Overview of the Telecommunication Sector in Mexico: Fixed and Mobile Lines
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Executive Summary

In 2014, global fixed telephone line subscription declined to 1,146.7 million while global fixed wired broadband increased to over 711 million subscriptions. In the mobile market, both global mobile subscription and global active mobile broadband subscription increased to more than 6,915 million and 806.9 million, respectively, in the same year. Regionally, Asia-Pacific leads the total global market as it has the largest share in both fixed lines and mobile subscription. Differences between the wireless and fixed lines across regions are constant except for Sub-Saharan Africa, where the number of mobile subscription greatly surpasses the number of telephone lines installed, which is the effect of easier access to wireless technology compared to other basic telecommunication services. Overall, there is a global migration from telephone lines to mobile phones, mainly due to the market preference over wireless communication.

Fixed telephone line subscriptions in Latin America have been gradually decreasing and reached 108 million while fixed wired broadband subscribers increased to 54.26 million. Globally, Brazil ranks fifth in terms of subscribers and supplies more than a third of the region's unique subscribers, with 114 million in September 2014. In 2013, the region accounted for around 10% of the global mobile market in terms of mobile operating revenues, with 108.7 billion USD. In the same year, the region had more than 200 mobile broadband subscribers. Since the early 2011, mobile services have been increasing as the region's main method of accessing internet as it surpassed the number of fixed broadband services. With the growth in the last 3 years, there are now more mobile broadband connections than fixed broadband in all of the leading markets in Latin America, with Brazil leading the migration.

One of the first milestones in the telecom industry in Mexico was in 1996 when an independent regulator was established, followed by the opening of competition of long-distance market in 1997 and local services in 1998. One mobile operator continues to dominate over 75% of Mexico’s mobile market, even with the presence of other operators. Like most industrializing countries, telecom infrastructure is developing first in major business centers, particularly in Mexico City, Guadalajara and Monterrey. The number of installed telephone lines in the country in 2013 did not change significantly from the previous year. Though there was a slight increase in 2012, improvements are predicted to be dormant as migration to wireless technology is expected. Being one of the top users of smartphones around the world, Mexico’s mobile market is expected to expand in the next years to come. In 2013, mobile subscriptions in the country reached over 105 million. Currently, telecommunications in Mexico is not just about voice transmission but also includes data transmissions such as electronic mail and social media. With a fast growing population and technology advances, Mexico’s telecommunication sector will remain significant and is expected to grow over the next five to ten years.

This publication provides information about the fixed line and mobile market of the telecommunication industry in the world, Latin America and Mexico. Additionally, it tackles specific trends that are currently significant in the Mexican economy and society.
Global Telecommunication

Global fixed telephone line subscription in 2014 reached 1,146.7 million, which was mostly from the Asia-Pacific region (44.7%). This is followed by the Americas (22.2%) and Europe (21.1%). The African region had the least subscription, with just 1% of the world total. All of the regions have shown small increases of fixed telephone penetration since 2007, except the Asia-Pacific region, which is switching to other alternatives.¹

Global Fixed Telephone Line Subscription, 2007-2014 (in millions)

On the other hand, global fixed wired broadband subscriptions have been increasing since 2007 and reached over 711 million subscriptions in 2014. The Asia-Pacific region also leads the global fixed wired broadband subscription in 2014, with over 312 million (44%). This is followed by Europe with 24.4% and the Americas with 22.9%. Notably, the CIS region massively increased its subscription from 6.28 million in 2007 to 40.31 million in 2014.¹

Global Fixed Wired Broadband Subscription, 2007-2014 (in millions)

¹ United Nations’s International Telecommunication Union (ITU)

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It was also reported that global mobile subscription increased from 3,367.8 million in 2007 to more than 6,915 million in 2014. It is led by the Asia-Pacific region, with 3,604 million (52.1% of the total world subscriptions). In the same year, the Americas, with 15.3% share, surpassed Europe that was 2nd in 2007. Additionally, it was revealed in 2013 that Sub-Saharan Africa is known as the fastest growing region in this market as its unique mobile subscribers growing by 18% annually over the last five years. It also reported that the mobile market makes up the 6% of the region’s GDP, higher than any other region, and is expected to increase to 8% by 2020. This is mainly due to easier access to mobile than other telecommunication services. ²

Global Mobile Cellular Subscription, 2007-2014 (in millions)

Global active mobile broadband subscription also increased from 806.9 million in 2010 to 2,315.3 million in 2014. Asia-Pacific had the largest number, with 39.7% of the world total. Though it decreased its share from 28.5% in 2010 to 24.9% in 2014, the Americas still ranks 2nd.

The global split of mobile connections in the first quarter of 2013 was 77% prepaid and 23% contract and it was expected to remain unchanged in the next few years. Post-paid mobile subscriptions are more popular in developed areas such as North America, where in 2012, 75% of the total mobile connections were post-paid. ² Other regions have mostly prepaid users, especially Africa, where 96% of the total mobile subscribers use prepaid services. This may be due to the different level of accessibility in the different markets as some countries require contracts while in others, prepaid subscriptions are easier to get.

Global Connectivity Split, 2013

Source: GSMA Mobile Economy 2013

2 GSMA Intelligence
Knowledge Center
PwC Mexico
Total Fixed telephone line subscriptions in Latin America have been gradually decreasing and reached 108 million while fixed wired broadband subscribers increased to 54.26 million.  

In 2013, the number of unique subscribers in Latin America was 320 million, with a penetration of 51.6%. It is expected to grow at a steady rate until 2020. Though penetration rate is expected to reach almost 60%, it is still below the average of mature markets (70-80%).

The mobile market of Latin America is dominated by Brazil, supplying more than a third of the region’s unique subscribers (114 million) by September 2014. Globally, Brazil ranks fifth in terms of subscribers and is expected to take Japan’s place as fourth-largest by the end of 2015. In the same time period, the five largest countries in the region - Brazil, Mexico, Argentina, Colombia and Venezuela - have a total of 230 million unique subscribers, which is more than 70% of the Latin American total.

Source: ITU

Source: GSMA Intelligence
Since the early 2011, mobile services have been increasing as the region’s main method of accessing internet, surpassing the number of fixed broadband services. With the growth in the last 3 years, there are now more mobile broadband connections than fixed broadband in all of the leading markets in Latin America. One reason that contributes to this shift is the lack of bases for fixed connections, especially in rural areas. Brazil leads the migration as 111.3 million people were already connected through their mobiles in 2013. By 2017, 3G is forecasted to account for around half of Latin America’s connections as network coverage is increasing throughout the region.

The rate of migration from fixed broadband internet to 3G in the region has recently been accelerating, fuelled by the fast technological shift to faster connections that is underway. 2G services accounted for 78% of all connections in Latin America, but fell to 60% by September 2014. At the same time, 3G connections grew to 39%, which is higher than the global average of 32% and the developing market 27%. The 4G market is still young but adoption is expected after the operators deploy their networks.4 As of September 2014, 4G connections cover 1% of the entire region, which is in line with the developing markets’ average but very little compared to 35% in North America, the leading market for Long-Term Evolution (LTE). However, the market is expected to grow averagely at the rate of 85% annually in the next seven years to 2020. In the recent years, 3G connections have surged in Brazil, with half of the 3G users found in the country alone. Additionally, Brazil also had the biggest number of 4G connections in the region, with 4.6 million as of September 2014. Colombia led the region in terms of 4G mobile operators as around 95% of them are licensed to provide 4G mobile internet. As of October 2014, 44 operating networks in 18 countries in the region have launched 4G networks. On the other hand, Costa Rica, Guatemala and El Salvador are still waiting for faster internet services to be available in their countries; Venezuela was expected to have 160 MHz operating license by the end of 2014.
**Telecommunication in Mexico**

The Telecommunication industry production had a generally significant increase in 2012, reaching 18.3% compared to 4.3% from the previous year. The latest recorded data stated that this industry had a 3.16% participation in the total GDP in the third quarter of 2013.

The telecommunication sector employed over 132,567 people in 2012, a 0.27% increase from 2011 and 31% increase from 2005.

Investment in the telecommunication industry has also been rising, and in 2012, it reached 6,799 million USD, which is the highest figure seen since 2000. Foreign Direct Investment for the sector from 1999 to 2014 accumulated to 131.8 million USD.

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**Telecommunication Services Investment, 2000-2013 (million USD)**

*until September 2013
Source: SIEMT
The Mexican fixed line telecoms market has declined in the past few years. The number of installed telephone lines in 2013 only changed 0.01% from the previous year. Though there are slight increases, improvements are predicted to be dormant as technological developments slow down. The voice only segment was the market’s most productive feature in 2012, with over 5.8 billion USD of revenues or 62.7% of the market’s overall value. Overall market performance of the industry is expected to remain stagnant until 2017.5

Over the years, the dominating telephone operator has been holding 86.5% of the total subscribers. Reasons for the low amount of companies in this market included the difficulty of supplying a complex, reliable and geographically extensive network. Switching costs with this market are often high, as exiting long-term supply contracts can be difficult.

Before 1997, the telecommunication industry was not liberalized and services had expensive prices and poor quality, mainly because of the commercial difficulties faced by the Internet Service Providers (ISPs). Internet providers before were forcing ISPs to wait for months to install new lines and to increase routing capacity. Most recently, the internet market has become one of the fastest growing segments in the country’s telecom sector. In terms of broadband penetration, Mexico has the lowest penetration rates among OECD countries. Little more than 30% of the population regularly uses the internet while broadband penetration by mid-2012 was about 17%, well below the OECD average of 30%. Poverty is one factor that correlates to low internet penetration along with a low number of ISPs, operating in the country. Broadband, especially DSL, is one of the fastest growing telecom sectors in Mexico, with the subscriber growth averaging 25% per annum over the ten years 2002-2011. Aside from DSL, broadband access is can also be accessed via cable, satellite and radio.

Total fixed wired broadband subscription in 2013 increased by 7.15% to more than 13 million. Though growth has slowed down a bit by 2011, compared to the percentage growths in 2004-2010, it is still increasing.6

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5 United Nation’s International Telecommunication Union (ITU)
6 Marketline

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Knowledge Center
PwC Mexico
The mobile phone market consists of all analogs and digital handsets (mobile phone devices itself) used for mobile telephony. Despite the decline in 2009, the Mexican mobile phone market has been very active in the economy. In 2013, mobile subscriptions in the country reached over 105 million.

Mexico has one of the largest prepaid bases in Latin America. Prepaid cards have made mobile phone services accessible to certain parts of the population that are not considered credit-worthy for a mobile contract or have limited budgets or just to make few outgoing texts and calls. Some advantages prepaid has for operators are lower acquisition costs, the elimination of bad debt problems and wider distribution as operators can sell their prepaid packages at retail stores. In 2012, Mobile Network Operators (MNO) continued to focus on increasing their contract subscriber base. In 2013, the number of mobile contracts increased slightly from the previous year but prepaid services still dominate the Mexican mobile market.

**Mexican Mobile Cellular Subscription, 2008-2013 (in millions)**

![Graph showing Mexican Mobile Cellular Subscription, 2008-2013 (in millions)](image)

Source: ITU

**Mexico Proportion of Prepaid/Postpaid Subscribers, 2008-2013**

![Graph showing Mexico Proportion of Prepaid/Postpaid Subscribers, 2008-2013](image)

Source: GSMA
**Megatrends**

PwC has identified 5 megatrends (demographic shifts, shifts in global economic power accelerating urbanization, climate change and resource scarcity, and technological breakthroughs) that will influence industries over the next few years.

Many countries, including Mexico, are experiencing a massive demographic shift which will have its implication for labor market. Searching for better jobs and living conditions, people would move from the countryside to cities, which, as a result, will put natural resources under pressure of meeting the needs of these people. Much of the expected growth will take place in the developing countries – Mexico is expected to be among the world’s top 10 economies ranked by Purchasing Power Parity (PPP) in 2030.

Though the telecom industry is facing a number of challenges caused by those megatrends, we mainly focus on three megatrends and correlating underlying trends.

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<th>Implication</th>
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</table>
Demographic Shifts

Underlying Trend:

Mexico is moving towards an aging country though the aging problem is not as severe as it is in the other countries. In 2010, the number of Mexicans aged 65 or older was 7,053 thousand (6% of total population) and it is expected that it will grow to 13,227 thousand (10% of total population) in 2025 and 31,542 thousands (20% of total population in 2050).

There are two factors that contribute towards an ageing population in a country, which are fertility rate and life expectancy. Mexico has been showing a decreasing trend in the number of children per woman (2.28 children per woman in 2014) and an increase in life expectancy. Life expectancy for Mexicans is 74.5 years and in 2050, it will increase to 79.42 years. This phenomenon causes an accelerated population aging process.  

Implication:

The aging population has considerable consequences for many industries such as healthcare, public services and so on. Some existing surveys show that new communication technologies such as internet, mobile phones and smartphones are underutilized by older people. Smartphones in Mexico are mostly used by people aged 18-24, followed by the 25-34-year-old age group. On the other hand, people aged 25-34 preferably use tablets, followed by the 18-24-year-old age group. The 35-44-year-old age group was the third biggest users for both tablets and smartphones. Additionally, people in the age group of 12-17 are the biggest users of computer and internet, with 24.3% and 24%, respectively. This is followed by the 18-28-year-old age group and 25-34-year-old age group.  

However, the above mentioned studies are mostly focused on individuals who have been introduced to mobile communication later in their lives, not those that became mobile users during their youth. Therefore, even though the current studies demonstrate that young adults are avid users of technology, but more studies on usage of technology by age group is required.

Source: INEGI
Source: AMIPCI

7 CONAPO  
8 INEGI  
9 AMIPCI
Accelerating Urbanization

Underlying Trend:

The process of urbanization in Mexico began in the same time that the industrialization process in the country, around 1940. Since 1960, Mexican urban population has been higher than rural population. The proportion of urban population in Mexico increased from 52% in 1962 to 78% in 2012, and keeps on growing. It is expected that in 2050, the number of people living in the Mexican urban area will be 123.95 million, a 40% growth compared with 88.27 million in 2010.10

Implication:

The constant growth of population living in large urban agglomerations makes important the delimitation of metropolitan areas, municipalities and states, for a better promotion of the urban development, allowing the conjunction between distribution and growth of territorial population towards sustainable development. Smart cities work in bringing together technology, government and society to create smarter economies, mobility, environment, governance and overall quality of life.

In March 2014, Guadalajara, Mexico’s 2nd largest city started collaborating with smart city builders and experts to assist them in executing the IEEE (Institute of Electrical and Electronics Engineers) Smart Cities Initiative. The initiative aims to select and transform a total of nine cities, including Guadalajara through the usage of information and communication technologies (ICT) to be more intelligent and efficient in the use of resources.

<table>
<thead>
<tr>
<th>Metropolitan Area (ZM)</th>
<th>2010 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZM de Valle de México</td>
<td>20,137,152</td>
</tr>
<tr>
<td>ZM de Guadalajara</td>
<td>4,434,252</td>
</tr>
<tr>
<td>ZM de Monterrey</td>
<td>4,080,329</td>
</tr>
<tr>
<td>ZM de Puebla</td>
<td>2,336,694</td>
</tr>
<tr>
<td>ZM de Toluca</td>
<td>1,846,602</td>
</tr>
</tbody>
</table>

Source: CONAPO
**Technology Breakthroughs**

**Underlying Trend:**

With the falling prices of smartphones, 4G technology penetration is expected to increase, as smartphones are the main devices for mobile internet services. Smartphone penetration is expected to reach 61.9% of the total Mexican population at the end of 2020, a big increase from 17.9% in the 3rd quarter of 2014.

![Smartphone Adoption Rates Forecast in Mexico](image)

Source: GSMA Intelligence

Mobile operators have been investing in 4G LTE infrastructure not only in Mexico, but also in the whole Latin America. The improvement of incomes and the decrease of the cost of technology will increase the 4G subscriptions. It was reported that in 2013, total mobile internet operators totalled to 210, wherein 60 of them already provided 4G mobile internet.

**Implication:**

Though still at its early stages of development, Machine to Machine (M2M) technology is beginning to generate interest from mobile operators, governments and M2M hardware and solutions companies. This growth will be mainly in the areas of Mexico’s smart meters, digital signage, telecare, remote monitoring, mobile payments and connected cars, M2M depends heavily on a highly developed mobile network infrastructure, preferably 4G LTE (4G wireless communications standard), to send large quantities of data at high speeds. The consistent power supply, as well as the presence of data centres and highly developed cloud computing systems will also have an impact on the M2M technology.

In 2014, mobile network companies already announced M2M projects, which aims to provide clients in not only Mexico, but as well as other Latin American countries, the power to connect, manage and control M2M communications with local SIM cards. One of these projects expects to increase the number of connected devices from 1.3 billion today to 20 billion in 2020. Additionally, this will also improve the society’s resources and time efficiency by connecting machines such as energy meters, vehicles and buildings.
**Economic Power Shift**

**Underlying Trend:**

Current economic conditions i.e. economic power shift to Asia are fostering investment in technology as developing countries are trying to spark growth and developed countries seek new ways to cut costs and drive innovation.  

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**Implication:**

On July 15th, 2013, Mexico’s president, Enrique Peña Nieto, unveiled the “Transport and Communications Infrastructure Investment Program 2013-2018”. The final investments into the nation’s infrastructure over the six-year period are 4 trillion MXN (315 billion USD), out of which 700 million MXN will be invested into the communication sector. The Mexican government is committed to inject the above mentioned amount across five regions with (see Investments in the telecoms sector by region (million MXN). With the program, the government is aimed to:

1. Expand the network coverage and capacity, to increase broadband services access at public and community sites;
2. Encourage competition, reduce cost and improve access to telecommunications services;
3. Contribute to the Constitutional Reform of Telecommunications.

**Investments in the telecoms sector by region (million MXN)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Investments (MXN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region 1</td>
<td>142</td>
</tr>
<tr>
<td>Region 2</td>
<td>145</td>
</tr>
<tr>
<td>Region 3</td>
<td>141</td>
</tr>
<tr>
<td>Region 4</td>
<td>130</td>
</tr>
<tr>
<td>Region 5</td>
<td>142</td>
</tr>
</tbody>
</table>

Source: SCT
Knowledge Center Mexico

Knowledge Center Mexico acts as a knowledge, innovation and best practices provider to PwC practitioners. This enables the practitioners to successfully identify new service offerings, approach the market and complete projects.

The expert staff of Knowledge Center designs innovative solutions for PwC partners and managers. The Knowledge Center delivers knowledge and experience through:

- Provide consulting and training in the use of various knowledge management tools.

- Research and information searches, based on the information needs of PwC staff & partners.

- Participating in the strategy design, related to global Knowledge Management & Innovation Management.
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