

21st Global Symposium for Regulators (Virtual Event, 2021)

Regulation for Digital Transformation: Accelerating inclusive connectivity, access and use

Contributions from civil society and private sector

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Contribution from the Alliance for Affordable Internet (A4AI) for the GSR-21 consultation

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ITU Global Symposium of Regulators (GSR 21)

Best Practices Guidelines - Consultation on regulatory uplift for financing digital infrastructure, access and use.

Submission by the Alliance for Affordable Internet (A4AI)

Introduction

A4AI is honoured to have participated in the **ITU GSR-21 Regional Regulatory Roundtable** for Europe and Africa, held online on 14th April 2021 where we shared a presentation and we also welcome the invitation to be involved in ITU's consultative process of the ITU on "Best Practices Guidelines - Consultation on regulatory uplift for financing digital infrastructure, access and use".

The topics and recommendations outlined below relate to all the aspects outlined in the consultative process, but A4AI's contribution is particularly focused on the specific issue of "inducing new, effective and agile financing mechanisms to digital infrastructure, access and use". More specifically, we address the following topics:(i) "what new policy and regulatory tools can be leveraged to trigger a multiplier effect on investment"; (ii) "how can regulation improve affordability and enhance use?".

- 1. Leverage universality policy instruments that are already in place and/or creating new ones as needed. Policy instruments to foster universality are already in place in several countries across Europe and Africa. Nonetheless, universal service and access funds (USFs), which are part of such policies, are often used for fiscal purposes or not used at all. USAFs should be used to fund a broader spectrum of providers, including small and medium broadband service providers, as well as community networks and other not-for-profit operators. While USAFs are not a "new tool" *per se*, reforms often need to be promoted to allow for the promotion of the aforementioned changes. A4AI research undertaken in 2018, showed over US\$400 million collected to be used towards telecommunications and connectivity investments in Africa was unused despite an overwhelming need for it.
- 2. Pay attention to device affordability and use. The cost of internet-connected devices continues to be a financial barrier preventing many from getting online and denying them meaningful connectivity as outlined in the <u>A4AI's device affordability research 2020</u>. Our research showed that the cost of the cheapest available smartphone represents a large percentage of the average monthly income in most countries. Innovative financing should be encouraged for device ownership, which is part of having meaning connectivity to the internet, a concept for which A4AI advocates. Indeed, the lack of ownership prevents many from accessing the internet on a daily basis, and without the security and privacy that ownership offers. Thus, taxation systems should not, for example, apply excise taxes generally applied to luxury good e.g. alcohol and tobacco, for example to mobile phones,



A4AI ALLIANCE FOR AFFORDABLE INTERNET

as A4AI argues in the 2020 study <u>From luxury to lifeline: Reducing the cost of mobile</u> devices to reach universal internet access.

3. Support connectivity in rural and remote areas. The Rural Broadband Policy Framework, developed by A4AI in partnership with Association of Progressive Communications (APC), Collaboration on International ICT Policy for East and Southern Africa (CIPESA), Digital Empowerment Foundation (DEF) and Facebook, is a resource that was developed precisely to serve to "trigger a multiplier effect on investment"¹ to those areas. The framework provides guidance to policymakers and regulators on how to reach rural populations taking into account their unique connectivity challenges. While many of the recommendations are not exclusive to rural areas, they are crucial to the success of connectivity in those areas. In rural areas, even more than in other areas, there is no "silver bullet for accelerating the rollout of ubiquitous connectivity"², as each country and/or region has its own geographic, populational and economic characteristics. Thus, broadband plans should establish concrete targets for these areas, as well as goals related to tracking the progress of policy and regulatory interventions. Further, interventions such as "dig-once" policies and proper rules related to rights-of-way are key to incentivize broadband deployment in these regions.

We would like to encourage you to look at our <u>Good Practices Database</u>, which showcases experiences in Africa, Asia and Latin America, and our <u>Affordability Reports</u>, which are an important part of an ongoing effort by A4AI to measure policy progress toward affordable internet. Further, we suggest you read the publications we have launched over the past years, which can be found in our website - <u>www.a4ai.org</u>.³

Thank you for this opportunity and we look forward to further engagement to shape the Best Practices Guidelines.

A4AI. 2020a. From luxury to lifeline: Reducing the cost of mobile devices to reach universal internet access - Alliance for Affordable Internet. https://a4ai.org/research/from-luxury-to-lifeline-reducing-the-cost-of-mobile-devices-to-reach-universa l-internet-access/ (16 de agosto de 2020).

—. 2020b. Meaningful Connectivity Standard. <u>https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2020/05/Meaningful-Connectivity.pdf</u> (27 de maio de 2020).

¹ Using the consultation's language.

² Id.

³ Suggested readings (not-comprehensive):

 ^{2020.} Rural Broadband Policy Framework. <u>https://a4ai.org/rural-broadband-policy-framework/</u> (23 de julho de 2020).

ITU. 2020. Connecting Humanity: Assessing Investment Needs of Connecting Humanity to the Internet by 2030. <u>https://www.itu.int/myitu/-/media/Publications/2020-Publications/Connecting-Humanity.pdf</u> ***study developed by A4AI***



Contribution from the American Tower Corporation (ATC) for the GSR-21 consultation

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International Telecommunication Union Place Des Nations 1211 Geneva 20 Switzerland Ravi Suchak Vice President, Public Affairs - EMEA Email: ravi.suchak@americantower.com Tel: +44 7377 333423

14 May 2021

Dear Sir / Madam

Global Symposium for Regulators ("GSR") Consultation on "Regulatory Uplift for Financing Digital Infrastructure, Access and Use.

As a proud ITU-D Sector Member and one of the world's leading independent owner and operator of wireless communications infrastructure, American Tower Corporation ("ATC") is committed to connecting the unconnected and supporting global efforts to maintain and increase the resilience of telecommunication networks.

The Covid-19 pandemic has highlighted the need for smart public-private partnerships that focus on the needs of future generations and empowering local communities. As such, enhanced multistakeholder dialogue and cooperation is required to accelerate economic recovery and bridge the financing gap (USD 428 billion) to achieve universal connectivity by 2030.¹

ATC believes that the points set out in the annex to this letter provide a regulatory uplift for financing digital infrastructure, access and use.

We thank Ms. Mercy Wanjau, Acting Director General, Communications Authority of Kenya and GSR-21 Chair, for her consideration of our submission as she develops the GSR Best Practice Guidelines.

Yours faithfully

Ravi Suchak Vice President, Public Affairs – EMEA American Tower Corporation

¹ ITU (2020). "<u>Connecting Humanity – Assessing Investment Needs of Connecting Humanity to the Internet by 2030.</u>"



ANNEX – ATC RECOMMENDATIONS IN RESPONSE TO THE GSR CONSULTATION

Digital infrastructure and services have become the foundation of the digital economy and society, and a powerful driver for development. By promoting the sharing of passive infrastructure and, policymakers can trigger a multiplier effect on investment in digital infrastructure and services. For example, a study conducted by EY estimates that, in Europe, greater outsourcing to independent tower companies ("TowerCos") could release an estimated EUR 28 billion of capital, which mobile network operators ("MNOs") can re-invest in service delivery.²

Passive infrastructure sharing also enables significant cost savings and efficiencies. A typical location of a wireless network operator managed by a TowerCo is 40% more efficient than one managed by an MNO, resulting in economic savings of EUR 31 billion across Europe between 2019 and 2029.³

In addition, passive infrastructure sharing reduces the overall number of sites needed to meet service demand, leading to more efficient land use and a decrease in the overall aesthetic impact and carbon footprint of mobile networks. This particularly applies in developing countries where towers are often powered by diesel generators. Moreover, it is also worth noting the substantial investment TowerCos are making in green energy; ATC alone has invested more than USD 150 million in green energy solutions such as lithium-ion batteries and solar installations.

Affordability and Use

Regulation can contribute to improving affordability by providing financial incentives to encourage broadband infrastructure deployment. According to a World Wide Web Foundation, A4AI and UN Women Report 2018, only 23 out of 37 universal service and access funds ("USFs") in Africa were active at the time of the study and an estimated USD 408 million remained unspent.⁴ Turning this situation around demands a serious rethink of USFs, not just in terms of their mission and governance frameworks, but also reinforcing their institutional capabilities, shielding them from political interference and increasing their transparency.

In parallel, regulation should also provide support for innovation in the design and deployment of lowcost rural networks. Additional efforts are also required to stimulate public spending on basic infrastructure, such as energy and transport, which represent a substantial cost in the provision of broadband. Finally, enhancing collaboration on improving digital literacy and empowering more women and girls to participate in the digital economy is key.

Finally, setting policies that guarantee an effective use of spectrum through moderate pricing and prioritizing the expansion of networks over maximizing revenues for the government can have a significantly favorable impact on the expansion of the digital economy, infrastructure investment and bringing benefits to remote or more disadvantaged areas. This is particularly relevant in the context of emerging technologies like 5G that require much more spectrum allocation.

² EY (2020). "<u>The Economic Contribution of the European Tower Sector.</u>"

³ Ibid.

⁴ WWWF. A4AI. UN Women (2018). "Universal Service and Access Funds: An Untapped Resource to Close the Gender Digital Divide."



Enhancing Multistakeholder Collaboration

To bridge the financing gap, policymakers and regulators should act as convenors of multistakeholder dialogue. This should include representatives of the public and private sectors, international donors and organizations, and civil society. In addition, by promoting sustainable and green investments policymakers have an opportunity to accelerate progress on achieving the 2030 Agenda.

Policymakers are further encouraged to develop regulatory frameworks that attract and foster investment in the telecoms sector. These should include financial (e.g., subsidies and/or tax exemptions for infrastructure deployment in rural and remote areas) and non-financial (e.g., eased restrictions on the import of network equipment and increased certainty on right-of-way rules) incentives. The use of USF as a financing tool for digital infrastructure will also contribute to bridging the financing gap.

Prototyping regulatory patterns for the post-Covid digital world

By jointly establishing repeatable regulatory processes that provide optimum yield for both government and industry, especially those that facilitate permitting and time-to-market, regulators can create frameworks to capitalize on emerging technologies and encourage foreign direct investment; it should be noted that investors look more favourably at markets with an enabling regulatory framework.

In addition, regulators should be careful not to automatically extend legacy telecommunications regulations to new and emerging technologies. Generally, innovation should be encouraged by adopting an ex-post approach to regulation and competition with regulatory sandboxes offering a safe space for regulatory experimentation and the fine-tuning of new business models.

Transformational leadership to unleash the power of emerging technologies and business models

The Covid-19 pandemic has highlighted that burdensome regulation, red tape and excessive protectionism is a deterrent to sustainable, equitable and resilient responses. As such, policymakers should commit to the adoption of agile and streamlined regulatory frameworks that enable the development and deployment of emerging technologies and business models. This approach (coregulation/self-regulation) allows technology developers and providers to respond rapidly during a crisis without the need for emergency legislative changes and, in normal times, enables faster and more efficient network rollout at a lower cost for consumers and businesses.

Regulatory agility is a key characteristic of fifth-generation collaborative regulation (G5). It can be achieved through wide consultation with interested stakeholders from across the public and private sectors, as well as civil society. As regulators embark on the journey of developing state-of-the-art regulation, they should: i) provide a clear rationale for how and why decisions are made; ii) underline their goals; iii) establish time-bound targets and monitoring mechanisms for effective implementation; and iv) commit to sharing responsibility for the development, monitoring and implementation of rules and guidelines with other stakeholders. This will ensure sustainable policy making and contribute to facilitating collaboration and coordination on the development of the digital economy.



Contribution from AXON Partners Group for the GSR-21 consultation

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Contribution from Axon Partners Group

Subject: Regulatory best practices to close the digital gap

Among the relevant topics for the 21st Global Symposium of Regulators, in the context of the Best Practice Guidelines, one of the key aspects is "Inducing new, effective and agile financing mechanisms to digital infrastructure, access and use".

Even if a lot of work has been already done to narrow the digital gap in terms of digital infrastructure, there are still a relevant number of human beings that are not reached by digital services, especially by very high-capacity networks. According to my experience, many countries are struggling in two fronts, where I believe these Bestinformatice Guidelines should focus its attention, namely:

• Optimising the use of such funds

Let's dig into these two topics.

Funding

Of course, the starting point to close the gap is to get sufficient funds. In a nutshell, there are three main sources (that can be combined):

- National telecom markets: A relevant number of countries have relied on the telecom operators to
 raise the funds to connect the unconnected. It may be in the form of a tax/fee or a universal service
 fund that is fed by main operators based on their market share. However, there is a limit where the
 telecom operators can reach. In countries with very low ARPU, the contributions that operators can
 sustain will not be enough to close completely the gap. Due to the positive impact that connecting
 those areas brings to the society, new sources of funding may be explored.
- Public funds: This is an obvious solution to the challenges of operators' financing. Governments and international organisations have already funded in one way or another the development of telecommunication networks in remote areas. For instance, the European Regional Development Fund, together with Member States' governments, has been a relevant source of telecommunications universalisation in Europe. Still governments' treasury is not limitless and other priorities are typically in the game.
- Private funds: This option is less obvious. If the market and the government are not able to fund the extension of the digital infrastructure to certain areas, what is in it for other private players to invest in such infrastructure? Recent experiences show us that corporates, especially in the digital ecosystem domain, are promoting initiatives to provide access to the internet in remote areas when the right regulatory conditions are met. One of these examples is *Internet para Todos* (https://ipt.pe/), brought together by Telefonica and Facebook to cover rural areas in Perú. Someone could argue that digital players have other incentives to increase the Internet footprint, but, still, it would be a very relevant help to increase digital infrastructure reach.

Optimising the use of such funds

Managing to get the funds is not easy, but sometimes seems more difficult to spend them and, especially, to spend them efficiently. I have seen cases of countries that are not able to spend already available funds that wait for years untouched without any impact. The main challenges to spend the funds (efficiently) are:

• Measuring the investment required: This is especially relevant in cases of universal funds are paid as a compensation to an operator with a universal service obligation or where universal service projects

should be tendered. Calculate the required investment and operational costs of networks in delimited geographical areas is not an easy task. You cannot rely on average numbers. Instead, you need complex geographic and topographic analytic skills. Failing to do this may end up with over/infra compensating one of the market players, null tenders due to lack of proposals or overspending.

- Define the right model for each area: Even if an area is not currently covered or not currently covered with certain quality of service, it does not mean that it will not be covered by the market itself. On the other hand, areas that the market will not reach may just need some additional financial help to cover the investments, while others will not be profitable even to cover the operational costs. Each area will need a proper funding model (e.g. subsidy, loan, universal service obligations, or even no support at all). It is crucial for policy makers and regulators to properly identify such areas and to decide the right mix of different options to satisfy their needs. I have seen cases in which governments end up funding networks in areas that would be profitable in any case.
- Define the proper regulation that supports the selected models: As expected, regulation around the digital gap is not straight forward and depend a lot on the particular model and funding source. There are implications regarding levels of quality of service, how compensations, if any, are calculated, design of the projects' tendering conditions, define the rules for the participation of new parties beyond existing operators (e.g. digital players), etc.

How can the Best Practice Guidelines help Member States?

In my view, there are a number of areas where these Guidelines can be of help:

- 1. Providing use cases and identify international best practices about the approaches followed by different countries to close the gap in all the aspects described above.
- 2. Providing the know-how required to manage the entire process to close the gap, which includes:
 - a. Analysing the current situation, measure the gap and understanding the funds required.
 - b. Designing a proper strategy with the right mix of models and approaches to close the gap.
 - c. Finding the funds required in the cases or areas where the national sources (i.e. markets and government) are not enough.
 - d. Defining the regulations required to support the models selected in the strategy.
 - e. Running the strategy: monitoring the provision of services, launching projects' tenders, assigning projects, etc.

I hope these ideas are useful for the GSR. I remain at your disposal for any clarification you may need on these aspects.

Yours faithfully,

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Subject: The importance of Regulatory Roadmaps in the current digital ecosystem

Among the relevant topics for the 21st Global Symposium of Regulators, in the context of the Best Practice Guidelines, one of the key aspects is "Transformational leadership to unleash the power of emerging technologies and business models".

Today's digital ecosystem – comprised of digital infrastructures, platforms, applications, and ultimately users – is transforming citizens' lives and boosting every sector of the economy. However, in order to fully exploit its potential, the digital ecosystem must be accompanied by an enabling regulatory environment (see more details in one of our previous articles – <u>Role of regulators in the digital ecosystem</u>).

In order for a regulatory environment to succeed in the new digital era, the most fundamental initial step that regulators must take in their journey is to define an overarching master plan for a consistent and transparent implementation of regulatory actions over a certain time horizon. Such a master plan, a.k.a. Regulatory Roadmap/Agenda, must integrate a medium-term strategic perspective on the broad ICT/digital market with a view to providing a predictable playing field and helping reduce regulatory barriers and bottlenecks to innovation, economic development and investment.

At Axon, we have extensive experience in supporting regulators across multiple regions in the elaboration of Regulatory Roadmaps in order to cope with the challenges that the new digital ecosystem brings.

The main lessons learned that should be taken into consideration when elaborating Regulatory Roadmaps can be summarised in the following Decalogue:

- 1. Be consistent with the Regulator's strategic planning, i.e. mission and vision
- 2. Have a medium-term vision it must cover a 4-5 year horizon
- 3. Do not forget the current context of the market this will be the starting point to reach the 'desired' vision
- 4. Seek inputs and consensus with relevant stakeholders (telecom operators, digital players, governments, academia, society, etc.) consultations, workshops or other forms of engagement are a must
- 5. Take the right lessons from the international practice
- 6. Be pragmatic although it is a strategic document (and high-level in nature), specific regulatory initiatives and areas of work must be defined
- 7. Define priorities not all regulatory actions have the same importance and/or urgency
- 8. Set measurable targets/metrics associated with the defined regulatory actions progress must be tracked throughout the roadmap horizon
- 9. Define responsibilities among relevant stakeholders this is particularly important in the current digital ecosystem, as it comprises many regulatory and policy agents with different visions and interests
- 10. Coordinate with the different areas/divisions of the Regulator for the actual implementation of the Regulatory Roadmap planning is important, but implementation is the ultimate goal.

One of the most significant examples where the above Decalogue has been put into practice is the Instituto Federal de Telecomunicaciones (IFT), the Mexican Regulator. Earlier this year, the IFT published its Regulatory Roadmap for the 2021-2025 period (available <u>here</u>). This roadmap aims to facilitate the development of the digital ecosystem and contribute to the socioeconomic development of Mexico, covering aspects that range from incentivising the development, deployment and efficient use of ICT infrastructures and networks; fostering competition in the digital space; and promoting the adoption of emerging technologies and digital use cases among the society and the industry.

Axon Partners Group, in close cooperation with IFT's Strategic Planning Unit, elaborated such Regulatory Roadmap and accompanied the IFT throughout the entire process, including participation in workshops with external stakeholders and the final approval of the document by the IFT's Board.

With this Regulatory Roadmap in place, the IFT now has the necessary tools to become one of the most important international references at the forefront of digital regulation.

I hope these ideas are useful for the GSR and that could be somehow incorporated as part of the Best Practice Guidelines. I remain at your disposal for any clarification you may need on these aspects.

Yours faithfully,

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Contribution from Emea Satellite Operators Association (ESOA) for the GSR-21 consultation

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ESOA Response to the ITU Consultation on the GSR-21 "Regulatory uplift for financing digital infrastructure, access and use"

- 1. 100% connectivity is achievable by using a variety of technologies, and every Regulator's goal should be to provide their people with meaningful connectivity.
- 2. Financing digital infrastructure should prioritize the development of robust and affordable national infrastructure.
- 3. Satellite technology has multiple existing and emerging offerings that can be used in tandem with terrestrial services to finally provide ubiquitous coverage, and Regulators should provide incentives for their licensees to use satellite capacity where useful.
- 4. Regulators need to encourage the adoption of all connectivity technologies by providing financial solutions such as tax breaks and broadband funds to their most underserved areas.

The above points are elaborated below.

1. OBJECTIVES: Investments need to prioritize universal meaningful connectivity

The COVID pandemic has revealed the absolute necessity of considering connectivity as an essential element of social cohesion. At the same time, millions of people are still not, or not well, connected at home, in all regions of the world. While investment in Internet connectivity has risen over the past years, funding opportunities have generally remained insufficient to ensure universal access to affordable broadband connectivity.

Extending connectivity is more of an *economic challenge* than a technical one, as areas without coverage are typically remote or isolated areas (such as islands, rural locations, or those surrounded by difficult terrain) with low population densities and less developed or non-existent infrastructure, representing significant obstacles to commercially sustainable solutions.

Appropriate financial resources therefore have to prioritize the deployment of universal meaningful connectivity, noting the needs are not the same in all regions and all countries. Improving the digital infrastructure has never been more important, as businesses and consumers continue to adapt to the COVID-19 pandemic, broadband connectivity is vital to economic growth and social cohesion. Satellite connectivity can accelerate this transformation to ensure all people are connected, no matter their location.

2. PRIORITIES: Affordability and access to networks, with a focus on unserved and underserved areas and populations

Investments should not only focus on the race to 5G / 6G, as it is generally agreed that terrestrial 5G will only improve connectivity where 4G exists already – it will not extend connectivity to remote and rural areas or close the digital divide. What is essential is to ensure *robust* and *affordable* access to the Internet to everyone. National planning integrating smart cities with rural or remote areas will need to rely on meaningful connectivity, which will mean integrating satellites into the national critical infrastructures.¹

Financial incentives need to be put in place to foster the rapid and wide deployment of affordable and scalable connectivity solutions, specifically responding to e-Government, e-Education, e-Health or e-Payment needs, by extending access to online services. For example, the universal service funds (USFs) should be primarily dedicated to underserved areas, and the stimulation of further demand in these areas. In some cases, access to electricity is critical and must be addressed and included in the connectivity project.

Financial instruments from the governments ought to be adapted to new business models, notably aiming at the reduction of deployment and operation costs for underserved areas that are most often not commercially viable.

3. PRACTICALITIES: Target everyday and essential connectivity needs plus facilitate emerging solutions

It is important that regulators recognize a wide range of connectivity options, without imposing technical targets that will likely only lead to delayed (or non-existent) deployment as in the past: many technological solutions have proven successful in enabling a range of *everyday* and *essential* digital services that people around the world have come to

¹ ESOA is amongst all the signatories to the Web Foundation letter: **"Leave No One Behind: A People-Centered Approach to** Achieve Meaningful Connectivity" – from <u>https://webfoundation.org/2021/04/leave-no-one-behind-a-people-centered-approach-to-achieve-meaningful-connectivity/</u> approach-to-achieve-meaningful-connectivity or <u>https://esoa.net/press-room/leave-no-one-behind-a-people-centered-approach-to-achieve-meaningful-connectivity</u>



rely on. Satellite technology has burgeoned in the last years and can provide a substantial range of services to meet disparate needs.

Since consumers tend to value reliable connectivity over the speed of the connection, stakeholders' access to procurement tenders and financial instruments should not depend on absolute technicalities in terms of speed and latency and instead be developed on a case-by-case basis, so the solutions should be tailored to users' needs, applications' requirements and geographical situations. These solutions can involve satellite in a standalone mode, satellite enabling community WiFi solutions or satellite backhauling terrestrial mobile networks including, *if and when needed*, at the level of 5G standards. Satellite also has a key role to play in combating the downsides of network outages. Considering satellite's potential role in the IoT technology mix should be also top of mind for fixed-line and mobile operators looking to in-fill coverage gaps and unlock new use cases.

In addition, funding is to be adapted to new solutions based on emerging technologies: some ICT developments today allow a reduction in physical infrastructure, for example by having recourse to the cloud technology, which in turn, lowers the costs to consumers. The satellite communications sector also is going through several major innovation trends and increased competition that contribute to advanced performances at significantly lower cost than ever before, and the impact of this evolution has already been felt during the pandemic.

4. INVESTMENT NEEDS: Adopt a multi-tiered and holistic policy approach

The *national backbone* infrastructure and *international* Internet connectivity are two critical building blocks to drive connectivity. Increasing the number of international connections per country fosters competition and brings down prices, accelerating the transition to a functional digital economy. International financing mechanisms (relying, e.g., on the World Bank, the European Investment Bank, or the African Development Bank) can be activated to contribute and build this fundamental tier, notably for landlocked countries and islands.

Building upon this high-speed backbone, many countries worldwide still require carrying Internet and data traffic *inland*, from the edge to urban and rural centres. To this end, backhaul networks are necessary to extend connectivity further. Funding used for this deployment has to be *holistic* in such a way that a mix of technologies (terrestrial mobile, satellite, microwave, and other emerging technologies) provides reliable, quickly deployable and cost-efficient infrastructure connectivity.

It is only once high-speed connectivity is delivered to population centres via international and backhaul connectivity that telecom operators and service providers may *use any solution*, without undue market access restrictions, to ultimately serve the populations.

5. RECOMMENDATIONS: Boost investment in infrastructure and develop financial instruments tailored and based on the mutualisation of strengths and resources

It is becoming vital to boost investment and develop financial instruments that are tailored for the specificity of each infrastructure project, through partnerships between private operators and investors, government, financial institutions and international donors. The approach should always be *technology neutral*. To this end, regulators should:

- Support the creation of structured *policy dialogues* involving all relevant stakeholders and promoting a governmental approach to investments facilitating digital economy, using reliable data and country-owned assessments on national connectivity
- Empower the civil society by consulting users and citizens
- Leverage technical assistance to conduct *feasibility studies*, for the development and implementation of bankable projects
- Undertake capacity building to develop the necessary *digital skills* to use new technologies and guarantee the sustainability of new projects
- Map the infrastructure needs and provide a *priority list for investments* in building the missing links, considering *all* connectivity technologies and services
- Create *innovative financial instruments* for infrastructure deployment with a focus on underserved areas, such as dedicated infrastructure funds, blended grants and guarantee schemes to provide tailor-made solutions, on a case-by-case basis
- Adopt *streamlined* regulatory, licensing and spectrum policies to incentivise *all* technology solutions together and contribute to connectivity reach with affordable devices and services



Contribution from Hughes Network Systems, LLC (HUGHES) for the GSR-21 consultation

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Hughes Network Systems, LLC Comments to the ITU Consultation on the GSR-21 "Regulatory uplift for financing digital infrastructure, access and use"

The COVID pandemic has further demonstrated the need for prioritizing universal connectivity to broadband for work, education, health, government and socialization. However, significant funding is required to make access to broadband a reality and must be made on a technology neutral basis. To the extent that governments continue to make funds available to enable universal service and access to broadband, it is imperative that such funding be made available on a technology neutral basis, for wireline, terrestrial wireless, and non-terrestrial services — including satellite. For example, Hughes' HughesNet satellite services provide 25/3 Mbps broadband services to users across the Americas today, primarily in rural and remote areas. Hughes' planned Jupiter 3 satellite, which will be launched in 2022, will bring those speeds to approximately 100/20 Mbps to Hughes' users throughout the Americas, no matter how remote the location.

Government investments should focus on extending connectivity on an affordable basis that enables access to the internet to everyone in both rural and non-rural areas on a technology neutral basis. Governments should avoid adopting unnecessary performance requirements that drive costs up for service unnecessarily. Business models that provide reasonable broadband services that also reduce deployment and operational costs must be included in the mix of broadband solutions to ensure affordability to broadband services. Satellite broadband services, such as HughesNet, is a good example, whereby the cost to deployment to rural and remote areas is not distance-based. This means that HughesNet can be deployed not only on a cost-effective basis, but because the satellite system is launched and operating, service can be provided to the end-user in a matter of days, not months or years.

To this end, it is critical that regulators support the wide range of connectivity technology options without strictly specific technical targets; many technological solutions have proven successful in enabling a range of essential digital services that people around the world have come to rely on - from streaming to video conferencing, to telehealth and more. Solutions and funding for broadband solutions need to be developed based on the specific requirements of the users, including the desired applications and geographic situations. Having artificial performance requirements will only increase costs and would fail to meet the real needs of



broadband users. Further, regulators should enable the use of hybrid solutions, such as terrestrial/non-terrestrial solutions, to bring broadband service to the end-user. To the extent performance requirements are imposed, the operator should be able to utilize the capabilities of the hybrid service to meet the relevant requirements. In addition, mapping must be part of the solution. Failure to understand where broadband is available, using any technology—terrestrial or non-terrestrial—is critical to understanding how funding should be used.

Finally, governments must provide more than funding to support broadband roll-out. Regulators must do their part by allocating spectrum on a technology-neutral basis so that all broadband technologies can be part of the solution. In addition, regulators must take steps to reduce costly regulatory fees and licensing burdens that add cost and time delay to the deployment of broadband. This includes adopting policies such as blanket licensing which allows an operator of a wireless or satellite system to file for and obtain one license, based on a cost-based administrative fee, to deploy large numbers of identical user terminals.

Respectfully submitted,

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Contribution from Intel Corporation (intel) for the GSR-21 consultation

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Intel Corporation's Response to the GSR-21 Consultation on "Regulatory Uplift for Financing Digital Infrastructure, Access and Use"

Importance of High-speed Broadband and ICT Infrastructure

Intel's purpose is to create world-changing technology that enriches the lives of every person on earth. Intel's global broadband objectives are the same as that of most governments and consumers: we want to enable high-speed and high-quality, widespread, affordable broadband in all countries extending computing technology to connect and enrich the lives of every person on earth. High-speed and highquality intelligent broadband networks can provide digital equity for SDGs to close the gaps, for example in education, health, etc.

The Global COVID-19 pandemic further highlights the importance of high-speed broadband technologies. 5G and Wi-Fi are both essential and complementary to provide high-speed broadband connectivity, and both technologies see continuous growth in data traffic and usage. Coverage of mobile broadband networks have reached 93% of the world's populationⁱ, and 5G networks are expected to reach 60% of the world's population in 2026ⁱⁱ, and is considered the Fastest Growing Mobile Technology in Historyⁱⁱⁱ. Despite the global pandemic and economic challenges, 5G powered ahead at four times the speed of subscriber growth as 4G LTE. The pandemic has also accelerated Wi-Fi data growth. By 2022, 60% of global mobile traffic will be offloaded to Wi-Fi^{iv}. Transitioning to Wi-Fi 6E networks can help accommodate increasing Wi-Fi data traffic and to enable new advanced services.

We can further accelerate the benefits of 5G and Wi-Fi 6 networks for digital equity and the SDGs with the right policies and regulations, including financing mechanisms.

Enabling Policies and Regulations

Operators worldwide have already invested trillions of US dollars for the existing terrestrial wireless broadband networks^v. Society would benefit from complementing these existing terrestrial wireless networks with high-speed and high-quality intelligent networks through 5G and Wi-Fi 6. There are different approaches to accelerate the adoption of high-speed broadband networks, with the most important financing mechanisms listed below;

-Political support across all parts of government, including the President and/or Prime Minister.

-Development of a national high-speed broadband and ICT strategy including integration into national digital development plans.

-Inclusion and prioritization of high-speed broadband infrastructure investment in annual government budgets.

-Coordination between Ministries, especially between Ministries of ICT, Economy/Finance, and Planning but also other Ministries (e.g. Education, Health, Agriculture, Transportation, Energy, etc.).

-Discussions between Finance/Economy Ministers and Development Banks such as participating in the same panel of important development conferences. For example, ITU may organize a dedicated

thematic finance event during the ITU WTDC 2021 for a panel discussion to increase the investment for the broadband infrastructure.

-Integration of new ICT technologies and applications in annual budgets of Ministries and Municipalities for smart applications (e.g. smart education, smart health, smart transportation, smart agriculture, smart energy, smart cities, etc.)

-Effective use of Universal Service Funds. Many countries are effectively using Universal Service Funds for high-speed broadband and ICT deployment to underserved populations. For example, India, Malaysia, Morocco, Pakistan, and Turkey are among the many countries that have created successful ICT/broadband programs^{vi}.

-Allocation of sufficient amount of licensed and unlicensed frequency bands for new high-speed broadband technologies (5G, Wi-Fi 6). Operators need access to spectrum for investment.

-Development of public private partnership projects/initiatives for high-speed broadband connectivity.

-Implementation of sound tax policy strategy will help to foster digital economy and increase the revenue of governments^{viiviii}.

- Effective use of economic recovery programs for the high-speed broadband infrastructure. Governments have launched economic recovery programs due to pandemic globally^{ix}.

-Collaboration with Development Banks to increase investments for high-speed broadband networks. According to the Alliance for Affordable Internet (A4AI), multilateral development banks are only investing 1% of their total commitments in ICT projects.

-Implementation of demand creation programs for high-speed broadband connectivity and ICT. According to UNESCO, 826 million students were kept out of the classroom by the COVID-19, and do not have access to a household computer and 43% (706 million) have no internet at home. Costa Rica's ITU WSIS awarded "Connected Home Program"^x is a good example how the homes of these students can be connected and equipped to support at home learning.

ⁱ https://www.gsma.com/r/wp-content/uploads/2020/09/GSMA-State-of-Mobile-Internet-Connectivity-Report-2020.pdf ⁱⁱ https://www.ericsson.com/en/press-releases/2020/11/more-than-1-billion-people-will-have-access-to-5g-coverage-by-theend-of-2020

ⁱⁱⁱ https://www.5gamericas.org/5g-is-the-fastest-growing-mobile-technology-in-history

^{iv} https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-738429.html

^v https://www.statista.com/statistics/671785/global-telecom-service-provider-capex

^{vi} https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/usf-support-ict-broadband-programs-paper.pdf

vii https://www.broadbandtax.org/downloads/Katz%20Study%20-%20Generic%20Talking%20Points%2012%202%202019.docx
viii https://www.itu.int/en/ITU-D/Regional-Presence/Americas/Documents/EVENTS/2016/15544-BR/3-1.pdf

^{ix} https://www.imf.org/-/media/Files/Publications/fiscal-monitor/2021/April/English/foreword.ashx

^{*} https://www.itu.int/net4/wsis/stocktakingp/en/Database/Search?pld=1449345354



Contribution from OneWeb for the GSR-21 consultation

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Contribution from OneWeb

GSR Best Practices 2021 Consultation

Response from **OneWeb** (Ruth Pritchard-Kelly, Senior Advisor on Regulatory Policy, ruth@oneweb.net)

Topical Area: Transformational leadership to unleash the power of emerging technologies and business models.

The world is poised to enter a new era, an era of global connectivity that will transform the world the way the industrial revolution did, and before that the printing press. Once everyone can connect to the internet no matter where they are – on land, at sea, or in the air – <u>every single one of the UN's 17</u> Sustainable Development Goal's (SDGs) can be addressed and supported by better connectivity.

Therefore Regulators need to encourage ubiquitous connectivity, because with connectivity comes education, jobs, information, e-health, e-finance, and the concomitant rise in a nation's Gross Domestic Product (GDP). With connectivity, a nation can address all of the SDGs: poverty, hunger, health, education, gender equality, clean water, clean energy, economic growth, improved infrastructure, decreased inequalities, sustainable cities, responsible consumption, climate action, oceans, land use, justice, and of course, <u>partnerships</u>. Partnerships with connectivity providers is how Regulators will unleash the power of emerging technologies and business models.

Regulators are encouraged to position themselves as powerful backers and advocates for any new technology that will increase connectivity, rather than seeing themselves in the older model of the regulator as simple enforcer. Regulators can set goals for universal service, and financially reward suppliers of connectivity for helping to reach those goals. Regulators should encourage their existing licensees (telco's, mobile network operators (MNOs), internet service providers (ISPs)) to look at the revolutionary infrastructure provided by the new low-Earth orbit (LEO) satellite constellations, as they can reach any place and any person on Earth, with speeds and broadband comparable to 4G quality services today. These LEOs will also provide infrastructure and backhaul for most 5G applications – but unlike terrestrial technology, these LEOs will provide that 5G-quality service in currently underserved areas.

Topical Area: Inducing new, effective, and agile financing mechanisms to digital infrastructure, access, and use

Many people around the world now use their personal mobile devices for far more than just calls – phones are now used for myriad purposes, including payments and banking. People pay each other, pay for goods in retail stores, pay for goods purchased online. Regulators need to ensure that this new scripless payment and banking is legal and safe – and expanded in use to government services and utilities (such as paying water and electric bills), if not already possible. It is unsurprising that the Mobile Money platforms prospered in developing markets, where the majority of the population is unserved by traditional banking systems, however, this makes access to connectivity even more of a societal imperative.

Once again, connectivity to these mobile devices is crucial to this new economy, and must not be left to terrestrial technologies alone, which will never reach all places, leaving populations behind in this digital

evolution. Only space-based technologies can reach every spot on the globe economically. (Certainly the LEO constellations are likely to be used, but Regulators must keep in mind that traditional geostationary satellites (GEOs), medium-Earth orbit (MEO) constellations, and even some sort of drone or balloon or other high-altitude platform (HAP) technology might be added to the technology mix.)

Topical Area: Prototyping regulatory patterns for the post-Covid digital world

Regulators must be ready not just to enforce rules, but to issue mandates that encourage the adoption of all technologies that can support these needs. This is a new role for many Regulators, but one that is crucial to connecting their people.

Regulators must also work with their Ministries to view access to connectivity as a public good, much like access to clean water. Many nations still view "spectrum rights" as a way to make money, to auction that access and use the funds for other public needs. However, in the long run, this will actually delay a nation's economic growth, as it will hamper the introduction of new LEO and other satellite technology, and crucially, it will hamper the inclusion of populations unserved by terrestrial networks in the digital era. That is because satellites are inherently multinational, and if every nation in its footprint auctions the spectrum rights, no company in the world can afford that exponentially burdensome fee. For the LEO constellations, that cover every nation in the world, such fees will completely prevent the service from being offered.

In the past, governments were focused on "jobs and taxes" when contemplating what a new technology or company could offer their nation. Today, governments must view raw connectivity as the conduit to jobs (and taxes) as well as to education, health, and financial growth.

Crucially, the current world financial hubs (London, New York, Tokyo) came about because of the density of population and related access to infrastructure. With the infrastructure of "connectivity" now a reality, people can work for financial institutions from anywhere in the world. This will disrupt the way the financial world thinks and works, and Regulators in nations everywhere need to be ready for the growth in their own countries of people using connectivity for their jobs, and getting the education needed to work those jobs. Instead of travelling to foreign places, a nation's people will be able to get a degree from their own homes, learning from the world's best universities just by connecting to the internet from anywhere.

Regulations for traditional satellites are often written in very specific, technical language. When regulations are so specific, it can be hard to update them when a new technology comes along – or in anticipation of new technology not yet invented. Regulators are encouraged to provide "regulations" that are outcome-focused and foster services and the quality of those services, without prescribing exact technology.