Connected Society
Content in Latin America:
Shift to local, shift to mobile

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Connected Society

Supporting the mobile industry to increase the adoption of the internet for the underserved by tackling key barriers: network coverage, affordability, digital skills and locally relevant content.

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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 the barriers to digital inclusion remain unaddressed. This report is one of a three-part series on digital inclusion in Latin America and focuses on lack of locally relevant content as a barrier. The other two reports discuss network coverage and an overall analysis of digital inclusion barriers in the region.

Context: the penetration story is around the mobile internet

The market context for mobile in Latin America is now about the growth in the mobile internet and the behavioural shift to digital access and engagement. Almost half the population in Latin America now subscribes to the mobile internet. Although this is less than those subscribing to mobile overall (48% versus 69%), it is growing fast; we expect penetration to rise to 66% by 2020, although this is contingent on a number of factors. The majority of incremental internet growth is being driven by smartphones at the lower end, mostly Android devices, under $150 (increasingly sub-$100), with the specs and performance of a $300+ handset only 18–24 months ago. The result has been a shift away from slower 2G internet connections towards higher speed 3G ones (4G coverage has expanded but take-up still lags). This has been accompanied by an explosion in content, driving a rise in video traffic which is estimated by Cisco to be 55% annually to 2019.

At present, most of the digital story is being defined by social, entertainment and gaming by those in the mid- and high-income segments. The segments not yet connected to the internet have lower incomes and are less educated. To examine why these people are not yet using the internet, we conducted a consumer survey across eight markets in Latin America, with 1,000 adult respondents per country. The results show a significant reduction in internet access when moving from the middle (C) to lower (DE) socio-economic bands. The intuitive conclusion that these segments are non-internet users primarily because they lack network coverage or because of cost is incorrect. In terms of coverage, 3G now reaches 90% of the population, with significant investment and innovation from across the ecosystem targeted at reaching the remaining 10%. With regards affordability, continued declines in device costs have helped offset the slowing pace of income rises. In any case, mobile is relatively price inelastic: given the choice, individuals on lower incomes are more likely to sacrifice other expenditure to preserve mobile service.

Lack of locally relevant content is greatest barrier for non-users

The largest barrier to mobile internet access among the unconnected – the lowest income individuals – is a lack of relevance, which is directly driven by a lack of locally relevant content. Argentina has the strongest response, with more than 70% highlighting this as a barrier, but the situation is broadly similar in the other markets surveyed. The irony is that while content in general is driving increased internet usage on mobile among existing users, there remains a strong perception among non-users – 40–50% of adults – that what is available is largely irrelevant to their would-be digital experience.

This important finding from primary research is reflected in the GSMA's forthcoming Mobile Connectivity Index – a global, bottom-up approach to quantify country standings on the four primary enablers to mobile internet adoption (infrastructure, affordability, consumer and content). For the content portion of the index, Latin America (61 out of a possible 100) is above the global average but well below North America (87) and Europe (70). However, it is telling that in nearly all countries within the region, consumers rate the lack of locally relevant content as a larger barrier to internet

access than any other (including network coverage). Only around 30% of domestic internet traffic in Latin America goes to websites that are hosted locally in the local language, with the remaining 70% split among international sites (such as the BBC or CNN) or adapted versions of them. Taken together, these indicators underline the local content deficit.

In some ways, the lack of locally relevant content on mobile is surprising. Firstly, the linguistic make-up of Latin America is dominated by two languages, Spanish (67%, around 400 million) and Portuguese (33%, around 200 million in Brazil). This is positive for app developers, which require scale economies to reduce the cost of adapting content for multiple languages and to help their advertising business models. Secondly, traditional media is still strong with content that has a heavy local focus. Televisa (Mexico), Globo (Brazil) and a number of their peers have built established positions in domestic TV markets, with most now vertically integrated, linking content production and distribution. Consumer media habits reflect their strength, with TV and even 'legacy' media in radio and print healthy despite near-terminal declines in most other parts of the world.

Several factors explain the content deficit on mobile

There are a number of reasons why content success in traditional media has not yet migrated to mobile. Part of the inertia is pragmatic: mobile, particularly on higher speed 3G and 4G coverage, is the newest mass-media distribution channel. Part may also reflect cultural idiosyncrasies and the strong tradition of government support for newspapers and local television stations as a conduit to the masses. Structurally, many of the largest media conglomerates are family dynasties that have historically operated with relatively little competition given the licensing and cost barriers to entry, reducing the impetus for innovation in a new delivery medium.

Beyond the traditional media sector, there are also complexities in the mobile content value chain that we believe limit locally relevant content creation. First, Google's dominance in browsing

(90% of searches) and operating system (Android accounts for 80% of the smartphone base) masks the fragmentation that exists in designing for featurephone users, with voice and SMS/USSD still viable options at present even if apps are the future. Second, there remains an uneven distribution of Internet exchange points (IXPs) across the continent, increasing costs for small entrepreneurs and acting as a constraint on the cost and quality of customer experience. Finally, the most popular services used by consumers in the smartphone era (such as social networking and IP comms) are such that the winners are those with global footprints. For better or worse, competition across the mobile ecosystem has mostly focused on these areas, leaving largely unmet a range of use cases that need the most local know-how – loosely grouped under the umbrella term of 'productivity'.

Government and operators each have a role to play

The solutions to these problems are more evolutionary than revolutionary, but there is clear impetus to act. Several national governments in the region have already introduced digital transformation agendas, complemented by investments in innovation hubs and incentives for entrepreneurship, and backing for local IXPs. Colombia's Vive Digital and Chile's Start-Up are good examples, and highlight the positive enabling role policy-makers can play.

From the perspective of the market, some of the change is likely to happen naturally, particularly video, where the combination of rapidly rising smartphone ownership and Netflix's imminent expansion (with express intention to go local) are likely to accelerate a mobile shift among established TV conglomerates. Many operators have pre-empted this with their own mobile video on-demand propositions. We continue to see

opportunities for a more integrated approach for operators beyond the video and entertainment categories, with intimate knowledge of the local landscape and reputations of trust. Part of this would include forming strategic partnerships with venture-capital (VC) firms and local entrepreneurs (Millicom's joint venture with Rocket Internet is a promising model).

Equally important is launching services in the productivity space. Among existing internet users in Latin America, a minority have used online banking (22%), accessed government services (24%), or used their mobile to search for a job (29%). The latent demand is likely to be much higher among non-users. Some operators, notably Telefónica and Millicom, have grasped this and are active in the space, but there is room for more, with these use cases key for longer term loyalty given their positive impact on livelihood.
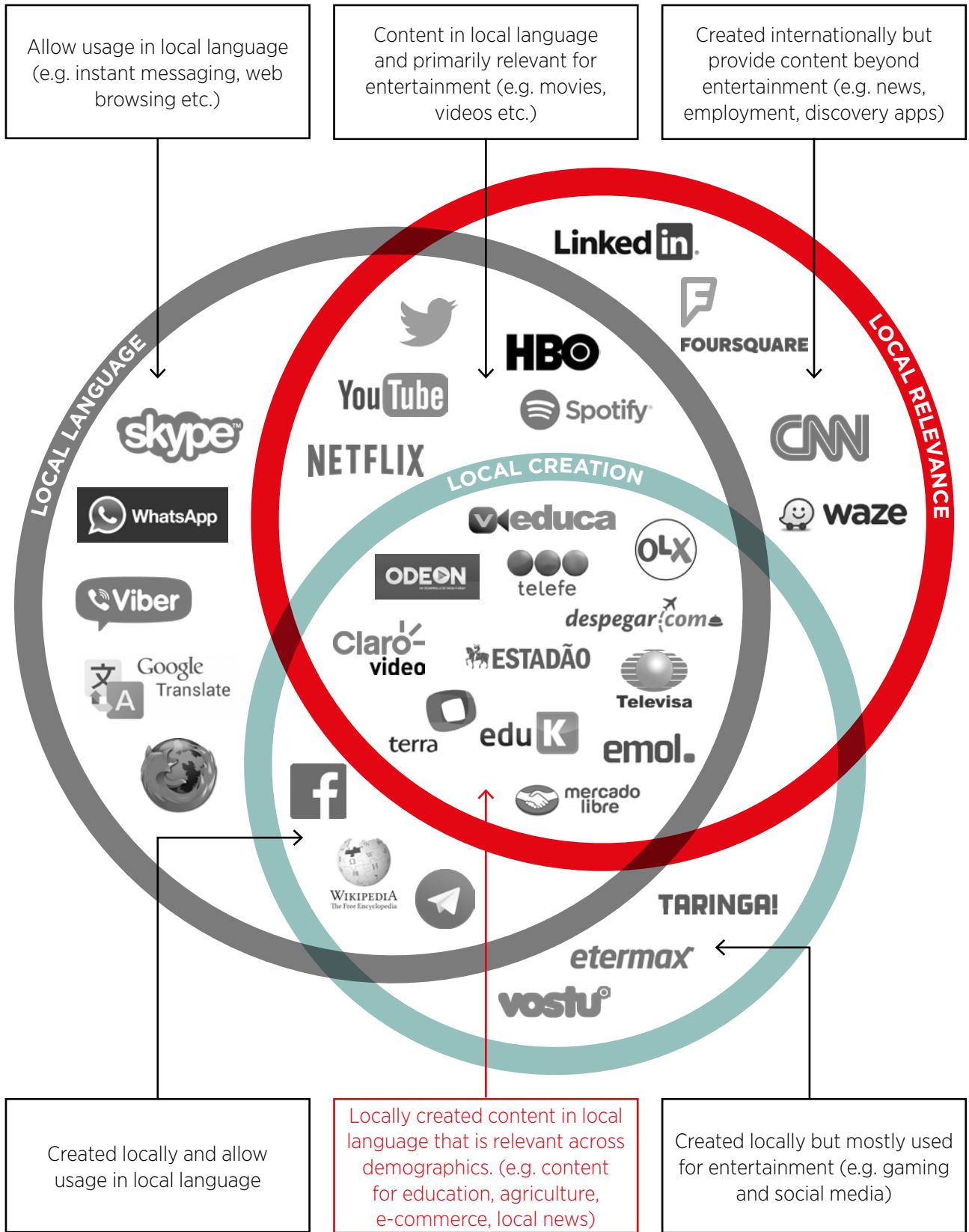
2 Defining locally relevant content

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. In terms of local language, much of the content currently available is simply directly translated, without taking into consideration what locals will find relevant.

In Figure 1, the three circles represent content that is locally relevant, created locally, or in the local language. The centre of all three categories represents content that is locally generated, in the local language, and locally relevant to users in emerging countries — i.e. content that is created within the markets themselves and that addresses specific needs.

Figure 1

Locally relevant content sits in the sweet spot of language, relevance and creation

Allow usage in local language (e.g. instant messaging, web browsing etc.)

Content in local language and primarily relevant for entertainment (e.g. movies, videos etc.)

Created internationally but provide content beyond entertainment (e.g. news, employment, discovery apps)

LOCAL LANGUAGE

LOCAL RELEVANCE

LOCAL CREATION

Linked in.

FOURSQUARE

Twitter

HBO

YouTube

Spotify

NETFLIX

CNN

skype

waze

WhatsApp

educa

OLX

ODEON

telefe

despegar.com

Viber

Claro video

ESTADÃO

Televisa

Google Translate

terra

eduK

emol.

mercado libre

facebook

WIKIPEDIA
The Free Encyclopedia

TARINGA!

etermax

vostu

Created locally and allow usage in local language

Locally created content in local language that is relevant across demographics. (e.g. content for education, agriculture, e-commerce, local news)

Created locally but mostly used for entertainment (e.g. gaming and social media)

Source: GSMA Intelligence

3 Market context

Mobile and video surge, local content still lags

The market context for mobile in Latin America continues to be one of stabilised subscriber growth overall, with an underlying shift to smartphones on 3G. At a regional level, unique subscriber penetration is around 69%, with average growth of 3.5% over the last three years (for comparison, Europe and the US grew at 1% and 3% respectively over the same period). We expect penetration to rise to 80% by 2020, mostly driven by new additions at the lower end of the income spectrum[1]. The mobile internet is now used by around 48% of the population, with substantial incremental growth coming from mobile given the lack of fixed infrastructure. This implies that roughly half of the population, 330 million people, remain unconnected to the internet. We expect penetration to rise to 66% by 2020, reducing (but not eliminating) the digital divide to 224 million or one third of the population (see Figure 2).

Beneath the headline numbers, there is significant regional variation in mobile internet access, mostly correlated with GDP per capita. Brazil, Chile, Argentina and Colombia are in the 50–60% range, with lower income markets such as Haiti and Cuba below 25% (see Figure 3). The majority of incremental internet growth is being driven by smartphones at the lower end, mostly Android devices under $150 (increasingly sub-$100), with specs and performance of a $300+ handset 18–24 months ago. The impact of this is being augmented by a mix effect, with existing featurephone users trading up to smartphones, even if they stay on prepaid data tariffs. Over the last 6–12 months, the result has been a shift away from slower speed 2G internet connections towards higher speed 3G ones (4G coverage has expanded but take-up still lags). The shift is inexorable; we estimate that the share of the mobile internet base on 3G or 4G will increase from 70% in 2015 to 85% by 2020. For operators, this presents mixed implications. On the one hand, an increased base of customers on the internet drives data revenue and an opportunity for competitive differentiation based on strong network coverage (repeatedly cited in surveys as the most important purchase criteria for customers when selecting an operator). On the other hand, it increases capacity stress, driven by rising video traffic, estimated by Cisco to be 55% annually to 2019.

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1. Unique subscriber penetration is lower but more meaningful than the oft-quoted connections penetration of 110% (which implies saturation) because it adjusts for multi-SIM ownership and subscriber inactivity

Figure 2

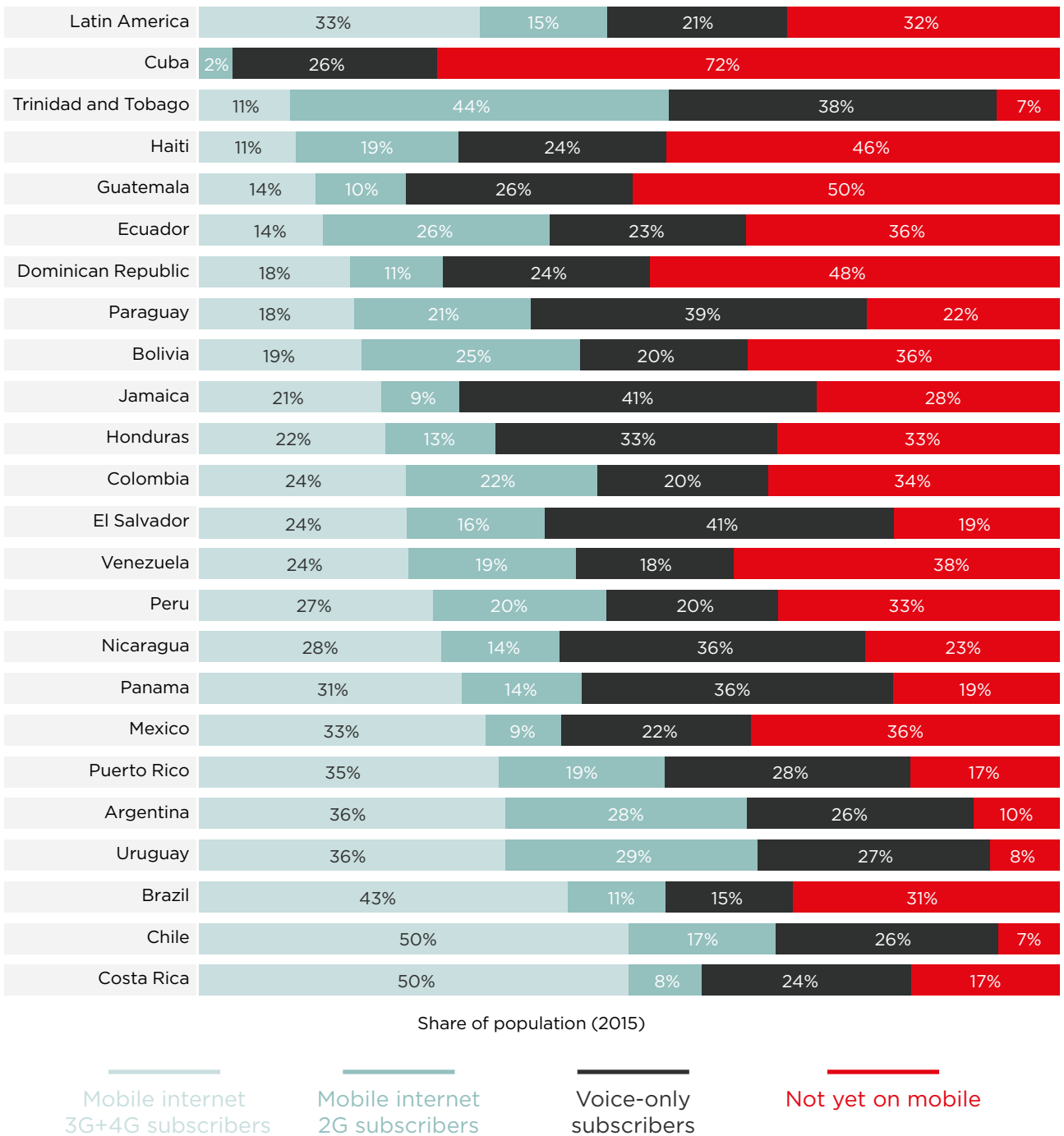## Latin America: internet penetration rising inexorably, mostly on mobile...
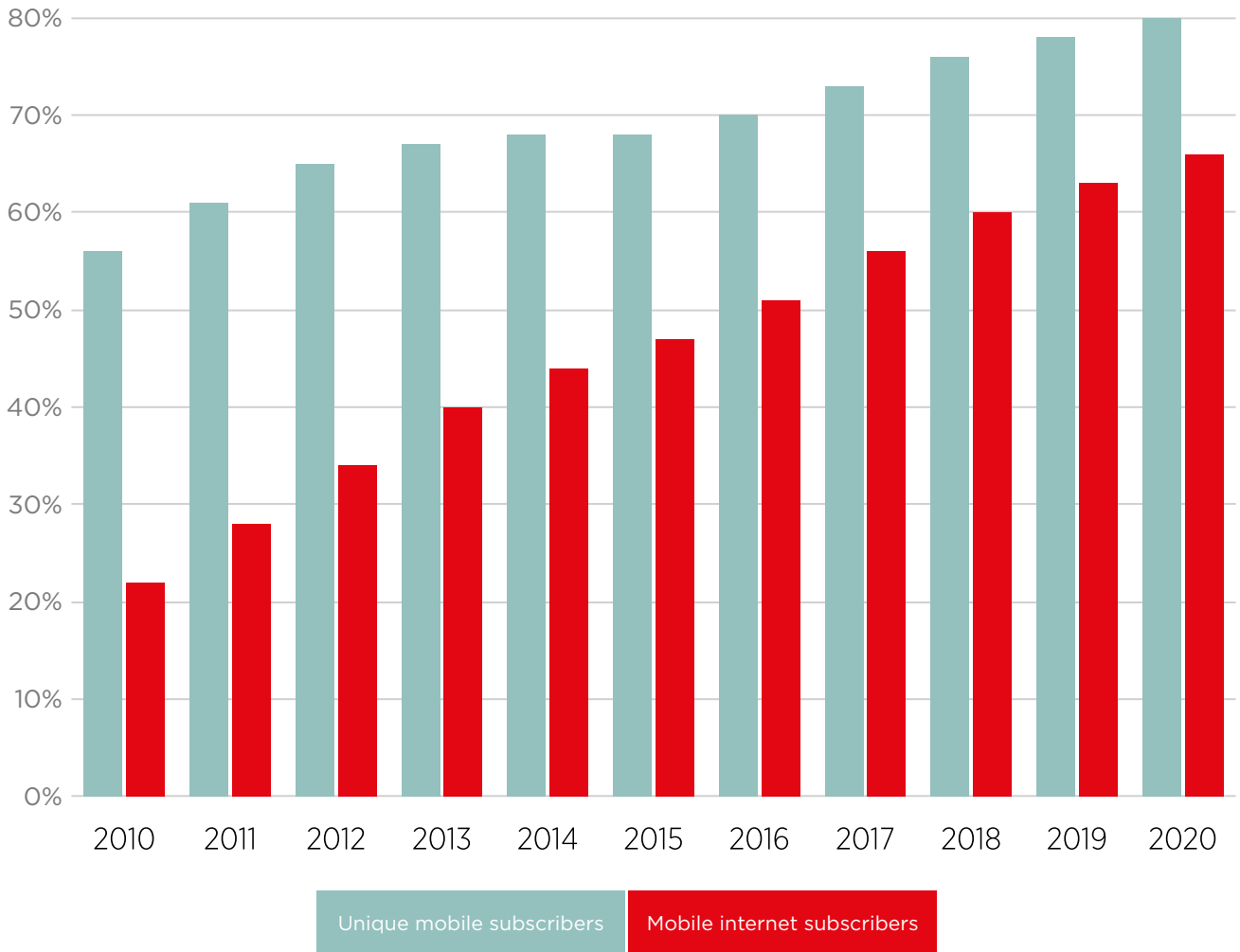
Note: penetration expressed as share of population

Source: GSMA Intelligence

Figure 3

…But there is significant variation

	Mobile internet 3G+4G subscribers	Mobile internet 2G subscribers	Voice-only subscribers	Not yet on mobile
Latin America	33%	15%	21%	32%
Cuba	2%		26%	72%
Trinidad and Tobago	11%	44%	38%	7%
Haiti	11%	19%	24%	46%
Guatemala	14%	10%	26%	50%
Ecuador	14%	26%	23%	36%
Dominican Republic	18%	11%	24%	48%
Paraguay	18%	21%	39%	22%
Bolivia	19%	25%	20%	36%
Jamaica	21%	9%	41%	28%
Honduras	22%	13%	33%	33%
Colombia	24%	22%	20%	34%
El Salvador	24%	16%	41%	19%
Venezuela	24%	19%	18%	38%
Peru	27%	20%	20%	33%
Nicaragua	28%	14%	36%	23%
Panama	31%	14%	36%	19%
Mexico	33%	9%	22%	36%
Puerto Rico	35%	19%	28%	17%
Argentina	36%	28%	26%	10%
Uruguay	36%	29%	27%	8%
Brazil	43%	11%	15%	31%
Chile	50%	17%	26%	7%
Costa Rica	50%	8%	24%	17%

Share of population (2015)

— Mobile internet 3G+4G subscribers   — Mobile internet 2G subscribers   — Voice-only subscribers   — Not yet on mobile

Source: GSMA Intelligence

Although video and the accompanying explosion in content is driving the smartphone story, most of this is coming from social, entertainment and gaming by those in the mid- and high-income segments. Those not yet connected to the internet have lower incomes and are less educated. To examine why these people are not yet using the internet, we conducted a consumer survey across eight markets in Latin America, with 1,000 adult respondents per country. Analysis of the results shows the significant reduction in internet access when moving from the middle (C) to lower (DE) socio-economic bands (see Figure 4). The intuitive conclusion that these segments are non-internet users primarily because they lack network coverage or because of cost is, however, incorrect. In terms of coverage, 3G now reaches 90% of the population, with significant investment and innovation from across the ecosystem targeted at reaching the remaining 10%. With regards affordability, continued declines in device costs have helped offset the slowing pace of income rises. In any case, mobile is relatively inelastic: given the choice, individuals on lower incomes are more likely to sacrifice other expenditure to preserve mobile service.

Instead, the largest barrier to mobile internet access among the lowest income individuals is a lack of relevance, which is directly driven by the lack of locally relevant content (see Figure 5). Argentina has the strongest response with more than 70% highlighting local content as a barrier, but the situation is broadly similar in the other markets surveyed. The cost of mobile ownership as a share of income tends to be 3–5% in most advanced markets. This is also the level paid by the upper income groups (the top 20%) in Latin America. The bottom 40% pay a much higher rate, generally above 15% and in some markets such as Bolivia and Guatemala above 30%. The survey results here are therefore all the more important given that affordability – even for lower income groups – is not seen as a primary barrier for internet access. The irony is that while content in general is driving increased internet usage on mobile among existing users, there remains a strong perception among non-users – 40–50% of adults – that what is available is largely irrelevant to their would-be digital experience. This underlines the deficit in locally relevant content.

Figure 4

Do you use the internet on a smartphone?
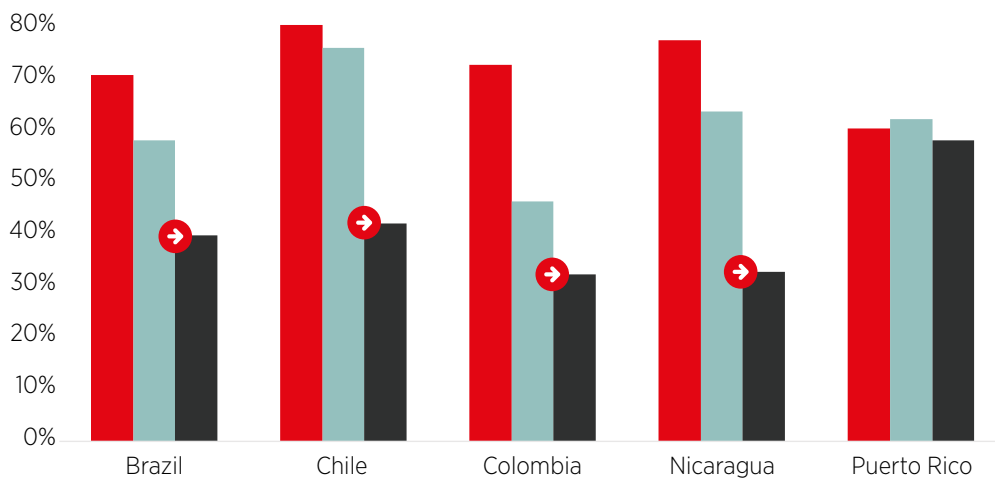
Social grade	AB	C	DE
Indicative annual income*	$15,000 - $30,000+	$6,000 - $15,000	$0 - $6,000

Base: consumers who access the internet at least once per month from a smartphone, expressed as share of adults. Sample size of 1,000 adults aged 18 and over for each country

*Indicative income ranges. Exact bands vary by country

Source: GSMA Intelligence Consumer Survey 2015

Figure 5

Relevance and local content is number one barrier for people not yet on internet

	Lack of relevance and local content	Digital skills	Affordability	Lack of coverage
Argentina	**72%**	19%	18%	2%
Brazil	**47%**	41%	37%	2%
Chile	**37%**	47%	18%	1%
Colombia	**49%**	46%	49%	19%
Mexico	**51%**	33%	43%	9%
Guatemala	**57%**	38%	14%	3%
Nicaragua	**31%**	58%	23%	6%
Puerto Rico	**68%**	18%	33%	2%

Note: Based on survey conducted in 54 countries. The sample for Latin America and the Caribbean covered eight countries interviewing 1,000 respondents in each market.

Source: GSMA Intelligence Consumer Survey 2015

4 Content deficit

Supply not meeting demand for local content

From the supply side, there is unfortunately no single indicator to quantify the availability of locally relevant content. Even if there were, it would risk giving a skewed perception because it is equally important in this discussion to account for how much content is created versus how much of it is actually available to people. For this reason, we have approached the issue bottom-up by using a cocktail of metrics that, in combination, give an aggregate index score for content in a given market (maximum of 100). This is part of the GSMA's forthcoming Mobile Connectivity Index, designed to provide a comprehensive and country-level standing on the four primary enablers to internet adoption: infrastructure, affordability, consumer and content.

Below is a breakdown of the metrics for the local content portion of the index, along with indicator scores for a selection of markets in Latin America, benchmarked against regional averages for comparison. We observe several points:

- At a regional level based on our index, Latin America's score on content (61) is above the global average but well below North America (87) and Europe (70).

- There is significant variation within the region. Chile, Colombia, Argentina and Uruguay sit at the advanced end, with smaller markets such as Nicaragua, Guatemala and Paraguay at the weaker end.

- Most of this is driven by how much content is produced locally, not just whether it happens to be in the local language. More advanced markets generally have a higher level of the following:

Websites produced in domestic markets, particularly country-coded top-level domains (ccTLDs)

Engagement with popular information sites (here, we use Wikipedia edits)

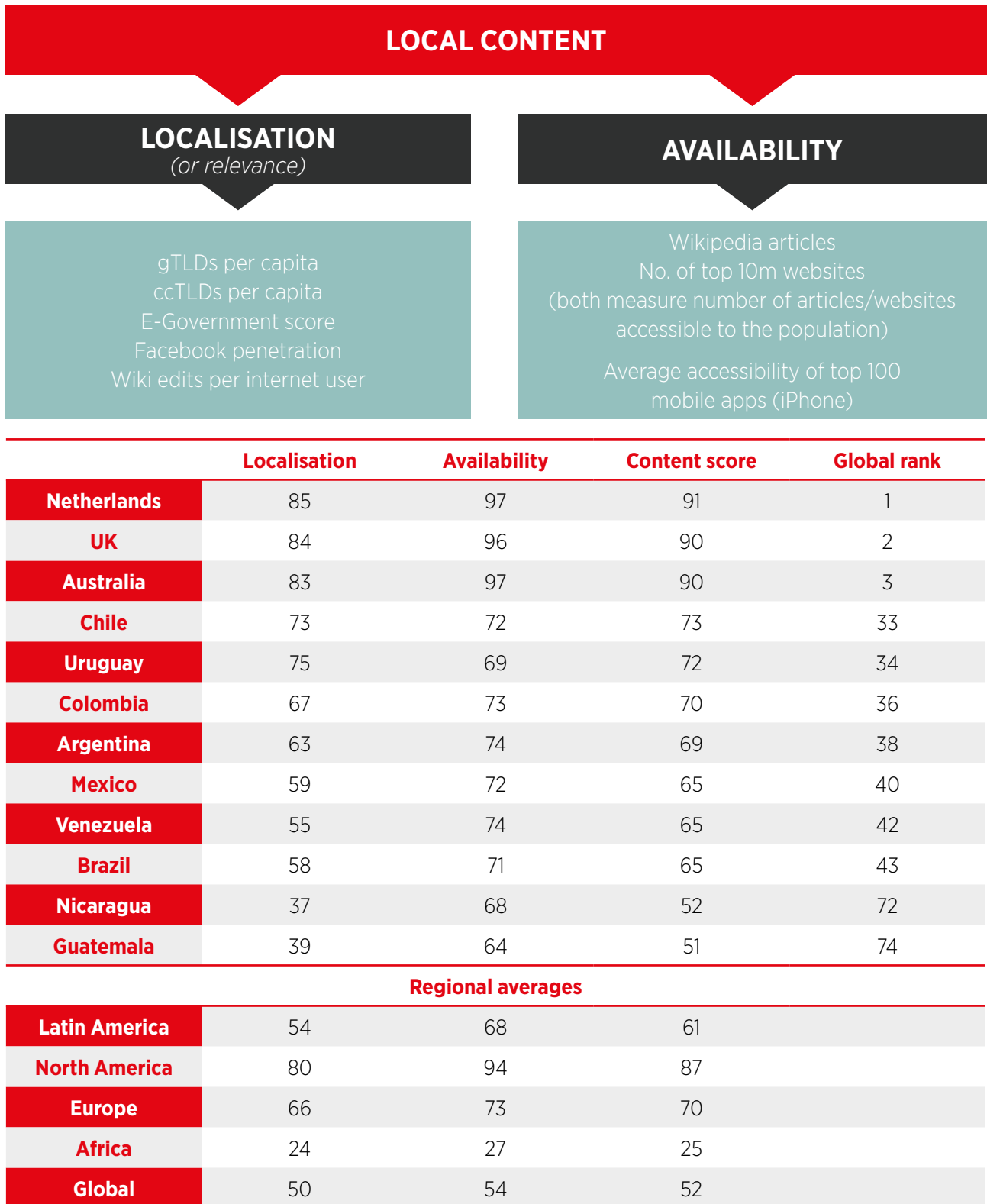Social engagement, a good proxy for grass-roots content creation and sharing (here, we use Facebook penetration)

E-government service provision. Related to this, although not quantified in the index, are broader national digital agendas. Colombia's national digital plan (Vive Colombia) and the Chilean government's programme to entice entrepreneurship (Start-up Chile) are good examples (see *Outlook: how government and operators can help address the content deficit*).

It is telling that in six out of the eight surveyed countries within the region, consumers rate locally relevant content as a larger barrier to internet access than all other factors (including network coverage). The lack of locally relevant content is reflected in website traffic. Dr. Raul Katz identified this in a study in 2013 using traffic data from Alexa, but the figures are largely unchanged. Only around 30% of domestic internet traffic in Latin America goes to websites that are hosted locally in the local language, with the remaining 70% split among international sites (such as the BBC and CNN) or adapted versions of them (see Figure 7).

Figure 6

## Dissecting locally relevant content: how does it break down?

LOCAL CONTENT

LOCALISATION
(or relevance)

gTLDs per capita
ccTLDs per capita
E-Government score
Facebook penetration
Wiki edits per internet user

AVAILABILITY

Wikipedia articles
No. of top 10m websites
(both measure number of articles/websites
accessible to the population)

Average accessibility of top 100
mobile apps (iPhone)

	Localisation	Availability	Content score	Global rank
Netherlands	85	97	91	1
UK	84	96	90	2
Australia	83	97	90	3
Chile	73	72	73	33
Uruguay	75	69	72	34
Colombia	67	73	70	36
Argentina	63	74	69	38
Mexico	59	72	65	40
Venezuela	55	74	65	42
Brazil	58	71	65	43
Nicaragua	37	68	52	72
Guatemala	39	64	51	74
Regional averages				
Latin America	54	68	61	
North America	80	94	87	
Europe	66	73	70	
Africa	24	27	25	
Global	50	54	52	

Note: Above shows selected markets in Latin America, but average includes all countries in the region

Source: GSMA Intelligence

Figure 7

Top 100 websites visited: local versus international
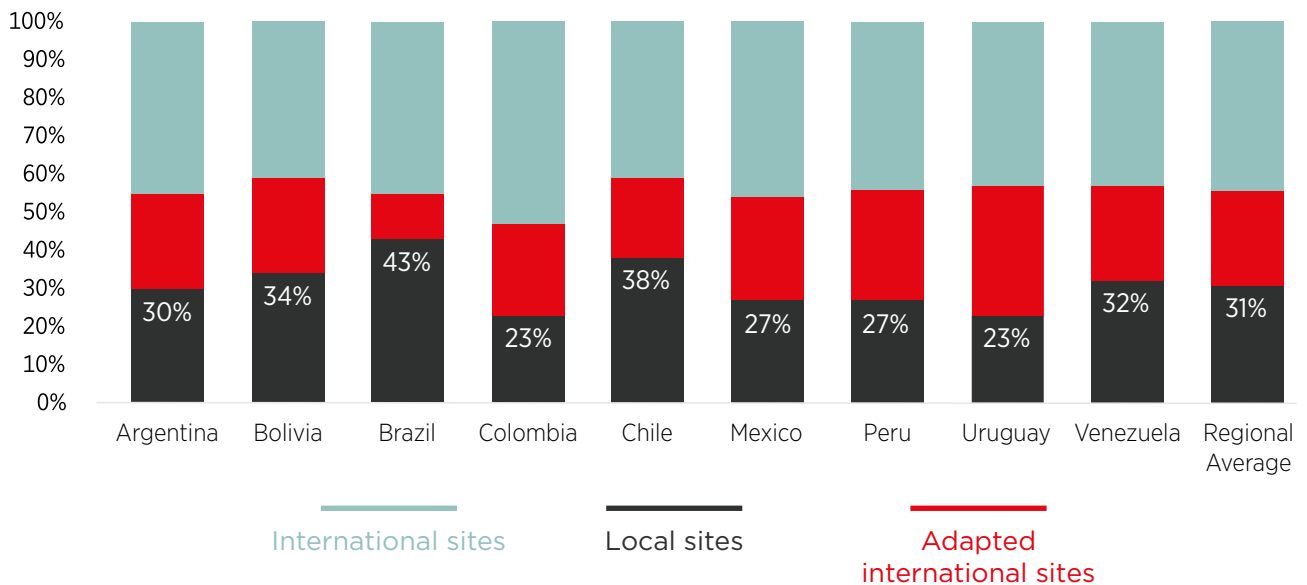
Source: "Desarraigo cultural en contenidos de internet: Un análisis para América Latina" based on Alexa, Raul Katz, 2013

If consumers want it, what's the problem?

The content deficit presents an obvious supply-side question: if consumers want locally relevant content, why isn't there more of it? We believe there are several reasons:

• Local language does not equate to relevance

• A strong traditional media sector, just not yet on mobile

• Value chain complexities

• Mass-market content favours global scale.

Local language does not equate to relevance

In some ways, the linguistic make-up of Latin America makes the lack of locally relevant content surprising. The region is dominated by two languages, Spanish and Portuguese (see Figure 8)[2]. Portuguese is spoken solely in Brazil, but with a population of more than 200 million this creates a large and broadly homogenous market for local content. Spanish is the primary language in countries with a combined population of more than 400 million. This is positive for app developers, which require scale economies to reduce the cost of adapting content for multiple languages and to attract advertisers. On this basis, we believe there is a strong latent potential for developers and other digital firms seeking go-to-market propositions with in-built scale based on common language. However, there is a common misperception that local language content by default carries higher relevance and utility to the lives of the local population. Although there is no shortage of translation software, even for rare dialects, the harder challenge is in devoting resources to extract local know-how to understand what people actually want and will find relevant.

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2. While broadly homogenous, it is important to caveat some fragmentation in certain markets. For example, while most Paraguayans speak Spanish, Guarani is more widely spoken as a first language (37% of the population are monolingual). Indigenous languages are significant in a number of other countries, including Peru, with 14% speaking Quechuan (also spoken in neighbouring Bolivia), and in Mexico with Mayan dialects. Local populations that speak such local languages are also the least likely to be internet users. Facebook and Tigo launched a version of Facebook geared specifically for Guarani in 2013 in recognition of this, but this has so far been indicative of the exception rather than the rule.

Figure 8

Latin America is fairly monolingual, meaning large economies of scale

3%

200m
32%

410m
65%

Spanish

Portuguese

Other
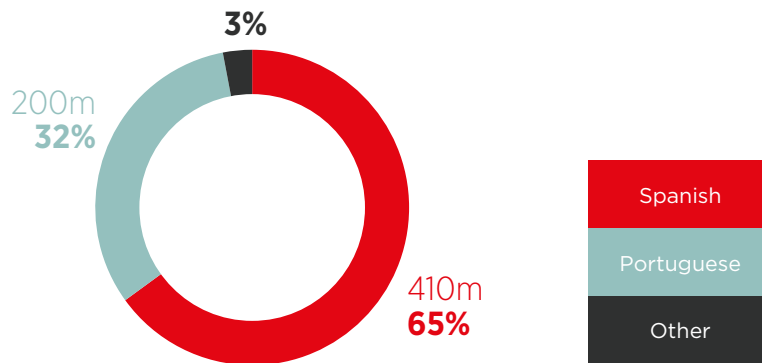
Note: Population of countries in Latin America where given language is the main one spoken. There are also around 20 million native Spanish speakers living in the US

Sources: World Bank, Ethnologue

Strong traditional media sector, just not yet on mobile

Latin America has a strong traditional media sector, with a healthy content proposition that is locally driven. Televisa (Mexico) and Globo (Brazil) are good examples. Both have long established positions in their domestic TV markets, with each now vertically integrated, linking content production and distribution. This has helped firm margins, freeing up capital for more local programming and network investment, more recently complemented by exporting content to international markets. Each has also built positions in other media markets such as radio and print publishing (including magazines and newspapers), creating a more expansive and integrated proposition for customers as well as further cost and marketing synergies.

Consumer media habits reflect the dominance of the traditional media. For example, among the largest markets in the region, TV still accounts for more time than the internet (on average, four hours per day versus three, although this is much higher in some markets such as Argentina; see Figure 9). Legacy media in radio and print is even more surprising. In these same markets, radio penetration measured by ownership and daily listening is more than 50%, with print newspaper consumption in the 20–30% range (although higher again for Argentina). This is, of course, in direct contrast to the performance of these legacy media in Europe, the US and virtually every other region. Advertising revenues for print in Latin America grew by 50% between 2009 and 2013, by far the most substantive globally (mainland Asia, at 7%, was the only other region to show any positive growth at all[3]).

3. Source: World Association of Newspapers and News Publishers

Similar success has not (yet) been translated to mobile for several reasons. Part of it is pragmatic: mobile is, relatively speaking, the newest of mass-media distribution channels. TV-led conglomerates have been around since the 1960s, with smartphones only coming to prominence in the last seven years post iPhone and Android. Content ecosystems take time to form and coalesce, particularly given the comple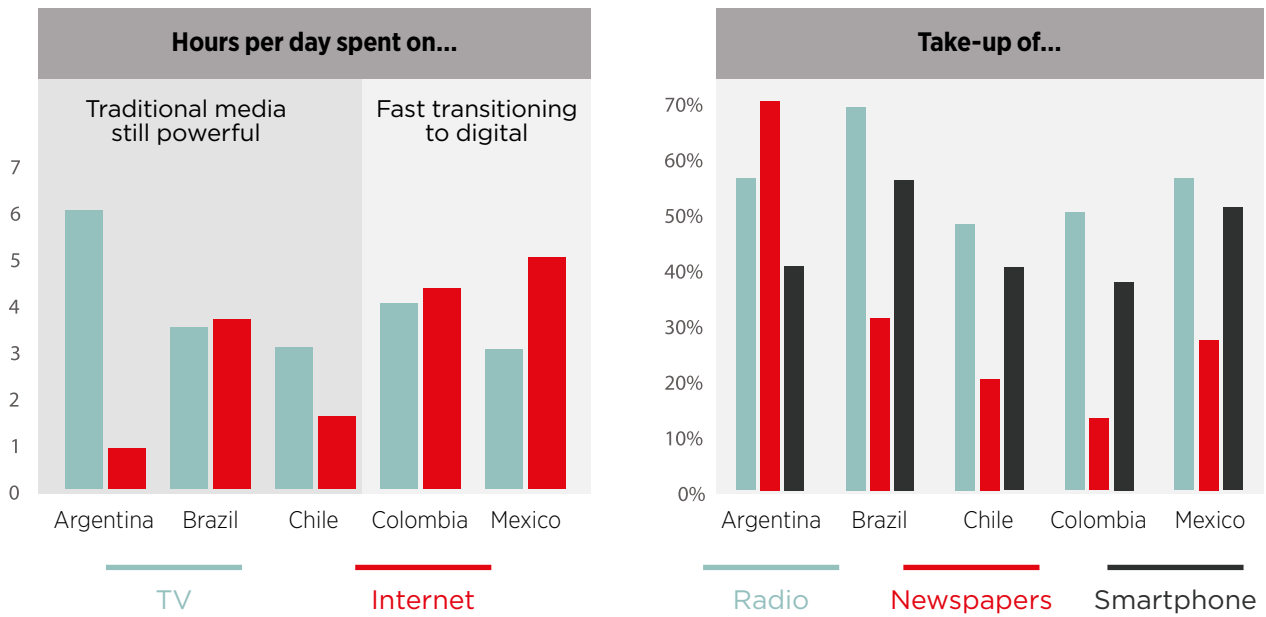xities of the mobile content value chain and subtleties in repurposing content produced for TV onto a mobile form factor. Part involves cultural idiosyncrasies. Latin America has a strong tradition of government support for newspapers and local television stations as a conduit to the masses. This has helped preserve their existence despite secular decline in other regions with the migration to digital. Finally, many of the largest media conglomerates are family dynasties that operate with relatively little competition given the licensing and cost barriers to entry, reducing the impetus for innovation.

However, this is changing with increased regulation to check monopolistic or duopolistic power, which combined with rapid growth in smartphone ownership and increasing time spent on the internet make a successful migration to mobile a necessity more than an option.

One other factor that is likely to speed the transition from traditional TV to mobile is the presence of Netflix. Netflix is far from the first mass-market video play in Latin America, with Claro heavily invested, in addition to other initiatives such as the Argentine Odeon. The difference is in its scale, extensive programming expertise and partnerships on the ground. The company currently accounts for a relatively small share of overall TV viewers in Latin America, although the groundwork is now being laid for a significant ramp-up following its recent announcement of global expansion to 130 markets. The company has stated that it will pursue a content strategy that combines original and licensed content designed for a global audience with locally produced shows and movies. The impact of its entry has already been felt in the US, Japan and most of Europe, with domestic VoD players reacting by launching mobile propositions but still struggling to compete at the lower price level. We believe it is only a matter of time before the same happens in Latin America, with growth potentially faster than other regions given Netflix's already heavy investment in Spanish-language programming for its US customers. As such, we believe more cross-sector strategic partnerships are on the cards, with several potential permutations between mobile operators, domestic media conglomerates, and NGOs where the market does not invest (such as in educational content).

Figure 9

Engagement with different forms of media

Hours per day spent on...		Take-up of...	

Traditional media still powerful / **Fast transitioning to digital**

TV | Internet

Radio | Newspapers | Smartphone

Note: Radio and newspaper figures are for share of population using daily. Smartphone penetration expressed as share of mobile connections

Source: The 2014 Media Marketing Report for Latin America, US Media Consulting; GSMA Intelligence

Value chain complexities

There are two broad areas where complexities in the value chain act as barriers to locally relevant content. The first is in the distribution channel of mobile itself. The generation of mobile content is broadly via three technology types: voice, messaging (SMS, MMS and USSD services) and data (web and apps). Voice and messaging content is distributed in bulk via aggregators, web pages are found and accessed via search engines and browsers, and apps are distributed via app stores (see Figure 10). Google's dominance in browsing (90% of searches) and operating system (Android accounts for around 80% of the smartphone base) reduces fragmentation there, but this ignores the other 50% of mobile users that are still on featurephones. These individuals are also those most likely to be illiterate, making voice and

rudimentary text services such as USSD more viable options. Socially, the case for this has always been clearer than the commercial rationale. This is understandable from the perspective of developers and other smaller scale content providers given the need to monetise in some way, shape or form. However, there are loyalty benefits by providing productivity-based services using these formats that are particularly relevant for rural, lower income segments (such as in agriculture or health). Finally, there is the longer term trend that engaged featurephone users are more likely to migrate to smartphones earlier in the lifecycle; our current forecasts are for smartphone penetration of around 70% in Latin America by 2020, with the content question one that could influence this significantly on the upside.

Figure 10

Mobile content value chain

MOBILE CONTENT

SMS/MMS/USSD/IVR

MOBILE WEB

APPS

PULL
(USER-REQUESTED
DATA)

AGGREGATORS

WEB SEARCH ENGINES

APP STORES
Billing Payments

PUSH
(USER-GENERATED
DATA)

USER INTERFACE
Operating system and devices

USER

| Generation | Distribution | Consumption |
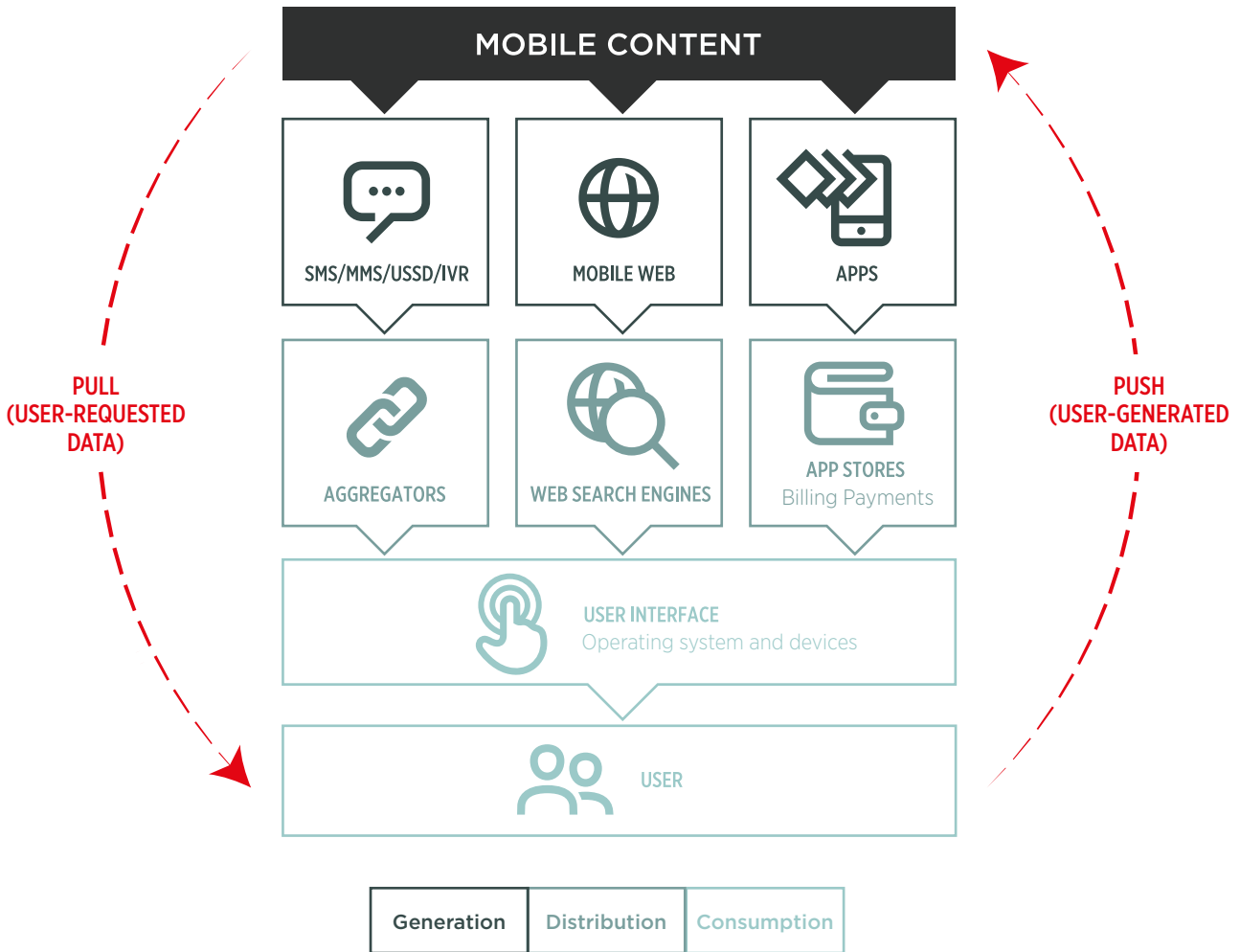
Source: GSMA

The second area of complexity is in the economics of data transfer. Although they are not listed in Figure 10, the distribution layer of the value chain also contains content distribution networks (CDNs). These are companies that provide network services to transfer content from production houses through to the last mile delivery networks that reach actual end users (e.g. mobile, fixed DSL or cable). Increasingly this has also involved hosting content in local servers to reduce the cost of transit from hotspot creation centres to far-reaching countries (from Silicon Valley to South Africa, for example) and reduce the associated latency effect that otherwise lessens customer experience. Level 3 is one of the largest international players, with its transit points shown in Figure 11. The problem is that most of the CDNs and Internet exchange points (IXPs) are located in advanced markets.

This partly reflects a legacy effect in serving countries/regions with advanced media and telephony markets, and partly the high cost of laying submarine cables over long distances. In Latin America, there are around 46 IXPs. This is around 8% of the global total, roughly on par with the region's share of global smartphone connections (10%). However, Brazil controls by far the largest share of these (helped by the formation of a multi-stakeholder body in 2003 to spearhead expansion beyond large cities), with a limited, scattered distribution elsewhere, and absent altogether in some countries.

This matters for local content because of the disincentive for local entrepreneurship. Launching a local website or app in-country without a local IXP increases costs because traffic to the site must be routed out of the country to an exchange before coming back in (the situation has been aptly compared hypothetically to requiring domestic air traffic to stop at an international airport outside the country). It also goes beyond cost. Local IXPs provide a greater incentive for content producers to host closer to end users, generally via caching, which reduces latency. Finally, hosting websites locally has search engine optimisation benefits. Google, Yahoo and Bing will determine and rank search results based on, among other criteria, the content's locale, prioritising content that is in the local language and locally hosted. If content is in the local language, hosted with a local IP address and registered on a top-level domain, it will appear higher up on a search result list, providing the content creator with greater visibility and making it easier for end users to find.

Figure 11

Internet exchange point locations

IXP   Level 3 CDN
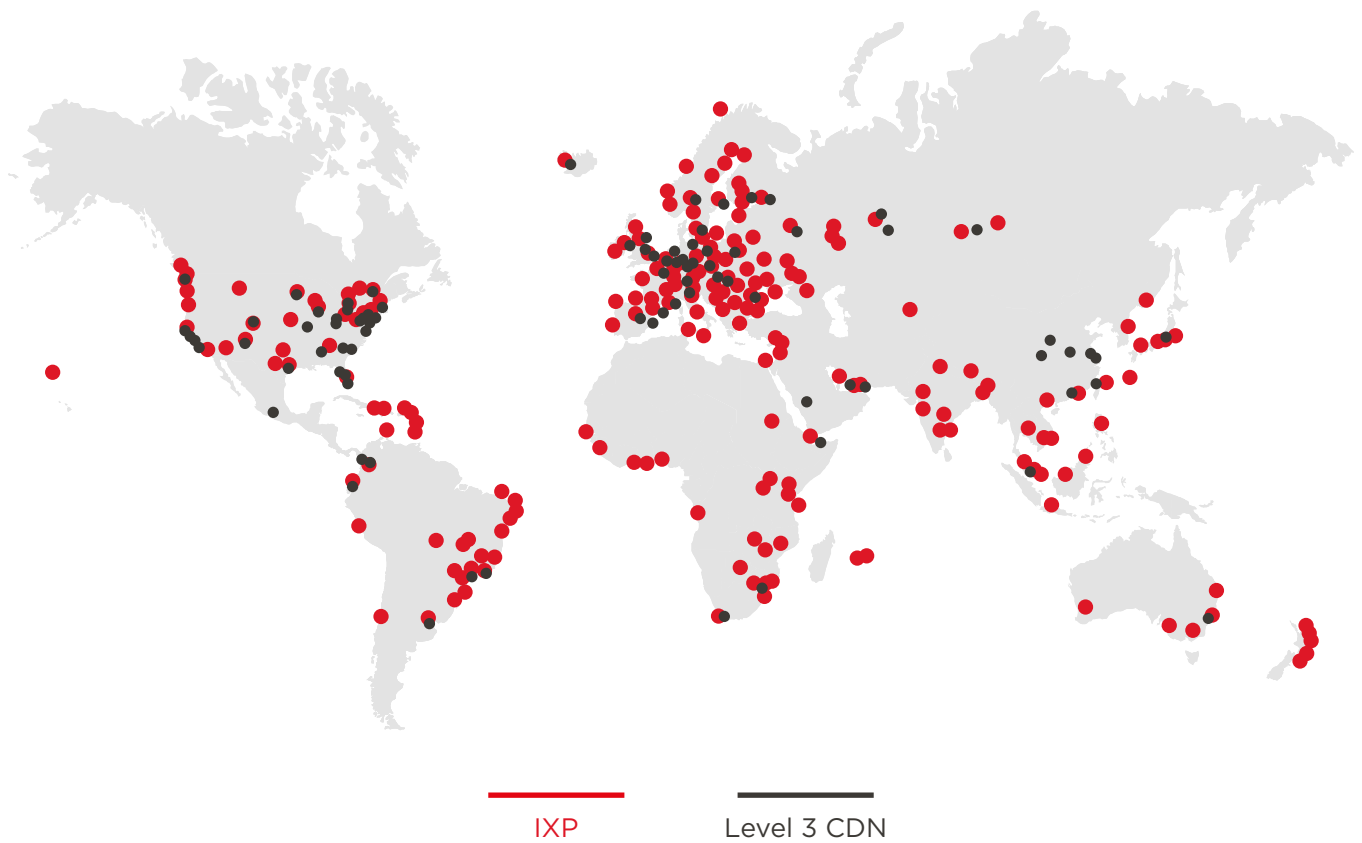
Note: Level 3 data from 2014

Source: Telegeography, Level 3

Mass-market content favours global scale

Looking at the range of functionality available to people on mobile, actual take-up and usage follows a spectrum. Voice calls and SMS are the mainstays of mass-market usage (over 80%). In the smartphone era these have been joined in equal measure by internet browsing, social networking, video, and IP messaging platforms both for core communications and, increasingly, a range of other services such as gaming and online shopping (see Figure 12). Most of these services are free, and as such attract users irrespective of income. The corollary is that the winning players in these spaces are reaching global, or at least pan-regional, footprints in what have become 'winner takes all' markets. For example, IP messaging has now bifurcated into two broad groups: WhatsApp (900 million), Facebook Messenger (800 million) and WeChat (China, 600 million) as the top three followed by a long tail of other providers seeking to compete either in national markets on the basis of cultural idiosyncrasies (such as Kakao in Korea) or product niche plays (such as BlackBerry Messenger). The latter two are success stories, but there is a much larger group of companies that have tried and failed to compete on the 'local' tag against global incumbents.

To some extent, the social/sharing element of social networking and IP comms platforms can fill a void in locally produced content relevant to the local population. However, moving down the spectrum, a range of use cases that can loosely be grouped under the umbrella term of 'productivity' have largely gone unmet. Even among mobile internet users in Latin America, a minority have used online banking (22%), accessed government services (24%) or used their mobile to search for a job (29%). From a demand point of view, these use cases are prime examples of the types of services relevant to non-internet users because of their positive impact on livelihood, and we believe therefore are an important lever for initial access. Global players in messaging and even social have largely ignored this end of the spectrum (Facebook Free Basics is a notable exception). Economics remains a challenge in the absence of a direct charging model for lower income users. We believe there are opportunities for a more integrated approach for players with intimate knowledge of the local landscape, such as mobile operators, by bundling such services with core airtime, for example.

Figure 12

Mass market versus niche functionality on mobile

| Productivity | Entertainment apps | Communication and messaging apps |
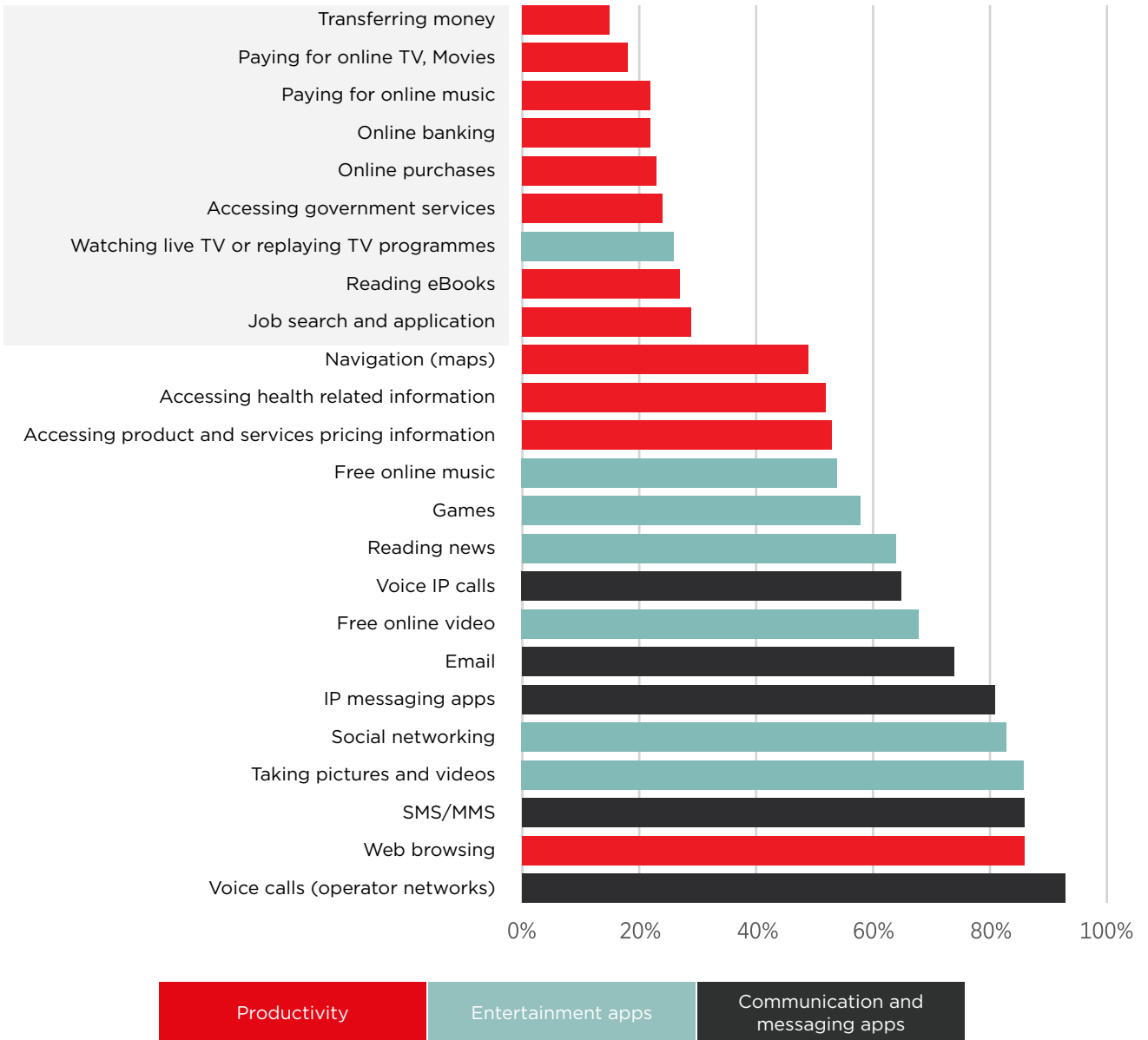
Percentage of mobile internet users in Latin America who have used feature on their phone

Source: GSMA Intelligence

5 How government and operators can help address the content deficit

There is a lot of activity happening in the content space from the public and private sectors. The main challenge is to consolidate some of the fragmentation in these efforts, where there is clear mutual benefit. We focus our analysis on government and mobile operators.

Government

Governments have started to play a more proactive role in recognising the importance of locally relevant content in internet development, and in promoting local creation. This has been helped by a progressive policy environment, although this is somewhat uneven across the continent and it is clear that more can be done.

Part of this will come through national digital agendas. These have become common in the US, Europe and much of Asia in an effort to stimulate public-private collaboration and investment to expand broadband access and digitise public service delivery. Latin American countries are also well advanced in this area, although (again) to varying extents. Emphasis must focus on tackling each of the major barriers to internet access in collaboration with market participants; in this light, the results of our survey highlight the importance of investing in improving digital skillsets among citizens and provisioning locally relevant content more than classic infrastructure gaps to help close the digital divide.

Colombia's Vive Digital is a good example, comprising a two-phase agenda. The first phase focused on creating an enabling environment (e.g. eliminating taxes on PCs and tablets) while also investing in extensive infrastructure programmes, specifically building out fibre and 4G mobile coverage to all towns and villages in the country with more than 100 inhabitants. At the start of the first phase, in 2010, the government reported that 60% of small and medium-sized enterprises (SMEs) felt that the internet was not useful or relevant for them, with only 7% online. The share of this audience online has now increased to 74%. The second phase of the plan to 2018 is attempting to kickstart a local digital economy. This is a key issue across Latin America given the region's underperformance on several measures of innovation (e.g. patents per capita, R&D investment), even against developing regions. In order to increase the number of digital entrepreneurs, 17 digital centres ('Vive Labs')

have been founded across the country. These centres provide a place in which anyone can learn digital content skills. They also empower new entrepreneurs with high-quality equipment and licensed software. In addition, through the 'Apps.co' program, more than 50,000 Colombians have learnt how to code in its 'bootcamps'. 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 and aims to train 90,000 Colombians by 2018.[4][5]

Beneath statute, the role of government is one of fostering an enabling environment in partnership with industry as opposed to in isolation. One space is in attracting and retaining entrepreneurship. Silicon Valley's success has made the development of other start-up ecosystems an ambition in many countries around the world. London, Berlin and Tel Aviv are good examples of this in progress, with local start-ups and investment capital increasing significantly over the last two to three years.

The Chilean government launched 'Start-Up Chile' in 2010, attempting to attract entrepreneurs (local and international) by offering equity-free seed capital, mentoring, office space and temporary visa exemptions. On the face of it, these are all positive things, with a reported 1,500 jobs created through the programme. The problem is that most of the start-ups (80%) leave, generally for the US, following their short incubation. The prospect of collaborating with or being acquired by one of the large US tech firms is a major incentive to leave, but it is likely also to do with the need for a predictable and supportive operating environment that is currently lacking. To its credit, the process of starting a business in Chile has eased, but problems remain in accessing credit and, crucially, restrictions on cross-border trade (Kenya has followed a similar path, where the government has supported several incubators, but still ranks in the bottom 30% in rankings for ease of doing business).

4.   El Tiempo, Ministerio TIC lanzó versión 2.0 de Apps.co
5.   apps.co

Developing sustainable innovation is a long-term, multi-faceted undertaking that requires a combination of financing assistance, supportive policy environment and educational institutions that feed the start-up community. In the absence of these support pillars, evidence suggests isolated start-up competitions are likely to fizzle out.

E-government services are a further lever in increasing the amount of locally relevant content, a potentially easy win given the heavy consumer reliance on public services. Development is still nascent but is growing. An example of this is in Panama where the government recently launched a smartphone and tablet app, PanamáApps, making it the first country in Latin America to have a standalone mobile app. The app allows citizens to conveniently access the functions of all 15 state agencies[6].

Finally, further support for local IXPs should be considered. These have a curious organisation structure, with many born from public monopolies before widening membership to new entrants, both telcos and content providers, and government. The key is in expanding to lower density centres outside major cities, where the economics make rollout models difficult in the absence of some type of public support. Brazil, Argentina and Ecuador have all made successful case studies of a public-private cooperative model for IXP expansion (the Internet Society has done a full analysis on the subject[7]). Taking Argentina as an example, the CABASE cooperative was formed in 2011 to stimulate expansion beyond the single IXP that had been established in Buenos Aires. The result was an increase to 10 IXPs by 2013, spanning five provinces and peering more than 80 telcos. Importantly, the increase in traffic volumes was inversely related to population size, meaning the impact was proportionately larger on smaller locales as a result of investment from new entrants.

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6. "Gobierno de Panamá presenta aplicación móvil para trámites", ANPanama, December 2015
7. Connectivity in Latin America and the Caribbean: The Role of Internet Exchange Points, Internet Society, November 2013

Operators

There is no shortage of operator involvement in the content space in Latin America (more than most other regions). The question is more where to play most effectively. We believe this broadly falls into two areas: investing in start-ups and accelerators, and direct service offerings.

Telefónica and Millicom are the two largest players in the start-up space, although they have used different models. Telefónica's model has focused on direct investment and incubation of start-ups. It launched Wayra in 2011, offering seed funding, mentorship, access to office space, exposure to investors and a live test network environment (sandbox). This has been complemented with $200 million of venture funding through the Amerigo platform and a recently created umbrella division (Open Future) to unite the various digital initiatives that the company runs. Wayra now operates in 12 markets (including Brazil, Argentina and Mexico). An estimated 84% of the 230 start-ups that came through the programme are still active, although few high-profile success stories have emerged.

Millicom has taken a more indirect route by investing in Rocket Internet, a holding company for a portfolio of start-ups in Latin America and Africa (a 20% stake was acquired in 2012 with an option to increase this to 100% by September 2016). The advantage for Millicom is that it gains exposure to new products and, equally importantly, talent without investing in its own incubation centres. In addition, the company has taken direct management of some aspects of services originally incubated with Rocket.

Colombia provides a good example of a test market for services emanating from portfolio companies. It has now launched own-brand services in taxi bookings (Easy Taxi), food delivery (Hellofood), property sales (Lamudi), price comparisons (Price Panda) and bus tickets (Click Bus). As with Wayra, it is hard to judge success comprehensively because Rocket only reports results for a select group of high performing companies, which it calls 'proven

winners'. Collectively, this group posted revenue growth of around 80% in 2014 with an EBITDA margin of 21%, although as of 2015 only one of these (Home24) was located in Latin America. For Millicom's own services, it claims that Easy Taxi is the leading taxi app in Latin America with 18 million users and 5 million rides per month across 16 countries (in 2014). With either model, investment must be long term given the high likelihood of short-term losses, but we believe the indirect model is most promising for operators because it strikes the right balance between playing to the strengths of others versus one's own; in this case, gaining exposure to start-ups by co-investing with one or more VCs or accelerators, who can leverage a global network of entrepreneurs and know-how, complemented by network assets and distribution strength from the operator.

The other area is in direct service offerings. Outside of core airtime, the biggest growth in value-added services (VASs) has come from video on-demand

(VoD), generally sold as a complement to standalone data plans or bundled triple-play offers. Tigo, Claro, Movistar, TIM and Vivo (among others) have all introduced VoD services to meet growing demand as smartphone penetration rises and, presumably, as a pre-emptive hedge against Netflix. There is, however, still a void of activity in services targeting lifestyle needs (productivity services). Channel checking paints a stark picture. Of the 35 operator companies sampled, at least two thirds offer services in video, music, games and ringtones, but only 20% have offerings in mobile money and health, and less than 10% in job sites and agriculture (see Figure 13). We believe this ignores a large section of the untapped market of mostly low-income consumers for whom the absence of locally relevant content is a key blocker to accessing the mobile internet. Effectively servicing this market could carry significant loyalty benefits. It is difficult to charge directly for these services but, as with VoD, a bundling model may have more traction.

Figure 13

Operator content services by type in Latin America
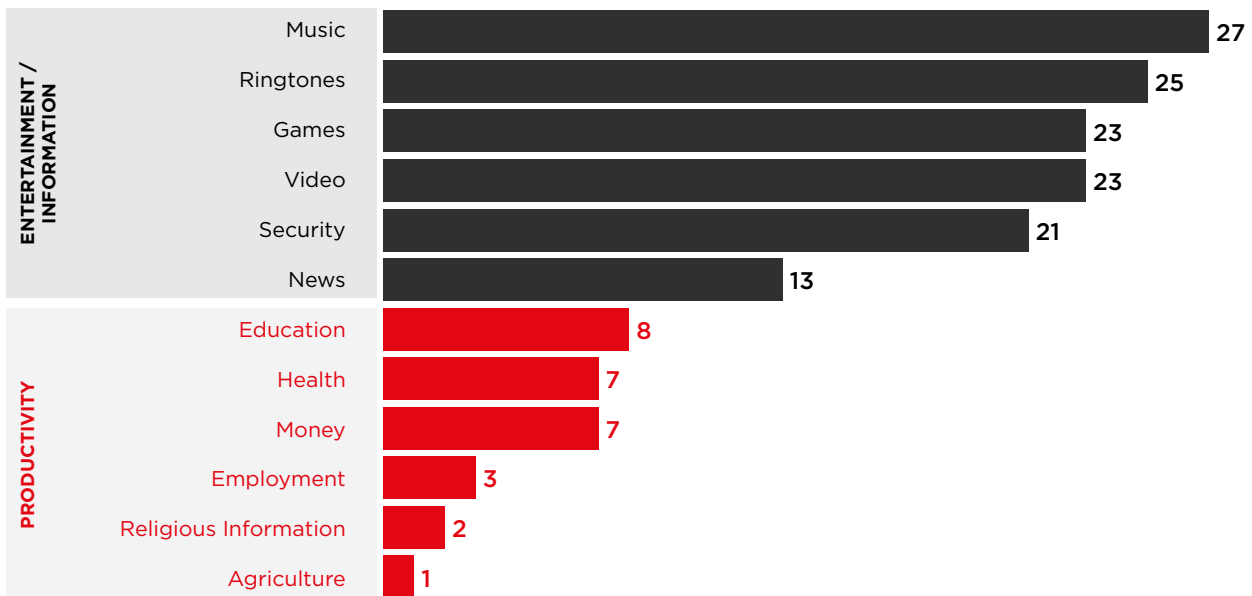
Number of operator websites with offerings per category

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

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