda em Dezembro de 2003 e a terceira em Maio de 2012.

Uma das estratégias de expansão da rede de telecomunicações adoptada pela Autoridade Reguladora das Comunicações –INCM foi a de licenciar o terceiro operador de telefonia móvel celular. Este operador de forma estratégica começou por implantar as suas infraestruturas nas zonas rurais onde havia pouca cobertura de telecomunicações e fraca concorrência, usando tecnologias de baixo custo para instalação de estações bases transreceptores (*Base Transceiver Stations –BTS*) e a colocação de cabo de fibra óptica para rede principal (*backbone*) de telecomunicações, partilhando com a empresa de distribuição de energia eléctrica no uso de torres e postes em todo o território moçambicano.

As políticas e medidas regulatórias adoptadas por Moçambique de expandir as infraestruturas e a conectividade às zonas rurais através do licenciamento do terceiro operador de telefonia móvel celular, por um lado, e usando recursos financeiros do Fundo de Serviços de Acesso Universal, por outro lado, contribuiu para a aceleração do desenvolvimento da rede de telecomunicações às zonas rurais.

Quando existiam apenas dois (2) operadores de telefonia móvel celular, houve uma instalação média anual de 104 BTS (de 2004 a 2011) e com a entrada do terceiro operador de telefonia móvel celular, a instalação média anual passou para 410 BTS (de 2012 a 2015). Consequentemente, houve uma maior penetração do serviço de telefonia móvel celular, crescendo de 34,08 por cento em 2011 para 78,24 por cento em 2015.

Ao nível de subscritores, representou um crescimento médio anual de 0,91 milhões (de 2004 a 2011) e 3,07 milhões de 2012 a 2015.

A expansão da rede de telecomunicações poderia ter sido mais rápida se os operadores de telecomunicações tivessem partilhado as suas infraestruturas. Esta questão é um dos desafios que a Autoridade Reguladora das Comunicações –INCM tem de ultrapassar com certa urgência.

Fundos e Financiamento

O Fundo de Serviço de Acesso Universal (FSAU) foi criado em 2004 com o objectivo de financiar programas e projectos de telecomunicações, priorizando as comunidades rurais. Em 2007, foi fixado em 1% (um por cento) da receita bruta do ano fiscal anterior, como contribuição de todas entidades licenciadas ou registadas.

De 2008 a 2015, o FSAU contribuiu muito para a expansão da rede e cobertura em zonas rurais com a cobertura de 5 distritos dos 128 existentes e 98 localidades, bem como beneficiou cerca de 123.900 habitantes em todo o país.

Conclusão e Recomendação

O licenciamento do terceiro operador foi uma medida regulatória oportuna por ter permitido uma boa expansão da rede de telecomunicações.

Por último, Moçambique apoia a recomendação da partilha de infraestruturas para permitir um desenvolvimento mais rápido da rede de telecomunicações e maior acessibilidade ao mundo digital.



Global Symposium for Regulators (GSR-17) (Nassau, 2017)

**Contribution from Office of Electronic Communications (UKE), Poland
for the GSR-17 consultation**

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Contribution from UKE, Poland to the GSR17 Consultation

With the rapid deployment of ICT networks worldwide, increasing affordability of digital services and potential of ICTs in empowering people, especially women and persons with disabilities, we truly live in the world of digital opportunities. However, there is still a large group of people excluded from those opportunities for whom affordability remains an issue.

Rapid adoption of connected devices, provided consumers with an access to a wide variety of over-the-top (OTT) services and applications. They are reshaping and expanding the entire communications ecosystem. Some of them may even supplement traditional voice, messaging and audiovisual services provided by telecommunications operators. At the same time, consumer behavior regarding traditional communication services is changing, and the total consumer spend on these services is expected to decline even while overall communications activity grows.

Online methods of communication are gaining over the last years significant levels of reach among consumers. Voice telephony and SMS are being replaced by fixed and mobile Internet access, delivered to a range of connected smartphones, tablets, computers, offering access to an array of digital communication services and applications, which make increasing demands on the networks over which they are provided. Fear of being displaced by innovative business models and technologies, that are constantly entering the market force many incumbent operators to adjust. The overall digital market grows, new entrants are offering easy-to-use messaging and communication services which to some extent may affect and impact competition in the conventional telecommunications market. Moreover, consumer demand for OTTs can lead to an increase in demand for data from telecommunications service providers. This growing demand for connectivity will require companies to have broadband access and a high-speed infrastructure, which would result in a rise in spending for ubiquitous broadband access.

In order to foster level playing field and ensure constant investments in telecommunications infrastructure, these new regulatory challenges must be addressed. Regulators are confronting the challenge to adjust their regulatory framework to a changing environment while recognizing the interrelationship between traditional telecommunication and OTT services, as well as a growing demand for data. At the same time, the economic impact of OTTs on the traditional model of telecommunications requires constant analyses and observation. However, the regulators often lacks possibilities and means to collect information from all players to get a full insight of the market and understand the complexity of this interrelationship.

The role and impact of all players on the telecommunications market should be considered by the regulators in a variety of areas. In order to ensure competitive environment and promote fair competition, innovation and investment in a highly dynamic and fast-moving

industry, regulators should be able assess the economic, policy and consumer welfare impacts of OTT in all critical areas, including the regulatory framework and existing economic incentives. To do so, regulatory bodies need to have a possibility to collect all relevant data from the OTT providers, especially about the type and scope of their activity and sales volume of their services. The possibility of data collection is crucial for reliable assessment of the state of national markets and keeps with the principle that similar services shall be subject to similar regulations.



Global Symposium for Regulators (GSR-17) (Nassau, 2017)

Contribution from Swiss Confederation, Switzerland for the GSR-17 consultation

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Notes

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Infrastructure and connectivity: innovative measures at international, national and local levels

Since the telecommunications market was opened up in 1998, Switzerland has had a buoyant telecommunications market, which is attractive for marketing innovative services. Consequently, in recent years there has been intensive investment in expanding the networks - both fixed and mobile - so Switzerland has an excellent basis for the development of a smart society.

In April 2016, the Swiss Federal Council adopted its "Digital Switzerland" strategy, by means of which it seeks to support ongoing digitisation, which is affecting all areas of our lives, so that Switzerland can seize the resulting opportunities and face the associated challenges. In terms of the telecoms infrastructure, the government has set the goal of ensuring that high-speed broadband will be available in all Swiss municipalities by 2020.

The government has taken a technology-neutral stance and is leaving the decision regarding suitable network technology (mobile radio, fixed network or other technologies, e.g. satellite) to the market participants.

However, within the framework of the legal requirement to provide a universal service for the entire country (universal service obligation [USO]), all Swiss households are currently entitled to a minimum download speed of 2 Mbit/s, irrespective of the population density of the region in which they live. Any net deficit resulting from the provision of this universal service is to be jointly financed by all telecommunications operators. As of 1 January 2018, the minimum speed will be increased to 3 Mbit/s in order to accommodate the increasing requirements.

In recent years there have not only been developments in the universal service; there has also been much market-driven activity in the construction of optical fibre networks, the expansion of existing CATV networks, and improvements in the use of existing copper networks by means of vectoring or the introduction of G.fast solutions. A unique feature is the fact that in many Swiss towns fibre-to-the-home (FTTH) networks have been created by cooperation between electricity companies and telecommunications operators. These networks have been created in accordance with the multi-fibre approach, which means that households are connected with four optical fibres. This means that some

30% of the Swiss population can benefit from competition between independent optical fibre network providers and can use the most modern communications services.

In order to support local initiatives, the government has cooperated with the private sector, cantons and cities to publish guidelines on best practice for network construction. The government also maintains an interactive online map which provides information on the existing broadband provision for the respective households and villages.

The main interest in relation to mobile radio is the development of 5G. In this respect, in a report requested by parliament, the government outlined in 2015 the basic conditions in relation to telecommunications legislation, building regulations and environmental standards for electromagnetic waves, which are important for the further expansion of the mobile networks. As a result, there is currently a debate on a change to the Swiss Telecommunications Act, the main focus of which would be to establish the legal basis for spectrum trading and the funding of nationwide monitoring of electromagnetic waves.

In Switzerland, the responsibility for the allocation of frequencies for 5G lies with the independent Federal Communications Commission (ComCom). The allocation currently includes frequencies in the 700 MHz, 1.4 GHz and 3.4 - 3.8 GHz ranges and presupposes a transparent and comprehensive process in which interested parties at home and abroad can participate. The allocation process must meet the most stringent requirements for transparency and the rule of law in order to create complete trust among the participants and thereby enable the necessary investment for wide-ranging expansion of the new mobile radio networks.

With these measures, Switzerland wishes to continue on its path of digitisation and adapt its already well-developed telecoms infrastructure to the very latest technologies.

Consumer access to ICT services and devices

As part of the legal requirement to ensure the provision of a universal service for the entire country (universal service obligation [USO]), Switzerland will tread new ground in 2018 with the introduction of compulsory access to telecommunications (by way of sign language via video telephony) for persons with impaired hearing. This service must be offered at defined operating hours in all three official languages of Switzerland (French, German and Italian) and is free for persons with impaired hearing. As mentioned above, any net deficit resulting from the provision of this universal service is to be jointly financed by all telecommunications operators.

New ICT services are very often accessed via the internet. To ensure that internet domains with a connection to Switzerland are reliable and protected, for some time now a legal basis for protection against malware and phishing has been established which is applicable and used for internet addresses with the country code .ch. Since 2015, Switzerland has also operated the generic top-level domain .swiss, which may only be allocated to companies and organisations with a clear connection to Switzerland. Internet addresses with the suffix .ch as well as .swiss should comply with the highest security standards for protection against cybercrime.

With these measures, Switzerland wishes to continue on its path of digitisation, ensure a high level of quality and security for consumers, increase the level of consumer trust in the internet and improve the services offered on the internet.



Global Symposium for Regulators (GSR-17) (Nassau, 2017)

Contribution from Regulatory Authority of Zimbabwe (POTRAZ) for the GSR-17 consultation

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Contribution from POTRAZ, Zimbabwe to the GSR-17 Consultation

INNOVATIVE AND COLLABORATIVE POLICY REGULATORY AND BUSINESS MEASURES TO CREATE AN ENABLING ENVIRONMENT FOR INNOVATION AND INVESTMENT

1. INTRODUCTION

This contribution was prepared in response to the invitation to Zimbabwe by Director ITU Telecommunication Development Sector, to identify innovative and collaborative Policy, Regulatory and Business Measures to lift barriers and achieve affordable access, to the Digital World. The contribution covers the following areas:

- Infrastructure and connectivity,
- Consumer Access,
- Market and business opportunities, and
- Funding and Financing

2. INFRASTRUCTURE AND CONNECTIVITY

Infrastructure sharing has emerged as a good strategy to reduce the cost of ICT services. This is because as service providers share infrastructure, both in terms of active and passive infrastructure, the need to invest in individual infrastructure is reduced. This reduces the overhead costs of each service provider and translates into a reduction in the product price to the benefit of the consumer as well as the ability of a country to roll out Broadband efficiently, cheaply and faster. The Zimbabwean experience however was that operators were not interested in infrastructure sharing. Each Telecommunication Operator continued to build its own infrastructure, which resulted in a very high cost structure of telecommunication / ICT products. This, therefore, hampered access by the generality of the people of Zimbabwe, particularly unserved and underserved people.

Zimbabwe had to change its approach of allowing service providers to voluntarily decide at their own pace, to share infrastructure. The new approach involved incorporating infrastructure-sharing provisions into the law, in such a manner that a service provider cannot refuse to share its infrastructure, if another service provider wishes to share it. The service provider, who accesses another's infrastructure, pays a fee but this is much cheaper than constructing the infrastructure individually. The piece of law, known as the Infrastructure sharing Regulations was subjected to rigorous consultation involving both service providers and consumers, for buy in.

At the international level, there have not been real cases of countries sharing infrastructure. For landlocked countries like Zimbabwe, this makes the cost of accessing undersea cables very expensive. If effort is made for neighbouring countries to share infrastructure, particularly the main backbone, this would help reduce costs and allow easier and massive rolling out of Broadband Services. This is where ITU can be of assistance by encouraging such regional or bilateral treaties.

3. CONSUMER ACCESS

The strategy of incorporating infrastructure sharing into the law is one way of improving, or at least creating, an enabling environment for access to telecommunications/ICTs by consumers, but there are other ways. The Zimbabwean

experience has revealed that it is important for the gadgets used by consumers to be more affordable in order to promote access by every citizen of the Country. To this end, computers, smartphones and tablets were exempted from import duty for a period of about three years, which saw a massive increase in the number of gadgets entering the country and the broadband penetration.

Promoting ICT Innovation by young people is also another measure which Zimbabwe found to be effective, in promoting access to ICTs. The Zimbabwean Regulator, working with Government, introduced an innovation programme, which encourages Zimbabweans to come up with homegrown applications that can be used in the day-to-day lives of the people. Applications in local languages are encouraged and people are likely to buying into this approach. These homegrown applications become cheaper to use as they are not imported. The Universal Service Fund finances the innovation programme. The programme finances and encourages that which have the potential to be used commercially through loans, at concessionary rates.

In addition to these measures, guided by Policy, the Universal Service fund in Zimbabwe has embarked on a massive drive to install Community information centres across the Country with 70 having been installed in 2016 alone and another 140 earmarked for the period up to 2018. These centres enable people in the rural areas who in some cases would not have any access to ICTs in general and broadband services in particular, to have such access. Similarly a massive drive to Computerise and connect 9000 of Zimbabwe's public schools, in the long term, has been embarked on. Although these measures have been used before elsewhere, their innovativeness, lies in the scale and the speed with which they are applied. Using the measures as a cocktail, also yields better results than sticking to one measure.

4. MARKET AND BUSINESS OPPORTUNITIES

A mixture of these measures, which also include encouraging small ICT businesses to tender for some of the work, certainly reduces barriers and increases access to telecommunications ICTs in the Country. An important measure is to allow virtual service providers more and more, so that huge capital outlays do not remain a barrier to business opportunity and access to markets. Collaboration with the financial Sector Regulator and Financial Institutions under the banner of financial inclusion has increased the uptake of digital financial Services by such a large scale in Zimbabwe that this could be a worthwhile measure for other countries to try.

5. FUNDING AND FINANCING

Turnkey solutions to have a lot of potential in infrastructure development. This is one measure, that needs to be fully explored and can save Developing countries the pain of raising huge capital amounts.

6. CONCLUSION

In conclusion, the measures that need to be taken are varied, and no One Size fits all. A multiple of innovative measures need to be applied in order to get appropriate results. The measures discussed in this document certainly need to be explored further and applied to determine their effectiveness

