Telefónica

Rural Manifest

A proposal for developing inclusive and sustainable rural networks

a Telefónica brand

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01

Introduction

The Fourth Industrial Revolution is causing profound transformation in economies and societies around the world. In Latin America, the region with the highest inequality in the world, the expansion of connectivity and the acceleration of the digitalization process are key to building fairer and more sustainable societies. However, the digital divide persists, something that the COVID-19 pandemic has exacerbated even more.

Despite the work carried out by the industry and authorities in extending telecommunication networks in the region, there are still rural areas of Latin America with little to no coverage (the connectivity gap). In addition, it is estimated that 38% of the population live in areas with connectivity but are not connected to the Internet, creating a usage gap.

The expansion of connectivity and the acceleration of the digitalization process are key to building fairer and more sustainable societies in Latin America.

To close the connectivity gap in rural areas and achieve effective digital inclusion, where **the benefits of the new digital era reach everyone,** Telefónica considers that it is necessary to evolve the traditional model for expanding services in rural areas to one based on three pillars: innovation, cooperation, and sustainability.

Telefónica proposes a new model based on three pillars:

Innovation

Technological, commercial, business

Cooperation

Combining public and private efforts

Sustainability

Financial and social, supporting the development of communities

This new model has already been successfully implemented by *Internet para Todos* in Peru. Created as a result of the alliance between Telefónica, Meta, and the most relevant development banks in the region (IDB Invest and CAF - Development Bank of Latin America), Internet para Todos S.A.C. (hereinafter, "IpT") began operations in Peru on May 1st 2019, and in just over three years has expanded rural connectivity, benefiting almost three million of the six million people who lived in areas without Internet coverage in Peru at the beginning of the venture. In its short time of existence, IpT has received various national and international awards for its innovative approach and social impact.

The purpose of this document is to share Telefónica's vision regarding how to build models that **contribute to effectively closing the digital divide by taking into account the experience and lessons of IpT** on its journey of contributing to digital inclusion in a sustainable way.

However, the intent of this document is also to be **an urgent call to action** in these especially difficult times for Latin America, when the region has been subject to an unprecedented health crisis and is exposed to the risk of increasing poverty and exclusion.

The COVID-19 pandemic has reinforced the conviction that expanding Internet coverage is a necessary, although insufficient, condition for the progress of our societies and no one can be left behind. Being connected makes a decisive difference in terms of the impact and speed of recovery of economic and social activities.

Studies from many different international organizations show a broad consensus on the buffering role that digital infrastructures have had in dealing with the impact of the economic crisis caused by COVID-19. In places with good service coverage, society continued to operate, educational institutions carried out their work remotely, and the digital economy rapidly replaced the analog economy. Considering the broad consensus on the benefits of connectivity, the big question is: why does a significant portion of the inhabitants of Latin America still not have access to the opportunities of the digital world?

And even more pertinent: **Is it possible to develop an *Internet para Todos* across Latin America?**

Telefónica's answer is: Yes. It is a response full of enthusiasm, founded on two necessary premises to make it a reality. The first is that the objective can only be achieved through combining efforts, since connecting the unconnected requires not only the critical involvement of telecommunication operators, but also the collaboration of other agents, such as digital economy companies, equipment providers, and content developers, as well as development banks, the investment community, and governments. The second premise is that this collaboration – which must extend to the financial, operational, and commercial arenas – can only be achieved when the appropriate legal and regulatory conditions are duly in place.

The reality is that the traditional recipe for the expansion of rural coverage used in much of Latin America, based on Universal Service Funds that are funded by contributions made by telecommunication operators, has failed. It is urgent to develop a different and sustainable path that attracts new investments in rural areas, that facilitates innovation in commercial and technological models, that favors cooperation among the different elements of the digital value chain and that, above all, truly places the key players in this process at the center of the solution: the people who live, study and work in remote areas of Latin America.

The adventure that led to the creation of IpT began a few years ago, when we, at Telefónica, identified the need to develop sustainable collaboration strategies to connect the unconnected. Telefónica has been able to debunk myths and demonstrate the viability of new disruptive proposals: in the structuring of the financial operation that enabled the investment of Meta, IDB Invest and CAF; in the design of the operational models for deployment, including the first cases of the use of OpenRAN in the region; in the wholesale commercial operation; in collaborating with mining and agricultural companies to care for their areas of influence; but, above all, in working together with the Peruvian authorities to apply and develop the Rural Mobile Infrastructure Operator (OIMR, from the Spanish acronym) model, on which IpT is based.

After showing that financial, commercial, and technological disruption is possible and very positive, it is urgent to partner this progress with disruptive public policies that contribute to closing the digital divide. This document contains Telefónica's proposals to extend connectivity to rural areas of Latin America, combining public and private efforts in a new collaborative approach.

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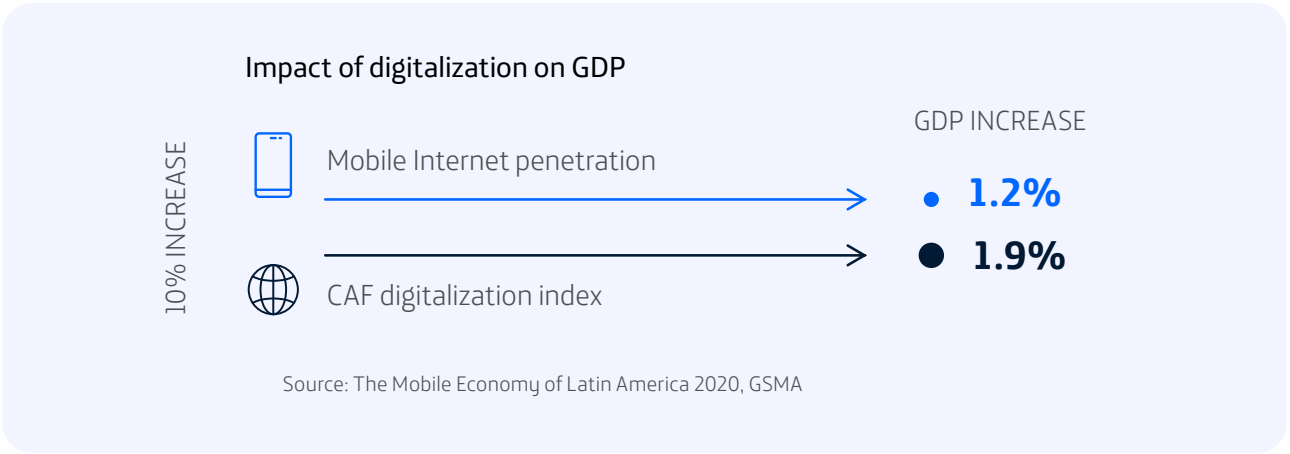
Chapter
02

Telecommunications
as a driver for social and economic transformation

Telecommunications has been a key sector in limiting the impact of the COVID-19 pandemic and in keeping economies and societies running during periods of lockdowns and restricted mobility. Thanks to telecommunication networks, many activities essential to people's lives were able to continue. As José María Álvarez Pallete, CEO of Telefónica S.A., said, *"when the physical world had to close its doors, connectivity kept the digital world open, becoming the backbone of the economy and of society".*

Several reports published by the GSMA (2020) highlight how the mobile industry can play a key role in the economic development and recovery of Latin American economies. The arguments in favor of accelerating economic recovery through digitalization and its impact on the gross domestic product (GDP) are, according to these reports, clear and compelling: a 10% increase in the penetration of mobile Internet has the potential to increase GDP by 1.2%, while a 10% increase in a country's digitalization rate[1] can increase GDP by 1.9%. The digital transformation of public and social services, especially education and health, can be a driver that accelerates digital adoption by citizens, boosts productivity, and generates significant efficiencies throughout the economy.

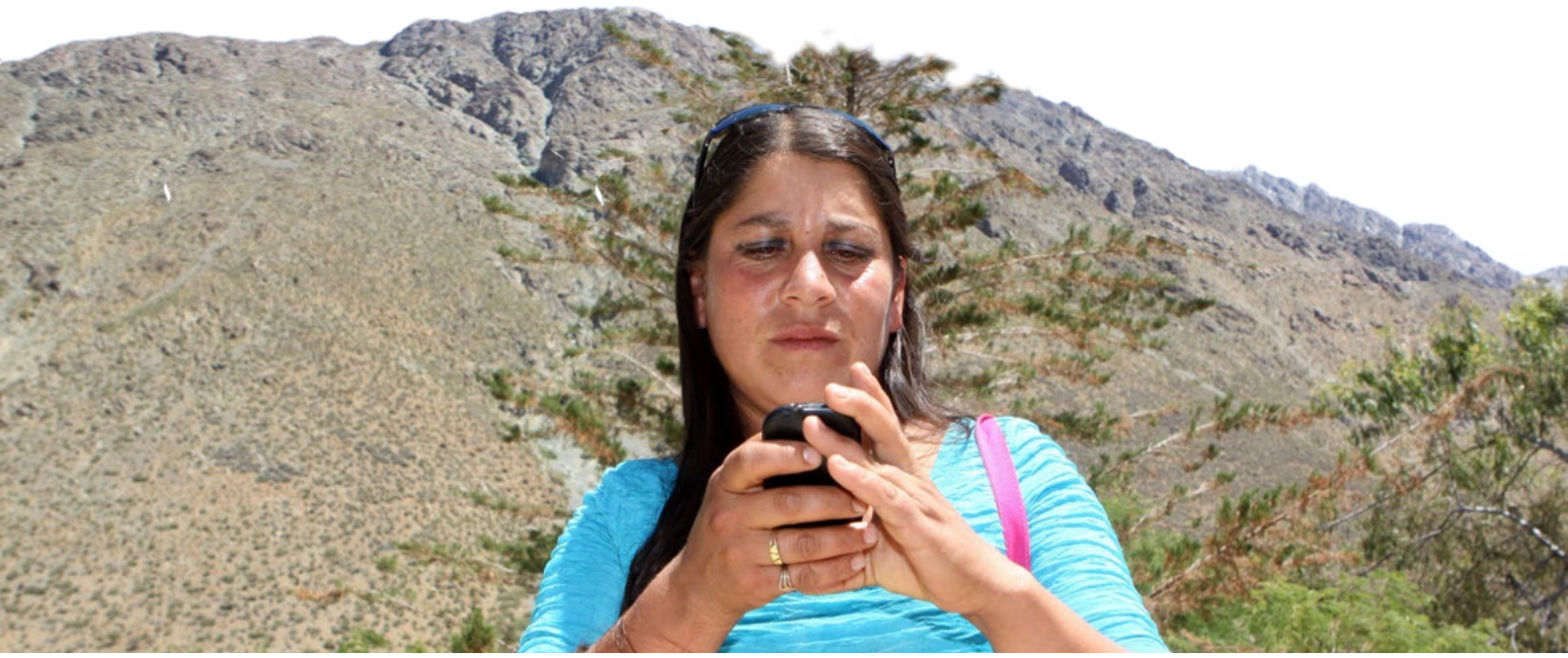
1 The CAF index on digital ecosystem development is a composite index which evaluates the development of the digital ecosystem by considering eight elements (infrastructure, connectivity, household digitalization, production, competition, production factors, use of technologies and public, institutional and regulatory policies).



Source: The Mobile Economy of Latin America 2020, GSMA

The economic literature, in general, agrees on the relevant positive effects associated with expanding Internet access. Consistently, the expansion of broadband coverage has had a positive impact on GDP growth across various country samples and periods of time; this impact varies between 0.25% and 1.5% of GDP growth for an increase in broadband penetration of 10% (Mayer, Madden, & Wu, 2020). In addition to the positive impact generated by ICTs on economic growth, as companies and consumers connect, benefits are generated in terms of efficiency, new business model development and improvement of available market information, among other things (World Bank, 2018).

The impact of the extension of telecommunication services to rural areas in Latin America can be very relevant. A study published by the Inter-American Institute for Cooperation on Agriculture (IICA), the IDB and Microsoft (2020) indicates that **a 1% increase in the digital ecosystem development index can lead to a 0.13% growth of GDP per capita, with positive impacts on productivity and connectivity.**



Chapter

03

The digital divide
in Latin America

In Latin America, there are economic, social, geographic and population barriers that make it difficult to close the connectivity gap and that affect the quality of the available networks. Deploying networks in rural areas is more costly than doing so in urban areas, which added to the lower population density and average revenue per customer leads to low returns on investment.

The relevance of the economic and social divide can be understood in all its magnitude in the "Latin American Economic Outlook 2021" (LEO 2021), published by the Development Center of the Organization for Economic Cooperation and Development (OECD), the United Nations' Economic Commission for Latin America and the Caribbean (ECLAC), CAF - Development Bank of Latin America and the European Commission. According to this document, the impact of the COVID-19 crisis in Latin America has been asymmetric, since it has especially affected the most vulnerable sectors of the population, and has reversed part of the socioeconomic progress achieved by the region in recent decades.

The economic impact of the COVID-19 pandemic on Latin American economies has been higher than in other regions.

12.5%
Population in extreme poverty

33.7%
Population below poverty threshold

2.9%
Increase of inequality (Gini coefficient)

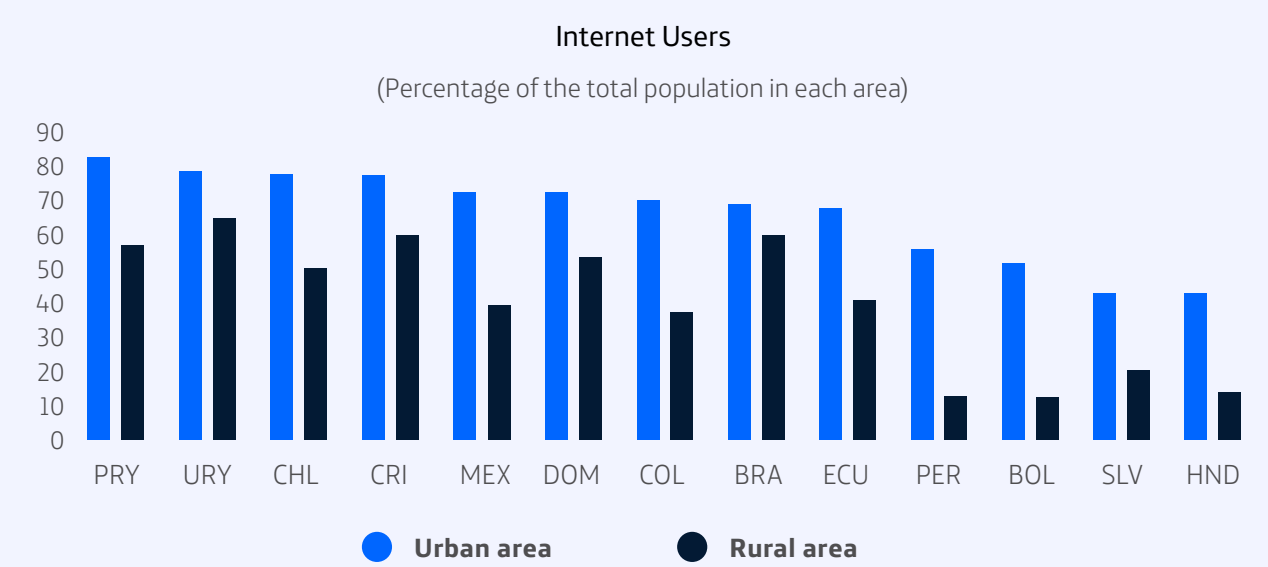
Source: Latin American Economic Outlook 2021 (OECD)

Because of the COVID-19 crisis, it is estimated that in 2020 the extreme poverty rate in Latin America rose more than one percentage point, reaching 12.5% of the population (around 78 million people), and the poverty rate rose three percentage points, reaching 33.7% (more than 200 million people). These poverty levels had not been observed in the last 20 and 12 years respectively. Similarly, it is estimated that inequality, measured using the Gini coefficient, increased by 2.9% in the same period.

Looking specifically at the coverage and connectivity gaps, there is some revealing data that shows a high level of correlation with poverty figures. According to the GSMA figures, in 2020 45% of Latin Americans (more than 285 million people) did not have access to the Internet. Of these, around 45 million lived in areas without Internet coverage, where there were no communication networks and services nor other basic infrastructure and services.

At the regional level, we can observe significant differences in the use of the Internet between countries and within them, in most cases these differences are related to aspects such as income levels, geographic location and the availability of good quality connectivity infrastructure.

In most Latin American countries, Internet user penetration is over 60% for those living in urban areas while in rural areas the average penetration barely exceeds 35% and, in some countries, is as low as 10%.



Source: "Las oportunidades de la digitalización en América Latina frente al Covid-19", 2020 CAF, ECLAC, et al.

Likewise, it is necessary to note the existence of a significant usage gap that affects people who live in areas with network coverage, but do not access the Internet. According to figures from the GSMA, **this usage gap affects around 240 million people in Latin America.**

It is necessary to analyze in depth the causes of this usage gap to put in place initiatives that encourage Internet use. It is not enough to just build the train tracks, one also has to get everybody on board the train.

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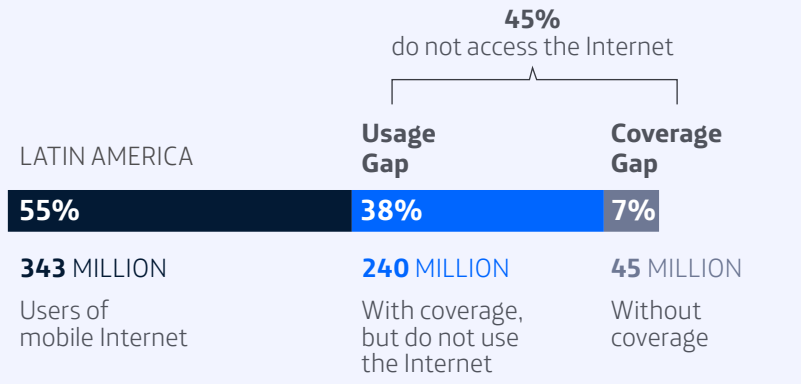
Mobile broadband adoption



Usage Gap:
About **93%** of Latin Americans have mobile Internet coverage, however, around **38%** of the population live in areas with network coverage but do not access the Internet.

Source: The Mobile Economy Latin America 2020, GSMA.

Extending and improving connectivity and closing the digital divide should be a priority when designing public policies. Availability of coverage is a necessary, although insufficient, condition for advancing in digitalization and realizing its full benefits. Public policies must prioritize digitalization and ICT development with a comprehensive vision due to their social impact and multiplier effects of economic development along with their necessity for bringing everyone into the global information society.

In this vein, it is imperative to stop viewing the Internet as a luxury item and start viewing it as a basic need. This has been done by the UN Broadband Commission for Sustainable Development, which set forth that *"[...] basic broadband services must be affordable in developing countries, representing less than 2% of the monthly gross national income per capita"* (2018) as part of one of its goals to increase connectivity in the world by 2025. In Latin America, taxes and other fiscal levies (among them spectrum and concession payments) have a disproportionate impact on the cost structures of telecommunication operators and negatively affect the affordability of mobile services. The total cost of accessing the Internet has a significant component of sector-specific taxes. According to reports from the GSMA, in some countries in the region, tax loads alone already push the price of services above the UN's affordability target for the bottom 20% of the income pyramid.

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Chapter

04

Telefónica's proposal:
A new model for closing the divide

Digital inclusion is fundamental to build societies and economies that are fairer and more productive, but the traditional model used for closing the coverage gap has not been successful in solving the problem. Telefónica considers it essential to build a new model centered on three main axes: innovation, cooperation, and sustainability.

Telefónica proposes a new model based on three pillars:

Innovation

Technological, commercial, business

Cooperation

Combining public and private efforts

Sustainability

Financial and social, supporting the development of communities

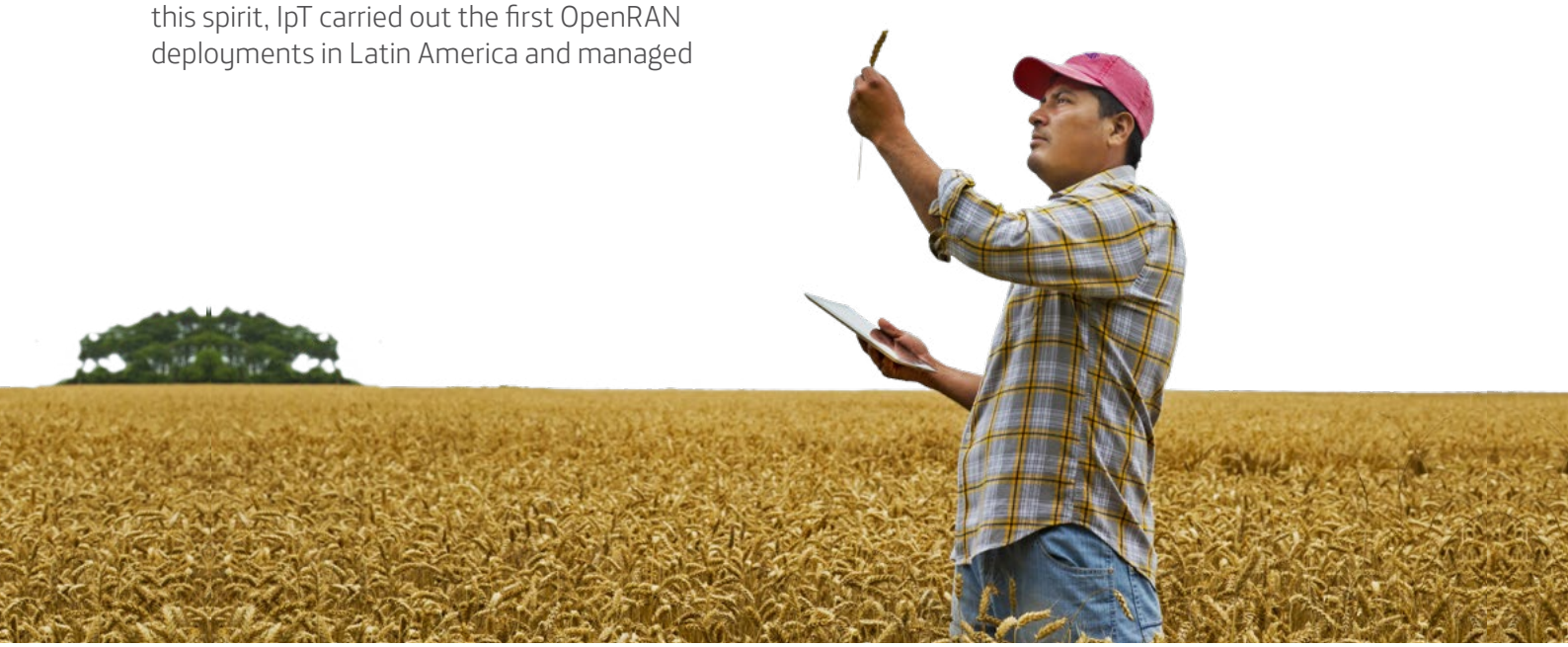
i. Innovation

In order to reach universal connectivity, it is essential to reduce the costs of deploying networks and providing services. This requires innovative approaches not only from a technological point of view, but also from operational, commercial, and regulatory points of view.

The efforts made in the region over the last 20 years to expand telecommunication services have yielded good results but have been insufficient to achieve universal coverage in rural areas. In order to reach universal connectivity, it is essential to reduce the costs of deploying networks and providing services. This requires innovative approaches not only from a technological point of view, but also from operational, commercial, and regulatory points of view.

The use of new technologies, such as Artificial Intelligence and Big Data, in the planning and operation of networks and the use of new technical solutions in the access or transportation networks can provide financial sustainability to business cases focused on extending services to rural areas. As IpT has done in Peru, innovation requires being agnostic towards different technological solutions, evaluating their viability in the areas where services are to be deployed. In this spirit, IpT carried out the first OpenRAN deployments in Latin America and managed to put into operation a solution based on tethered balloons, promoted at that time by Loon, which was operational after a natural disaster. This innovative approach should be extended to business and operating models, that should be specially designed to address the specific conditions of remote areas.

The specifics of rural areas must also be taken into account in the regulatory frameworks, so that regulatory requirements do not become a disincentive for network deployment and service expansion. Applying general regulations to network deployment in these areas (in aspects such as quality of service, or spectrum policy), can make investment projects unsustainable. Regulation must be an enabler rather than a hurdle, and therefore it must be designed in such a way that it promotes innovation at all levels and adapts to the reality of the market and the specificity of each area.



ii. Cooperation

Extending coverage in rural areas requires the combined efforts of all agents, public and private, and therefore collaboration is essential and urgent.

Extending coverage in rural areas requires the combined efforts of all agents, public and private, and therefore collaboration is essential and urgent. Joint public and private efforts are also necessary to maximize the impact of initiatives to close the gap.

Network sharing in rural areas minimizes inefficient duplication and captures economies of scale, facilitating coverage expansion, but sometimes faces regulatory challenges. To make cooperation feasible, it is essential that governments and regulators consider regulatory and free competition models that facilitate voluntary infrastructure and spectrum sharing agreements. Fostering voluntary sharing agreements is a better alternative to the imposition of sharing obligations under regulated conditions, which can increase conflict among operators and generate subsequent disincentives for deployment.

In addition, as we have learned with IpT in Peru, cooperation should extend beyond the provision of telecommunication services. Connectivity expansion must be used as a platform to develop digital services and content relevant to rural areas, especially in the educational, health and financial fields. The development of these services can also be a source of income that contributes to making rural connectivity projects financially sustainable.

iii. Sustainability

The only way to ensure technological evolution of rural networks is to develop financially sustainable business models.

Public subsidies have facilitated coverage of remote areas but have failed to generate incentives for technological evolution once the subsidy has been consumed. In this context, while urban mobile networks in Latin America have evolved first to 3G and then to 4G, there are still remote areas where it is only possible to provide voice solutions and where the data services offered do not allow for a functional use of the Internet. The only way to ensure technological evolution of rural networks is to develop financially sustainable business models that do not depend on subsidies or extraordinary contributions, but are instead able to generate recurring income, either provided by end customers or by other agents interested in the provision of the service.

One of the characteristics of services in rural areas is that they require higher levels of investment and operating costs than those in urban areas. For this reason, business cases for rural areas must consider agile and low-cost operating models. Subsidized rural coverage models, where regulators define the technology and other technical characteristics of the solution to be deployed, discourage innovation and tend to generate unsustainable business models in the medium term that hinder technological evolution. The imposition of deployment obligations may foster initial investments in networks, but it does not guarantee technological evolution when there are no recurring sources of revenue that makes such evolutions financially sustainable once subsidies run out or when public policy and priorities change.

There is no one size fits all method for achieving financial sustainability, but there is a clear list of important elements, among which are the reduction of tax burdens, the application of fiscal incentives, the efficient use of public subsidies, the effective use of infrastructure that has already been deployed and the reduction of regulatory obligations.

Lastly, it is important to **promote the interrelationship between connectivity projects in rural areas and local communities** where deployments are carried out, since this will enhance the positive externalities contributing to comprehensive development and endow the projects with social sustainability. In this way, it is possible to generate a virtuous circle of shared value between companies and communities.

For Telefónica, digital inclusion is a broad concept that is not limited to connectivity, but also includes digital skills, that is, the development of skills in the population so that they can truly take advantage of the benefits of digitalization. Only in this way will connectivity translate into better quality of life in places where services are extended. Social projects based on technology and connectivity can be enhanced with this approach, as demonstrated by *Conectarse para Crecer*, a Telefónica program that recognizes and strengthens technology-based rural entrepreneurship, and other education, digital employability, and volunteering programs such as those deployed by Fundación Telefónica Movistar in Latin America.

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Chapter

05

Internet para Todos:
The model works

The model proposed by Telefónica to close the connectivity gap in rural areas is not the result of a theoretical exercise, but rather **has been implemented by *Internet para Todos* (IpT) in Peru.** IpT was created with the mission of bringing digital connectivity to rural areas of Peru. To meet this objective, IpT evolved Telefónica del Peru´s 2G rural mobile network to install 4G technology and migrate transport solutions – mostly satellite at the start of operations – towards fiber optics or ground-based radio solutions, as well as deploying new infrastructure and extending 4G technology to other rural areas in Peru. This network is open to all mobile operators, who can access it without having to invest to expand the coverage of their services.

IpT came to be thanks to a collaborative exercise between a telecommunications company (Telefónica), a digital ecosystem company (Meta), and two regional development banks (IDB Invest, and CAF-Development Bank for Latin America), who shared the objective of bringing good quality mobile Internet service to remote areas of Peru based on the pillars of innovation, collaboration and sustainability.

This new model has been successfully implemented by ***Internet para Todos*** in Peru. Created from an alliance between:

Telefónica + Meta + BID Mejorando vidas + CAF Banco de Desarrollo de América Latina

a. Characteristics of the IpT model

i. Innovative

IpT is based on an open technology model that incorporates the use of shared access infrastructure (RAN Sharing), network virtualization and automation of operational processes for a radical reduction of costs. Additionally, the use of technologies, such as Artificial Intelligence and Big Data, has made it possible to optimize the design and maintenance of networks.

ii. Collaborative

IpT operates its network in rural areas and makes wholesale connectivity services available to all mobile operators in Peru under non-discrimination principles, providing the required infrastructure and transport as a neutral platform. As a shared wholesale network, IpT avoids duplication of investments in infrastructure, gaining important efficiencies. IpT offers wholesale access to its rural broadband infrastructure to all mobile operators, allowing them to expand the coverage of their services to rural areas where previously there either was no service or it did not have a good enough quality.

iii. Sustainable

By being based on a single wholesale network model, IpT makes it possible to reach unserved rural areas under a scheme that optimizes costs and investments, facilitating the financial sustainability of the project and reducing the environmental impact that duplication of networks can generate. In addition, IpT places a special focus on the development of the communities where it provides its services, seeking to accelerate digital adoption and its benefits on people's quality of life. IpT's model is based on the premise that connectivity and technology should support sustainable development from an economic, social, and environmental perspective.

IpT is developing projects such as *Aprendo con IpT*, a digital platform that contains varied educational content that can be accessed online, which help improve the digital skills of students in rural communities. Additionally, IpT is working with other partners to strengthen different educational, health, and financial projects in the areas where it provides service.

b. Incentives that made it possible

Regulatory flexibility

The role of the Rural Mobile Infrastructure Operator (OIMR, in Spanish) in the Peruvian regulatory framework is to provide wholesale services to retail mobile operators in rural areas where they do not have coverage and enables the use of the mobile operator's spectrum by the OIMR.

Peruvian legislation also provides a straightforward process to obtain OIMR registration without restrictions with regards to the business structure of the company.

New technological approach

The regulatory framework facilitates and encourages active infrastructure sharing between operators in rural areas (both through RAN Sharing and through roaming).

Public-Private Effort

The Peruvian State created 21 Regional Projects aimed at the deployment of broadband transport networks over fiber optics with more than 30,000 kilometers nationwide.

IpT – like any OIMR - may use the access network of the regional connectivity projects by signing Internet service agreements with the companies that manage the regional networks, thus maximizing the use of those networks to expand mobile Internet coverage in rural areas.

The Ministry of Transport and Communications of Peru has issued regulations that aim to encourage OIMRs to use other State-owned infrastructure, such as radio and television towers deployed across the country. Additionally, there exists the possibility for mobile operators to meet their network deployment commitments in rural areas, that they have undertaken with the Peruvian State, through agreements with OIMRs.

Fiscal Neutrality

The creation of IpT implied transferring all the assets of Telefónica del Peru associated with the provision of services in rural areas to the new company. This, thanks to the Peruvian tax framework, could be carried out in a tax neutral way, with no impacts at Income Tax or Value Added Tax (IGV) levels.

c. Results

After just over three years of operations, IpT has brought services to many rural areas of Peru and almost three million of the six million people who lived in areas without Internet coverage in Peru in 2019 when IpT began its commercial operations. IpT has brought the benefits of the digital world to more than 15,000 locations throughout Peru, deploying more than 1,900 4G sites.

Internet para Todos in Peru began its operations in May 2019 and after more than three years of operations has expanded connectivity to:

~3,000,000
people

+15,000
locations

+1,900
4G sites deployed

Chapter

06

New public policies
to close the divide

As the case of IpT in Peru shows, it is possible to **make progress in closing the digital divide in Latin America, but to do so it is essential to implement innovative business models and new public policies** that are consistent with the objectives sought, contribute to long-term sustainability of rural projects, encourage investment and foster digital inclusion. On the contrary, policies focused on the short term hinder the development of innovative business models that can allow effective progress in closing the digital divide.

Most efforts made in Latin America have been channeled through Universal Service Funds (USF). Reforming them is key to accelerating connectivity expansion. It is necessary to review whether the projects implemented with USF resources meet the objectives for which these funds were created in an efficient and effective way. An efficient management of the USF's resources guarantees that they are directed towards connecting the unconnected, and do not become an additional source of revenue for the public treasury. Furthermore, ex-post assessments of the impact of projects implemented will contribute to ensuring that USF resources effectively meet the objectives set forth.

The study Cerrando la Brecha de Conectividad Digital. Políticas Públicas para el servicio universal en América Latina y el Caribe.

published by the IDB (García-Zaballos, Huici, Puig Gabarró & Iglesias Rodríguez, 2021) emphasizes the execution problems of the USFs and highlights the importance that funds are used for their intended purpose (instead of being diverted to purposes other than digital inclusion), have a holistic approach (may also be used to improve service appropriation), and focus on the sustainability of the implemented programs.

Most regulations have been designed for urban areas, with minor adjustments to adapt to the needs of rural areas. If the goal is to connect remote locations, close the digital divide, and bring the benefits of digitalization to everyone, then it is necessary to have flexible regulatory frameworks which are appropriate for rural areas. It is essential to create a new regulatory framework specifically designed to meet the challenges and needs related to the provision of services in rural areas.

Before detailing the main elements of this new public policy model for rural areas, it is necessary to clearly identify why previous models for the expansion of connectivity in rural areas have not been successful. Among the main causes, it is possible to identify the following:

It is essential to create a new regulatory framework specifically designed to meet the challenges and needs related to the provision of services in rural areas.

Geographical and social issues:

In many areas of Latin America, small villages in rural areas that do not have telecommunications infrastructure also lack other basic infrastructure and services, such as a stable power supply, paved roads, or transportation. Furthermore, most of these places have a sparse and uneven population distribution.

High costs and investments required to provide services in rural areas:

The installation, operation and maintenance of rural networks requires high operating costs and large investments. One of the elements that makes the viability of business cases in rural areas more difficult is the lack of high-capacity land transport networks. This forces the use of satellite technology for transport, which is still very expensive, or carrying out high investments in new fiber optic deployments when extending services to new rural areas.

Commercial aspects:

In order to move forward in expanding services in rural areas, it is necessary to have sustainable business models. The lack of demand for services and the low purchasing power of a relevant part of the rural population in Latin America makes it necessary to also innovate the commercial offer.

To face these challenges and advance in closing the digital divide in rural areas of Latin America, Telefónica proposes a review of public policies on five fronts:

New public policies for the development of rural connectivity

Rural Connectivity

1. Foster Innovation

- Financial
- Regulatory
- Technological

2. Encourage Collaboration

- Encourage public-private cooperation
- Facilitate infrastructure sharing
- New model for spectrum management

3. Free up Resources for Investments

- Reduce the tax burden
- Reduce spectrum cost
- Review the USFs (Universal Service Funds)

4. Facilitate Infrastructure Deployment

- Accelerate processes and simplify procedures for deployment permits
- Facilitate access to public infrastructure

5. Reduce or Eliminate Technical Barriers

- Reduce environmental obligations on infrastructure
- Enable technology neutrality

1. Foster innovation:

a. **Financial:** The financial resources necessary for the expansion of services in rural and remote areas cannot be sourced exclusively from the telecommunications sector. New business models must be developed to attract investments from other sectors and facilitate public-private collaboration.

b. **Regulatory:** Regulatory frameworks need to be simplified to encourage the development of networks in rural areas. Regulations imply costs for the operators and, to the extent that this burden can be reduced, it may help make business cases viable. In addition, implementing measures such as regulatory sandboxes that make quality obligations more flexible, facilitating infrastructure installation permits and encouraging self-regulation, can be very positive. Furthermore, measures that promote rural investment, such as the exchange of regulatory fees for connectivity commitments or the elimination of regulatory fees (USF fees, spectrum fees, etc) on services provided in the rural areas are elements to consider. It may also be helpful to develop a new approach for competition policies in rural areas, accepting that the existence of overlapping networks in these areas is not sustainable and instead focus on service-based competition.

c. **Technological:** New technologies to extend coverage in rural areas must be facilitated and encouraged through trial schemes that allow for exploring emerging technologies, with flexibility or even temporary exemptions on quality indicators.

2. Encourage collaboration:

a. **Cooperation:** Public-private partnerships and private-private alliances should be encouraged and facilitated to make rural connectivity projects viable. It is of particular interest to promote the development of market-driven single wholesale network models to which all operators of retail services can connect under voluntary schemes and non-discriminatory conditions, following IpT's model.

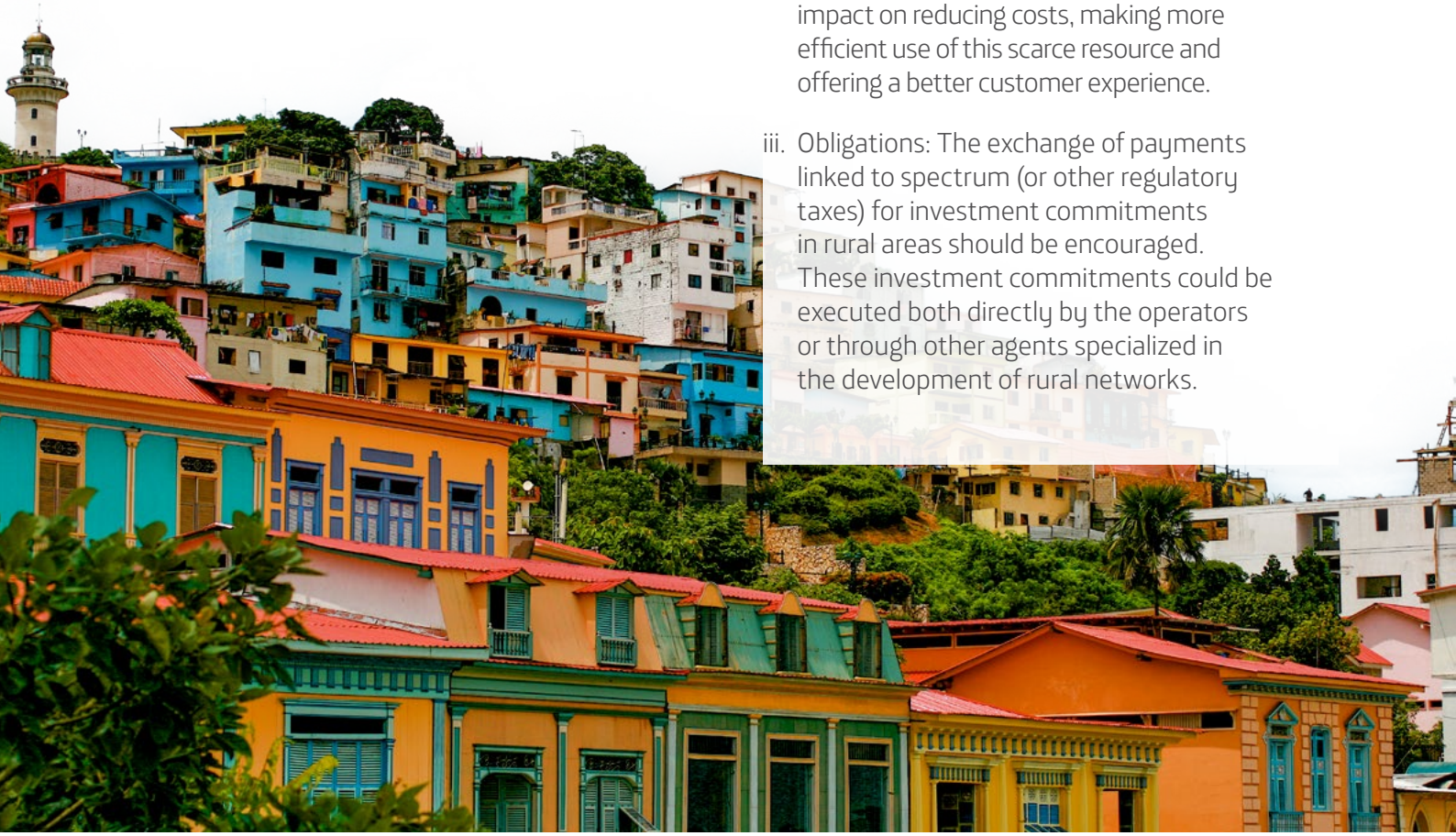
b. **Infrastructure sharing:** It is necessary to facilitate and develop infrastructure sharing models, as they generate very relevant operational and financial efficiencies in the deployment of networks in rural areas. This sharing must be carried out on a voluntary basis and, although it can be encouraged, it should not be made mandatory as it may create a disincentive for investment.

c. **New model for spectrum management:** Spectrum policies must have a long-term vision focused on promoting digital inclusion and innovation, and not on maximizing short term fiscal revenue.

i. Spectrum access: Wireless technologies are essential for the expansion of Internet access in rural and remote areas, so facilitating access to spectrum at an affordable cost is key. A framework that allows accessing the available spectrum without discrimination between agents, with a flexible approach, respecting the rights acquired by spectrum holders and based on voluntary agreements, may become one of the main enablers for coverage extension in rural areas, with special emphasis on access to spectrum in low bands due to its coverage characteristics.

ii. Spectrum use: It is important to develop new approaches that facilitate the flexible use of the spectrum in rural areas. Models such as spectrum leasing, spectrum sharing and spectrum pooling, negotiated on voluntary terms between operators, can have an impact on reducing costs, making more efficient use of this scarce resource and offering a better customer experience.

iii. Obligations: The exchange of payments linked to spectrum (or other regulatory taxes) for investment commitments in rural areas should be encouraged. These investment commitments could be executed both directly by the operators or through other agents specialized in the development of rural networks.



3. Free up resources for investments:

a. **Improve the management and use of USFs:** In many Latin American countries, USF resources, which are provided almost exclusively by operators, are not effectively used. In addition to expanding the base of contributors to USFs, including all parts of the value chain of the digital ecosystem, mechanisms must be defined to ensure effective and efficient use of the funds. In addition, there should be schemes that allow the use of USF resources to subsidize demand of low-income sectors, facilitating their access to connectivity services and enabling operators to choose between paying fees to the USF or investing in rural connectivity projects defined by the regulators.

b. **Taxation adapted to rural areas:** In many Latin American countries, the tax burden of the telecommunications sector is very high, even comparable to that applied to luxury products. According to a study by Ernst & Young for GSMA (2020), the telecommunications sector in Latin America and the Caribbean has the highest tax burden of all industries, with an average of 18%. Maintaining the current high tax burden on telecommunication network deployments and on services in rural areas represents a significant barrier for investments and the adoption of services in these areas.

c. **Spectrum cost reduction:** Spectrum is a critical input for the telecommunications industry but is perceived by some authorities as a source of fiscal revenue. Studies carried out by the GSMA (2022) for several countries in the region (Colombia, Ecuador, and Mexico) show that the high cost of spectrum has a negative impact on the expansion of networks and the quality of services. It is key to evolve to a new vision of spectrum, from an approach focused on short-term fiscal collection towards a focus on networks and services development. In addition to the costs associated with spectrum assignment, it is necessary to lower the fees for spectrum use, especially in countries that have schemes for calculating spectrum fees that specifically penalize rural areas. Being exempt from paying these fees in rural areas may be a relevant measure to free up resources for investments and facilitate sustainable business cases for service provision in rural areas.

4. Facilitate infrastructure deployment:

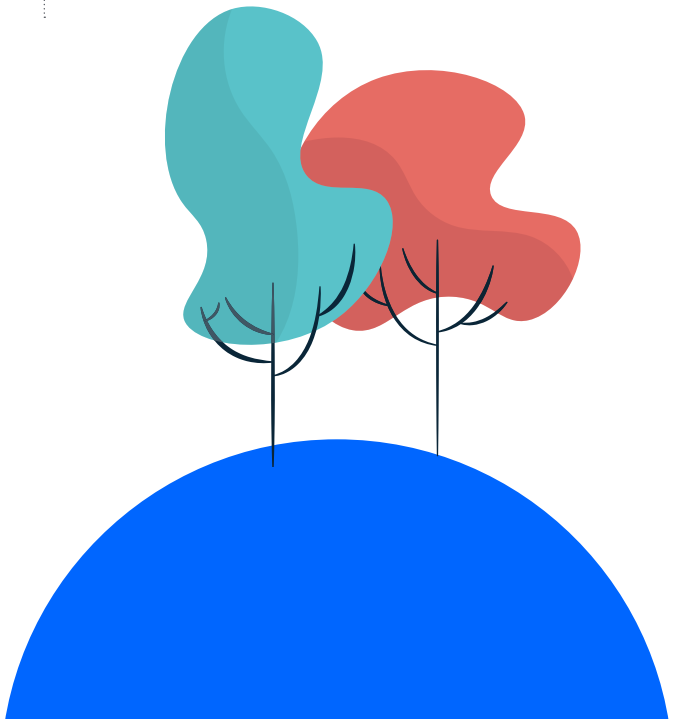
a. **Accelerate processes and simplify procedures for infrastructure deployment permits:** The deployment of infrastructure, such as antennae and fiber optic networks, entails long and expensive bureaucratic processes in most countries. It is necessary to foster collaboration among national, regional and local governments with regulators to reduce red tape and administrative costs linked to the deployment of infrastructure in rural areas, improving coordination between the different administrative bodies to expedite procedures. Considering automatic permit approval regimes or defining telecommunication deployments as basic infrastructure of public interest, with the consequent simplification of procedures, can be essential to accelerate and reduce the costs of infrastructure deployment in rural and remote areas.

b. **Access to public infrastructure:** Enabling operators to use public infrastructure (sites, rights of way, etc.) can be a very relevant element to facilitate, reduce costs, and speed up deployment in rural areas.

5. Reduction or elimination of technical barriers:

a. **Environmental obligations on infrastructure:** Review the reasonableness of applying these types of obligations in rural areas as they may entail additional costs that hinder business cases for deployment.

b. **Technological neutrality:** An obligation to deploy networks using a specific technology can negatively affect the extension of infrastructure in rural areas, and even force early obsolescence. Guaranteeing technological neutrality, especially in rural areas, allows operators to choose the best available technology for deployment in each specific location.



Chapter

07

Conclusions

Telefónica envisions a human-centered connectivity, that improves the quality of life for everyone, regardless of where they live. There is concrete evidence that digitalization can close economic and social divides and improve the productivity of economies, making digital inclusion an imperative.

In Latin America, coverage and connectivity gaps persist in rural areas with low levels of development, high percentages of low-income populations and lack of access to basic infrastructure and services. Reducing the digital divide in these regions requires designing solutions that fit the specific needs of rural areas. With this objective in mind, Telefónica proposes a model centered on three elements: innovation, cooperation, and sustainability. This proposal asks us to think differently from how we have done up to now, to work together with all the players in the ecosystem and generate new business models that encourage investment.

Within this context, there is a need for a constructive public-private dialogue that reviews current public policies and contributes to the development of a new regulatory framework for rural areas based on five elements.

There is a need for a constructive public-private dialogue that reviews current public policies and contributes to the development of a new regulatory framework for rural areas.

New public policies for rural areas on five fronts:

1. Encourage innovation: financial, regulatory and technological.

2. Foster collaboration: through cooperation, infrastructure sharing and the development of new models for spectrum management.

3. Free up resources for investments: with better management and use of USF resources, the review of taxation applied to networks and services in rural areas and the reduction of spectrum acquisition and use costs.

4. Facilitate infrastructure deployment: accelerate processes and simplify procedures for infrastructure deployment permits, reduce or eliminate the costs of permits, and facilitate access to public infrastructure in rural areas.

5. Eliminate technical barriers and guarantee technological neutrality.

We are convinced that the implementation of this model for the development of connectivity in rural areas can accelerate digital inclusion and close the digital divide in Latin America. **This is a model that has already been successfully implemented in Peru with *Internet para Todos*** where, in a period of just over three years, quality connectivity has been brought to rural areas where almost 3 million people live. The conjunction of elements such as innovation in the technical, operational, and business model together with a new regulatory approach made it possible to attract non-traditional players to collaborate in closing the rural connectivity gap with very encouraging results.

However, the availability of connectivity is a necessary but insufficient condition to ensure that the benefits of digitalization reach everyone and no one is left behind. In addition to the challenge of coverage, which is very important and where we are convinced that new approaches can work, we have an enormous challenge ahead associated with the use and adoption of the Internet. As pointed out earlier in this document, around 38% of Latin Americans live in areas with service coverage, but do not access the Internet. There are several elements that explain this: the development of digital skills, the availability of use cases or relevant content, the cost of devices and services affordability, which is especially relevant for lower-income sectors. Joining public and private efforts to help overcome these limitations is key to making rapid progress in closing the digital divide in Latin America.

To close, a final plea: urgency. The challenges are widely identified and analyzed, but progress is not being made at the required speed. There are multiple forums where the existing gaps and the urgency to close them have been discussed, especially following the COVID-19 pandemic and its enormous economic impact on the region, but we are hardly seeing any clear actions that address the challenges. **Every minute that passes is a missed opportunity. We must act, and we must act now.**

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