Country overview: Argentina
Impact of the mobile ecosystem: perspectives and opportunities
The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai and the Mobile 360 Series conferences.

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Argentina: a mobile market rapidly transitioning to high-speed mobile data

Argentina is the third largest mobile market in Latin America, with 61 million mobile connections. Penetration on a unique subscriber (i.e. human user) basis is mature at 90% – higher than Europe (85%), the US (80%) and the regional average (68%). The moving parts are therefore not in adding new subscribers but existing ones migrating to 3G and 4G smartphones.

This migration has already started to become evident in an increase in the level of consumer engagement in social media, messaging and e-commerce platforms, where home-grown start-ups such as Taringa and MercadoLibre have been successful. Aided by an enabling environment of technology focussed education and on-the-ground accelerators (some led by operators such as Wayra from Telefónica), a number of mobile and tech start-ups have flourished. Four of the six ‘unicorns’ in Latin America – MercadoLibre, Despegar, OLX and Globant – were founded in Argentina.

The overall contribution of mobile to the economy is significant: in 2015, the mobile sector made a total contribution of more than $21 billion in value-added terms, equivalent to approximately 3.7% of Argentina’s total GDP. This assessment takes into account the direct impact of mobile operators and the mobile ecosystem, the indirect effect that this activity generates on the broader economy, and the increased productivity of firms and workers brought about by the use of mobile services.
Significant barriers exist to mobile technology achieving its full potential for society

Some 27% of the population in Argentina do not use the mobile internet. Of this, only 7% are not covered by 3G or 4G services, which leaves a latent demand gap of 20% who do not subscribe to 3G or 4G services but are covered by them. A consumer survey conducted by GSMA Intelligence indicates that a lack of locally relevant content (rather than network coverage or cost) is the greatest barrier to take-up. This places impetus on the mobile ecosystem to revamp content and service offerings for mobile distribution (as opposed to just TV and radio) to reflect local nuances and relevance. Entertainment and video are well trodden paths; less so are productivity verticals in agriculture and health, but both have shown significant upside through smartphone apps and other digital services.

Achieving this full potential requires a stable economy and a conducive business environment for the mobile industry and the broader ecosystem. Rising inflation poses a significant challenge, directly impacting the risk appetite of entrepreneurs and investors, as well as the purchasing power of consumers. In the past, a dual exchange rate, lack of access to foreign capital and the challenges of bureaucracy have all resulted in a slowdown in the rate of investment and constrained the development of local start-ups in the country.

An improving outlook

The arrival of a new administration in December 2015 offers the promise of a change in the policy environment. This presents a unique opportunity to create a new regulatory framework focused on convergent services, better reflecting the digital ecosystem. It is important for mobile operators, government, regulators and other stakeholders to work collaboratively on the expansion of the industry value chain, especially in the content and apps sector, which delivers high-value services and strong employment opportunities.

Supported by an improved outlook, mobile broadband penetration will rise from 46% now to around 75% by 2020. This growth will be underpinned by nearly $9 billion in network investment by mobile operators. A similar shift is expected in device ownership; smartphone adoption is expected to increase to 71% of connections over the next five years. The total economic contribution of the mobile sector could reach $26 billion by 2020, representing 4.6% of Argentina’s GDP, up from 3.7% in 2015.
ARGENTINA

Unique subscribers and SIM connections

2015 39m 90% PENETRATION RATE
2020 42m 92% PENETRATION RATE

CONNECTIONS*
*Excluding M2M
2015 61m
2020 73m 159% PENETRATION RATE

Smartphones

<table>
<thead>
<tr>
<th>SMARTPHONE INSTALLED BASE</th>
<th>SMARTPHONE ADOPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 25m</td>
<td>2020 51m</td>
</tr>
<tr>
<td>SMARTPHONE ADOPTION</td>
<td></td>
</tr>
<tr>
<td>2015 40%</td>
<td>2020 71%</td>
</tr>
</tbody>
</table>

4G

<table>
<thead>
<tr>
<th>% of connections</th>
<th>Population coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 3m</td>
<td>2015 63%</td>
</tr>
<tr>
<td>2020 23m</td>
<td>2020 85%</td>
</tr>
</tbody>
</table>

5% of total connections
33% of total connections

Accelerating the delivery of new connected devices and services in the M2M market through industry collaboration, appropriate regulation and optimising networks.

Helping mobile network operators deliver global interconnected all-IP communications services to consumers such as voice over LTE (VoLTE), video over LTE (ViLTE), voice over Wi-Fi (VoWi-Fi) and Rich Communications Services (RCS).

Delivering a universal identity system that securely authenticates the user and provides safe access to mobile and digital services via the mobile phone through GSMA’s Mobile Connect programme.

Driving the mass adoption of SIM-secured digital commerce services.

Employment

<table>
<thead>
<tr>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 65,000</td>
</tr>
<tr>
<td>2020 80,000</td>
</tr>
</tbody>
</table>

2016-2020

Mobile industry contribution to GDP

<table>
<thead>
<tr>
<th>Capital expenditure</th>
<th>Mobile industry contribution to GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 $26bn</td>
<td>2015 3.7% of GDP</td>
</tr>
<tr>
<td>2020 $21bn</td>
<td>2020 3.7% of GDP</td>
</tr>
<tr>
<td>$2bn</td>
<td>$9bn</td>
</tr>
</tbody>
</table>
Mobile industry contribution to GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Value (US$bn)</th>
<th>GDP Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>21</td>
<td>3.7%</td>
</tr>
<tr>
<td>2020</td>
<td>26</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Capital expenditure

- 2015: $2bn
- 2016-2020: $9bn

Employment

- Jobs directly supported by mobile ecosystem: 65,000 (2015) to 80,000 (2020)
- Plus an additional 55,000 indirect jobs supported by 2020

Mobile operator and GSMA activities to support the developing mobile ecosystem

1. Accelerating the delivery of new connected devices and services in the M2M market through industry collaboration, appropriate regulation and optimising networks.
2. Helping mobile network operators deliver global interconnected all-IP communications services to consumers such as voice over LTE (VoLTE), video over LTE (ViLTE), voice over Wi-Fi (VoWi-Fi) and Rich Communications Services (RCS).
3. Delivering a universal identity system that securely authenticates the user and provides safe access to mobile and digital services via the mobile phone through GSMA's Mobile Connect programme.
4. Driving the mass adoption of SIM-secured digital commerce services.

Mobile operator and GSMA activities to support the developing mobile ecosystem

- Accelerating the delivery of new connected devices and services in the M2M market through industry collaboration, appropriate regulation and optimising networks.
- Helping mobile network operators deliver global inter-connected all-IP communications services to consumers such as voice over LTE (VoLTE), video over LTE (ViLTE), voice over Wi-Fi (VoWi-Fi) and Rich Communications Services (RCS).
- Delivering a universal identity system that securely authenticates the user and provides safe access to mobile and digital services via the mobile phone through GSMA’s Mobile Connect programme.
- Driving the mass adoption of SIM-secured digital commerce services.
Argentina is the eighth largest country in the world by land area, and second only to Brazil in Latin America. It has the fourth largest population in the region, with 43 million people. The country is subdivided into 23 provinces and one autonomous city, Buenos Aires, which is the federal capital of the nation as decided by Congress. The provinces and the capital have their own constitutions but exist under a federal system.
Argentina in numbers

- **Total population**: 43 million
- **Capital city**: Buenos Aires
- **Official language**: Spanish
- **Second largest country in Latin America by land area**: 2,780,400 square km

Ease of Doing Business Ranking

- Mexico 38
- Chile 48
- Perú 50
- Colombia 54
- Guatemala 81
- Dominican Republic 93
- Brazil 116
- Ecuador 117
- Argentina 121
- Bolivia 158
- Haiti 182
- Venezuela 186

Source: World Bank

Note: Male and female unemployment as a share of male and female workforce respectively.
The mobile market in Argentina is quickly transitioning to maturity as mobile ownership rates approach the ceiling of addressable population. More than 70% of connections are prepaid and three key operators – Claro (America Movil), Movistar (Telefónica) and Personal (Telecom Argentina) – each have nearly a third of the market. After the launch of 4G in November 2014, 3 million connections now run on 4G services.

### Key mobile indicators for Argentina

<table>
<thead>
<tr>
<th>METRIC</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015 (Estimated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique subscribers (million)</td>
<td>37</td>
<td>39</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Connections (excluding cellular M2M, million)</td>
<td>58</td>
<td>63</td>
<td>62</td>
<td>63</td>
</tr>
<tr>
<td>Mobile broadband connections (million)</td>
<td>12</td>
<td>20</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>4G connections (million)</td>
<td>-</td>
<td>-</td>
<td>0.2</td>
<td>3</td>
</tr>
<tr>
<td>Penetration, unique subscribers</td>
<td>89%</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Penetration, connections</td>
<td>137%</td>
<td>146%</td>
<td>143%</td>
<td>141%</td>
</tr>
<tr>
<td>Unique subscriber growth (annual)</td>
<td>6%</td>
<td>3%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Connections growth (annual)</td>
<td>4%</td>
<td>8%</td>
<td>-1%</td>
<td>-1%</td>
</tr>
<tr>
<td>SIMs per subscriber</td>
<td>1.37</td>
<td>1.41</td>
<td>1.40</td>
<td>1.37</td>
</tr>
<tr>
<td>% prepaid connections</td>
<td>73%</td>
<td>73%</td>
<td>74%</td>
<td>74%</td>
</tr>
<tr>
<td>% smartphone connections</td>
<td>16%</td>
<td>25%</td>
<td>32%</td>
<td>40%</td>
</tr>
<tr>
<td>% 3G connections</td>
<td>21%</td>
<td>31%</td>
<td>38%</td>
<td>42%</td>
</tr>
<tr>
<td>% 4G connections</td>
<td>0%</td>
<td>0%</td>
<td>0.3%</td>
<td>4.8%</td>
</tr>
<tr>
<td>ARPU, by connection (pesos)</td>
<td>64</td>
<td>69</td>
<td>78</td>
<td>89</td>
</tr>
<tr>
<td>Recurring revenue (pesos, million)</td>
<td>44,153</td>
<td>50,698</td>
<td>58,454</td>
<td>66,910</td>
</tr>
<tr>
<td>Recurring revenue growth (nominal)</td>
<td>20%</td>
<td>15%</td>
<td>15%</td>
<td>14%</td>
</tr>
<tr>
<td>Recurring revenue growth (inflation adjusted)</td>
<td>1%</td>
<td>-5%</td>
<td>-14%</td>
<td>-12%</td>
</tr>
</tbody>
</table>

Source: GSMA Intelligence
Healthy mobile market competition in Argentina: three players with a third of the market

Mobile market HHI scores 2005-2015

Source: GSMA Intelligence

Note: The Herfindahl-Hirschman Index (HHI) is a measure of competition; it takes the sum of the squared market share held by each mobile operator, giving a maximum country value of 10,000. Higher values indicate a larger concentration of share held by one or two operators, which generally indicates a lower level of competition.
Disparities in mobile and internet use between urban and sub-urban areas of Buenos Aires

### USE MOBILE PHONES

- **Greater capital area**: 60% YES, 40% NO
- **Buenos Aires city**: 79% YES, 21% NO

### USE INTERNET

- **Greater capital area**: 73% YES, 27% NO
- **Buenos Aires city**: 83% YES, 17% NO

Source: INDEC, Encuesta Nacional sobre Acceso y Uso de Tecnologías de la Información y la Comunicación (ENTIC) 2015

Note: Based on a national survey of 31 urban conglomerates, the city of Buenos Aires and Greater Buenos Aires area.
Mobile operator launches in Argentina

1989
- Mobile phone services launched in Argentina

1999
- PCS spectrum licensing

2000
- Decree 764
- 4.5 million mobile connections

2002
- GPRS services launched

2003
- First GSM network

2004
- Telefonica buys Movicom Bell South

2005
- 21 million mobile connections

2007
- 3G services launched

2008
- 100% market penetration (connections)

2010
- 52 million mobile connections

2011
- Failed auction of spectrum returned by Movistar

2012
- 10 million 3G connections
- Mobile broadband connections surpass fixed

2014
- Spectrum auction in AWS, 700, 1900 and 850 bands
- 4G services launched
- Argentina Digital Law

2015
- 3 million 4G connections
- 61 million mobile connections

Source: Operator websites, news reports, GSMA Intelligence
Country Overview: Argentina

Direct contribution: Our definition of the mobile ecosystem in Argentina includes a set of closely interlinked industries (see Figure 18 in Section 3) that jointly made a contribution of 1.3% to national GDP in 2015, with a direct economic value added of $7.5 billion.

Mobile operators account for the majority of this figure with $5.5 billion, approximately 70% of the total contribution, directly generating just under 1% of Argentina’s GDP. The contribution of the rest of the mobile ecosystem put together directly accounts for less than half the contribution of mobile operators, with another 0.35% of the GDP of Argentina. Mobile content, application and service companies are the greatest contributor from the rest of the mobile ecosystem with more than $800 million in value-added terms contributed in 2015, or 0.14% of Argentinian GDP. Argentina has traditionally had strong and creative advertisement, media and content sectors, and these are all key ingredients in generating successful mobile-based applications. The remaining three components of the mobile ecosystem – distributors and retailers of mobile technology, manufacturers of mobile devices, and mobile infrastructure companies – each contribute approximately $400 million in economic value added.

Indirect contribution: In addition to the direct economic contribution of the mobile ecosystem, firms in the mobile ecosystem purchase inputs from their providers in the supply chain in other sectors and industries across Argentina. This generates additional economic activity that would have not been generated otherwise. For example, mobile content and service companies require services from the broader information technology sector, indirectly generating jobs in the broader economy. Furthermore, some of the profits and earnings generated by the ecosystem are spent on other goods and services, stimulating economic activity in those sectors. We estimate that in 2015 this additional economic activity generated a further $1.6 billion in value add (or 0.3% of GDP) in Argentina.

Productivity contribution: The use of mobile technology also drives significant improvements in productivity and efficiency by workers and firms. For example, it provides faster and easier access to information by workers, saving money and time. Increasingly, it also facilitates the increased digitisation of businesses in many sectors of the economy. In Argentina, the productivity effect of mobile technology and services represented a boost to Argentinian GDP of more than $12 billion, or just over 2% of GDP.

Overall, taking into account the direct, indirect and productivity impacts, in 2015 the mobile sector made a total contribution of over $21 billion in value-added terms, equivalent to approximately 3.7% of Argentina’s total GDP.

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1. The economic value added directly generated by mobile operators in Argentina reflects their contribution in the form of salaries paid to employees, contributions to the funding of the public sector, and profits to stakeholders. Economic value added is a different measure to the turnover of mobile operators in Argentina. GSMA Intelligence estimates total turnover of $9 billion in 2015 for mobile operators, equivalent to 1.6% of GDP. Turnover is an important measure to understand the size of the sector, but also accounts for value added that is generated in other parts of the economy or imported from abroad. Our measure of economic value added excludes those elements that do not represent a direct contribution to GDP.

2. Excluding the contribution by mobile operators through their direct retail channels, which is included in the mobile operators figure.

3. The indirect impact is calculated using multiplier estimates for the Argentina economy that are derived from the EDRA MRIO database.
Total contribution of mobile ecosystem to GDP in Argentina in 2015

Source: GSMA Intelligence
In 2015 the mobile ecosystem provided direct employment to approximately 65,000 people across the country. Of this figure, the large majority of jobs (25,000) were supported by mobile operators, as well as by mobile content, applications and services, with a similar number of jobs, though many of those employed in the latter sector are on a self-employment or part-time basis. Direct employment in mobile device manufacturing was more limited, with approximately 4,000 jobs. Similar numbers of jobs were also directly generated by the mobile infrastructure and mobile distribution and retail sectors.

The mobile ecosystem is a central part of a broader digital ecosystem that also includes fixed-line communications and the internet and software sector. The number of jobs directly supported by this broader digital ecosystem in Argentina is obviously higher than for the mobile ecosystem only. For example, considering both mobile and fixed communications operations, the number of jobs supported by the four Argentinian mobile operators increases from 25,000 to approximately 40,000. Similarly, if we expand the definition of the mobile content, apps and services sector to account for software and IT development more broadly, the employment figure increases from 25,000 to approximately 80,000 direct employees, according to CESSI. In an increasingly converged sector, where products and services are offered and consumed simultaneously on mobile and fixed devices and networks, the distinction between mobile and fixed digital services is becoming increasingly blurred.

The economic activity of companies in the mobile ecosystem generates jobs in other sectors of the economy, as firms that provide goods and services as production inputs for the mobile ecosystem will employ more individuals as a result of the demand generated by the mobile sector. Sectors from the broader economy that most benefit from the activity of the mobile ecosystem in terms of jobs include legal and professional services, as well as the broadcasting and creative industries. In 2015 approximately 50,000 jobs were indirectly supported in this way, bringing the total impact (both direct and indirect) of the mobile industry to approximately 115,000 jobs.

“In Argentina, we have high-quality human resources with excellent knowhow. But as in all Latin America, there are insufficient human resources to fulfill industry demand. We must therefore continue working with educational bodies to achieve greater production of skilled resources.”

Hernán Fulco, Commercial Director, Sondeos (technology and outsourcing service provider)
Total jobs (direct and indirect) created by the mobile ecosystem in Argentina

Thousands

Source: GSMA Intelligence analysis
Note: Totals may not add up due to rounding
The story so far...

4G poised to take centre stage as mobile market matures

Argentina is the third largest mobile market by number of subscribers in Latin America (after Brazil and Mexico), with 61 million connections and 39 million mobile subscribers that account for 90% of the Argentine population. The country achieved 100% connections penetration in 2008, which increased to 141% at the end of 2015. In terms of individual subscriber penetration, at 90% Argentina is behind only Chile (by a small margin) in the region and exceeds the average penetration rates for Europe, North America and the developed world.

The majority of organic growth in subscriber penetration occurred between 2003 and 2010, when 26 million new subscribers were added. As voice-only subscribers grew in number, mostly via prepaid channels, mobile internet services on 2G and 3G networks began to gain popularity over this period. Rapid network expansion together with affordable tariffs and devices drove the majority of this growth. However, since subscriber penetration crossed the 80% mark in 2011, the subscriber growth curve has begun to flatten out as the market saturates, indicating that the majority of growth over the next five or six years will come not from merely adding more subscribers but from migrating existing subscribers to mobile broadband services on 3G and 4G technology.

---

4. Unique subscribers is defined as total unique users who have subscribed to mobile services at the end of the period, excluding M2M. Subscribers differ from connections such that a unique user can have multiple connections.
Subscriber growth is slowing as the market matures

Source: GSMA Intelligence
Country Overview: Argentina

Strongest 4G take-up in Latin America

4G connections (million)

Figure 8

Source: GSMA Intelligence
Argentina has been the fastest growth market in Latin America in terms of 4G adoption. LTE services were launched within days of the 4G spectrum auction in October 2014 and in just 6 months reached 1 million users, around 1 new 4G user every 10 seconds. There is still a pent-up demand that will drive 4G service adoption in the next five years. We estimate that 3G and 4G subscriber penetration will rise to 56% of the population by 2020; up from 37% as at the end of 2015 (see Figure 9).

Mobile broadband to drive growth over the next five years

Source: GSMA Intelligence
With capex investment of nearly $5 billion over the last four years, including $1.7 billion on spectrum acquisition in 2014/2015, mobile networks have quickly expanded in Argentina. 2G networks have achieved nationwide coverage and 3G coverage had been extended to more than 90% of the population by the end of 2015. Moreover, 4G networks now cover 63% of the population nationally and connect 3 million Argentines. Despite financial and macro-economic challenges, the operators are committed to further investing in mobile broadband network expansion in the country. Telefónica, Telecom Personal and America Movil have pledged to invest $2.6 billion, $2.1 billion and $2.7 billion respectively by 2020.

The availability of mobile broadband has also led to an increase in smartphone adoption in the country. Smartphones now account for an installed base of 25 million in Argentina or 40% of connections in 2015, with feature phones accounting for about the same percentage of mobile devices, followed by data terminals. The number of smartphones is expected to rise to 51 million or over 70% of the connections base by 2020. Android commands nearly 94% of the smartphone operating system base in Argentina. In terms of smartphone shipments, Samsung leads the market with 38% market share, followed by LG (19.5%), Motorola (10.6%), TCL-Alcatel Lucent (6.5%) and Huawei (6.5%).

Note: Figures for 2015 include forecasts
Source: Operator reports, GSMA Intelligence

5. “APAC-Based Smartphone Manufacturers Dominate Booming Market in Argentina”, eMarketer, February 2016
Locally relevant content will be key to bringing subscribers online

With the increase in mobile broadband adoption, content consumption via mobile phones is rising too. This is particularly evident in the use of social media; Argentina is a global leader in terms of the number of hours per day spent on social media: 4.3 hours, almost twice the global average. About 60% of the country’s population have active social media accounts, of which 20 million are accessed via mobile phones. The Argentinian social network Taringa has developed a strong foothold with an estimated 7 million users in Argentina and 75 million users across Latin America, second only to Facebook in the region. Consumption of online video and music is at high levels too; according to a survey by US Media Consulting, Argentina tops the Latin American markets in terms of online video consumption, and Argentines watch an average of 117 online videos every month. According to our consumer survey, nearly 40% of Argentine phone users watch videos and live TV online at least once per month and 30% use mobile to listen to music online.

As a result, mobile data traffic in Argentina increased 80% in 2015 compared to 2014. According to Cisco VNI forecasts for 2015–2020, Argentines consumed 24.2 PB of mobile data per month in 2015 (for context, this is the equivalent of 6 million DVDs each month). As more users migrate to high-speed broadband, mobile data traffic is expected to grow seven-fold between 2015 and 2019, a compound annual growth rate of 49%.

6. We Are Social
8. Latin America’s Media Market 2013, US Media Consulting
9. Moving beyond subscriber growth, GSMA Intelligence, February 2016
Argentines’ use of social media

### Hours Spent Each Day on Social Media Sites

<table>
<thead>
<tr>
<th>Country</th>
<th>Hours Spent Each Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>4.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>4.3</td>
</tr>
<tr>
<td>Mexico</td>
<td>3.9</td>
</tr>
<tr>
<td>Thailand</td>
<td>3.8</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3.5</td>
</tr>
<tr>
<td>South Africa</td>
<td>3.2</td>
</tr>
<tr>
<td>Vietnam</td>
<td>3.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2.9</td>
</tr>
<tr>
<td>USA</td>
<td>2.7</td>
</tr>
<tr>
<td>Russia</td>
<td>2.6</td>
</tr>
<tr>
<td>India</td>
<td>2.5</td>
</tr>
<tr>
<td>World average</td>
<td>2.4</td>
</tr>
<tr>
<td>UK</td>
<td>2.2</td>
</tr>
<tr>
<td>Canada</td>
<td>2.1</td>
</tr>
<tr>
<td>France</td>
<td>2.0</td>
</tr>
<tr>
<td>Spain</td>
<td>1.9</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1.8</td>
</tr>
<tr>
<td>China</td>
<td>1.7</td>
</tr>
<tr>
<td>South Korea</td>
<td>1.3</td>
</tr>
<tr>
<td>Japan</td>
<td>0.7</td>
</tr>
</tbody>
</table>

### Social Media Users as a % of Population

<table>
<thead>
<tr>
<th>Platform</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whatsapp</td>
<td>44%</td>
</tr>
<tr>
<td>Facebook</td>
<td>35%</td>
</tr>
<tr>
<td>Facebook Messenger</td>
<td>32%</td>
</tr>
<tr>
<td>Google+</td>
<td>21%</td>
</tr>
<tr>
<td>Skype</td>
<td>16%</td>
</tr>
<tr>
<td>Twitter</td>
<td>15%</td>
</tr>
<tr>
<td>LinkedIn</td>
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</tr>
<tr>
<td>Instagram</td>
<td>9%</td>
</tr>
<tr>
<td>Pinterest</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: We Are Social
Although social media is proving to be a powerful tool to create and consume local content in Argentina, there is still a lack of availability of relevant content via other mobile channels. It is important to understand here that content availability through traditional media channels (TV and radio) is well established in the country. This is supported by high literacy levels and a culture that values and celebrates education. But much of this content continues to be shared via traditional channels and has been slow to migrate to digital channels (see Figure 12). This reflects a key barrier to internet adoption among users; our survey results show that the 72% of Argentines that do not use the internet cite lack of relevant content as the reason, indicating a gap which, if filled, can be a powerful tool to attract more content users online.10

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10. Based on GSMA Intelligence Consumer Survey conducted in 54 countries. The sample for Latin America and the Caribbean covered eight countries interviewing 1,000 respondents in each market.
Figure 12

Engagement with different forms of media

HOURS SPENT EACH DAY ON...

- TV
- Internet

Traditional media still powerful
- Fast transitioning to digital

TAKE UP OF...

- Radio
- Newspapers
- Smartphones

Note: Radio and newspaper figures are for share of population using daily. Smartphone penetration is expressed as share of mobile connections.
Source: US Media Consulting (The 2014 Media Marketing Report for Latin America), GSMA Intelligence
Recognising this as an issue, a number of media channels in Argentina are now thinking mobile; most media majors such as Grupo Clarin and Telefónica now distribute their TV, radio and print content via online channels. Similarly, many music services in the country are available online; examples include BajáMúsica, Batanga, Cien Radios, Daily Motion, Deezer, Faro Latino, Ideas Musik, Larala and Ubbi Música. The top three mobile operators have launched video and music apps for local users: OnVideo by Telefónica, Personal Play, and Claro video. Similarly, the Argentine government has launched an OTT multi-platform (PC, tablet or smartphone) video offering called Odeon. Developed by the National Institute of Film and Audiovisual Arts (INCAA) and state-owned broadcaster ARSAT, the service functions similarly to Netflix, with TV and film titles available by genre.\(^1\)

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

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Lack of locally relevant content</th>
<th>Lack of digital literacy and skills</th>
<th>Affordability barrier</th>
<th>Lack of network coverage</th>
<th>Security and trust barrier</th>
<th>Other</th>
</tr>
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<tr>
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</tr>
<tr>
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<tr>
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<tr>
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<td>68%</td>
<td>18%</td>
<td>33%</td>
<td>2%</td>
<td>6%</td>
<td>10%</td>
</tr>
</tbody>
</table>

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.

“\(\text{We are developing (producing and co-producing) new mobile content in a series format to suit mobile user needs. We are interested in fostering local talent in each country Qubit.tv operates in.}\)"

Facundo de la Iglesia, CEO, Qubit Corporate (Internet player)

\(^1\) “Lanzaron el Netflix argentino”, Infobae, November 2015
In conversation with Matias Botbol, CEO, Taringa

Founded in Argentina in January 2004, Taringa is a social network targeting Latin American users. The platform has a presence in every country in the region. Its main markets are Argentina, Mexico, Spain, Colombia, Chile, Peru and the US Latino community.

What role does mobile technology play in the development of digital businesses today?
If Taringa hadn’t already been around for 12 years and we had to create it today from scratch, I think we’d make a mobile product first, either the app or the mobile site, and then launch the web version. At Taringa, 48% of our traffic is from mobiles. There are now companies and media that not only think mobile first, but are also mobile-exclusive products. At Taringa we believe that today’s traffic is multi-platform and consumers must be able to browse in a user-friendly way across all devices. But obviously mobile has, and will increasingly have, the highest proportion of site traffic and will therefore be the most strategic element for digital businesses. A combination of an optimised mobile site and a family of mobile apps offering a range of experiences to users is the key for any digital business today.

How have you adapted your strategy in recent years with the exponential growth of mobile technology?
Taringa was born as a 100% digital website product. Over the years, as smartphone penetration began to expand in the region, a lot of our traffic started to come from mobile phones, so in 2014 we launched Taringa’s first responsive mobile-optimised site to deliver a more user-friendly experience. The next step was to launch the first mobile app, which was in beta for a while, and we published the first version with open access in 2015: an app that is aimed 100% at the micro content section of the site, called Shouts, where users share GIFs and memes. These days, all the new projects we’re carrying out from the product are mobile first.

What regulatory measures could contribute to the expansion of your business through the mobile channel?
Lowering costs for local companies and paving the way for the expansion of mobile internet use, which has improved but still isn’t great in the region.
In your experience, what’s your view of Argentina’s human resources?

I think Argentina’s human capital associated with development and technology is international quality, at par with – or even better than – talent in other parts of the world. Global technology and software development companies know this, and that’s why they look for human resources in the region, as it also gives them comparative advantages in costs. The problem is that the demand for these types of professionals is greater than supply, and that creates a highly competitive market. Local companies have to compete with big multinationals for developers and other technical profiles, and this is often a big challenge because of the differences in wage-paying capacity and salaries in dollars. Most professionals who decide to stay with companies such as Taringa do so because they’re attracted by and committed to certain types of projects that pose interesting technical and professional challenges for their careers.

What business benefits do you see in the growing smartphone penetration?

What’s your vision for the future?

Smartphone penetration is undoubtedly a positive thing, both for consumers and the internet industry in general. I see it as a kind of democratisation of internet access, because for some sectors a mobile phone is more accessible than a computer, so sectors that didn’t previously access the internet can now access it from a mobile. So I think it’s a positive thing both for individuals and for the companies that form part of the industry, because there are more users and there’ll continue to be more and more. It’s also a challenge for platforms like us that have been around for more than 10 years, because we’ve had to deal with a transition in how products and the business are perceived. But in the internet, change and adaptation are constant, and we’ll see a lot more of both. So it’s essential to stay alert to change and be able to respond on time.

How many of your users access your site through mobile devices in Argentina?

And in Latin America?

Today 48% of Taringa users access the site from mobile devices, both in Argentina and the rest of the region. Mexico is the country with the highest percentage – mobile traffic overtook desktop traffic some years ago and about 55% of Mexican users browse from their smartphones.
Mobile affordability affected by weak macro environment and high levels of taxation

Argentina has been subject to complex import restrictions in the past, as well as currency controls whereby access to foreign currency and sending money overseas from Argentina was restricted to quotas, and exchange rates were set at an official rate by the government. Soaring inflation led to the devaluation of the market value of the currency. The official rate did not follow the same adjustment, and this led to the emergence of a parallel informal market where currencies were being exchanged at the so-called “dólar blue” rates. This led to reduced access to foreign credit for provincial and private enterprises, as well as a reduction in foreign investment in the country.

The reported mobile revenue growth has hovered at 14–15% in local currency over the last three years (see Figure 14). Nominal growth was driven mostly by subscribers upgrading to higher value 3G and 4G tariffs, with smartphone penetration continuing to rise (now 40% of the base). Unfortunately, growth is negative in real terms due to the high (and rising) level of inflation. The Argentine economy has grappled with a number of challenges over the last five years, with inflation levels consistently above 15%. GDP growth was flat at around 0.4% in 2015, risking the spectre of stagflation. Operators have tried to keep the rise in prices below inflation levels, resulting in additional financial pressure in an already tough environment. The outlook for organic growth is positive given continued upward migration to 3G and 4G smartphones. But real growth will continue to be much lower if inflation and high investment risks go unchecked in future.

Revenue challenges for operators but price increases kept in check

![Graph showing annual service revenue growth and inflation](image-url)
In addition to macro-economic instability, high mobile sector specific taxation is affecting both consumers and mobile operators in Argentina. For instance, under the previous government’s policies focussed on promoting local manufacturing and assembly, heavy restrictions were imposed on the importing of pre-manufactured phones. As a consequence, more than 80% of handsets sold in Argentina are manufactured within the country, mostly in the province of Tierra del Fuego. But contrary to expectations, these policies along with other macro-economic pressures led to a mismatch in the supply-demand equilibrium, leading to high handset prices (sometimes up to 200% more than markets without restrictions on foreign trade)\textsuperscript{12} and fewer locally assembled phones for consumers to choose from.

Argentina is one of only six countries in the world that apply non-standard VAT rates to mobile services. Moreover, handset tax as a percentage of total handset cost in Argentina is the second highest in the world (after Iran) at 58%, compared to a world average of 23%. The cost of mobile ownership for those in the bottom 20% of the economic pyramid is 9% of monthly income, compared to 1–3% for higher income groups (see Figure 16). High levels of taxation and economic instability have a direct impact on consumers, most of all low income Argentines, for whom mobile services are often unaffordable.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure15.png}
\caption{Cost of mobile ownership ($ per month excluding taxes) as a share of income by quintile}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure16.png}
\caption{Countries applying higher than standard VAT rates to mobile services, 2015}
\end{figure}

Source: GSMA, Deloitte survey of consumer taxes on mobile in 112 countries

Note: Mobile broadband is based on a 500 MB prepaid plan. Handset cost is based on entry-level smartphone (Nokia 215)

Source: GSMA Intelligence, World Bank, ITU (income share data is for 2013)

\textsuperscript{12} “Celulares: 2015 cerró con caída de producción del 5 por ciento”, El Sureno, January 2016
Current restrictions on imports prevent consumers accessing a wider range of handsets including global brands such as Apple. Lifting them could result in more competition and a wider choice of smartphones available. Increased competition is also likely to bring down smartphone prices, making smartphones affordable for those Argentines at the bottom of the economic pyramid. New government authorities are considering working with mobile operators and assemblers to swap old 2G devices for low-cost 4G smartphones in order to foster high-speed broadband connections among the low-income population, while also alleviating heavily congested 2G and 3G spectrum.

**Future expectations:**
- Greater competition
- Reduction in smartphone prices
- Wide variety of smartphone models

![Smartphone adoption increasing rapidly in Argentina](image)

Source: GSMA Intelligence
In innovation – from start-up to scale

“In recent years MercadoLibre has made remarkable progress in the region. Our mobile products lead on app store charts. Our developer team is continuously growing: we have just acquired a software company called Monits (with five years’ experience in mobile apps). We employ 955 technical experts, 2600 employees in total and have an active presence in 16 Latin American countries.”

Jacobo Cohen Imach, VP General Counsel - Government Relations, MercadoLibre

Ecosystem expansion: new growth opportunities

Rising smartphone penetration has been accompanied by significant expansion of the mobile value chain, particularly since 2010. Most of this has happened at higher levels of the stack in the services layer in line with growth in the broader app economy. Revenue growth is one indicator – digital music streaming, video and apps combined grew on average 50% per year in the three years to 2015 – although this obscures the extent of diversification (see Figure 18). In the wake of MercadoLibre’s IPO on the Nasdaq in 2007, a range of successful players have emerged in gaming (e.g. Globant), social networks (e.g. Taringa), infotainment (e.g. La Nacion) and payments (e.g. MercadoPago).

In consumer, this has expanded choice and driven a shift from voice to IP-based comms, particularly through the use of messaging apps and social networks. For example, avenida.com (a price comparison e-commerce website) confirmed that 40% of transactions on its websites are made via mobile devices and this is estimated to increase to 50% by 2017. MercadoLibre claims that 30% of its traffic comes from mobile devices. Similarly, Restorando, a restaurant search platform that defines itself as mobile first, claims that 60% of its internet users use mobile apps.

In enterprise, mobile has become an integral or even primary distribution channel to customers, with reduced costs in marketing and supply-chain management given the preponderance of cloud hosting solutions.

This carries a number of implications for business models and business lines among market participants. We first discuss mobile operators before moving on to the start-up and tech ecosystem.
Mobile ecosystem in Argentina

**MOBILE OPERATORS**
- Claro
- Movistar
- Nextel
- Personal

**MOBILE DISTRIBUTION AND RETAIL**
- Walmart
- Frávega
- Compumundo.com
- Carrefour
- Garbarino

**MOBILE DEVICE MANUFACTURERS**
- Grupo Newsan
- BGH
- Unitecblue
- Brightstar
- Telecomunicaciones Fueguinas S.A.

**MOBILE INFRASTRUCTURE**
- Cisco
- Siemens
- Alcatel-Lucent
- Huawei
- Ericsson

**MOBILE CONTENT, APPS AND SERVICES**
MOBILE CONTENT, APPS AND SERVICES

**Commerce/Services**
- mercadolibre
- DEPORTES.com
- despejar.com
- OLX
- RESTORANDO.COM
- iguanafix
- avenida.com

**Content Producers**
- DORI MEDIA
- endemol
- IDEAS DEL SUR PRODUCCIONES
- mandarina

**Infotainment**
- vchq
- VORTEX
- LANACION.COM
- LPO
- LaPolítica Online

**Payment Support**

**Gaming**
- GAMELOFT
- mercadopago
- Globant

**Mobile Advertising**
- PINPAGO efectivo digital
- DELI ADS
- MovilGate

**Accelerators/Enablers**
- wayra.
- VRAINZ
- QB9

**Health**
- Consultorio MOVEL.net
- epicrisis

**Education**
- Grupo ASSA
- WORKANA

**Entertainment Platforms**
- TECO VIDEO
- qubit.tv

**User Content Sharing**
- TARINGA!
- Claro video
- Claro música

Source: GSMA Intelligence
**Mobile operator and GSMA activities to support the developing mobile ecosystem in Argentina**

The GSMA has identified four key growth areas where mobile operators can collaborate and in doing so play an active role in delivering future opportunities and benefits for consumers.

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**Connected Living**

The initial focus of the GSMA’s Connected Living programme is to accelerate the delivery of new connected devices and services in the M2M market through industry collaboration, appropriate regulation, optimising networks and developing key enablers to support the growth of M2M in the immediate future. The ultimate aim is to enable the Internet of Things (IoT) – a world in which consumers and businesses enjoy rich new services connected by an intelligent and secure mobile network.

There are 1.5 million M2M connections in Argentina. Telefónica and America Movil support the GSMA’s industry-backed M2M Remote SIM Provisioning initiative and the new embedded SIM approach. Telecom Personal has announced a partnership with Jasper to introduce new IoT services and has the flexibility to easily expand services globally. Low power, wide area (LPWA) technologies are also starting to arrive in Argentina as proprietary solutions. It is expected that standard LPWA solutions will also be trialled soon. Together these technologies will allow the potential of IoT to be realised, bringing millions of new connections and services, and simplifying the lives of users who will be exposed to a whole new generation of connected devices and wearables. Further, Buenos Aires is envisaged as one of the top 10 smart cities in Latin America: operators expect to co-operate on different projects related to transport, mHealth and energy optimisation in 2016.

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**Digital Commerce**

Working with mobile operators, regulators, banks, retailers, transport operators and other service providers across the globe, the GSMA’s Digital Commerce programme is helping drive the mass adoption of SIM-secured digital commerce services. The GSMA engages regularly with key government and regulatory bodies, providing advice and guidance on how to harness the potential benefits of SIM-based services in transport, retail and other sectors of the economy, and developing industry positions on aspects of policy, highlighting the impact of regulation and informing regulators’ decision-making processes.

Visa and Samsung have announced plans to launch Android Pay services in Argentina in early 2016.
Personal Data

Through Mobile Connect services, the GSMA’s Personal Data programme is working with mobile operators that have launched identity services across the globe. Mobile Connect is a GSMA service launched in a growing number of countries, designed to deliver a universal identity that securely authenticates the user and provides safe access to mobile and digital services via mobile. It uses the mobile phone to simplify a number of day-to-day transactions in the digital word such as logins, authorisation and authentication, allowing a better user experience and security. This brings convenience to users and can help increase conversion rates in e-commerce/m-commerce. It can also help reduce losses associated with fraud. Extended to government services, Mobile Connect can be an important part of digital inclusion.

In Argentina, Telefónica launched the Mobile Connect service in December 2015 as part of a global approach to enable 2 billion users. Telecom Personal has also announced plans to deploy Mobile Connect in 2016.

Network 2020

The GSMA’s Network 2020 programme is designed to help mobile network operators in the move to an all-IP world and deliver global interconnected all-IP communications services to consumers such as voice over LTE (VoLTE), video over LTE (ViLTE), voice over Wi-Fi (VoWi-Fi) and Rich Communications Services (RCS). Operators are in a unique position to offer secure, ubiquitous all-IP solutions with reach, reliability and richness. The programme is already helping operators from around the world migrate from circuit-switched technology to an all-IP infrastructure, while helping them to maintain service continuity.

At Mobile World Congress 2016, Telefónica and America Movil announced a partnership with Google to support accelerated availability of RCS. The initiative will enable all operators worldwide to provide an open, consistent and globally interoperable messaging service across Android devices. Features such as group chat, high-resolution photo sharing and read receipts will now become part of the operator messaging experience, enhancing the experience of more than 4 billion SMS users worldwide. Movistar Argentina plans to launch VoLTE services in early 2016; this will bring to users improved call quality, rapid call establishment and increased handset battery life. Telecom Personal recently signed a contract with Hewlett Packard to transform the core mobile network to deliver 4G-LTE technology to meet customers’ increasing use of data.
Start-ups – the positive: visible success stories

Despite lacking the profile of more established hubs, the start-up scene in Argentina has been active for 15–20 years. Most venture investment has come after 2007 with the shift to mobile-first businesses and, to a lesser extent, as international investors have sought to place capital in centres outside Silicon Valley. Several factors in the domestic market have helped drive growth:

- an enabling environment of tech-minded universities connected with on-the-ground accelerators (such as Start Up Buenos Aires and Telefónica’s Wayra)
- rising smartphone penetration
- well connected back-end payments infrastructure
- a workforce with extra motivation for global expansion given recent weakness in the domestic economy (globalisation paradox).

Argentina accounts for four of the six ‘unicorns’ in Latin America – MercadoLibre, Despegar, OLX and Globant (see Figure 19). This has helped put the country on the map and catalyse a wave of entrepreneurialism across a range of verticals. We profile some of these below, along with key players.

E-commerce

- MercadoLibre is the father of the category, having launched in 1999 and IPO’d on Nasdaq in 2007 at a valuation of around $1.2 billion, which has subsequently increased to $5 billion (March 2016). It has 7.8 million unique sellers and 23.6 million unique buyers, making it the number one e-commerce property in each of its seven major markets in Latin America and putting it within the top 10 globally (Alibaba and Amazon are number one and two). It has become a full service provider, with marketplace (68% of revenues) complemented by payments (18%) and white-labelled SaaS and advertising (14%).
- OLX was founded in Buenos Aires in 2006, specialising in classified advertising and competing against Craigslist and Facebook. Following its acquisition by Naspers, the group has expanded to 260 million unique users across 40 countries.
- Avenida is more recent, having launched in 2013. The company is modelled on the Amazon just-in-time e-commerce delivery model. Mobile represented 40% of sales as of 2015, with the company targeting 50% by 2017.
Travel and transportation

- Despegar.com is the largest travel site in Latin America. Management has disclosed sales of $4 billion (2014), of which 20% comes from mobile against a long-run target of 50%. The company has 900 staff devoted to product/platform development.

- Urban transportation and logistics are more nascent. Uber is not yet operational in Argentina, although there are reports of it hiring management staff in 2016. However, regulatory restrictions are high and may preclude taxi apps at all, with the Buenos Aires municipal government mandating taxi fares, licence costs and distribution channels. EasyTaxi and SaferTaxi were both banned in 2016 on the grounds that taxis must be solicited by phone or traditional hailing.

Agriculture

- A number of apps have emerged to service the agricultural sector, which remains strategically important to the country (accounting for 8% of GDP in Argentina versus 5% in Brazil and around 1% in the US and Europe). Use cases focus on livestock management, nutrition and disease mitigation, weather and market price information, and crop diagnostics (for example, identifying a blight through use of a smartphone camera).

- Tambero.com is based in Argentina and has expanded to 150 countries. The core app runs on smartphones, tablets and PCs, and supports all major operating systems and Nokia Symbian devices. A number of smaller players are also active in the space.

- Telefónica is the leading operator in the mAgri sector through its Movistar Agro product. It runs on mobile and PC, offering weather information and equipment monitoring (such as grain silos and gas tanks) via M2M SIM provision.
"At the moment 30% of our traffic is from mobile devices and we’re optimistic that this figure will keep growing in the future."
Marcos Galperin, CEO, MercadoLibre

"Forty percent of Avenida.com transactions are made via mobile devices. We estimate that half of our sales will be mobile by 2017."
Federico Malek, CEO, Avenida.com

“We define Restorando as “mobile first”. Sixty percent of our internet users use the app and 40% the website; 50% of our revenue comes from mobile users.”
Frank Martin, CEO, Restorando

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### ‘Unicorns’ in Latin America – the Argentina effect

<table>
<thead>
<tr>
<th>Valuation ($bn)</th>
<th>Founding Year</th>
<th>Company</th>
<th>Founding Year</th>
<th>Headquarters</th>
<th>Sector</th>
<th>Valuation</th>
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<tbody>
<tr>
<td>6</td>
<td>1999</td>
<td>MERCADO LIBRE</td>
<td>Argentina</td>
<td>Sao Paulo, Brazil</td>
<td>e-commerce</td>
<td>$2.1bn</td>
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<td>5</td>
<td>1999</td>
<td>B2W DIGITAL</td>
<td>Brazil</td>
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<td>2006</td>
<td>OLX</td>
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<td>e-commerce/ad platforms</td>
<td>now owned by Naspers</td>
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<td>1983</td>
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<td>Sao Paulo, Brazil</td>
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<td>$2.1bn</td>
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<td>2003</td>
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<td>Argentina</td>
<td>Buenos Aires, Argentina</td>
<td>e-commerce</td>
<td>$1.3bn</td>
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<td>2006</td>
<td>GLOBANT</td>
<td>Argentina</td>
<td>Buenos Aires, Argentina</td>
<td>software</td>
<td>$1.0bn</td>
</tr>
</tbody>
</table>

Source: NXTPlabs, company websites
E-commerce market share (users)*

Venezuela: 95% MercadoLibre, 75% #2 player
Argentina: 61% MercadoLibre, 17% #2 player
Brazil: 54% MercadoLibre, 47% #2 player
Colombia: 44% MercadoLibre, 26% #2 player
Mexico: 40% MercadoLibre, 16% #2 player
Chile: 32% MercadoLibre, 25% #2 player
Peru: 22% MercadoLibre, 16% #2 player

*Percentages do not total as customers can use multiple sites
Number 2 players: Venezuela (Amazon), Argentina (alaMaula), Brazil (Netshoes), Colombia (Linio), Mexico (Amazon), Chile (Yapo), Peru (OLX)
Source: comScore, eMarketer, GSMA Intelligence
Start-ups – the challenge: unstable macro environment and funding constraints

Despite the success stories, two primary headwinds have restricted a wider scaling effect in Argentina’s mobile and tech start-ups: the weak macro environment, constraints in funding for early-stage businesses and an overall government-stimulation strategy.

Inflation has a multi-edged impact by reducing consumer demand, undermining pricing and increasing equipment costs (particularly if denominated in foreign currency). The existence of two exchange rates (one official and one set on the black market) and the imposition of capital controls have acted as a strong deterrent on foreign investment in domestic start-ups. The macro problems have been compounded by a raft of bureaucracy that has, until recently, made starting a business cumbersome and time consuming, with Argentina scoring 121st (out of 189 countries) in 2015 on the ease of doing business index (versus 117th in 2013).

VC funding reached $320 million in 2015, a 6× increase on the $55 million in 2014. However, this masks a less favourable picture beneath the surface.

Argentina’s share of funding for Latin America as a whole is less than what might be expected given the size of its mobile market (see Table 2). Among deals where investment amounts are publicly disclosed, this equates to an average funding round of $10 million, roughly the same as Brazil but much lower than Colombia and Mexico.

More importantly, the underlying distribution of funding has bifurcated towards opposite ends of the spectrum. One is in late-stage businesses seeking mezzanine financing or even nearing an exit (trade sale or IPO); the other is at the early stage with angel or seed funding. This has created a funding gap for companies in the middle, past the seed stage but before Series A (this effect is sometimes referred to as the ‘valley of death’, as shown in Figure 21). These businesses have developed proof-of-concept but have low scale, minimal revenues and no profits – and as such need further financing to expand, such as adding staff, equipment or marketing resource. Most start-ups sit in this phase at any one time. In Argentina (as with many other countries), an imbalance has formed, where the demand for venture funding outweighs the supply at this stage of evolution. Funding constraints have therefore limited the proportion that survive beyond prototype or the confines of funded accelerators, exacerbating the diaspora effect from businesses relocating to the US or Europe.
Table 2

Argentina in relation to its regional peers, 2013–15

<table>
<thead>
<tr>
<th></th>
<th>VC funding ($m)</th>
<th>Deal volume</th>
<th>Average deal size ($m)</th>
<th>Share of regional VC investment</th>
<th>Share of regional mobile subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>404</td>
<td>39</td>
<td>10</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Brazil</td>
<td>2,517</td>
<td>213</td>
<td>12</td>
<td>44%</td>
<td>33%</td>
</tr>
<tr>
<td>Colombia</td>
<td>457</td>
<td>20</td>
<td>23</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Mexico</td>
<td>1,861</td>
<td>79</td>
<td>24</td>
<td>32%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Source: CB Insights, GSMA Intelligence
Risk perceptions among investors provide colour on this. In November 2013, we conducted a global survey of 33 investors with active positions in the mobile ecosystem, including donors, VCs, impact investors and accelerators. The feedback was unambiguous in that there is nothing wrong with the state of ideas and technological innovation to support them – quite the opposite. The problems come from lacking a clear business plan and a perceived lack of business acumen among entrepreneurs (see Figure 22). Interestingly, a majority of investors are willing to tolerate enhanced political and macro-economic risks provided a solid business plan is in place. This underlines the exponential growth potential of platform business models in mobile and tech, with the internet enabling global scale. MercadoLibre has employed this approach in much the same way Facebook, Uber and AirBnB have.

Source: antiventurecapital.com
Risk perceptions centre on scalability and business acumen of entrepreneurs

<table>
<thead>
<tr>
<th>Risk Perception</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>The business model is not scalable</td>
<td></td>
</tr>
<tr>
<td>Lack of appropriate experience or exposure</td>
<td></td>
</tr>
<tr>
<td>Lack of appropriate business skills</td>
<td></td>
</tr>
<tr>
<td>There are few/no attractive exit options</td>
<td></td>
</tr>
<tr>
<td>The business model is not replicable</td>
<td></td>
</tr>
<tr>
<td>The idea is not ambitious enough</td>
<td></td>
</tr>
<tr>
<td>It is difficult to form partnerships</td>
<td></td>
</tr>
<tr>
<td>The idea is not innovative enough</td>
<td></td>
</tr>
<tr>
<td>Fear of bigger players (e.g. mobile operators) wiping out the business</td>
<td></td>
</tr>
<tr>
<td>The venture is too impact focussed and not commercial enough</td>
<td></td>
</tr>
<tr>
<td>Difficulties in valuing companies in the ICT sector in emerging markets</td>
<td></td>
</tr>
<tr>
<td>It is difficult to maintain partnerships</td>
<td></td>
</tr>
<tr>
<td>Entrepreneur does not fit in with the culture of the investing organisation</td>
<td></td>
</tr>
<tr>
<td>Lack of appropriate technical skills</td>
<td></td>
</tr>
<tr>
<td>Lack of suitable co-investment/ co-intervention partners</td>
<td></td>
</tr>
<tr>
<td>Lack of confidence in projected social impact</td>
<td></td>
</tr>
<tr>
<td>The ICT sector is relatively new and uncertain</td>
<td></td>
</tr>
<tr>
<td>Macroeconomic risk</td>
<td></td>
</tr>
<tr>
<td>Political risk</td>
<td></td>
</tr>
</tbody>
</table>

Source: GSMA Intelligence based on our global survey of 33 active investors in mobile and wider ICT (November 2013). This includes donors, VCs and accelerators. Results are averaged across markets, so are not specific to Argentina
In conversation with Lorena Andrea Suarez, Country Manager, Wayra, Argentina

Wayra is a tech accelerator funded by Telefónica and has operated since 2011. The firm allocates funding of up to $120,000 in cash and in-kind services and helps early start-up companies achieve sustainability and scale. It provides assistance through mentors, business partners, access to a global network of talent and the opportunity to reach Telefónica customers.

Which areas do you see most tech innovations coming from?

Ed-tech (educational technology), fin-tech and health solutions are the most prominent areas of innovation. We are still a bit far behind in health adoption compared to other regions, but we recently invested in a health tech company called Usound. This is an innovative service that transforms smartphones into hearing aids for people who suffer from some form of hearing impairment. It was seen that only one in 40 people with hearing trouble could afford to buy hearing aids. This solution cuts down these costs to as low as $30 a year, whereas a traditional hearing aid would cost $2,000-5,000.
What do you see as the main challenges to scaling innovation in the country?

The challenges are mainly related to localisation of the product across Latin American countries. It is often difficult for entrepreneurs to expand in the region because doing the same thing can be very different for different countries in Latin America. Accelerators such as ours with international presence can be very useful for entrepreneurs trying to understand and adapt to these differences.

Secondly, we are still maturing as a region in terms of investment. While the last few years have seen many VCs and accelerators created, this is still nascent compared to the likes of the US, Europe or Israel. And so fundraising is a second challenge that entrepreneurs face. They often have to look internationally to find institutional VCs, and attracting them can be challenging in the face of Argentina’s macroeconomic challenges.

How do you think the Argentine government can help support this?

Government is still exploring the best model to help the tech ecosystem. The ecosystem was created through private investment, and the government is now trying to promote this model. For instance, in Buenos Aires, the government has selected a few accelerators and is co-funding start-ups. This has so far been successful but is still in experimentation phase and needs more refinement. We are working towards it, and I am hopeful of a brighter future.

In this regard, we need to think long term because creating valuable companies takes time. First of all, the entrepreneurs need to identify real problems and provide real solutions. Secondly, funding cannot stop at the seed funding stage; we need private investors to support future rounds of funding. There is no dearth of demand, and we are hopeful of a good future together with entrepreneurs.
In conversation with Luis Bermejo, Managing Partner, and Lucia Scarafia, Head of Operations, Alaya Capital, Argentina

Alaya Capital Partners is a venture-capital firm based in Cordoba, Argentina. It provides private and public funds to high-impact projects that are in their early stage of development.

We are interested in learning about the tech investment scenario in Argentina. How have you seen this evolve in the last five years?

The political and economic situations have not been easy in the last two years, so it has grown more slowly than we expected. But start-ups are coming up with more sophisticated and evolved business plans now. They have a more informed view of the market, both nationally and globally.

What are the challenges to scale innovation in Argentina?

We have had two exchange rates in the past – one was set officially and the other one was the ‘blue’ or black market rate. This made transactions between Argentina and other Latin American countries a challenge. Start-ups got entangled in a lot of bureaucratic processes in order to sell and re-create those dollars in Argentina. We couldn’t freely exchange currency with other countries and this affected operational transactions for the start-ups and their capacity to get customers in foreign countries. We have a unified exchange rate now. For now things are moving slowly, but we are positive that this will bring stability to the economy and this will be beneficial in attracting investors.

Secondly, there has been an environment of uncertainty for private capital investments, so investors have not been keen on investing their money in the high-risk businesses. Public policies made it difficult for the start-ups to grow and transact globally. Further, inflation needs to be controlled because price rises are posing a big problem.
Is tech innovation in Argentina only centred on Buenos Aires or other are other regional centres also emerging?

Buenos Aires is the main centre of tech innovation, but Cordoba is in second place with a well-established ecosystem. Rosario, Mendoza and even Neuquén are emerging as centres of tech innovation in the country.

What is the approach of start-ups in terms of expansion? Do they usually focus on expanding nationally or is international expansion a preferred approach?

The objective for most companies in the tech sector is to move to other countries in Latin America or the US. They are all mostly looking to gain clients in the global markets. They need global scaling to make a difference. Argentina has only 40 million people. Markets like Brazil and Mexico offer a bigger potential and have more possibilities to expand the user base.

Finally, there are a number of tech hubs in Latin America - Mexico, Chile and Brazil. What do you think are the unique strengths for Argentine start-ups that give them a competitive advantage?

Argentine entrepreneurs are very popular across Latin America. They are perceived as passionate and hard working. Most of them speak English, which is a very strong point compared to other regions. You can see that there haven’t really been any success stories in Latin America like that of MercadoLibre and Globant, both of which come from Argentina.
The role of the mobile sector in future economic growth
In December 2015 a new government took post in Argentina that quickly moved to implement significant reform, both at the macroeconomic level and specifically for the telecommunications and mobile sector.

Initial measures to stabilise the macroeconomic situation include the devaluation of the official peso exchange rate back in line with market rates, the easing of restrictions to imports, and a range of initiatives targeting the reduction of inflation. For the telecoms sector, a new ministry and regulator have been created, and a new converged legal framework will soon be introduced. This will be an opportunity for new approaches to stimulate the digital ecosystem environment, with mobile at its core.

Economic reforms bode well for innovation

We believe the outlook for mobile start-ups and innovation is positive. The new pro-investment policy stance is likely to support this. The rescinding of capital controls and, secondly, creditor settlements with regards to the sovereign debt default of 2002 should pave the way for capital markets to reopen to international investment. This is important for legitimacy and as a route for exits among private investors in mobile/tech start-ups. In addition, duties for inter-country trade in Latin America have been rolled back. This is a crucial step in enabling domestic businesses to expand to a regional level beyond Argentina’s population of 40 million, driving scale economies across a broadly monolingual region of 600 million (400 million Spanish, 200 million Portuguese). Red tape has been cut on business formation, with anecdotal evidence suggesting the time taken to start up has been reduced to 10 days.

Funding challenges for early-stage businesses are likely to persist longer, but we are optimistic overall. VC and corporate venture funding is likely to increase as the economy liberalises and inflation moderates. Kaszek Ventures is perhaps the most well known domestic investor (it is led by the founder of MercadoLibre), and it is now joined by firms such as 500 Mexico City, Venture Hive, Endeavor Global and Naspers as multi-deal funders in 2014 and 2015. Buenos Aires is home to the largest and most established tech accelerators, but we expect expansion and new ones to form in other cities, namely Cordoba and Rosario.

Finally, we expect 4G take-up to rise to roughly one third of the mobile connections base by 2020, driven by coverage expansion and continued declines in handset costs. Overall 3G/4G penetration will rise to around 75% over the same period, significantly increasing user demand for mobile content, especially video. The chief risk to inclusion remains a lack of locally relevant content for non-internet users (around 40% of the population). This should improve as media and broadcast outlets expand content offerings from traditional media (TV and radio) to mobile, complementing services from the mobile operators. Productivity-gear services in agriculture, health and education also have a role to play in attracting predominantly lower income non-internet users. Operators have made some headway in this space (particularly agriculture), but there is ample scope for new launches (particularly in health) and increasing the awareness and usability of these services for the target market.
Economic opportunities ahead

There still are some serious challenges ahead, inflation being the foremost that directly impacts the risk appetite of entrepreneurs and investors, as well as the purchasing power of consumers. The regulation of the digital and telecoms sectors will be an important factor in determining the growth of the sector at a particularly crucial time for the industry.

We expect the overall economic contribution of the mobile industry in Argentina to continue to increase. In value-added terms, the total economic contribution of the sector will reach $26 billion in 2020, representing 4.6% of Argentina’s GDP, up from a contribution of $21 billion in 2015, or 3.7% of GDP.

Source: Operator reports, GSMA Intelligence analysis
The majority of this growth will be driven by the demand side, with improvements in labour productivity and efficiency from more widespread and integral use of mobile services and applications in the workplace and across industries. This will be supported by the rapid transition to 3G and 4G networks discussed earlier. The expected growth in mobile technology driven productivity is framed within a context of increasing digitisation of the Argentinian economy where mobile technology and services will continue to play a central role. For example, the agriculture sector in Argentina has significant potential to realise efficiency and cost saving through the full application of mobile solutions to improve information flows in the areas of logistics, transport and commerce. Similarly, other sectors of the economy in Argentina, including the public sector, have significant scope for further digitisation to reduce cost and frictions.

The mobile ecosystem will also experience some growth in terms of its economic value added over the period, though growth will be more modest than the productivity effects that mobile technology is expected to generate in the broader economy. The mobile ecosystem’s contribution to GDP will grow moderately over this period, with most of the growth coming from the content apps and services segment, which will almost double its contribution over this period.
Value added growth - outlook to 2020

$ billion

Increased value added driven mostly by productivity impacts. Also growing faster than the rest of the economy.

Source: GSMA Intelligence
This growth in the mobile content and apps sector will materialise in employment growth of a similar magnitude. By 2020, total employment in the mobile ecosystem is expected to be over 80,000, up from just under 65,000 in 2015, with virtually all of this growth coming from the content and apps services segment. Growth in the services segment will be underpinned by strong investment by mobile operators in their networks, with nearly $9 billion expected in capex between now and 2020.
Mobile technology is strongly positioned to help meet the public policy goals set by the current administration to expand Internet services to all of the population, promote knowledge, enhance productivity across industries, improve healthcare and boost access to basic services particularly to those in remote locations.

Over the next few months Argentine operators will launch Mobile Connect solutions, providing users with a simple, single login for services, apps and content. Voice over LTE (VoLTE) will also be in the spotlight in 2016, enabling users to communicate in a more efficient way and with high-definition audio. IoT services will enable a more efficient way to connect various aspects of our lives. Meanwhile, mobile money can help bring financial services to the unbanked.

The main challenges for the next five years are connecting the unconnected mobile users to the Internet, thus bridging the digital divide, and enabling investment conditions to keep pace with innovation. Mobile operators have helped bring 26 million Argentineans into the digital age since 2010, reaching almost 29 million internet connections, which represents more than 65% of the country’s population. Connecting the next 17 million will require further collaboration between the public and private sector and a regulatory framework suited to this new challenge.
Appendix

Methodology for economic estimates

The GSMA Intelligence definition of the mobile ecosystem includes mobile network operators, infrastructure service providers, retailers and distributors of mobile products and services, manufacturers of mobile devices including feature phones, smartphones, tablets and wearables, and mobile content, application and service providers. Any economic value generated through mobile commerce in Argentina is explicitly excluded, as in that case mobile technology and services are typically a contributor but not the key driver of the economic value added that is generated.

The direct economic contribution of firms in the ecosystem is estimated by measuring their value added to the economy, which includes employee compensation, profits for shareholders and tax payments. To calculate the economic contribution of the mobile ecosystem, we follow the value added approach to GDP accounting, also known as the production approach. We measure the revenues associated with each of the industries that make up the mobile ecosystem, and subtract from the value the direct cost of making those sales. Data is sourced from the analysis of company financial accounts, industry and trade bodies, local, regional and national public bodies, as well as a variety of leading industry and economic data providers including GSMA Intelligence, Euromonitor, Strategy Analytics, and the United Nations Comtrade database.

As mobile operators and the ecosystem purchase inputs and services from their providers in the supply chain, a multiplier effect is generated, producing sales and value added in other sectors and industries. We calculate this indirect effect from the analysis of an input/output table from the EORA MRIO database. We further adjust the values of the multipliers to avoid any potential double-counting from cross-sales within the mobile ecosystem.

Finally, the use of mobile phones and mobile internet applications by workers and businesses allows more efficient ways to access information, accelerates processes and communications, and allows greater productivity. GSMA Intelligence monitors and keeps track of relevant economic literature and empirical studies in this field. Based on these, and in combination with GSMA Intelligence data on the penetration and growth of mobile and mobile internet services across the population, we estimate the productivity effect of mobile services on GDP.
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**Matias Botbol**, CEO, Taringa  
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