Connected Society

Digital inclusion in Latin America and the Caribbean

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Connected Society

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1 Executive Summary

Digital inclusion – defined here as the expansion of global connectivity and mobile internet adoption – can deliver broad economic and social benefits by bringing communications services to previously unconnected populations. This in turn can help reduce poverty, improve infrastructure and services, and further increase internet access and usage. Unconnected and underserved communities risk falling further behind, widening the digital divide, if barriers to digital inclusion remain unaddressed. This report is one of three on digital inclusion in Latin America, and focuses on the barriers to digital inclusion in the region. The other two reports provide deep dives on network coverage and locally relevant content.

Low mobile broadband adoption despite wide network coverage in Latin America and the Caribbean

The mobile market in Latin America and the Caribbean is maturing rapidly, with unique subscribers growing on average 5% per year over the last five years and a further 4% average annual growth expected over the next five. However, there remains significant potential to bridge the digital divide by bringing mobile broadband services to the wider population. More than 300 million people in the region still do not subscribe to mobile internet services and the penetration is even lower for mobile broadband (3G and 4G), with nearly 7 in 10 people lacking a mobile broadband subscription.

Interestingly, the coverage gap in Latin America and the Caribbean is relatively small, with only about 10% of the population, or 64 million people, living outside the footprint of 3G or 4G networks. However, 57%, or 360 million, of those Latin Americans who have coverage do not use mobile broadband. This indicates a significant gap in demand despite network availability. To understand the reasons behind this weak demand, we have investigated the profiles of non-internet users – who they are, where they live and to which social cluster they belong. Insights from the GSMA Intelligence Consumer Survey 2015 and various national household surveys in Latin America and the Caribbean point towards three primary barriers to mobile internet adoption – absence of locally relevant content, lack of digital skills and affordability.

Lack of digital skills and locally relevant content are the biggest barriers to digital inclusion

Although basic literacy rates in Latin America and the Caribbean are higher than the global average, there remains a gap in digital literacy and skills. Insufficient infrastructure and teaching support for digital education prevents many mobile users from exploring the benefits of the internet. This issue is further compounded by a limited supply of attractive content – both in terms of local language and local relevance. Analysis of web traffic data shows that less than 30% of content accessed in Latin America and the Caribbean is in local languages. Moreover, the content available on app stores and mobile operator websites is largely entertainment related, creating a misconception among non-users that the internet is just an entertainment tool and masking the real relevance and lifestyle-changing potential of the mobile internet.

Latin America and the Caribbean has the highest regional level of income inequality in the world. Affordability is a big barrier to internet adoption for people at the bottom of the economic pyramid. For the bottom 40% of the population, the cost of mobile ownership is on average 17% of income. This compares to just 2% of income for the top 20% of the population.

Effective collaboration between government and mobile operators is necessary to overcome the barriers to digital inclusion

Rolling out extensive mobile broadband coverage has been a significant undertaking for mobile network operators across Latin America and the Caribbean. For the full social and economic benefits of the investments in mobile broadband infrastructure to be realised, governments, development organisations and mobile operators need to join forces to make the internet available, affordable, useful and understandable for everyone. Given that mobile is the main means of internet access in the region, and that 3G and 4G coverage will reach similar levels to 2G, we believe that mobile will be key in improving internet access and adoption if supported by the right policy environment. Governments have a big role to play in addressing the digital literacy and local content barriers. By providing funding and support to promote ICT usage and learning in schools, governments can be instrumental in up-skilling the digitally illiterate population. By promoting local tech innovations and start-ups, governments can also encourage the creation of local content that is understood and relevant to the specific needs of mobile internet users in Latin America and the Caribbean. Finally, by leveraging their distribution channels, mobile operators can partner with governments and other development organisations to increase digital literacy and awareness among non-internet users.

Understanding the barriers to digital inclusion

Population

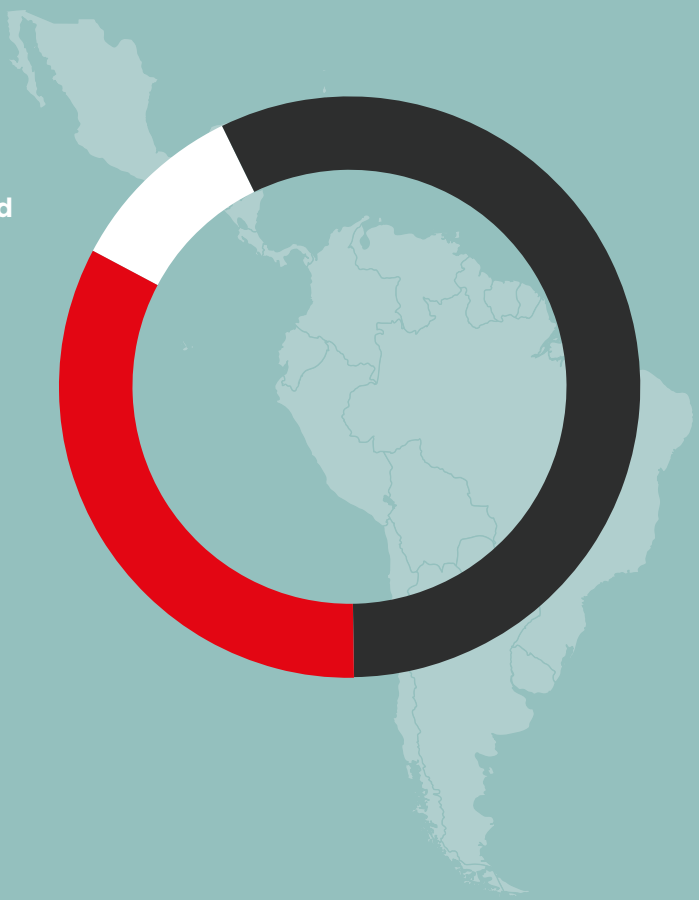
Total population
in Latin America and the Caribbean

634m

10% | **64m**
Not covered by mobile broadband (3G or 4G)

57% | **363m**
Covered but do not subscribe to mobile broadband

33% | **207m**
Subscribe to mobile broadband



Key barriers

Lack of locally relevant content

Less than 30% of content accessed is hosted locally in local language

Excess of entertainment-related content overshadows productivity benefits of internet

Lack of digital literacy and skills

Digital literacy not formally measured

High demand for digital skills education but insufficient teaching support in many countries

Lack of ICT infrastructure in schools and colleges

Affordability barriers

High income inequality

Cost of mobile ownership is on average 17% of income for bottom 40% of the population

High mobile-specific taxes in countries such as Brazil and Argentina

Network coverage to last mile

64 million people still not covered by mobile broadband

Challenge to connect sparsely populated areas – mountain ranges, rainforests and islands

Unreliable and patchy network coverage discourages users

Governments and mobile operators have a role to play

Governments

Providing funding and support to promote ICT usage and learning in schools

Promoting local tech innovations and start-ups

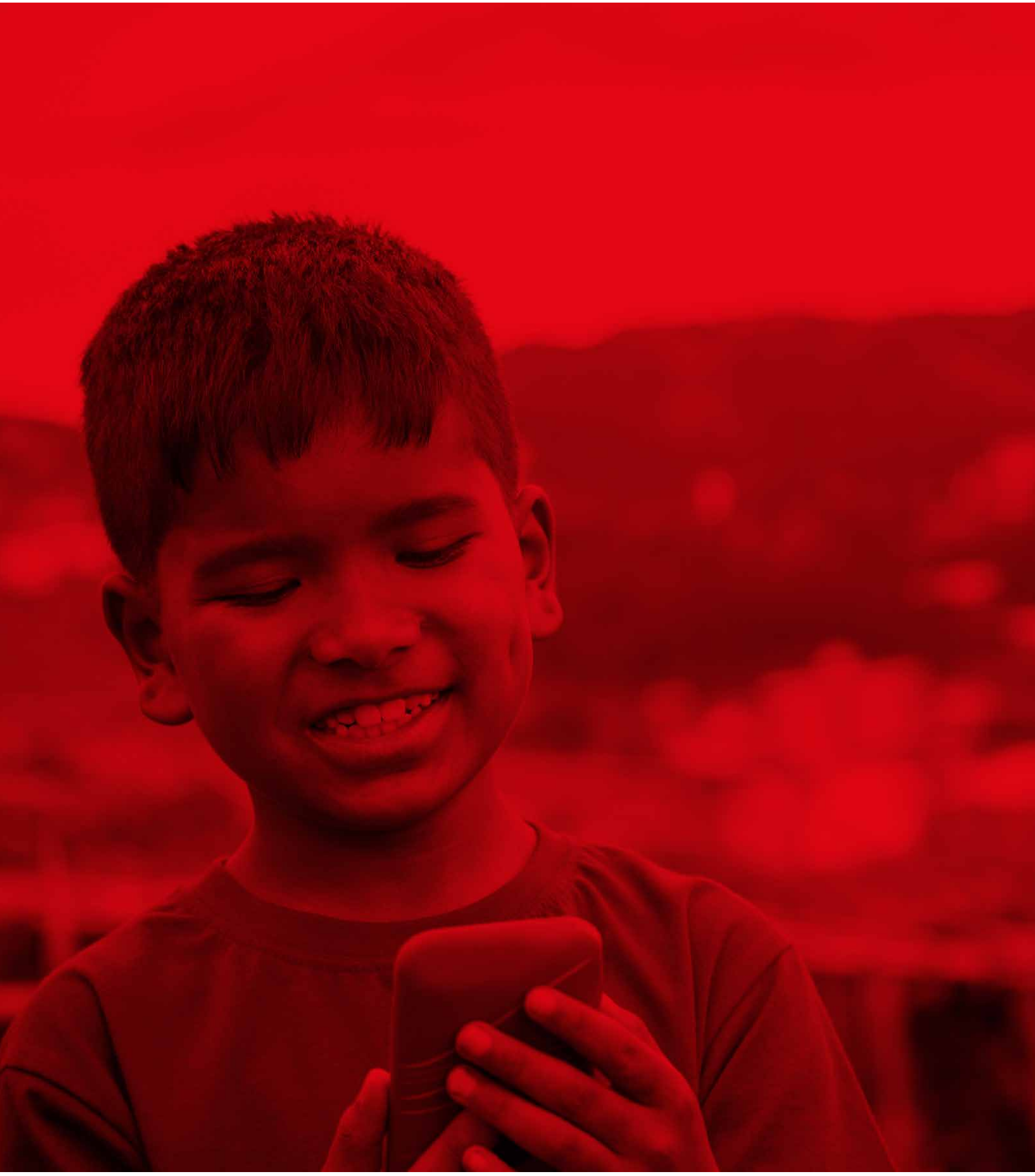
Providing locally relevant content via e-government services

Mobile operators

Collaborating with government and other organisations to promote digital literacy and awareness

Offering flexible pricing plans to make them affordable for those at the bottom of the pyramid

Providing opportunities to startups and innovations by helping them incubate and scale



2 Digital inclusion in context

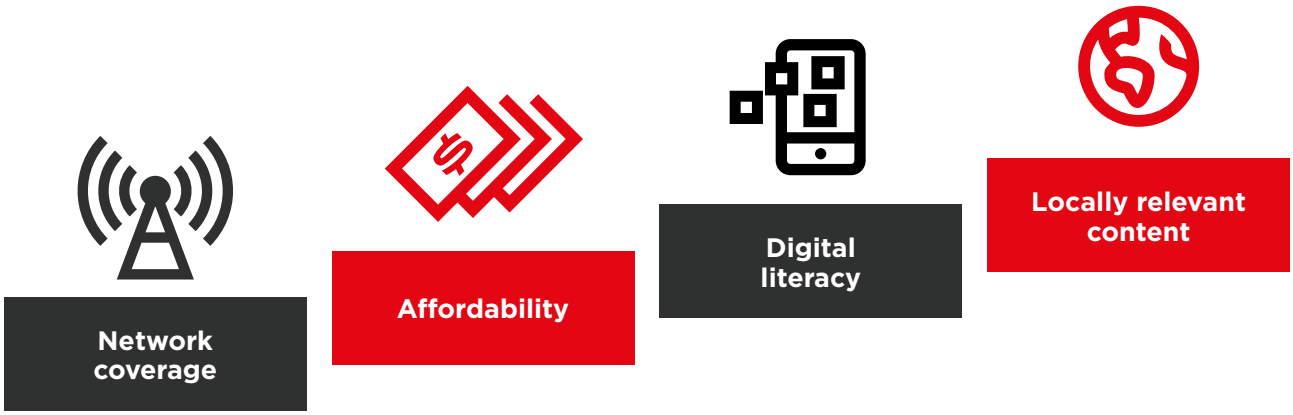
2.1 Digital inclusion – bringing internet to the 'have nots'

Beyond providing connectivity, the role of mobile technology is key in enabling empowerment for all, particularly for those at the base of the economic pyramid who are deprived of access to even basic utilities. Including the unconnected in the digital revolution is a step-by-step process, which includes providing coverage, equipping users with digital skills, raising awareness about the benefits of digital inclusion and providing opportunities to create and consume relevant local content.

The GSMA addresses these barriers through its Connected Society programme, which supports the industry to connect more people in developing countries to the mobile internet. In order to achieve this goal, the programme develops evidence-based research and case studies, and provides advisory services to help mobile operators address the barriers to reduce the digital divide.

In this report, we focus on the state of the digital divide and the barriers to digital inclusion in Latin America and the Caribbean.

Barriers to digital inclusion



2.2 Latin America: mobile market context

Strong human development indicators

Backed by strong human development indicators, most countries in Latin America and the Caribbean will be at the forefront of global growth in the years to come. More than 9 out of 10 adults in the region are literate, employed and live in urban areas. Over 90% of the population has access to electricity and 83% has access to improved sanitation, well above the global average. Both genders in the region score equally high on most of these indicators. Over the last decade, Latin America managed to lift more than 70 million people out of poverty; Peru and Uruguay have reduced their national poverty headcounts by more than 50% since 2005, and Ecuador, Paraguay and Venezuela have done so by approximately 40%[1].

However, GDP growth in the region has been slowing since 2012. This deceleration has mostly been driven by lower commodity prices and the slowdown of bigger economies such as Argentina and Brazil. There is significant variation in annual GDP within the region, with very large economies, such as Brazil and Mexico, reporting GDPs in 2014 of $2,346 billion and $1,295 billion respectively, and others as poor as Nicaragua and Haiti, with GDPs of $12 billion and $9 billion respectively. One of the biggest regional challenges the countries face is income inequality.

Fast evolving mobile market...

Latin America and the Caribbean is home to more than 430 million unique mobile subscribers, which amounts to 10% of the world's total in 2015. Unique subscriber penetration in the region has risen from 56% in 2010 to 68% in 2015, and this is forecast to reach 79% by 2020. The majority of this growth has come from Brazil, where more than 140 million of these subscribers live.

Most of the population in the region is covered by mobile networks, over 90% with 2G, 90% with 3G and 50% with 4G. More than 300 million subscribers had used mobile internet (2G, 3G and 4G) at the end of 2015, of which nearly 90% was on 3G and 4G. GSMA Intelligence estimates mobile internet subscribers to grow to 445 million by 2020. However, this growth is conditional on a number of factors, particularly tackling the barriers to internet adoption we discuss in detail below. Smartphone adoption has also risen from 5% of connections in 2010 to 47% in 2015, which equates to more than 300 million smartphone connections.

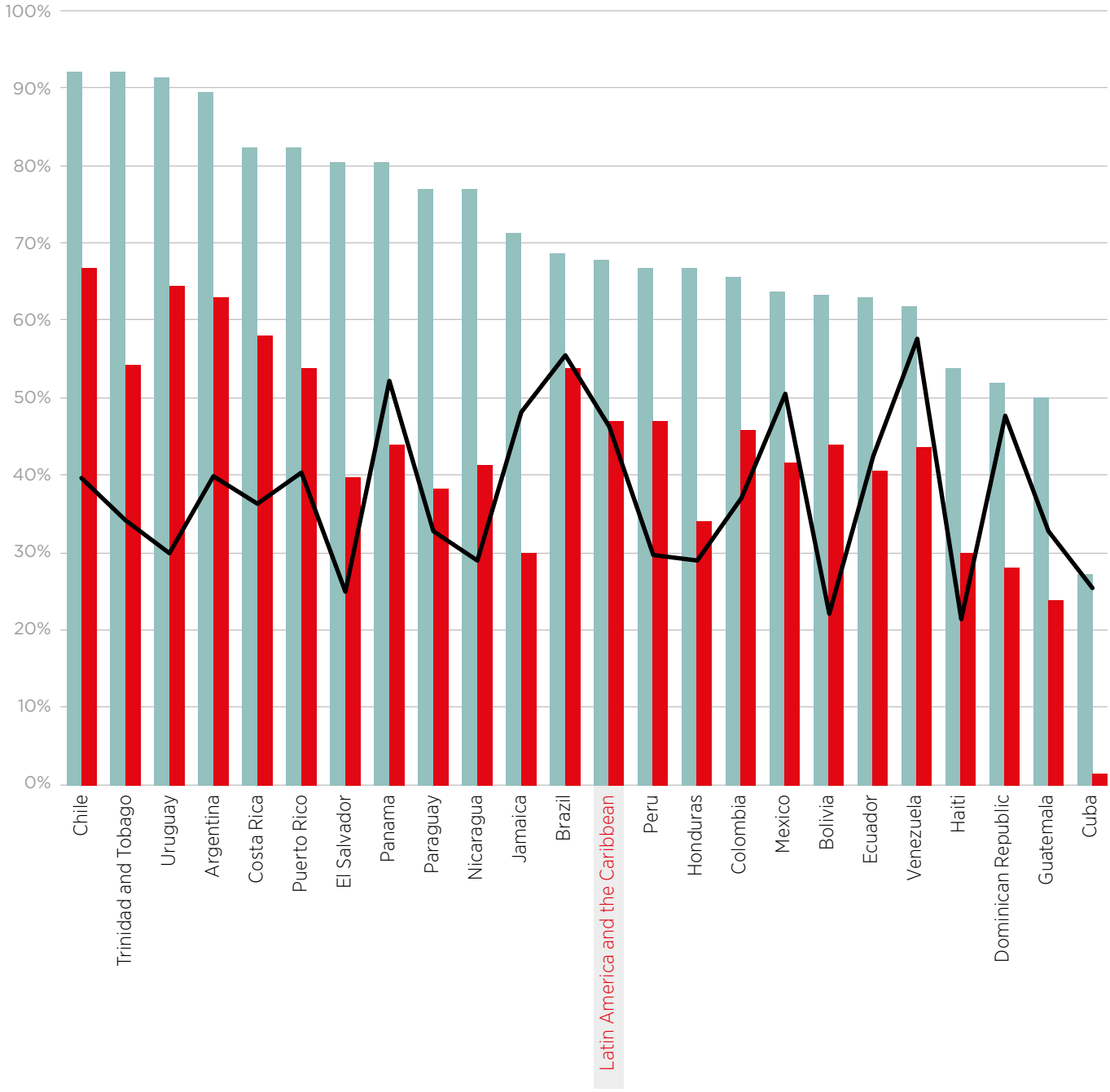
...but with different growth speeds by country

Most of the subscriber growth in the region comes from the most populous country – Brazil; more than 30% of unique subscribers in Latin America and the Caribbean live in Brazil. Unique subscriber penetration, mobile internet penetration and smartphone adoption levels vary significantly among the most populous countries in the region.

1. World Bank

Figure 1

Variations in mobile market maturity across the region



Source: GSMA Intelligence

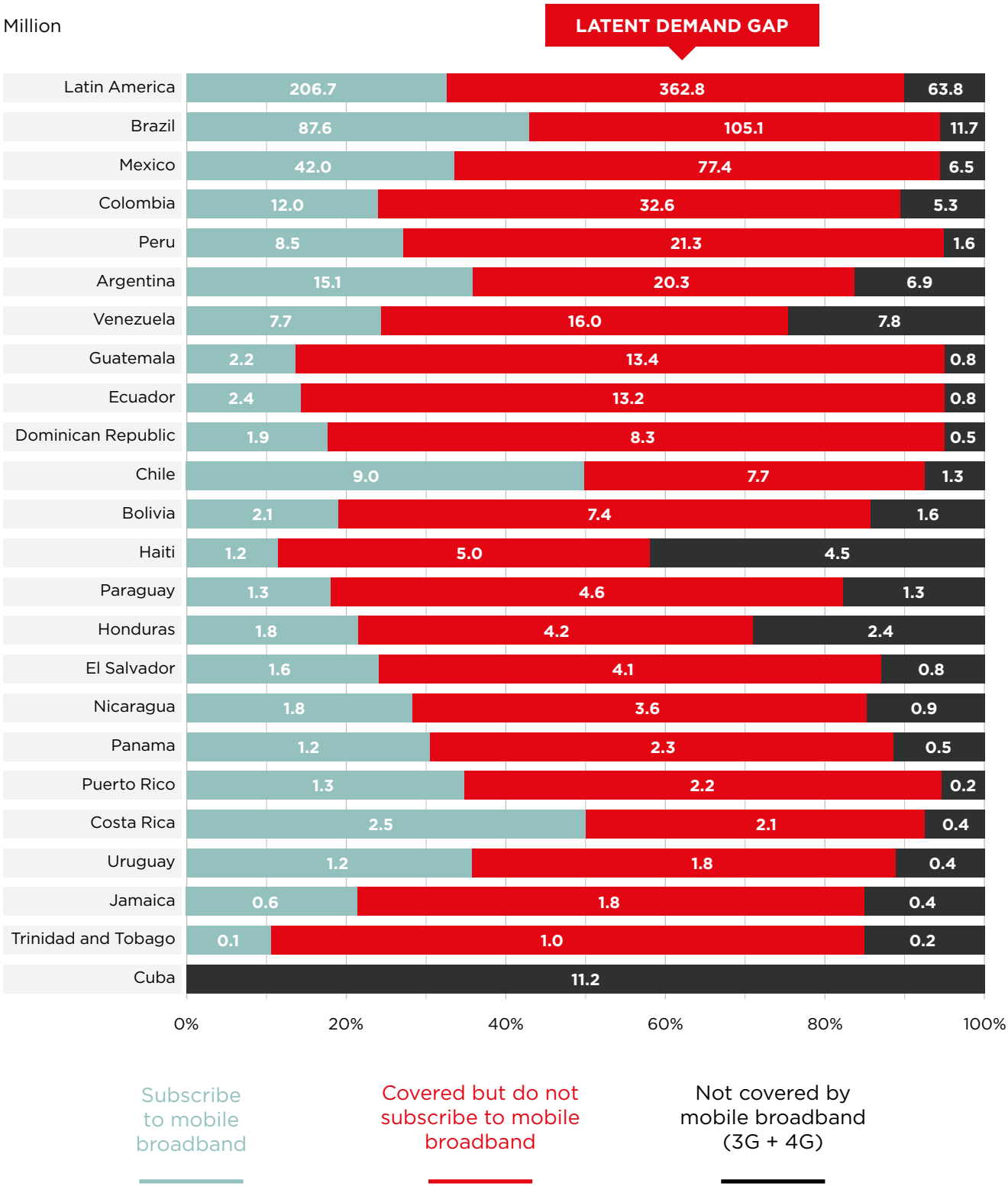
2.3 Sizing the digital divide in Latin America

Strong growth at the regional level often masks the significant digital divide in Latin America and the Caribbean. As seen in Figure 2, although a significant proportion of the population is yet to experience mobile broadband, it is not due to lack of coverage. Of the total population in Latin America and the Caribbean, only 10% or 64 million people are not covered by mobile broadband (3G or 4G) networks. The 90% of the population that is covered by mobile broadband can be further divided into 33% (207 million) who subscribe to mobile broadband and the remaining 57% or 363 million who are covered by mobile broadband but do not subscribe to the services. The majority of those unconnected to mobile broadband live in sparsely populated areas of the region, belong to the low-income segment of the population and are often ill-equipped in terms of digital skills. See *Appendix* for the profiling of non-internet users in selected countries.

It is this delta of 363 million people, 57% of the population, that forms the latent demand gap to be filled in Latin America and the Caribbean. However, this demand gap varies significantly by country.

Figure 2

More than 360 million people are covered by mobile broadband but do not use it – why?



Source: GSMA Intelligence
Note: Data for 2015

3 Barriers to digital inclusion

3.1 Identifying the key barriers

To understand the consumer barriers to internet adoption, we analysed the results from various national statistics databases together with the GSMA Intelligence Consumer Survey 2015 that covers 54 countries globally, including eight countries in Latin America and the Caribbean, namely Argentina, Brazil, Chile, Colombia, Guatemala, Mexico, Nicaragua and Puerto Rico. Among the 8,000 respondents interviewed in these eight countries, approximately 30% said that they have never used the internet on any device. Most of the non-users in the countries analysed come from the lowest income strata or bottom of the pyramid (BoP) and live in rural and less populated areas. Our consumer survey has not revealed a significant gender gap in terms of internet adoption in the region.

Among the four key barriers identified by the GSMA Connected Society programme, lack of coverage is the least pressing in Latin America and the Caribbean. Mobile operators have significantly invested in network infrastructure to bring 3G and 4G coverage to 90% of the population, up from 60% five years ago. Although coverage is high, many may remain unconnected because they cannot afford to access and use mobile services. Even though the cost of mobile ownership as a share of income is below the 5% affordability threshold in most of the countries in the region, high income inequality means that mobile services are unaffordable for those at the bottom of the pyramid, for whom the cost can represent as much as 42% of monthly income.

The two biggest barriers to internet adoption, as identified by the non-users in our consumer survey results, are perceived lack of relevant, local content and the lack of digital skills (see Table 1). While both these barriers are significant on their own, they are deeply inter-related at the consumer behaviour level. Lack of awareness about the benefits of the internet can lead to a perception that the internet is irrelevant to the user's daily needs. This perception can also stem from the inability to use or understand the technology (digital illiteracy) or lack of content that is of interest to users (lack of local content). An additional barrier that has been identified by consumers and is relevant to the region is security and trust.

Table 1

Lack of relevant, local content and digital literacy & skills among top reasons for non-users

Barrier	Lack of locally relevant content	Lack of digital literacy and skills	Affordability barrier	Lack of network coverage	Security and trust barrier	Other
Argentina	72%	19%	18%	2%	4%	11%
Brazil	47%	41%	37%	2%	10%	19%
Chile	37%	47%	18%	1%	4%	9%
Colombia	49%	46%	49%	19%	19%	25%
Mexico	51%	33%	43%	9%	7%	6%
Guatemala	57%	38%	14%	3%	5%	6%
Nicaragua	31%	58%	23%	6%	3%	7%
Puerto Rico	68%	18%	33%	2%	6%	10%

HIGH PERCEIVED BARRIER — LOW PERCEIVED BARRIER

Source: GSMA Intelligence Consumer Survey 2015
Note: Survey conducted in 54 countries. The sample for Latin America and the Caribbean covered eight countries and 8,000 respondents.

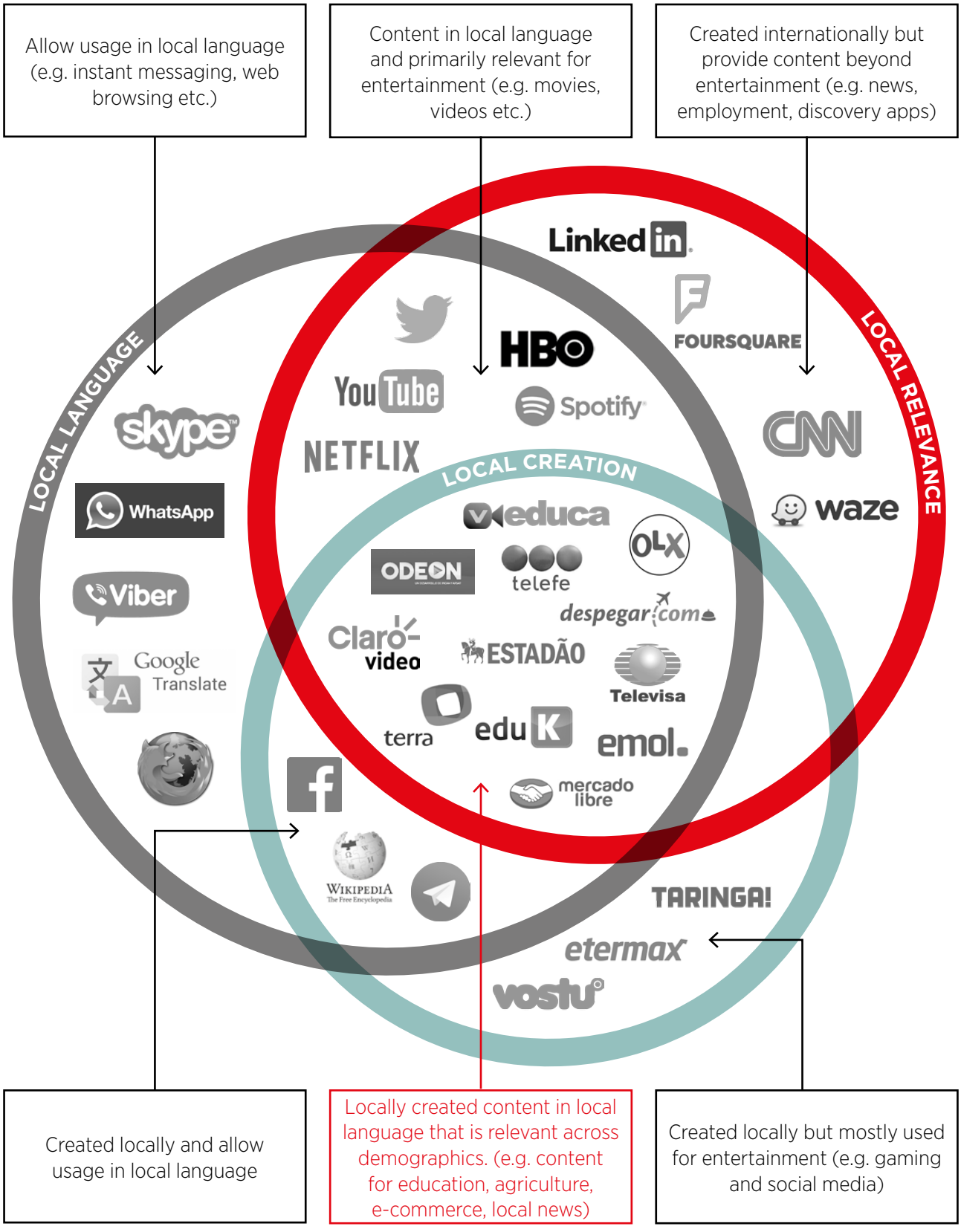
3.2 Locally relevant content

To fully understand local content's role in driving mobile internet usage, it is first important to define content and local relevance. Mobile content is any form of electronic media (pictures, music, text, videos, games, maps etc.) that can be viewed or used on a mobile device, such as a mobile phone or tablet. Referring to content as 'local' can mean many things; it can refer to content that is in the local language, content that is created and hosted locally, or content that happens to be relevant to the local population.

The majority of the content currently available is simply directly translated into local languages, without accounting for local nuances. There is then a smaller volume of content (both amateur and professional) that is locally created. The most valuable and yet least available is content that is locally relevant. Local relevance can mean different things for different people; while entertainment-related apps could easily be the top preference of some, others (and particularly low-income users) would associate it with content that improves their productivity – for instance, crop pricing, weather forecasts or educational content. For the purpose of this report we define it as content or information that has a direct impact on the everyday lives of people across demographic segments in the target market. We illustrate these categories in Figure 3; however, these categories are dynamic, and recent trends show that players are increasingly moving towards the middle ground to achieve relevance across demographics.

Figure 3

Content is most relevant when created locally in local languages



Source: GSMA Intelligence

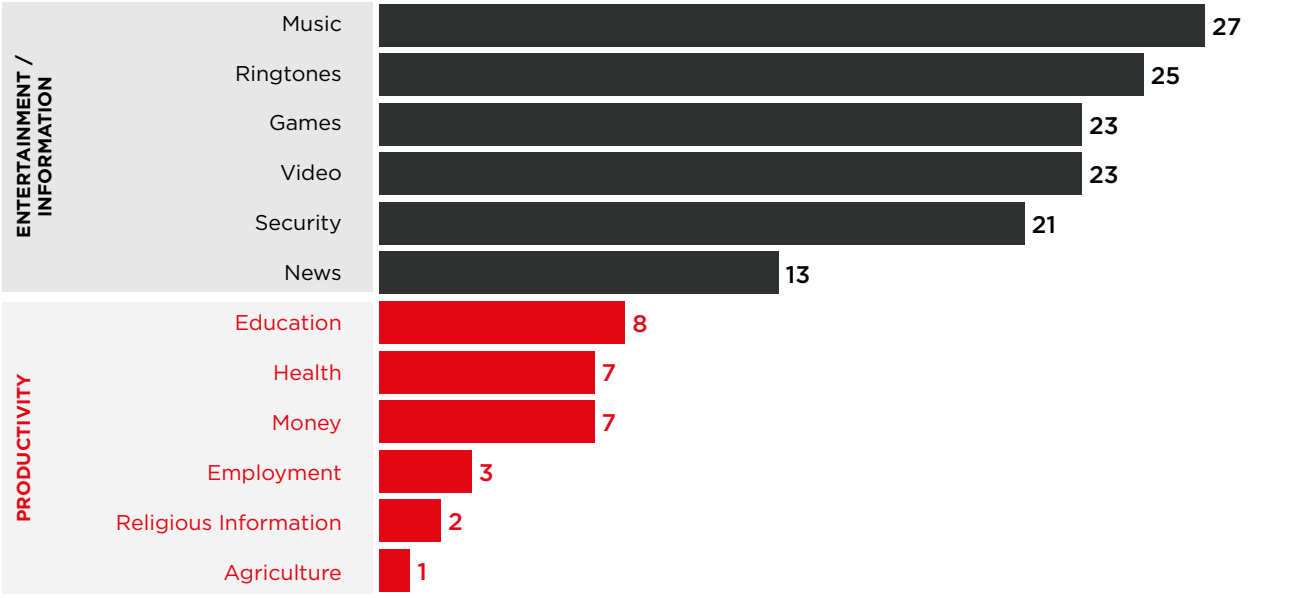
Locally relevant content is highlighted by our consumer survey to be a more important factor than cost or other considerations in most markets. The perception of lack of internet relevance can be driven by many reasons such as a lack of awareness, lack of content in local languages or shortage of content that interests consumers. It can also be driven by a lack of opportunities for the consumers themselves to create relevant content.

Spanish and Portuguese together account for the linguistic preferences of more than 90% of Latin Americans.[2] However, despite being less fragmented linguistically than other regions, the proportion of content in Latin America that is truly local is the lowest in the world. In 2013, according to analysis by economist Dr Raúl Katz based on Alexa data of website traffic, less than 30% of content accessed in Latin America and the Caribbean is hosted locally in the local language, the lowest of all regions globally.

To understand the second aspect of local content, we reviewed operator websites in Latin America markets for available content that is relevant; most of the service offerings primarily address the entertainment segment of the market through music, videos, ringtones and games content. Services that focus on productivity such as mAgri, mEducation and employment (which are more likely to meet the needs of non-users on lower incomes) are less common. It could be argued here that the supply of services is matching the demand, but it is impossible to tell whether demand for entertainment is the key factor in determining the range of operator services or vice versa.

Figure 4

Operator content services in Latin America focus on entertainment



Number of operator websites with offerings per category

Source: GSMA Intelligence based on c.35 operator websites across Argentina, Brazil, Chile, Colombia, Guatemala, Mexico, Nicaragua and Puerto Rico

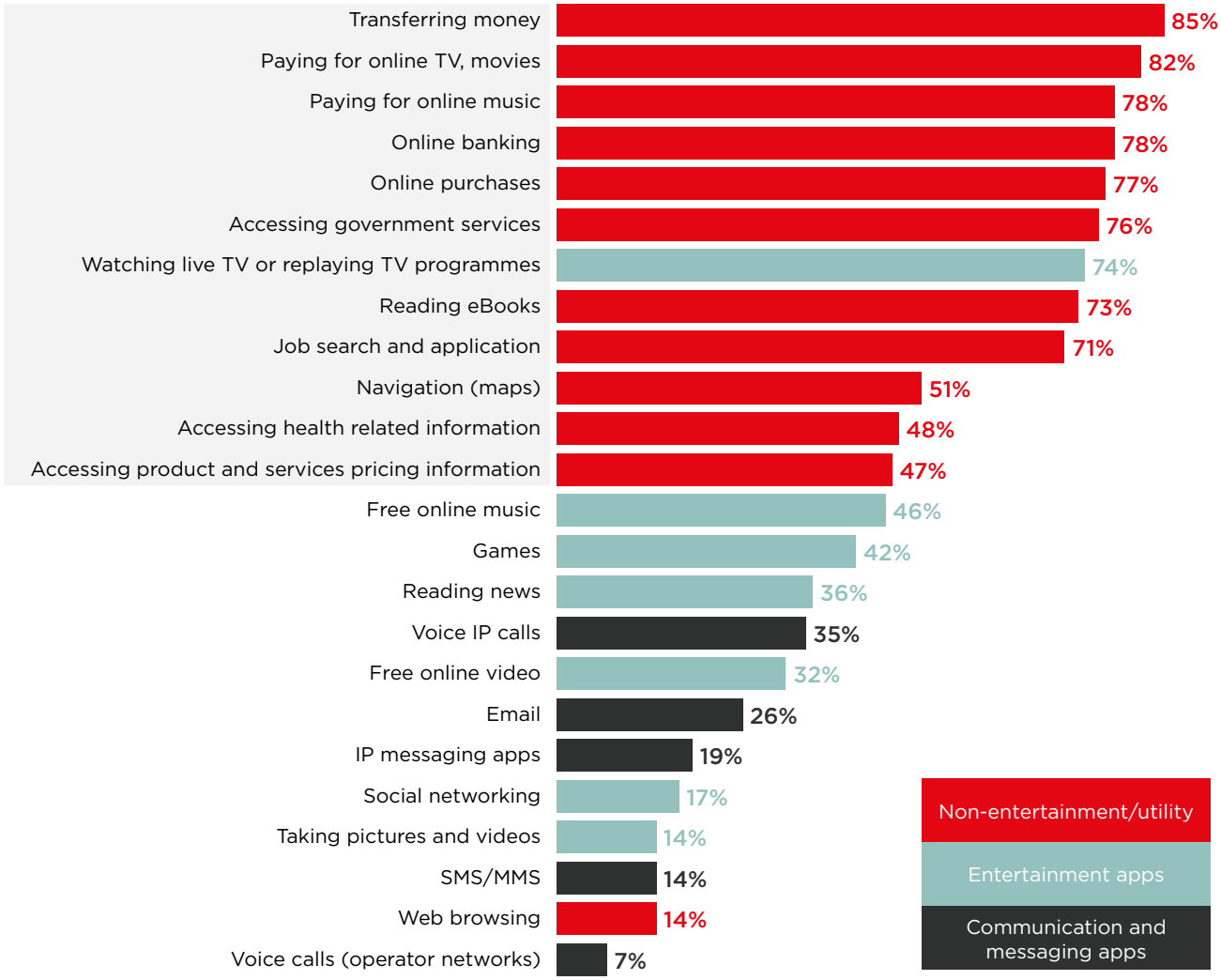
2. WebEthnologue

Consumer awareness of the productivity benefits of the internet among non-users can be driven by word-of-mouth from those who already use it. Results from our consumer survey show that the respondents who use internet on their mobile phones most commonly used them for making calls, taking pictures, sending SMS/MMS, web browsing and social networking. However, more than 70% of respondents across the eight surveyed countries had never used their mobile phones for functions such as making mobile payments, accessing government services, accessing health-related information, or even making online purchases (see Figure 5).

According to App Annie store statistics, 70% of the free app downloads from Google Play store (the most used app store in Latin America) in nearly 18 countries in the region are of messaging, social networking and other entertainment apps, along with nearly 30% that are utility applications such as antivirus and battery-saving applications.

Figure 5

More than seven in ten internet users have never used online banking, mobile payments or job search on their mobiles



Percentage of mobile internet users who have never used these features on their mobile phones

Source: GSMA Intelligence Consumer Survey 2015

There also remains an uneven distribution of internet exchange points (IXPs) across the continent.

Brazil controls by far the largest share of these, with a limited, scattered distribution elsewhere, and total absence in some countries. Launching a local website or app in-country with a local IXP is important because the traffic to the site does not need to be routed out of the country (as is the case if the IXPs are international) to an exchange before coming back in. This can not only reduce costs for small entrepreneurs but also moves the website higher up lists of search results, providing the content creator with greater visibility and making it easier for end users to find.

There is a large and developed local media market in Latin America, including regional powerhouses such as Televisa, Globo, Univision and Clarin Group. Content consumption via traditional media channels such as television, print and radio is common, suggesting strong consumer appetite. We believe that there are several reasons behind the slow migration of local content to mobile channels. In addition to the fact that mobile technology is a relatively new channel, there is a lack of innovation in traditional media and cultural idiosyncrasies that are compounded by value chain complexities.

Migrating content to mobile channels will not only improve usage and consumption but also enable users to contribute by creating content that is relevant to them. As well as providing opportunities for amateur content generation, mobile technology can be a powerful tool to host and generate commercial content and mobile applications. This can help develop a virtuous circle of raised awareness, attracting developers, stimulating innovation, and increasing interest in generating more relevant content, benefitting stakeholders across the entire mobile ecosystem.

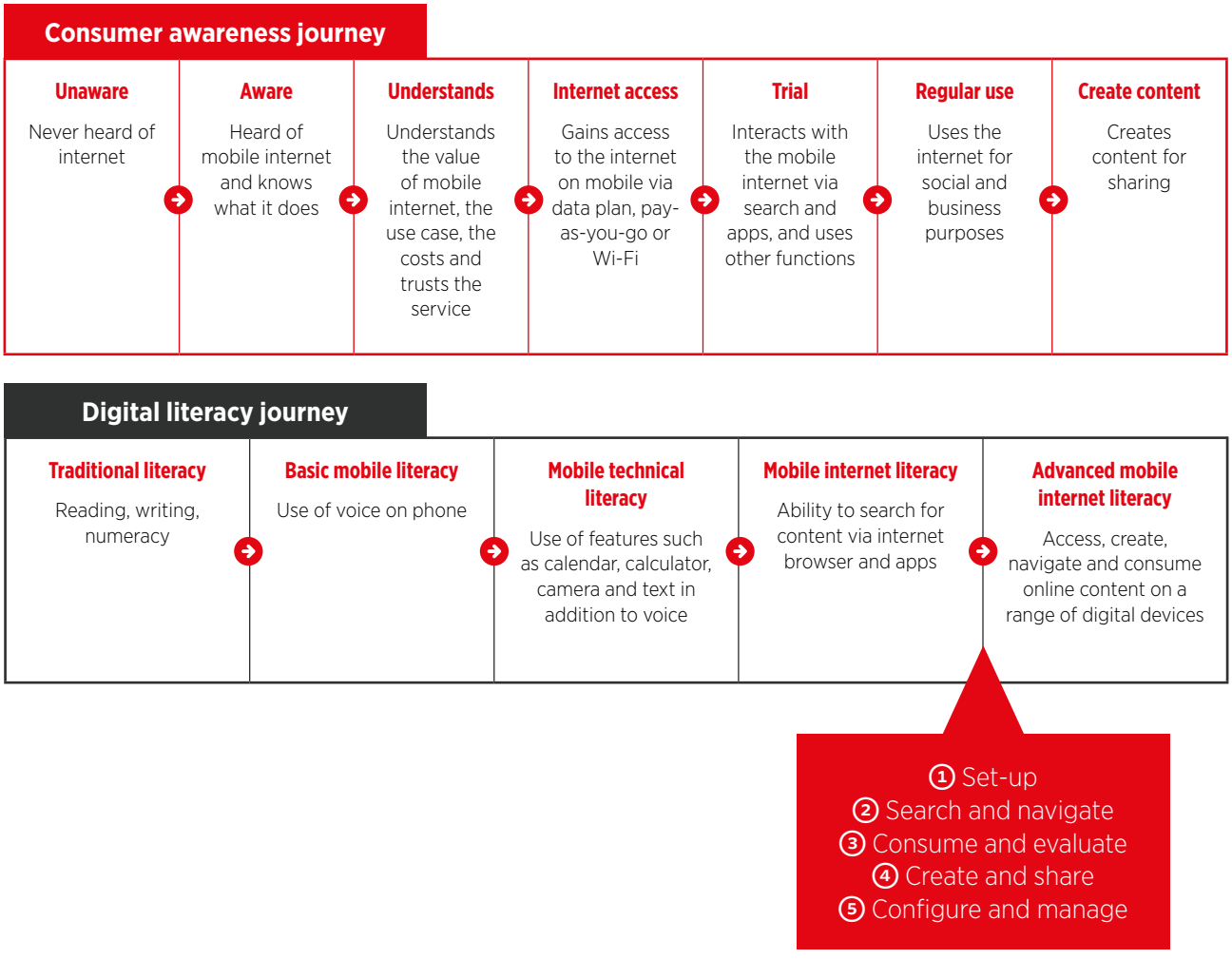
3.3 Digital literacy and skills

Education forms the cornerstone of holistic and inclusive growth in society. Latin America as a region has ensured high literacy rates for both genders (over 90%) and high enrolment rates in primary and secondary schools (over 75%). In the present digital age however, it is equally important to equip the population with digital literacy, defined as a set of skills that allows a user to not only access the internet but to navigate websites, and evaluate and create information through digital devices.

The journey to digital literacy begins with increasing consumer awareness, in parallel to which runs the journey of digital skills and literacy (summarised in Figure 6). Basic mobile literacy can be defined as the ability of a mobile user to make voice calls. The ability to use non-core functions such as SMS, calculator and alarm clock comes next, and is known as mobile technical literacy. This is followed by mobile internet literacy. The final stage similar to that of the consumer awareness journey is the ability to access, create and consume online content, which makes the consumer an advanced mobile internet user.

Figure 6

Mobile internet: stages of customer awareness and digital literacy



Source: GSMA Connected Society

Although mastering mobile internet literacy is not essential from the outset, nor is basic literacy always a pre-requisite for meaningful use of technology, lack of basic digital literacy deprives consumers from exploring the real value of the internet. This is reflected in the results from our consumer survey (see Table 1) in which almost 40% of the non-users across the eight surveyed countries said that they don't use internet as they need better knowledge and skills to use it.

In order to address this barrier effectively, it is essential to first understand the level of digital literacy in the region. When last measured in 2013, 20% of the population in Ecuador was digitally illiterate, with rural Ecuador even worse at 30%.[3]

Most other countries in the region do not formally evaluate this metric. A fair indication of the state of digital literacy can be achieved by looking at the availability of ICT education and infrastructure. Table 2 shows that the majority of school curricula in Latin American countries include specific objectives or subjects on basic computer skills. However, there is a subtle correlation between the lack of ICT education in countries such as Guatemala and Chile and the lack of digital skills cited as a key barrier by most non-users in our consumer survey.

3. National Employment survey 2010-2013 – Ecuador

Table 2

Countries where school curriculum includes specific objectives or subjects on basic computer skills/computing

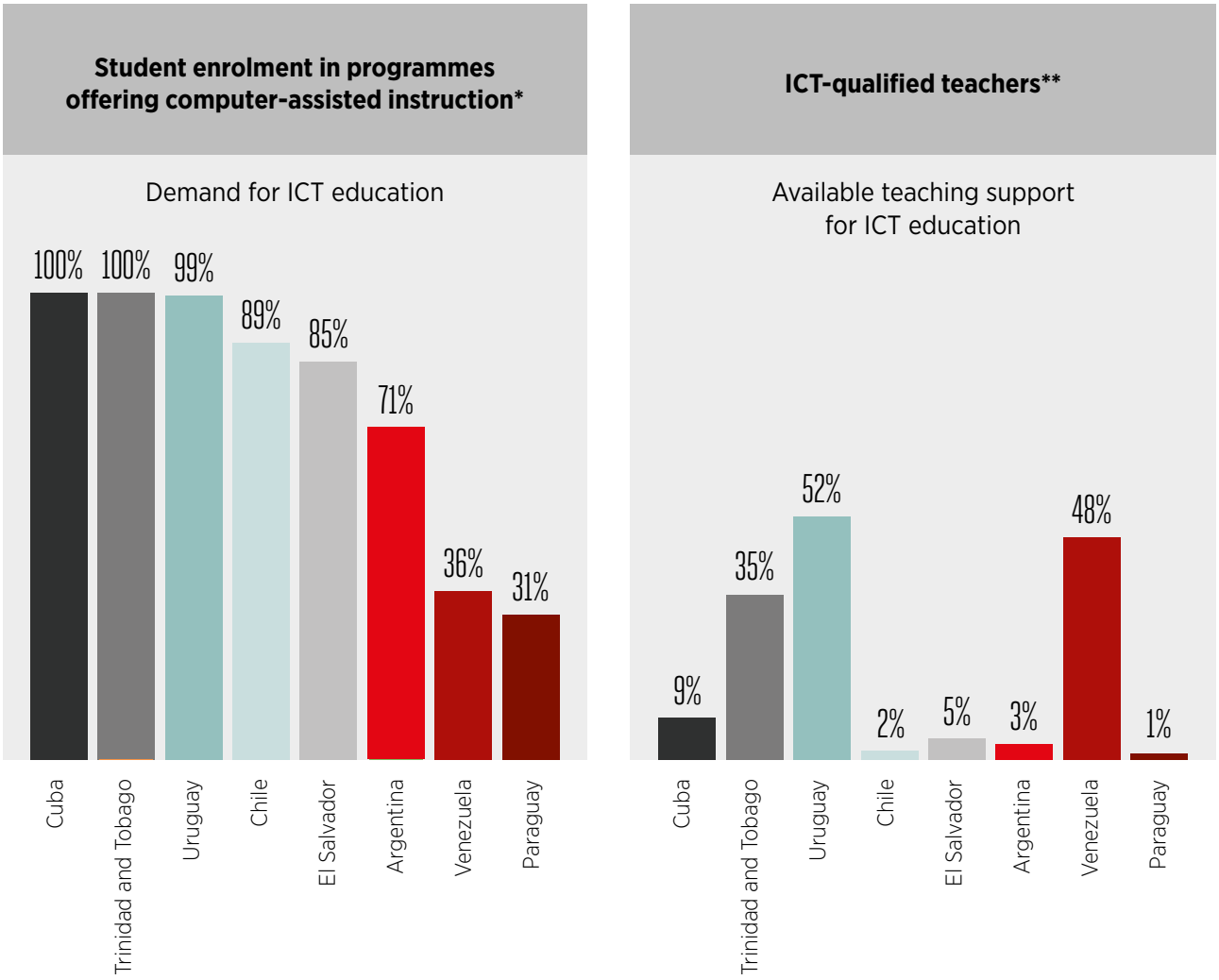
	Primary	Lower secondary	Upper secondary
Argentina	✓	✓	✓
Bolivia	✓	✓	✓
Brazil	✓	✓	✓
Colombia	✓	✓	✓
Costa Rica	✓	✓	✓
Cuba	✓	✓	✓
Ecuador	✓	✓	✓
Jamaica	✓	✓	✓
Nicaragua	✓	✓	✓
Panama	✓	✓	✓
Trinidad and Tobago	✓	✓	✓
Uruguay	✓	✓	✓
Venezuela	✓	✓	✓
El Salvador	✓	✗	✓
Dominican Republic	✓	✓	✗
Mexico	✗	✓	✗
Paraguay	✗	✗	✓
Guatemala	✗	✗	✓
Chile	✗	✗	✗

Source: UNESCO Institute for Statistics, World Bank

In addition to gaps in digital education in school curricula, there also is a significant gap in the supply of ICT infrastructure and teaching support in most countries. Figure 7 shows that despite high demand, which is reflected by the high enrolment rates in programmes offering computer-assisted instruction, the percentage of ICT-qualified teachers of total teachers is low in most countries. Further, Figure 8 illustrates the gaps in available ICT infrastructure in many countries in Latin America.

Figure 7

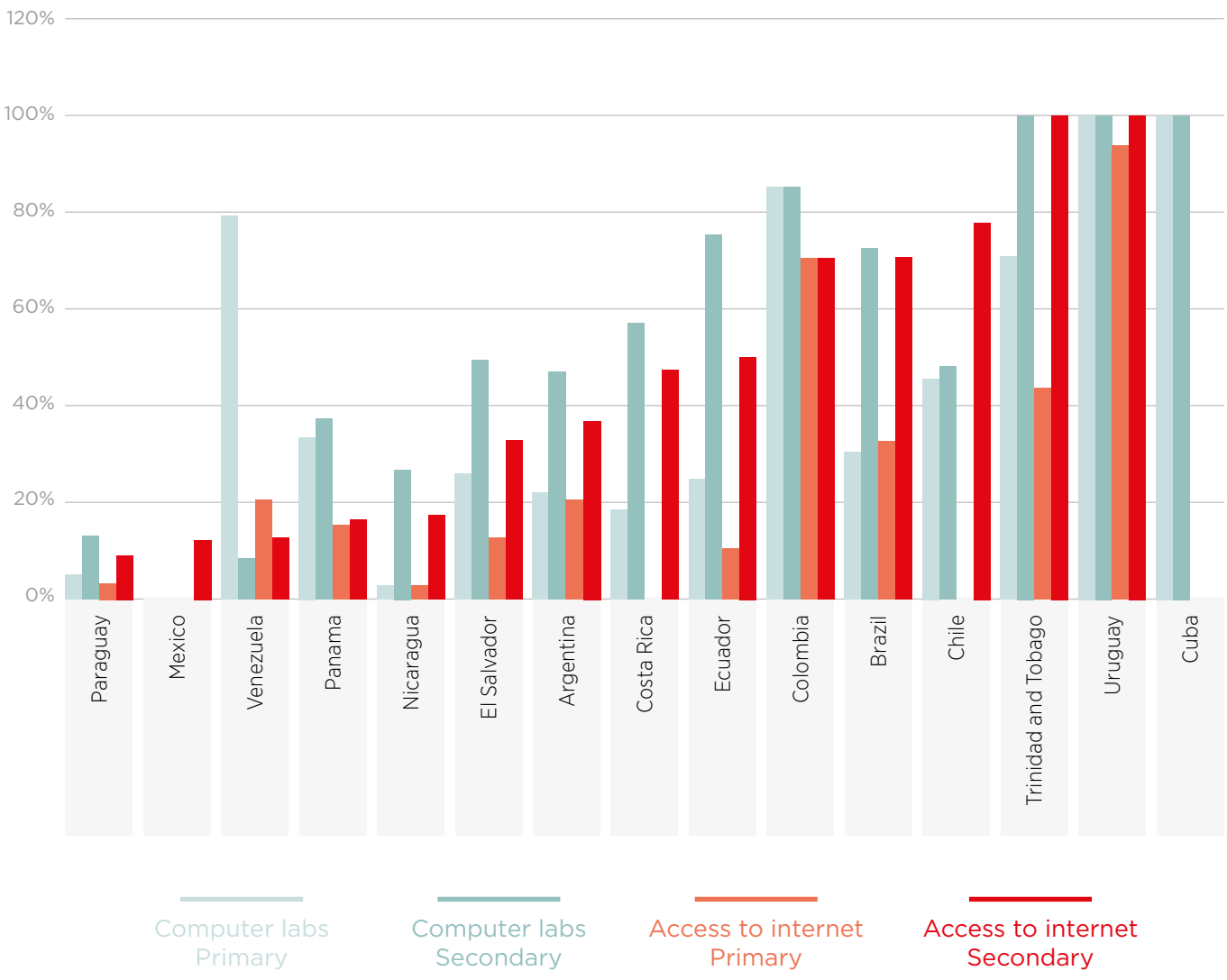
High demand for digital skills education but insufficient teaching support in many countries



Note: Data is for 2012
*Average for primary and secondary enrolment
**Teachers who are qualified with basic computing skills. Average for primary and secondary
Source: UNESCO Institute for Statistics

Figure 8

Availability of ICT infrastructure needs to improve in many countries



Note: Percentage of educational institutions with computer labs and access to internet (fixed and mobile). Some data points are unavailable for Mexico, Chile, Costa Rica and Cuba.
Source: UNESCO Institute for Statistics

Although these are indicators rather than conclusive evidence, in the absence of precise statistics on digital literacy, they do point towards the underlying reasons behind the lack of digital skills in the region. The potential of positive government intervention through literacy programmes and ICT supply can be significant. For example, the Uruguay government emphasised the promotion of ICT studies at different levels of education through its Digital Agenda 2011–2015. The impact of the schemes is evident in the high proportion of ICT-qualified teachers and ICT infrastructure in the country.

3.4 Affordability

One of the biggest challenges that countries in the region face is income inequality. Compared to countries with similar GDP per capita levels, countries in Latin America and the Caribbean have higher scores in the GINI Index, indicating high income inequality (see Figure 9). On average, the per-capita income of the top 20% of the population is more than eight times the income of the bottom 40%. This varies from more than 10 times in Honduras, Colombia and Panama to six times in Uruguay and El Salvador (see Figure 10).

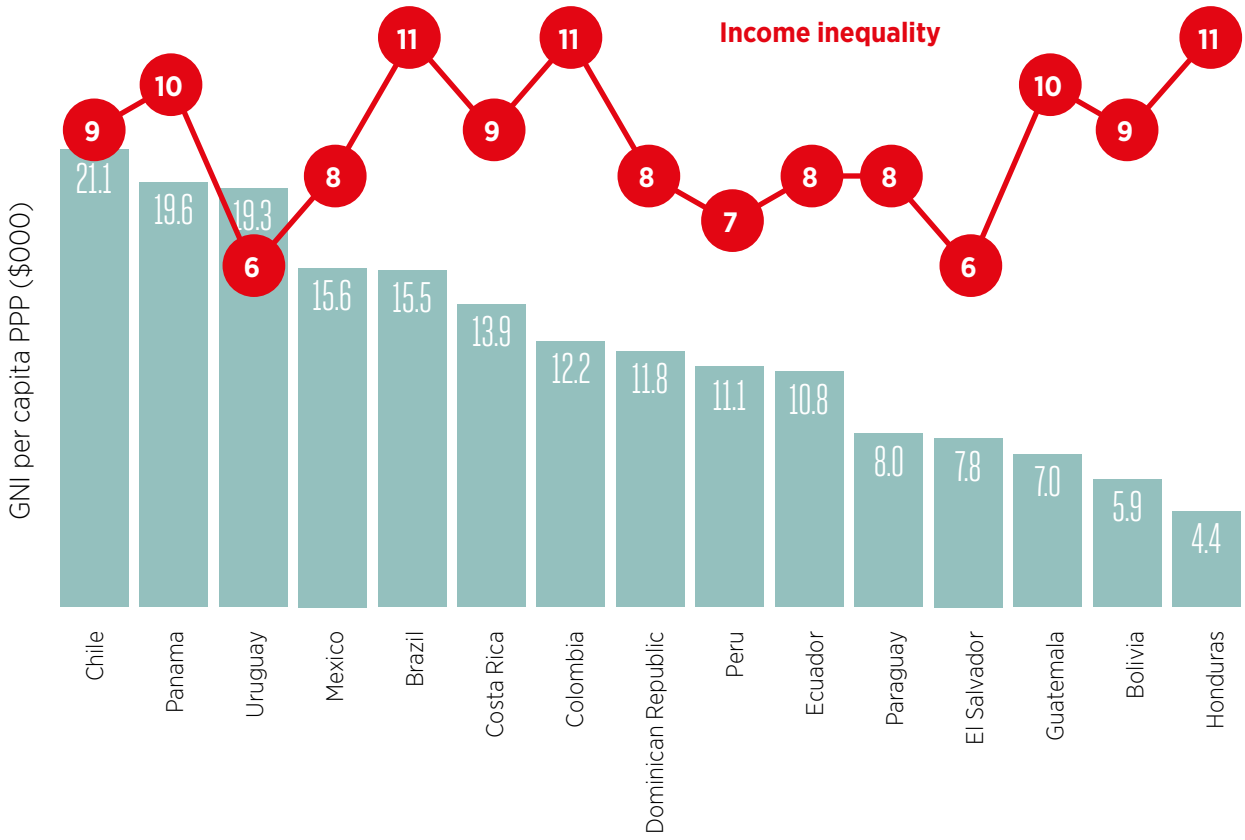
Figure 9

Inequality in Latin American and Caribbean countries is greater than in other regions

Source: World Bank, GSMA Intelligence
Note: Red dots indicate Latin American and Caribbean countries

Figure 10

Per-capita income of top 20% of population is on average more than eight times income of bottom 40%



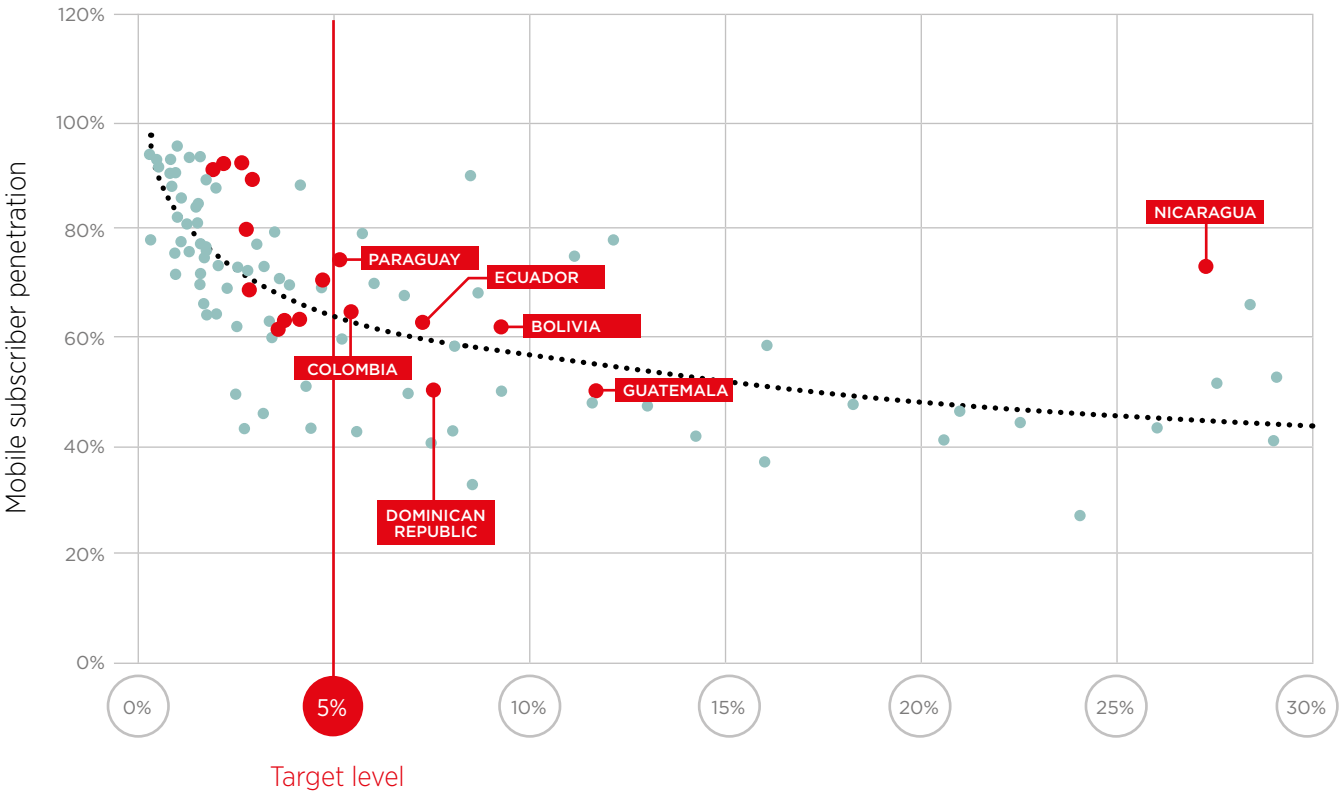
Source: World Bank, GSMA Intelligence
Note: Data for share of income is for 2013. Income inequality is the ratio of GNI per capita PPP of the top 20% to the bottom 40% of the population.

Income inequality lies at the core of the barriers to digital inclusion in the region. This is corroborated by the results of our consumer survey (see Table 1), in which approximately 30% of the non-users across the eight surveyed countries said that affordability, measured as price of equipment and services, is a barrier to internet adoption.

Affordability clearly impacts uptake in both developed and developing markets. The affordability threshold for the cost of mobile services as a percentage of income is generally considered to be 5%. In many countries around the world mobile is still unaffordable; in Latin America and the Caribbean, seven countries – Colombia, Bolivia, Dominican Republic, Ecuador, Guatemala, Nicaragua and Paraguay – are above the affordability threshold (see Figure 11). This may suggest mobile services are affordable elsewhere in the region, but looking at the bottom of the pyramid, the situation is very different. The cost of mobile ownership for the poorest 40% of the population is on average 17% of income, compared to 2% for the top 20% of the population (see Figure 12). To address this challenge, governments in Latin America and the Caribbean have launched "social broadband tariffs" and mobile operators have offered creative and flexible pricing plans.

Figure 11

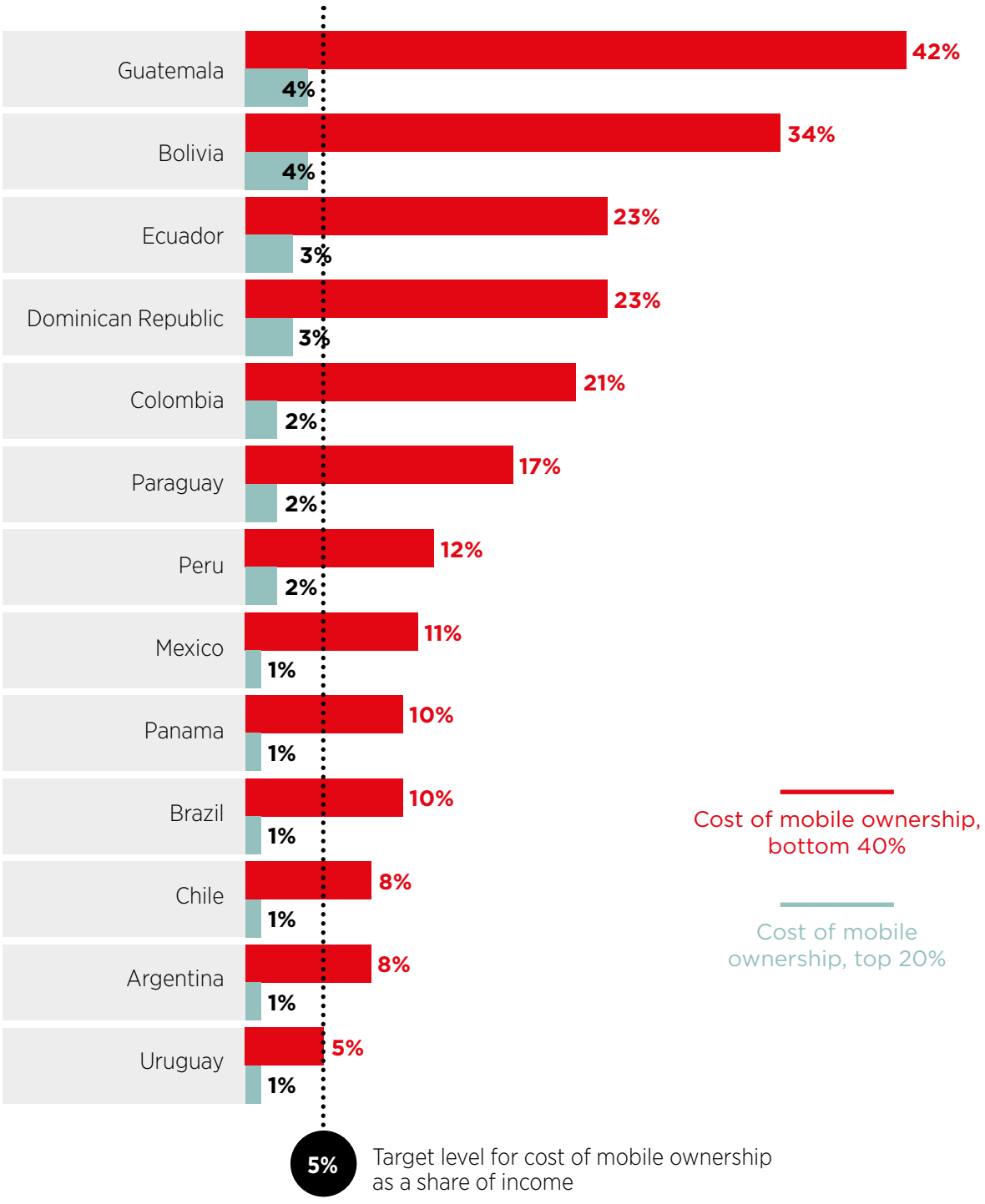
Cost of running a mobile phone as a share of income versus subscriber penetration



Source: GSMA Intelligence, ITU, World Bank
Note: Red dots indicate Latin American and Caribbean countries

Figure 12

Mobile ownership is unaffordable for the bottom 40% of the population in Latin America and the Caribbean



Source: GSMA Intelligence, World Bank, ITU
Note: Mobile broadband is based on a 500 MB prepaid plan. Handset cost is based on entry-level smartphone (Nokia 215).

One of the key barriers to affordability is the taxation of mobile services, particularly in countries such as Brazil and Argentina where consumer taxes account for over 30% of the total cost of mobile ownership. Mobile specific taxes include the following:

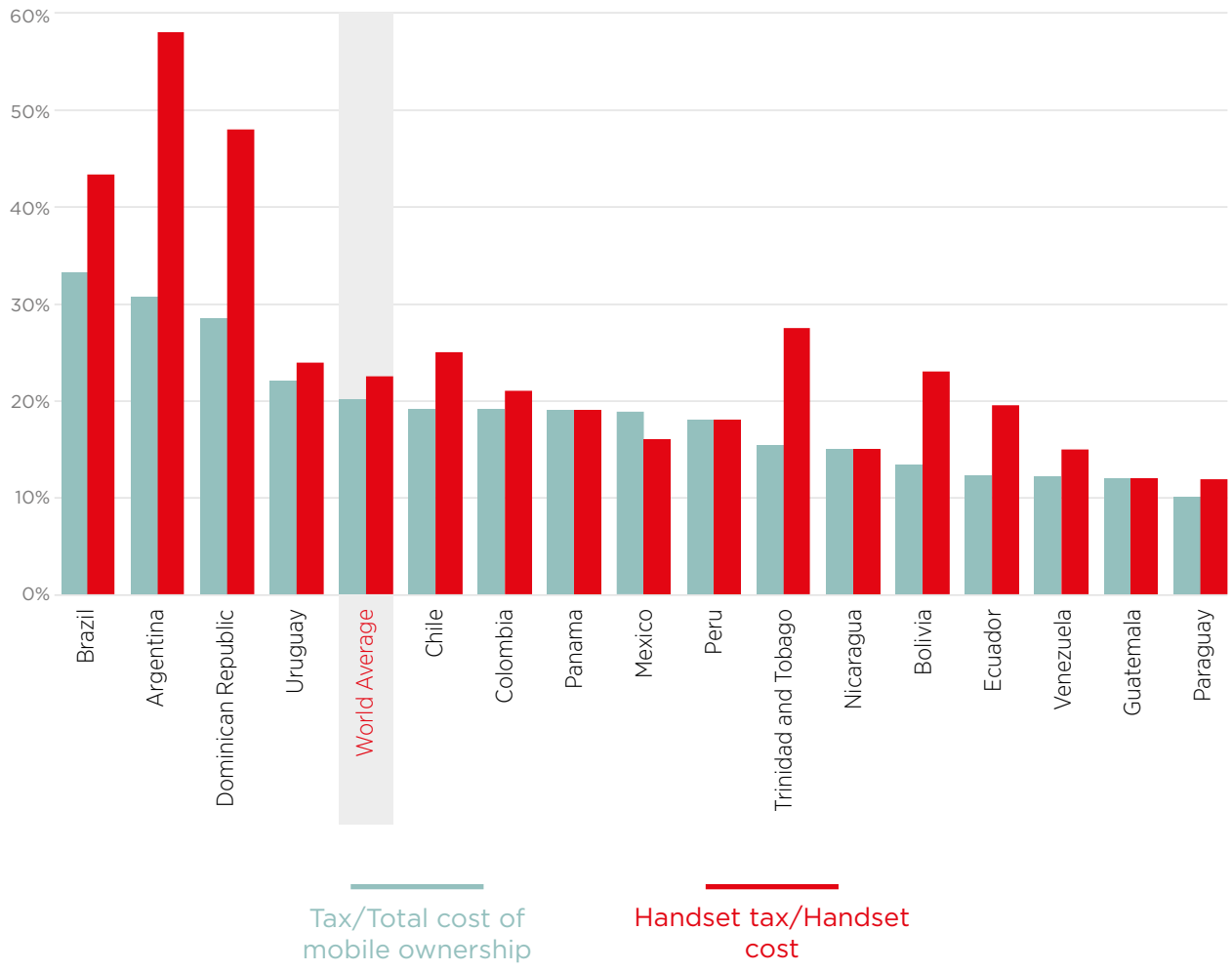
- **Consumer taxes** – consumption tax, mobile-specific tax, customs duty on devices, SIM activation tax and surtax on international incoming traffic
- **Operator taxes** – corporate tax, mobile-specific tax, regulatory fees, universal service obligation, customs duty and other, miscellaneous taxes.

While on the one hand governments in most Latin American and Caribbean countries support mobile broadband adoption by launching specific digital plans, high mobile-specific taxes and fees are counter-productive to the cause. They lead to higher cost of operation and reduce returns on investment for mobile operators, hindering growth of the sector and the development of new and more inclusive services for users. High taxation levels also contribute to raising the final price and can make mobile services unaffordable. For example, in Mexico, mobile consumers pay the Impuesto Especial sobre Produccion y Servicios (IEPS) tax on mobile airtime and SMS. This tax adds to the cost of service consumption and the overall cost of owning and using a mobile phone. When all taxes on devices and services are taken into consideration, taxes accounted for nearly 19% of the total cost of mobile ownership in Mexico in 2014. Also, the share of Mexican operators' revenues spent on regulatory fees is the third highest among 26 countries for which data is available[4]. Similarly, in November 2015, the El Salvador government proposed a 5% telecoms-specific tax to help fund security and crime prevention.

Tax burdens such as these hinder digital inclusion and limit the benefits mobile is able to provide to society and the economy in Latin America and the Caribbean.

Figure 13

Consumer taxation in Latin America and the Caribbean



Source: GSMA Taxation report

4. Digital Inclusion and Mobile Sector Taxation in Mexico, GSMA, September 2014

3.5 Network coverage

Operator investments in infrastructure have contributed to providing mobile broadband coverage to 90% of the population in Latin America and the Caribbean. This a significant achievement. However, the region still faces infrastructure challenges.

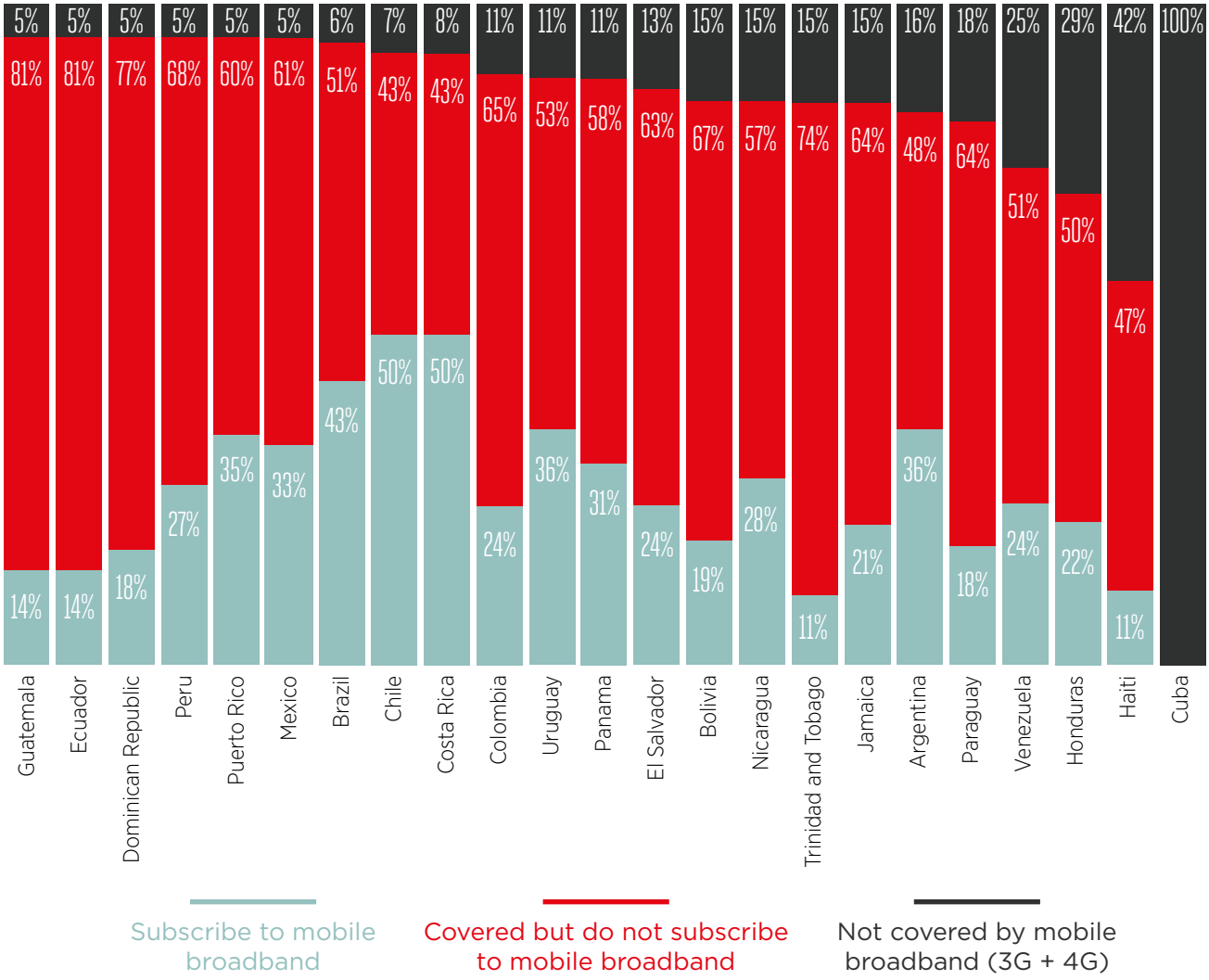
Firstly, covering the remaining 10% population (more than 20% for countries such as Cuba, Haiti, Venezuela and Honduras, see Figure 14) is not an insignificant problem. This gap equates to an unconnected population of 64 million, residing in sparsely populated areas in Uruguay, Bolivia and Brazil, including mountain ranges, rainforests and islands. There are commercial challenges for the operators to roll out networks in these areas. Moreover, due to low take-up in areas that are already covered, the commercial incentives are not as clear for further operator investment. A public funding model might therefore be necessary to bridge the remaining coverage gap.

Secondly, it is important to ensure that services provided in the covered areas are reliable and high quality. Unreliable and patchy network coverage disincentivises users from using mobile broadband, which could be an underlying reason behind the latent demand gap in the region. This in turn increases the cost pressure on mobile operators due to lack of service usage.

Figure 14

The coverage and demand gaps vary by country in Latin America and the Caribbean

Percentage of population



Source: GSMA Intelligence
Note: Data for 2015

No stakeholder can single-handedly address these two challenges. It requires a multifaceted approach and collaboration between stakeholders – mobile operators, government, development organisations and players from the wider ecosystem. To ensure a positive regulatory environment, governments can help bridge the last-mile gap by providing financial support, reducing municipal red tape and encouraging infrastructure sharing. Similarly, quality-of-service (QoS) issues cannot be addressed by unnecessarily stringent coverage obligations such as 0% dropped calls. These restrict mobile operators' participation in a free and open market where competition guides investment decisions and can have a further negative impact on coverage expansion, with the economics of infrastructure deployment no longer viable. For more details on such strategies, see *Closing the coverage gap: Digital inclusion in Latin America.*

3.6 Security and trust

In addition to the above four barriers, our consumer survey also highlighted security and trust as a barrier among non-users in Latin America and the Caribbean. The barriers can be divided into physical security issues such as handset theft and vandalism, and security of user identity from hackers and internet viruses.

Handset theft is growing at a fast rate in the region. For example, in Colombia it is estimated that close to 1 million devices were stolen in 2013, while only 18,000 theft reports were registered. In Argentina the number of stolen devices can reach 6,500 per day, with 35% of victims being children or teenagers. In Ecuador the number of stolen terminals averages 1,400 per day. In Brazil this number climbs to 2,500.[5]

The perception of physical security as a barrier is more pronounced among women. According to our consumer survey, women respondents quoted security as an issue more than male respondents in most of the eight surveyed countries. In separate research conducted in 2015 by GSMA Connected Women and Altai Consulting in 11 countries (including Mexico and Colombia), the most cited security concerns from women were the fear of having their mobile phone stolen or fraud issues. In Colombia, safety issues were a particular concern for women.

SECURITY AND TRUST ISSUES

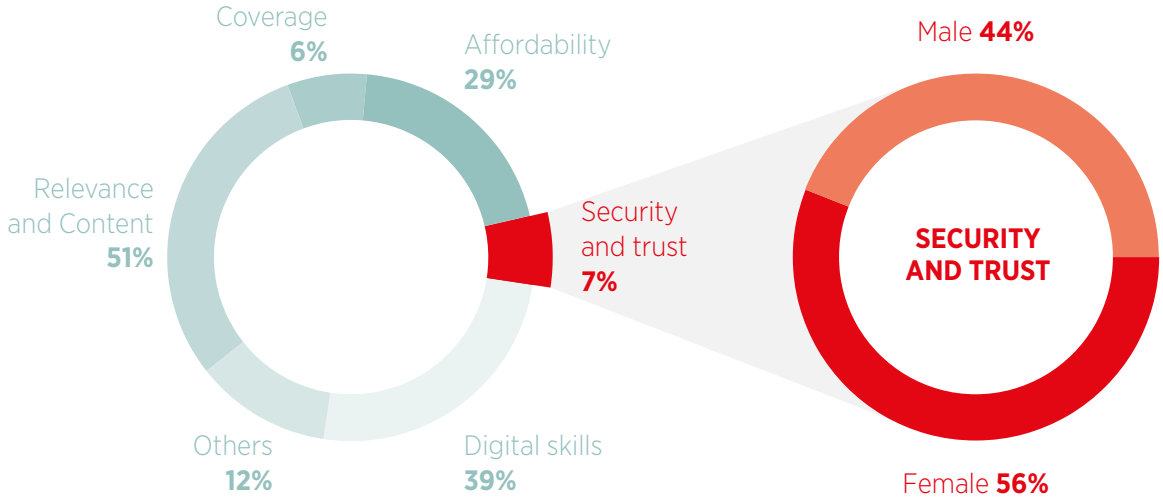
PHYSICAL SECURITY
(e.g. handset theft, vandalism)

IDENTITY
(e.g. cyber security, spam, virus attacks)

5. Handset Theft in Latin America, GSMA, April 2015

Figure 15

Female respondents more concerned about security and trust in Latin America and the Caribbean



Source: GSMA Intelligence Consumer Survey 2015
Note: Based on a survey of more than 10,000 respondents across eight countries in Latin America and the Caribbean. Question: "Which of the following reasons are stopping you from using the internet?" Respondents were allowed to select more than one answer.
The chart shows the % of non-internet users that said that one of those factors is a barrier to internet adoption.

"We women are more afraid of getting mugged because of a cellphone. We don't want to walk around with an expensive phone because we are afraid someone will rob us."
Female urban user, Colombia

"If you don't have a hands-free device, it is dangerous to use a phone on the street."
Female urban user, Colombia

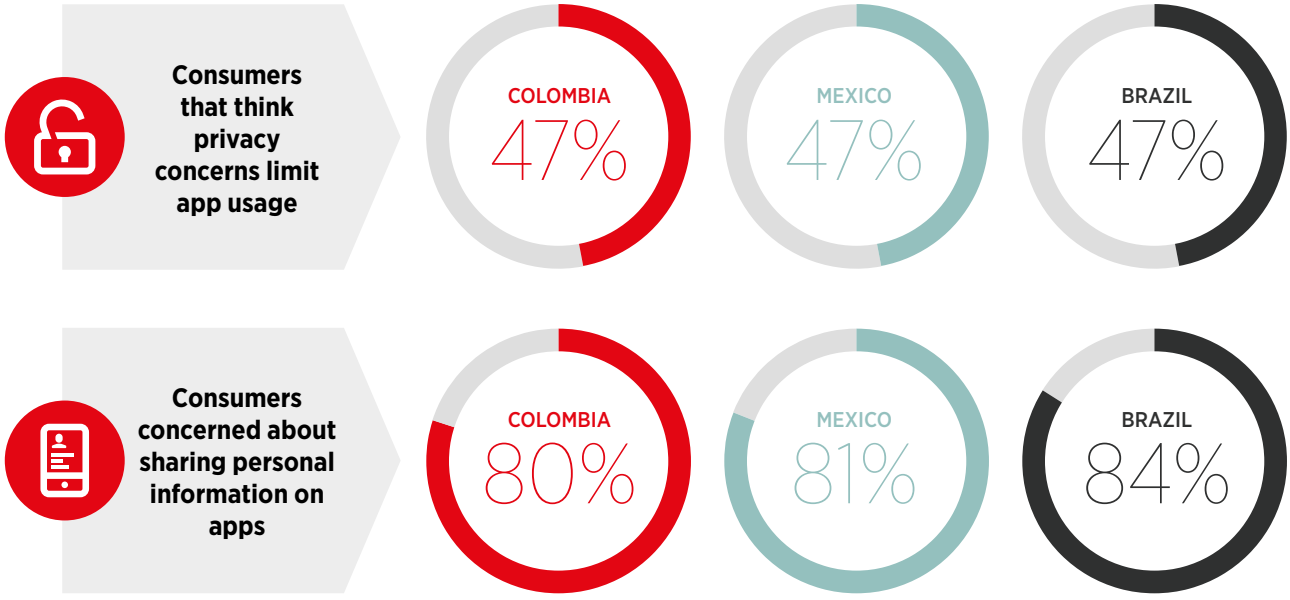
Source: Bridging the gender gap: Mobile access and usage in low and middle-income countries, GSMA, 2015

Purchasing smartphones can be a challenge for many, particularly those who belong to the lower-income groups. Any instance or fear of handset theft can act as a major discouraging factor for consumers. Handset thefts also put insurers and recyclers at significant risk of fraudulent insurance claims or of handling stolen devices.

The risk of identity theft and associated fraud is increasing with the rise in the number of digital identities. Privacy is a major concern for citizens when interacting with online service providers – from e-commerce and social media giants through to state-run digital portals. In February 2014, the GSMA commissioned global research on more than 11,500 mobile users (across Brazil, Colombia, Indonesia, Malaysia, Singapore, Spain and the UK).[6] More than 80% of respondents in Brazil, Mexico and Colombia said that they were concerned about sharing personal information when using mobile internet and apps. Nearly half of respondents in these three countries claimed privacy concerns would limit their use of apps unless they felt sure that their personal information was better safeguarded.

Figure 16

Privacy concerns – a barrier to mobile internet adoption



Source: GSMA, Futuresight

The GSMA International Mobile Equipment Identifier (IMEI) database provides access to a comprehensive and direct source of data indicating device model and lost or stolen status. It enables users, recyclers, mobile network operators and law enforcement agencies to identify suspect devices, minimise loss and combat crime.[7] Together with the GSMA, 13 groups of mobile operators in Latin America have committed to block the use of stolen devices, to support regional initiatives, and collaborate in the fight against handset theft.

6. Mobile Privacy: Consumer research insights and considerations for policymakers, GSMA, February 2014
7. Handset Theft in Latin America, GSMA, April 2015

4 Stakeholder roles and opportunities

4.1 Benefits of mobile broadband

Before discussing the roles of the different stakeholders, it is important to highlight the potential benefits of mobile broadband for the economy. Research conducted by the International Development Research Centre (IDRC) and implemented by Diálogo Regional sobre la Sociedad de la Información (DIRSI) analysed in detail how an increase in broadband adoption is linked to economic gains[8]. The research confirmed the presence of a positive income effect associated with broadband availability at the local level, which raises labour incomes by as much as 7.5% over a two-year period according to some estimates.

Owing to its near-ubiquitous presence, mobile technology plays a key role in bringing affordable broadband access to all. The mobile ecosystem is also a major driver of economic progress and welfare globally. The GSMA estimates that the mobile industry generated 4.2% of global gross domestic product (GDP) in 2015[9] and provides direct employment to more than 17 million people across the globe.

Many governments in Latin America and the Caribbean have understood the widespread benefits of broadband adoption and have rolled out plans to ensure nationwide availability and use of broadband. For example, Brazil committed around $3.2 billion (0.13% of its GDP) in 2014 to a plan that combines the development of a national fibre backbone, tax exemptions, and investments in R&D and training in broadband and related technologies. Argentina is committing $1.8 billion (0.4% of its GDP) to a similar plan. Meanwhile, Colombia, through its Vive Digital plan, plans to migrate government services online, provide broadband subsidies and training to poorer households, and build a national fibre backbone in remote areas. However, given that mobile is the main means of accessing the internet in the region, it is important that governments assign mobile a central role in their plans; in most cases, fixed broadband is the focus of digital plans.

For digital plans to be effective in bridging the digital divide, coordinated efforts between government agencies (ministries of ICT, infrastructure, finance and education) are required so that the policies are aligned towards reaching the goals set out in the agenda. An example of where successful coordination has occurred between different government agencies is Costa Rica. In 2015, the government launched the Plan Nacional de Desarrollo de las Telecomunicaciones (National Plan for Development of Telecommunications) to reduce the digital divide, promoting efficient use of spectrum and providing universal and affordable access to broadband. This plan was drafted through coordination between the Ministry of Science, Technology and Telecommunications, the regulator (Sutel), the Costa Rican Department of Social Security, and the ministries for health and education.

Mobile operators have also been leading the way in deploying broadband infrastructure and providing entry-level broadband prices generally more affordable than those found throughout Africa and Asia. Mobile operators and governments in the region have been active in trying to overcome the aforementioned barriers to mobile internet. We discuss the roles of stakeholders and their areas of involvement in the following sections, highlighting examples of successful initiatives implemented.

8. "The Internet and Poverty: opening the black box", International Development Research Centre and Diálogo Regional sobre la Sociedad de la Información, July 2014
9. The Mobile Economy 2016, GSMA, February 2016

4.2 Locally relevant content

Promotion of local innovation

To produce content that is local – in terms of language, relevance and creation – it is important to foster an environment that encourages entrepreneurs to build localised applications. Government policies and plans that support tech innovations and start-ups are indispensable to this cause. Mobile operators can provide the local talent with opportunities to incubate and scale these start-ups and innovations.

COLOMBIA

As part of the Vive Digital plan, the Apps.co programme was launched to develop an entrepreneurship ecosystem in Colombia. More than 50,000 Colombians have learnt how to code in its 'bootcamps', and the programme aims to reach at least 90,000 by 2018. The Ministry of ICT has invested about COP45 billion ($14 million) in this initiative, which so far has generated nearly 900 new products and services.

Telefónica

In 2011 Telefónica launched its incubator Wayra (now named Open Future), firstly in Colombia and subsequently in Argentina, Brazil, Chile, Mexico, Peru, Venezuela, Germany, Spain and the UK. The accelerator programme provides up to $50,000 in funding, and offers workspace, mentors, business partners and access to a global network. In Latin America, the highest follow-on round of funding raised by a Wayra start-up was $1.35 million by Plazapoints, a Peruvian multibrand loyalty programme for small and medium-sized retailers.

Providing e-government services

E-government services are a major component of locally relevant mobile content in developing countries. In Latin America, large cities such as Buenos Aires, Sao Paulo, Mexico City, Santiago and Bogota have a significant number of e-government services available. These focus on collecting taxes, dealing with refuse, reporting city problems and other such urban issues. Given the challenges of physically accessing government offices such services are valuable particularly in remote and underserved areas, where mobile internet can be the primary means of delivering e-government services. As well as boosting the availability of locally relevant content, this can also provide the underserved with the tools to interact and engage with their local community.

URUGUAY

Uruguay took its first steps towards e-government in the early 2000s, but the real progress began in 2007 upon the creation of the Electronic Government and Information Society (AGESIC). This initiative received strong political and financial support. The availability of a well-developed local ICT industry provided easy and immediate access to professionals that were able to provide local expertise. The Uruguayan e-government platform is a good example of a collaborative e-government approach that allows interoperability between various government offerings and consists of a set of cross-cutting services. The success of e-government services in Uruguay is evident from the UN e-government index: the country tops the list of Latin American markets, and has risen by 24 points to become 26th in the world.[10]

10. UN e-Government Survey 2014

4.3 Digital literacy and skills

Promoting consumer awareness as a first step on the digital skills development path

It is important for governments to increase awareness among consumers of the benefits of internet usage and steer them away from the perception that the internet is just a tool for entertainment purposes. Through partnerships with mobile operators and NGOs, governments can promote digital skills learning in schools and educational environments, as well as it becoming an economic/social development goal (e.g. digital skills for business).

COLOMBIA

A major barrier in Colombia is the perception by the majority of the population that the internet is not useful. To overcome this, the government continues to promote the development of local content and increase the number of online government services.

GSMA Connected Society

GSMA INITIATIVES

GSMA Connected Society is developing a Digital Skills Training Toolkit that will support mobile operators, governments and the broader mobile internet ecosystem to deliver training modules to increase digital literacy and improve understanding of the benefits of accessing and using the mobile internet. Please email **connectedsociety@gsma.com** for more detail.

Mobile operator-led initiatives to increase digital awareness

Using their existing agent networks and door-to-door sales agents, mobile operators can provide training sessions to rural communities and help improve digital skills. Through basic technologies such as voice, SMS and IVR, operators can design basic literacy tutorials that can be delivered to a wide subscriber base, particularly feature phone users. Operators can implement these initiatives themselves or through collaboration with government and development agencies such as UNESCO and UNICEF.

BRAZIL
In 2011, Vivo and Ericsson formed a partnership to provide 3,000 children and teenagers living in Vila Cruzeiro, a community in Rio de Janeiro, Brazil, with access to educational resources via broadband and the cloud. By 2013, 6 million users had benefitted from a portfolio of more than 35 services in culture, entertainment, languages and other training.

MEXICO
As part of a commitment to the United Nations Millennium Development Goals and the International Telecommunications Union, America Movil has organised more than 4,000 training and digital inclusion workshops, with more than 250,000 participants registering for one such workshop in Mexico City. The operator has partnered with Massachusetts Institute of Technology, Coursera and non-profit organisations on educational initiatives in the country.

Government funding and support to promote ICT use and learning in schools

According to research carried out by DIRSI, combining school connectivity initiatives with adequate educational resources and teacher training can be effective in helping students from less privileged backgrounds (such as students in rural schools, those from low-income households, and those who do not have an Internet connection at home) to catch up, at least in terms of language skills, with their peers. Connecting schools to broadband motivates students and promotes a better learning environment. Devoting sufficient resources to extend a supportive learning environment in rural areas and using e-government services to deliver services in education, health and financial disbursements and other life-enhancing services can be key in lowering awareness and digital literacy barriers.

CHILE

Enlaces is an ICT program introduced in 1992 by the Ministry of Education in Chile. Its main objective is to improve access to technology in public schools to reduce the gap between the technology services offered to students in private and public schools. Through this initiative, by 2008, at least 87% of the schools in the country had access to ICT.

ARGENTINA

Plan Conectar Igualdad (Connecting Equality) is an initiative launched in 2010 by Poder Ejecutivo Nacional (PEN), an executive body of the Argentinian State that includes several ministries. The aim is to enhance public education to reduce the digital, educational and social gaps compared to private education. The programme is delivering netbooks to all students and teachers in secondary public schools. The programme also develops digital content for students and trains teachers. Plan Conectar Igualdad promotes the use of netbooks at home as well as at school to have an impact on the daily lives of families and communities. By July 2015, 5 million computers had been delivered and more than 1,428 digital classrooms were established across the country.

Using USFs to create a long-term plan to teach people how to use the internet

As well as using universal service funds (USFs) to extend broadband coverage to rural and remote areas, they can be used for social purposes, such as digital skills programmes or increasing the availability of the internet in schools.

CHILE
The Fondo de Desarrollo de las Telecomunicaciones (FDT) supports telecommunications services for schools, libraries and health centres. In 2010, Telefónica agreed with the Ministry of Education to provide connectivity to 7,000 schools.

PERU
The Fondo de Inversion de Telecomunicaciones (FITEL) allocates subsidies for multimedia teaching for local residents, enabling the creation of local content and fostering the development of micro-enterprises responsible for the management and operation of telecentres.

Source: Universal Service Fund Study, GSMA, April 2013

4.4 Affordability

Provision of universal access to high-quality and affordable internet

Many governments in Latin America and the Caribbean have developed comprehensive and clear broadband plans to provide access to high-quality and affordable internet in rural and remote areas. Governments can provide and support free internet access in public places and subsidise broadband plans for those at the bottom of the economic pyramid. Providing free Wi-Fi can help offload some of the traffic in congested areas, improving quality of service. In addition, it can provide a first entry point for prepaid, voice-only mobile users, and will eventually drive uptake of mobile broadband.

COLOMBIA

As part of the Vive Digital plan, the government promoted Vive Digital Points – newly established centres where local communities can connect to the Internet, access the State Web portal, and receive training in the use of different technologies. It also promoted Vive Digital Kiosks – smaller Internet access centres located in national parks and other places with more than 100 inhabitants, helping to bring the internet to underserved areas. The Colombian government is offering subsidies and financial assistance to families unable to afford ICT equipment or access to the Internet. Around 1 million families are expected to benefit from broadband Internet subsidies.

Source: Alliance for Affordable Internet

Provision of affordable mobile internet tariffs

Mobile operators have been creative in their pricing plans to address those at the bottom of the economic pyramid. Three types of plan have been implemented in the region: plans with limited download volumes; plans allowing "all you can eat" internet access for a 24-hour period; and restricted use plans allowing consumers to pay for just what is most accessed, such as email, social networks, chat or navigation. Offering a flexible range of plans is key to reaching every segment of the population, as people can decide what to access based on their own demand and what they can afford.

Table 3

Mobile operator broadband price plans in selected countries

Country	Operator	Type of mobile internet plan	Cost ($)	Data limit	Cost of plan as a share of daily income per capita, for bottom 40%
Argentina	Claro	Daily plan with limited download volumes	$0.33	50 MB (prepaid)	2%
Brazil	Vivo	Daily plan with limited download volumes	$0.25	30 MB (prepaid)	3%
Bolivia	VIVA	Daily plan with limited download volumes	$0.22	11 MB (prepaid)	10%
Bolivia	Tigo	Restricted use plan	$0.43	Unlimited WhatsApp (daily charge on prepaid)	20%
Chile	Entel	Daily plan with limited download volumes	$0.69	30 MB (prepaid)	5%
Ecuador	Claro	Restricted use plan	$1.00	Unlimited WhatsApp (daily charge on prepaid)	19%
Mexico	Telcel	Daily plan with limited download volumes	$0.22	10 MB (prepaid)	2%
Uruguay	Claro	Restricted use plan	$0.50	Social networking, mail, chat, games and navigation (daily plan, up to 50 MB)	3%

Source: operator websites

Reduction of mobile-specific taxation

To guarantee universal access and reduce total cost of mobile ownership for all, it is important to reduce and eliminate taxation on mobile services and equipment for users at the bottom of the economic pyramid. High levels of sector-specific taxation on mobile consumers and operators have a damaging impact on the potential benefits that can arise from a vibrant mobile telecoms sector. Lowering taxation levels can benefit consumers, businesses and government by encouraging uptake and usage of new services such as mobile broadband, improving productivity, and boosting GDP, employment and tax revenues.

COLOMBIA
In 2012, the national government proposed to reduce the digital divide through tax reform. According to Juan Manuel Santos, President of Colombia, the bottom three income levels of the population will be exempt from paying VAT on internet services.

URUGUAY
In 2007, the Uruguayan government abolished an airtime tax that had accounted for between 30% and 50% of call costs. As a consequence, in 2008 prices fell by more than two-thirds from UYU3.75 ($0.17) per minute to around UYU1.00 ($0.04) per minute. Connections penetration more than doubled from 65% in 2006 to 140% in 2011. Mobile usage rose from just under 400 minutes per subscriber per year in 2006 to 1,600 in 2011.

BRAZIL
The Brazilian government introduced tax reductions on M2M SIMs. The reductions came into effect in April 2014. The M2M SIM card tax for new connections was reduced from BRL28.63 ($11.56) to BRL5.68 ($2.29). The annual connection tax was lowered from BRL8.94 ($3.61) to BRL1.89 ($0.76). This equates to a combined reduction in taxation of 80%.

MEXICO
In Mexico, consumers pay the Impuesto Especial sobre Produccion y Servicios (IEPS) tax on mobile airtime and SMS. A recent report from Deloitte and the GSMA estimated that a reduction of IEPS from 3% to 1.5% could lead to an increase of 1.1 million connections, $2.2 billion in GDP and 15,000 jobs by 2020. The government has recognised these impacts and has announced that a reduction in IEPS will be brought to the parliamentary agenda in 2016[11].

Source: Digital inclusion and mobile sector taxation in Mexico, GSMA, September 2014

11. Convergencia Latina

4.5 Network coverage

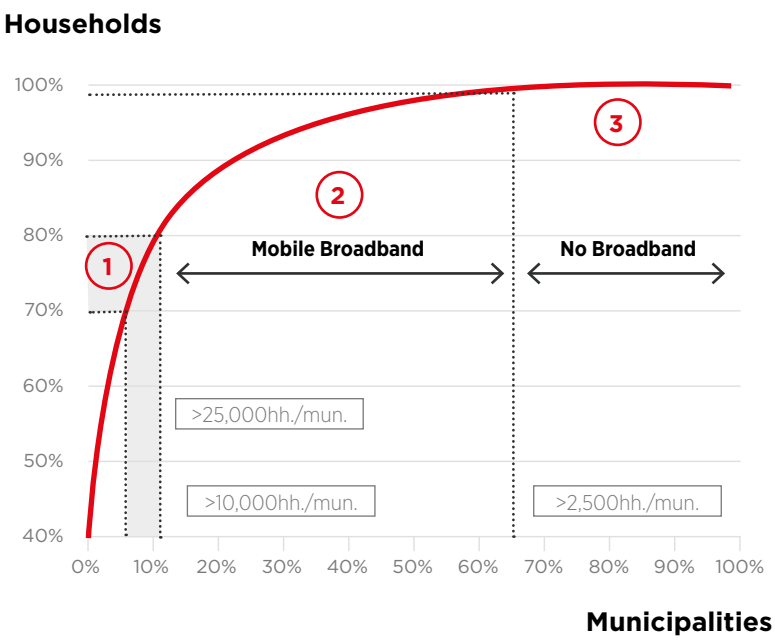
Market-led initiatives where possible; state interventions where needed

Capital expenditure by mobile operators in Latin America is increasing significantly and is forecast to reach a cumulative $116 billion between 2015 and 2020. Between 2009 and 2014, the total capex per person in the region, at $129, was higher than any other developing region, and will rise to $191 over the six years to 2020.

However, allocating capital for network expansion and boosting network capacity to meet quality-of-service (QoS) obligations puts additional economic burden on mobile operators. Government intervention is important to extend mobile broadband coverage to reach rural and remote areas; in such areas, the cost of providing access is often too high to justify private investments.

Figure 17

Government intervention required to reach the last mile



1 **PRIVATE:** Areas of high population density where infrastructure-based competition is feasible. The main problems are related to the regulatory framework and competition.

2 **PRIVATE/ PUBLIC:** Areas where mobile infrastructure is the best technological option for voice and data services. Competition is feasible on mobile network infrastructure. There are regulatory and infrastructure problems. Public intervention may accelerate broadband development.

3 **PUBLIC:** Areas for service/universal access, requiring public intervention to develop broadband. The main problem is lack of infrastructure.

Source: IDB Bridging Gaps, Building Opportunity, May 2012

Government intervention can come in the form of financial support, tax incentives, state-owned "truncal" network rollout (as in Argentina, Peru and Chile), incentives to operators and public-private partnerships. These should be backed by positive regulation to boost competition. Excessive regulation can stifle innovation, raise costs, limit investment and harm consumer welfare due to the inefficient allocation of resources, such as spectrum.

CHILE

In 2010 the government of Chile and Entel announced a project known as "Todo Chile Comunicado" to extend 3G and fixed broadband services across rural areas of the country, serving public facilities, including schools and health centres, and bringing coverage to an estimated 3 million people. The project was successfully completed in May 2012 and provided 3G wireless coverage to 1,474 rural sites, as well as extending fibre-optic nodes to 12 regional centres, representing a total investment of $100 million; government subsidies accounted for about $43 million of this cost.

Unified regulations required to facilitate network rollout and investment

Heterogeneous regulations for different municipalities in the same country increase unnecessary pressure on mobile operators and other stakeholders. Clear national policies and unified regulations are necessary to minimise red tape and bureaucracy and to prevent delays in decision-making and execution of plans to increase infrastructure coverage and capacity.

PERU

In April 2015 the government in Peru published a new legislation "Ley para el Fortalecimiento de la Expansion de Infraestructura en Telecomunicaciones" (Law for the Strengthening of Telecommunications Infrastructure Expansion) No. 29022. This law standardised the process and requirements for automatic approval to install mobile towers and simplified procedures for environmental certification and methods of camouflaging infrastructure.

More spectrum availability is necessary to deliver new services and improve coverage

Provision of low-band spectrum is important to facilitate network rollout in suburban and rural areas in a cost-effective way. The 700 MHz band (or Digital Dividend) is being assigned in many countries in the region. The countries of the region did well to agree on the same band plan (APT 45x45MHz) to allow seamless roaming and avoid interference, which also drives scale for handsets and thus improves access through better pricing.

Mobile operators have already invested $1.6 billion since 2009 in spectrum for 4G services in 15 Latin American countries. However, governments can do more to assign harmonised spectrum to mobile operators and to clear the band of existing services. Having a clear roadmap of spectrum allocation will be key to unleash operators' investment. Operators need to have a good portfolio of lower and higher frequency bands of spectrum to meet consumer demand and deploy new services.

Figure 18

Latin America: 700 MHz band assignments for mobile

Source: Closing the coverage gap: Digital Inclusion in Latin America, GSMA Intelligence, December 2015

Judicious use of universal service funds is necessary

A GSMA study[12] of 12 funds in Latin America revealed that approximately $5.4 billion of undisbursed funds were held by USFs. Inefficiencies in the use of these funds, which could be used to extend network coverage or lower the cost of mobile ownership, continue to exist. These funds are funded through a contribution mechanism from mobile operators, which makes their inefficient use act like a counter-productive taxation on the operators. We believe USFs should be given a lower priority to subsidies, PPPs and tax incentives until governance is improved to release funds systematically.[13]

CHILE

The Fondo de Desarrollo de las Telecomunicaciones (FDT) is fully subsidised by the government in Chile. The original goal of the FDT was to provide public telephony service to about 7,400 underserved localities. This target was achieved in 2001. Funds were then directed to support the telecentre projects, a broadband backbone and mobile network expansion. In 2009, the fund began supporting rural broadband expansion.

COLOMBIA

Colombia first introduced a USF in 1976, but the current structure of its fund – known as FONTIC – is a reflection of the reshaping that took place in 1999. FONTIC sets itself apart from other USFs in that it is financially autonomous, highly transparent about how funds are awarded, and delivers projects in a timely manner. The USF uses nearly the entire sum of contributions to the fund every year, which is uncommon for most USFs. Moreover, to ensure transparency, FONTIC clearly accounts for which schemes are currently being financed and where money will be spent in the near future. It ensures projects are awarded via a public bidding process that is open to all interested parties. Of the USFs in operation today, Colombia's management of its fund is a good example of best practice.

Source: Universal Service Fund Study, GSMA, April 2013

12. Universal Service Fund Study, GSMA, April 2013
13. Closing the coverage gap: Digital Inclusion in Latin America, GSMA Intelligence, December 2015

4.6 Security and trust

Consumer protection

Without taking action to protect consumer privacy, Latin America risks falling behind other parts of the world in the adoption of new mobile services. Mobile operators recognise the need to work closely with governments and the wider industry to address these issues. Mobile operators are in a much better position to preserve users' information than other mobile ecosystem players.

GSMA INITIATIVES

Mobile Connect is a fast, secure login system that enables people to access their online accounts with just one click or less, and provides different levels of security from low-level website access to highly secure bank-grade authentication. People subscribed to a participating operator know that when they click on a website's Mobile Connect button they can log in to any service or activity without the need to remember complicated username and password combinations. Telefónica has launched Mobile Connect in Peru, Argentina and Mexico.

We Care campaign: In Latin America and the Caribbean mobile operators joined forces to ensure a safe and reliable environment for their users by launching the "We Care" campaign. Through this campaign, mobile operators work together with government authorities, regulators, non-profit associations and users to launch initiatives to tackle handset theft, protect children and safeguard the environment.

Source: GSMA launches "We Care" consumer protection initiatives in Mexico with nation's mobile operators

Handset theft

In recent years, handset theft has increased significantly due to the growth in adoption levels of mobile phones, particularly smartphones. The poorest are those who suffer the most from handset theft, and this can be a disincentive to buying a smartphone. Public and private sectors are working collaboratively to prevent the activation of stolen devices, thereby restraining the black market and crimes linked to this.

Combating handset theft fully and effectively requires a coordinated approach between users, operators, government and manufacturers. Users need to report to their mobile operator stolen or lost mobile phones; operators should exchange information of blacklisted IMEIs with other operators in the country and the region; governments should penalize IMEI adulteration; and manufacturers need to design safer handsets. Addressing this issue can also help avoid other kinds of unnecessary regulation such as whitelisting or SIM registration, which can impact negatively on universal service, especially for those at the bottom of the economic pyramid.

MEXICO

In February 2015, the Mexican Regulator (Instituto Federal de Telecomunicaciones – IFT), local operators and the GSMA announced the International Mobile Equipment Identifier (IMEI) Device Check tool, which allows Mexicans to check an IMEI online to see if the device has been reported stolen on a worldwide basis, according to information provided by the GSMA and its members. During the first six months, more than 245,000 queries were made.

GSMA IMEI Database

GSMA INITIATIVE

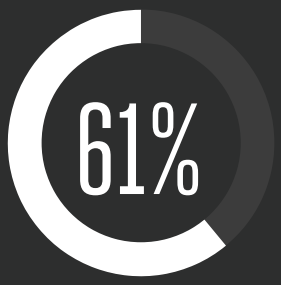
The GSMA IMEI database provides access to a comprehensive and direct source of data indicating device model and lost or stolen status. It enables users, recyclers, mobile network operators and law enforcement agencies to identify suspect devices, minimise loss and combat crime.[14] Together with the GSMA, 18 countries that represent 50 mobile operators in Latin America have committed to block the use of stolen devices, to support regional initiatives, and to collaborate in the fight against handset theft. The database pulls information from 44 countries and 140 mobile operators sharing information on stolen devices on a daily basis.

14. Handset Theft in Latin America, GSMA, April 2015

Appendix
Profiling non-internet users in selected countries

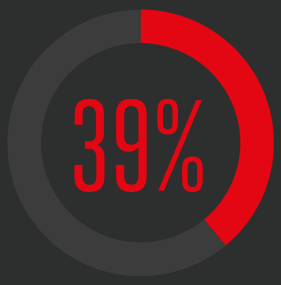
Non-internet users in BRAZIL

Source: CETIC, 2014
Individuals, 10 years or older, who reported never having accessed the internet, regardless of location



Internet users

123.7m



Non-internet users

79.1m

Regions

Non-internet users

Gender

Non-internet users

39% OF MEN

39% OF WOMEN

Location

Non-internet users

35% OF URBAN POPULATION

64% OF RURAL POPULATION

Social cluster

Share of non-internet users in each social cluster

A 3%	B 14%
C 39%	DE 72%

Note: Cluster DE is the bottom social cluster based on income and standard of living

Level of education

Share of non-internet users at each education level

96% Pre-school/illiterate	56% Elementary
15% Secondary	3% Tertiary

Age

Share of non-internet users in each age bracket

16-24	11%
25-34	22%
35-44	37%
45-59	60%
60+	76%

Barriers to internet adoption

Lack of relevant content **47%**

Lack of digital literacy and skills **41%**

Affordability barrier **37%**

Other **19%**

Security and trust barrier **10%**

Lack of network coverage **2%**

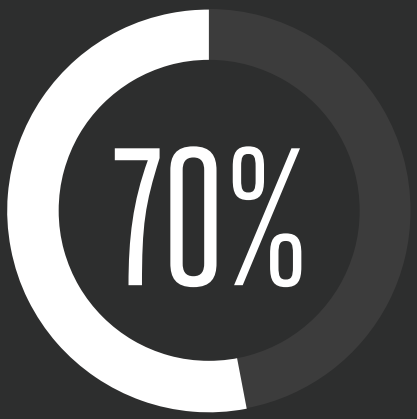
Source: GSMA Intelligence Consumer Survey 2015
Note: Based on a survey of more than 10,000 respondents across eight countries in Latin America and the Caribbean. Question: "Which of the following reasons are stopping you from using the internet?" Respondents were allowed to select more than one answer.

Non-internet users in CHILE

Source: VI Encuesta sobre Acceso, Usos, Usuarios de Internet en Chile, Subtel, 2014
*Individuals who reported not having accessed the internet in the last 3 months, regardless of location

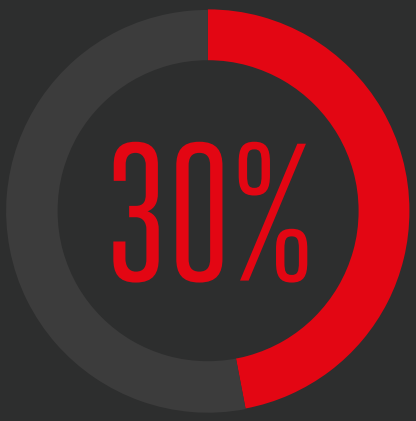
Regions

Percentage of households without internet access



Internet users

12.5m



Non-internet users

5.4m

Gender

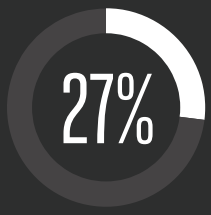
Non-internet users

27% OF MEN

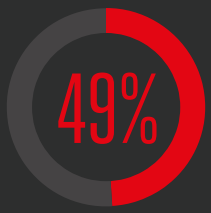
32% OF WOMEN

Location

Non-internet users



OF URBAN POPULATION



OF RURAL POPULATION

Income group

Share of households without internet access in each quintile

QUINTILE 5
14%

QUINTILE 4
30%

QUINTILE 3
31%

QUINTILE 2
45%

QUINTILE 1
46%

Note: Quintile 1 is the bottom income group

Age

Share of non-internet users in each age bracket

16-24	2%
25-34	4%
35-44	15%
45-54	26%
55-64	43%
65+	76%

Barriers to internet adoption

Lack of digital literacy and skills
47%

Lack of relevant content
37%

Affordability barrier
18%

Other
9%

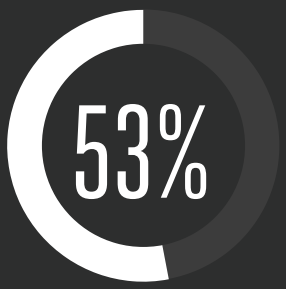
Security and trust barrier
4%

Lack of network coverage
1%

Source: GSMA Intelligence Consumer Survey 2015
Note: Based on a survey of more than 10,000 respondents across eight countries in Latin America and the Caribbean. Question: "Which of the following reasons are stopping you from using the internet?" Respondents were allowed to select more than one answer.

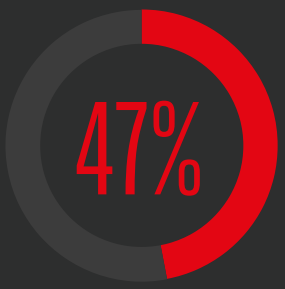
Non-internet users in COLOMBIA

Source: DANE Encuesta de Calidad de Vida (ECV), 2014
Individuals, 5 years or older, who reported never having accessed the internet, regardless of location



Internet users

26.1m

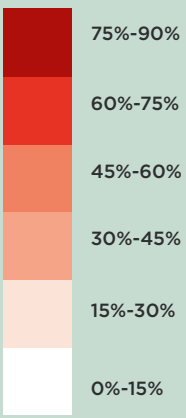


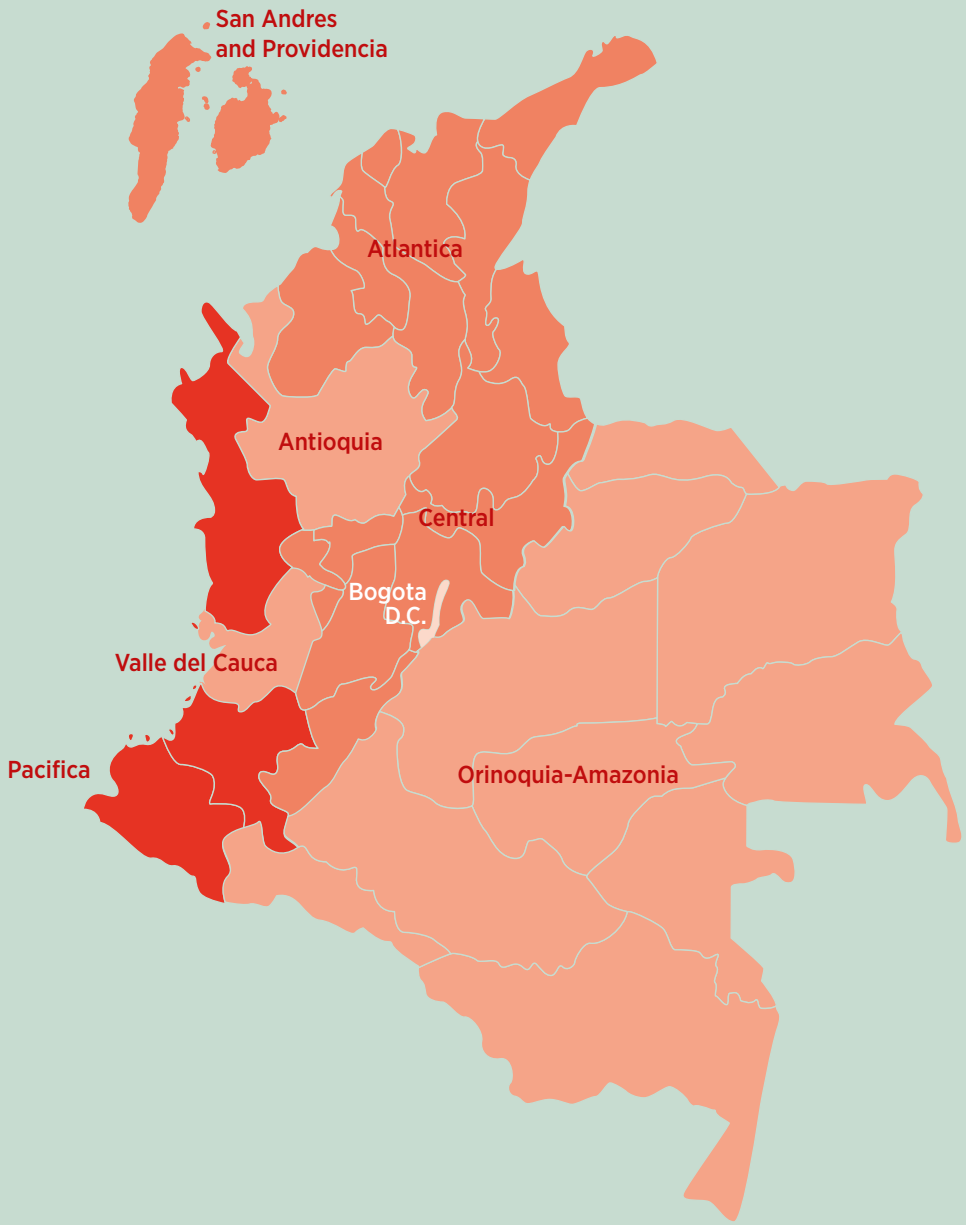
Non-internet users

23.1m

Regions

Non-internet users





Gender

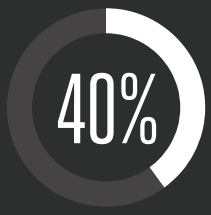
Non-internet users

47% OF MEN

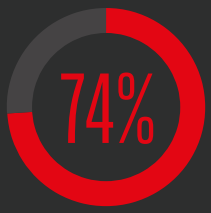
48% OF WOMEN

Location

Non-internet users



OF URBAN POPULATION



OF RURAL POPULATION

Income group

Share of households without internet access in each quintile

QUINTILE 5
38%

QUINTILE 4
62%

QUINTILE 3
76%

QUINTILE 2
87%

QUINTILE 1
90%

Source: CEPAL - Estado de la banda ancha en América Latina y el Caribe 2015
Note: Data is for 2012. Quintile 1 is the bottom income group.

Age

Share of non-internet users in each age bracket

5-11 **42%**

12-24 **20%**

25-54 **50%**

55+ **85%**

Barriers to internet adoption

Lack of relevant content **49%**

Affordability barrier **49%**

Lack of digital literacy and skills **46%**

Other **25%**

Security and trust barrier **19%**

Lack of network coverage **19%**

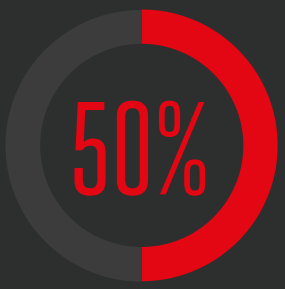
Source: GSMA Intelligence Consumer Survey 2015
Note: Based on a survey of more than 10,000 respondents across eight countries in Latin America and the Caribbean. Question: "Which of the following reasons are stopping you from using the internet?" Respondents were allowed to select more than one answer.

Non-internet users in MEXICO

Source: INEGI Módulo sobre Disponibilidad y Uso de las Tecnologías de la Información de los Hogares, 2014
Individuals who reported not having accessed the internet in the last 12 months, regardless of location

Internet users

24.6m



Non-internet users

24.6m

Regions

Percentage of households without internet access

Gender

Non-internet users

48% OF MEN

52% OF WOMEN

Location

Non-internet users

42% OF URBAN POPULATION

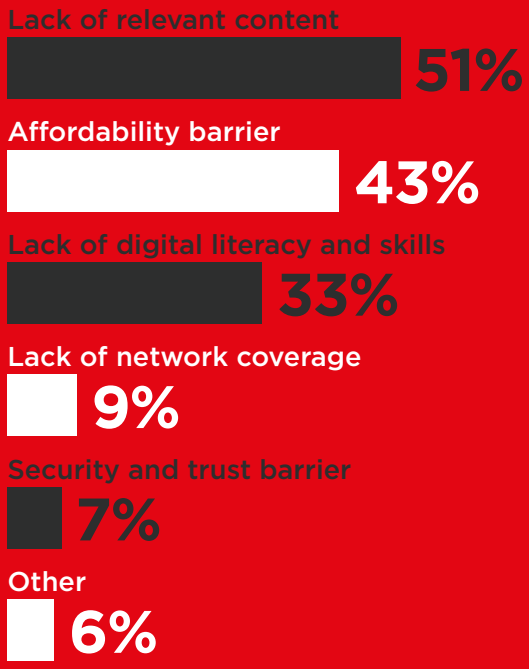
63% OF RURAL POPULATION

Age

Share of non-internet users in each age bracket

16-24	24%
25-34	42%
35-44	55%
45-54	66%
55-64	78%
65+	93%

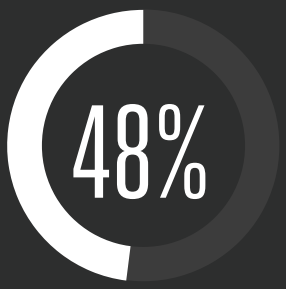
Barriers to internet adoption



Source: GSMA Intelligence Consumer Survey 2015
Note: Based on a survey of more than 10,000 respondents across eight countries in Latin America and the Caribbean. Question: "Which of the following reasons are stopping you from using the internet?" Respondents were allowed to select more than one answer.

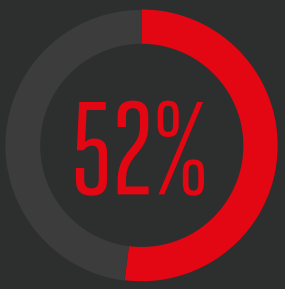
Non-internet users in PERU

Source: OSIPTEL - Encuesta Residencial de Servicios de Telecomunicaciones (ERESTEL), 2014
Individuals, 6 years or older, who reported not using the internet, regardless of location



Internet users

26.6m

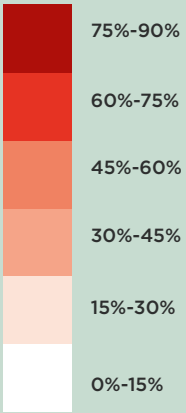


Non-internet users

25.6m

Regions

Percentage of households without internet access



Source: INEI (Instituto Nacional de Estadística e Informática)
- Encuesta Nacional de Hogares, 2014

Gender

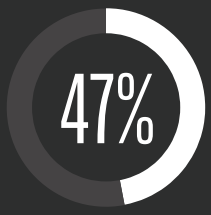
Non-internet users

49% OF MEN

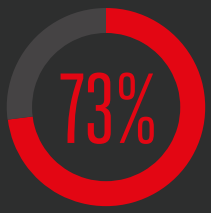
55% OF WOMEN

Location

Non-internet users



OF URBAN POPULATION



OF RURAL POPULATION

Social cluster

Share of non-internet users in each social cluster

A 15%	B 26%
C 39%	D 58%
E 76%	

Note: Cluster E is the bottom social cluster based on income and standard of living

Level of education

Share of non-internet users at each education level

84% Primary	58% Secondary
35% Tertiary	15% University

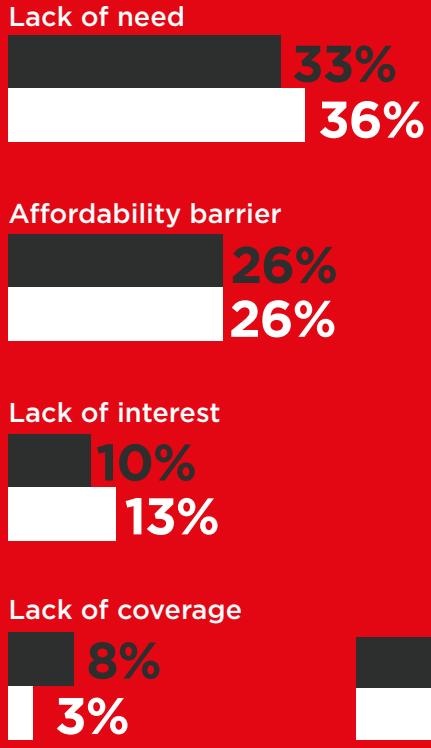
Source: INEI (Instituto Nacional de Estadística e Informática) - Encuesta Nacional de Hogares, 2014

Age

Share of non-internet users in each age bracket

12-17	20%
18-23	20%
24-29	33%
30-35	47%
36-45	57%
46-50	69%
51+	83%

Barriers to internet adoption



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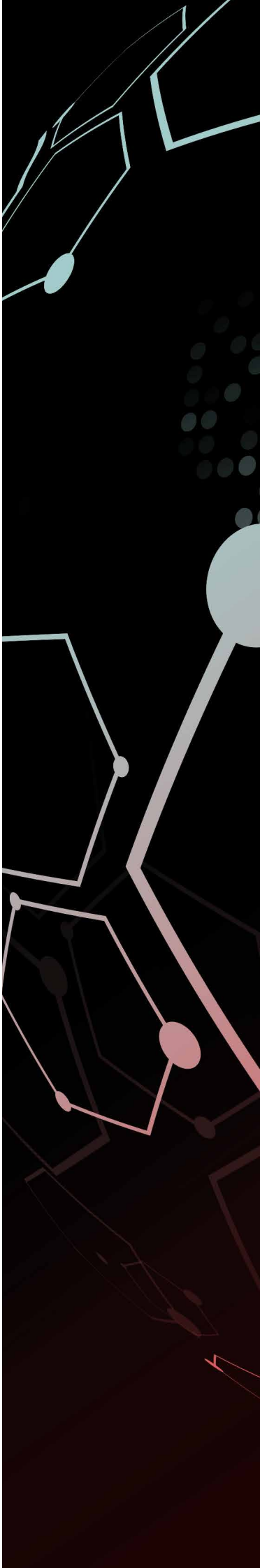

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