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Broadband Prices in Latin America and the Caribbean

2013 Report

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Abstract

This study discusses the current situation and evolution of broadband service offerings in Latin America and the Caribbean. The primary source of data is the annual survey of broadband plans conducted by the Center for Technology and Society at Universidad de San Andrés since 2010. The survey encompasses all broadband plans (fixed and mobile) offered by service providers with over 10% of market share in the region's most relevant markets (20 countries in total).

The findings reveal a mature fixed broadband market in Latin America. While the cost per Mbps of advertised speed has dropped significantly between 2010 and 2013 (-58%), market entry prices have only dropped 11% over the same period. This indicates that fixed broadband operators prefer to compete on service quality rather than price in the middle and high-income segments of the residential market. Further, despite improvements in some price indicators, the gaps with OECD countries continue to be large. As an example, a 2.5Mbps connection in Latin America is, on average, three times more expensive than in the OECD.

The findings also corroborate the opportunity to expand the market frontier with mobile broadband services. A price comparison with similar fixed access services reveals that mobile broadband is, on average, 23% cheaper. Yet the data is not conclusive as to whether mobile broadband prices exert pressure on fixed broadband prices. Also, an affordability analysis shows that, on average, Latin American users must spend six times as much as their OECD counterparts to purchase the same mobile broadband service package.

The key potential offered by mobile broadband stems from the greater segmentation of broadband plans, which enables a better fit between user preferences and willingness to pay, particularly in the low-income market segment. Nonetheless, some of the observed segmentation strategies by mobile broadband operators warrant regulatory attention, as they may challenge basic principles about Internet network openness and lead to anti-competitive effects in the so-called OTT (over-the-top) market.

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1. Introduction

Over the past five years, Latin American and Caribbean (LATAM) countries have made significant progress in advanced telecommunications infrastructure and high-speed Internet (henceforth broadband) access services. As revealed by Katz and Galperin (2013), albeit persistent network coverage deficits in some countries (particularly in the Andean region and Central America), most people and households in the region are now served by one or more broadband service providers. Still, as shown by these authors, demand growth has not kept pace with investments. Nearly two out of every three households served by fixed broadband do not subscribe to the service. Strengthening demand is a key challenge for the growth of broadband in the region.

What are the key drivers of demand for broadband? The existing literature consistently points to income as the primary driver of broadband adoption, followed by education, age and family composition (Hauge and Prieger, 2010; Zickuhr and Smith, 2013). In addition, household surveys in several LATAM countries point in a similar direction: the cost of services is the key barrier for adoption mentioned by households with computers but no Internet service. In other words, broadband affordability, understood as the ratio between service price and household or individual income, is a key obstacle for demand growth in the region.¹

This study intends to contribute to the discussion about the affordability of broadband services in LATAM by analyzing the situation and evolution of broadband offerings in the region. This analysis focuses on two key features of broadband plans: price (including taxes) and quality, using advertised speed as a proxy for service quality.² In addition to comparisons among LATAM countries, this study also includes a benchmarking exercise with countries with higher levels of service adoption such as those in the OECD. Finally, current trends in service packaging and bundling are also discussed.

¹ The percentage of households that mention affordability as the primary reason for not adopting broadband services varies between 50% and 60% depending on the country. For a discussion of these findings see Katz and Galperin (2013).

² There is ample debate about how to measure effective quality in broadband services, and no standardized metrics have emerged. This study uses advertised quality as a proxy, assuming that differences between promised and delivered quality do not vary significantly among providers or countries.

The main source of data is the annual survey of broadband prices conducted by the Technology and Society Center at the Universidad de San Andrés since 2010. This survey gathers information on all residential broadband plans (fixed and mobile) offered by service providers with more than 10% market share in the most relevant countries in LATAM. Data gathering follows the methodology suggested by the OECD, which, in addition to other benefits, makes it possible to compare local findings with those obtained in these nations.³ This methodology characterizes broadband Internet access services as having an advertised data download speed of at least 256 Kbps, and computes monthly prices prorating the cost of the first 24 months of service. The data was gathered in the second quarter of 2013 and resulted in 1,494 fixed broadband plans and 2,220 mobile broadband plans.

There is no consensus in the existing literature as to whether international price comparisons should be made using the nominal exchange rate or a purchasing power-adjusted exchange rate (the so-called PPP dollar).⁴ Therefore findings are reported alternatively in U.S. dollars at a nominal exchange rate (USD) and at an adjusted exchange rate (USD PPP), underscoring differences between these results when significant.

The study is organized as follows: the next section discusses the major findings in the fixed broadband segment, followed by a discussion of results in the mobile segment. This is followed by a discussion of trends in broadband service packages and supply differentiation. The final section presents conclusions and policy recommendations drawn from these analyses.

³ For more details on this methodology, see <http://www.OECD.org/sti/ict/broadband>. In this study, OECD results exclude Mexico and Chile, as these countries are included in LATAM.

⁴ For example, see OECD (2011a), and Hausman and Ros (2012).

2. Fixed Broadband: Analysis and Trends 2010-2013

Given the variety of service plans offered by operators, a number of different metrics are needed to capture market conditions in the fixed broadband segment. A widely used indicator in international comparisons is the price of the least expensive plan (unbundled with other services) offered in each country. This indicator presents the minimal monthly spending required for a household to purchase broadband Internet access, regardless of service quality, data caps or additional services offered by providers. As shown in Figure 1, there is a significant price range in the LATAM region: while basic connectivity services do not exceed USD \$10 per month in countries like Panama and Venezuela, the same services are priced above USD \$25 in countries like Argentina and Mexico.⁵

It is worth noting that the performance of countries like Venezuela and Uruguay can be largely attributed to aggressive broadband universalization policies implemented by state-owned service providers. In other nations, like Brazil, these policies have been implemented through public-private partnerships. At the opposite end of the spectrum, delays in the implementation of sector reforms and appropriate universal service policies in Mexico have led to connectivity prices twice as high as those found in Brazil and 55% higher than the regional average.

⁵ Results are largely identical when using an adjusted exchange rate (USD PPP).

The cost of the least expensive connectivity plan typically involves low-speed offerings with data caps.⁶ To compare prices in the middle quality segment of the market Figure 2 presents a comparison of prices for plans offering at least 2.5Mbps of download speed and a data allowance of at least 2GB (though in practice data caps are not relevant in this segment which is dominated by flat fee offerings). This indicator, which is more representative of overall market conditions, also allows for comparison with plans in OECD countries. The key results are:

- This market segment also presents a wide variation of prices within LATAM, with Bolivia being a clear outlier with prices over four times higher than the regional average of USD PPP \$73.
- Price dispersions in this segment are larger than in basic connectivity plans. For example, a household in Nicaragua needs to spend almost six times as much as a household in Uruguay to access a fixed broadband service of at least 2.5Mbps (USD PPP \$115 vs. USD PPP \$20 respectively).
- Some countries that have implemented broadband universalization policies, such as Uruguay and Brazil, are able to maintain very competitive prices in this higher quality segment of the fixed broadband market. In other cases, such as Venezuela, there is a broad gap between the price of basic connectivity services, which are subsidized, and prices for unsubsidized, higher quality services.
- The price gap between LATAM and OECD countries remains wide. While some countries in LATAM have comparable prices to the OECD, a connection of at least 2.5Mbps is, on average, three times more expensive in LATAM (USD PPP \$73.6 vs. USD PPP \$27.2).⁷

⁶ For example, CANTV's Aba prepaid plan in Venezuela (the cheapest one in LATAM) offers a download speed of 1Mbps with a 500MB data cap.

⁷ Excluding Bolivia this gap narrows to about twice the OECD average.

To analyze market performance in the higher quality segments, we first consider the price of the least expensive plan offering download speeds of at least 15Mbps. As shown in Figure 3, service offerings of this type remain scarce in the region: only 13 of the 20 countries surveyed offer connectivity services with download speeds in excess of 15Mbps (unlike the OECD, where this type of service is offered in all markets). Once again, Brazil and Uruguay stand out as the best performers in LATAM, with prices comparable to the OECD average. In other countries, such as Peru and Ecuador, this service is offered, but high price levels limit the potential for adoption. Overall, LATAM prices in this segment are, on average, 3.5 times higher than in OECD countries.

Finally, we analyze connectivity costs based on the implicit price per Mbps of advertised speed (Figure 4). This metric is very relevant for it allows comparisons based on a standardized price/quality unit. The findings suggest that:

- In the more mature LATAM markets (such as Uruguay, Brazil, and Chile) there is a wide range of prices per Mbps as a result of market segmentation strategies by service operators. This favors adoption as households can better accommodate spending to their connectivity preferences. In less mature markets (such as in most of Central America) the price range is significantly smaller, thus discouraging adoption.
- Prices vary substantially within the region: while a household in Montevideo or São Paulo faces costs per Mbps below USD PPP \$1 (by selecting a higher speed service), a household in Guatemala City pays at least USD PPP \$36 per Mbps of advertised speed (in La Paz, this cost can be as high as USD PPP \$82). This suggests the need for more investments in high-capacity networks in several LATAM countries.
- Comparisons based on cost per Mbps favors countries with higher speed offerings, as these imply lower unit costs. As a result, this indicator presents the largest gap with prices in OECD countries. While the cost per Mbps of advertised speed in the OECD can be as low as USD PPP \$0.51, in LATAM the average household will pay at least USD PPP \$13.6 per Mbps, or 27 times more (the difference drops to nearly 20 times when Bolivia is excluded).

- Even in LATAM's best performing countries, where some operators offer plans with download speeds above 100Mbps, prices per Mbps are substantially higher than the OECD average. For instance, the lowest price per Mbps in Brazil and Uruguay are approximately 50% higher than the OECD average, and twice as high in the case of Chile.

Figure 4: Price range per Mbps (log scale) inUSD PPP (2013)

The situation in LATAM is more encouraging in terms of price trends. First, we analyze changes in the price of basic connectivity plans. The analysis is based on a price series for 2010-2013, thus minimizing problems associated with price adjustments in specific years and exchange rate variations. As shown in Figure 5, prices for basic connectivity plans have dropped significantly in LATAM during this period, particularly in the less mature markets such as Honduras and Nicaragua.

Conversely, in the more mature markets price variations have been more modest, ranging from -4% in Brazil to +4% in Argentina. The exception is Mexico where prices have increased by about 20% yearly during this period.

Figure 5: Change in price for least expensive plan (CAGR 2010-2013)

On average, the minimum expenditure faced by households in LATAM to access a broadband connection has dropped at an annual rate of 4% between 2010 and 2013. While significant, this reduction does not factor in service quality improvements in the basic connectivity segment. As noted by several authors, (e.g., Greenstein and McDevitt, 2011), fixed broadband operators primarily compete on quality and, as a result, nominal price drops are quite rare. This is partly due to the fact that, unlike in the case of mobile broadband services, fixed operators incur costs for servicing every household, which sets an upper limit to their pricing strategies.

Thus, in order to capture this competitive dynamics, it is necessary to look at changes in typical (median) prices per Mbps of advertised speed. As depicted in Figure 6, this indicator shows a steady price fall in the 2010-2013 period, with an annual rate of up to 50% in the more developed markets (the regional average CAGR is -25%). In other words, while market entry prices have dropped at a respectable annual rate of 4% between 2010 and 2013, the typical price per Mbps has dropped much faster, at an annual rate of 25% on average in the region. These findings confirm that, in general, fixed broadband operators have focused on competing on quality rather than capturing the lower-income segments of the market.

3. Mobile Broadband: Prices and Affordability

The mobile broadband segment has been the most dynamic in recent years. Several authors note that, due to its cost structure and characteristics, as well as the widespread adoption of wireless telephony in emerging regions, this platform is best suited to extend the boundaries of the broadband market in LATAM (Katz and Callorda, 2013; Flores-Roux, 2013). Others, in turn, underscore the limitations of the mobile broadband platform (including lower download speeds, restricted application platforms, and limited functionality), stressing the complementarity between mobile and fixed services (Noam, 2011; Napoli and Obar, 2013).

This study contributes to this debate by analyzing price trends in the mobile broadband market in LATAM and comparing results with those in the fixed segment. Comparing mobile and fixed broadband services poses a number of methodological challenges, the most important being that, in most cases, mobile broadband plans establish data caps, whereas fixed services are typically priced at flat rates. In addition, supply segmentation in the mobile segment is based on data caps, access devices (PC or tablet vs. smartphone), and payment terms (prepaid vs. postpaid), among other service characteristics, whereas in fixed services segmentation is essentially based on advertised download speeds.

First, we analyze prices in the mobile broadband segment for PC or similar devices connecting via USB modem (sometimes called “dongle”). These plans are often presented as an alternative to the entry-level plans offered by fixed broadband operators, on account of the similarity in access devices as well as the presence of data caps. Figure 7 shows a comparison between the monthly cost of the least expensive fixed broadband plan in every market (the same data as in Figure 1) and the least expensive mobile broadband plan for PCs with a data cap of at least 1GB. The comparison reveals several interesting findings:

- Mobile broadband prices range from USD \$30 in Brazil to USD \$4 in Costa Rica. This range is essentially similar to the entry-level segment in fixed services. The average favors mobile services (USD \$14.3 vs. USD \$18.7 for fixed access), yet data caps tend to be lower in mobile broadband plans.
- At first glance, the similarities in price ranges suggest that these mobile broadband plans are substitutes for entry-level plans in the fixed market. However a closer look reveals that, while both services have comparable prices in some countries (e.g., Panama and Uruguay), other countries feature

very significant differences (more than double in several markets). This indicates that mobile broadband services do not always exert competitive pressure on fixed access prices, suggesting that these services are imperfect substitutes. These inconclusive findings indicate the need for further studies.

Focusing in the mobile segment for PCs, Figure 8 compares prices in LATAM and OECD countries. The data suggest that in the mobile segment prices in the region are more comparable to the OECD than in the fixed broadband segment. In fact, nearly half (8 out of 20) of LATAM countries surveyed feature prices below the OECD average. While LATAM's average (USD PPP \$23.2) is 53% higher than the OECD average (USD PPP \$15.2), this difference is lower than those in the fixed broadband segment (see Figures 2 through 4). Overall, this points to more intense competition in the mobile broadband market, where 3 to 4 operators compete in the typical LATAM market.

However the affordability analysis reveals that the gap between LATAM and the OECD remains large. As shown in Figure 9, with the exception of a handful of countries in LATAM that combine high incomes and low prices (Uruguay, Costa Rica and Chile), in most of the region affordability levels stand well below those in the OECD. On average, the relative effort that LATAM mobile broadband users have to make to afford the same service package is six times larger than in the OECD. Additionally, considering a conservative expenditure limit of 2% of per-capita income on broadband services (following Katz and Callorda, 2013), we find that half the countries in LATAM exceed this affordability threshold.

Figure 9: Least expensive mobile plan for PCs as % of per-capita GDP

Based on these results, several authors argue that broadband universalization in emerging regions depends on adoption via smartphones and similar devices. Next, we therefore analyze prices in this segment. In this case, there is abundant supply segmentation based on two variables: data caps and payment system. Postpaid plans cater to higher-income users, and, as a result, entry plans in this segment typically offer download caps of around 100MB (although some providers offer caps as low as 1MB). Figure 10 compares the least expensive postpaid mobile broadband plan for smartphones with a data cap of 100MB or greater. The most interesting finding is the relatively good performance of countries such as Bolivia and Nicaragua in this low volume segment, as these countries are among the worst performers in the fixed segment.

The relative performance of LATAM countries varies with different data caps. Figure 11 shows results for the same price indicator (mobile postpaid plans for smartphones) but with a higher data cap of at least 1GB. In this middle quality segment several Central American countries still perform well, while it is interesting to find high price levels in some of the more developed LATAM markets such as Brazil, Argentina and Chile.

Finally, we turn attention to the prepaid mobile access segment. Given its characteristics, which can accommodate variations in user income and preferences, this segment holds the greatest potential to promote adoption among low-income

sectors. In addition to segmentation by data caps, operators offer plans with various durations, typically daily, weekly or monthly packages. Since our primary interest is the so-called base of the pyramid, we focus on plans offering daily access with data caps of least 50MB (although some operators offer lower-tier packages of 1MB).

Figure 12 shows the results of price comparisons using this indicator. Again, several poor performers in other indicators such as Nicaragua, Paraguay and Bolivia appear among the best performers in this low-cost segment. On the contrary, in some of the more mature markets this segment of little interest to operators. For example, in Chile 1-day plans for mobile connectivity are offered with data caps well above 50MB, resulting in higher prices in this low-cost segment.

LATAM's average price of USD \$1.14 confirms that this connectivity alternative holds promise to extend broadband access to lower-income populations. However the limited characteristics of the service provided in these plans raise some questions as to how to measure the true adoption level in a country or region. In addition, as discussed below, increased segmentation by applications in the low-cost mobile access segment presents another level of complexity to this debate.

4. Application-based Differentiation and Service Bundling

Two strategies are being aggressively pursued by broadband operators in LATAM. The first is service bundling, in which the provision of broadband is typically packaged with telephony or pay-TV services. Service bundling has a positive impact on adoption as it reduces additional expenditures by users already paying for other services (OECD, 2011b). However, several authors have indicated the need to monitor these practices in order to ensure that dominant providers do not suppress competition in adjacent markets (Economides, 2012; García-Zaballos, 2013).

Our 2012 report revealed a significant increase in the number of fixed broadband services bundled with voice telephone and pay TV in LATAM. The current findings confirm this trend, in particular:

- For the first time, fixed broadband services bundled with other communication services are found in all of the markets included in the survey.
- Of the 1,494 plans surveyed in which fixed broadband services are offered by the dominant operators in the region, 70% of them correspond to bundled offerings.
- Triple-play offerings are increasingly relevant, and have been found in 16 out of the 20 countries included in the survey, despite current regulatory barriers for such packages in key markets such as Argentina and Mexico.

In the mobile segment bundling is uncommon in plans oriented to access in PCs or similar devices. However in the smartphone access segment bundling is more frequent, particularly in the postpaid segment. Overall, out of the 2,209 broadband plans for mobile devices analyzed in the survey, 21% include text messaging (SMS) services, and 12% include minutes for on-net calls.

The most significant innovation in the mobile broadband segment is differentiation by applications. In these plans, mobile operators offer access (often unlimited, i.e., without data caps) to a limited number of pre-selected applications (typically, email, social networks, and chat services). To access other content and applications, users must purchase an additional Internet data package, such as those discussed above. Application differentiation is common in Central American markets and countries like Colombia, Mexico, and Venezuela. Overall, these offerings have been found in 8 out of the 20 countries included in this survey. Packages including

social network applications (essentially Facebook) are the most common, followed by those offering a variety of chat and email services.

While still embryonic, this type of segmentation raises several policy questions. On the one hand, these plans offer access to some of the most popular applications at very low cost, thus helping to expand broadband access to low-income users with limited interest in other contents. For example, a Mexican operator offers a (prepaid) 1-day access package for a number of pre-selected email and chat applications for USD \$0.83 (with a 100MB download cap). This is about half the price of a similar Internet data package with no application restrictions (USD \$1.58).

On the other hand, application-based segmentation promotes semi-closed service platforms in which network operators prioritize some content and applications over others, which may lead to exclusionary effects in the so-called OTT (over-the-top) market and possibly infringe on basic non-discriminatory principles in the Internet ecosystem. The increase in these offerings requires careful regulatory scrutiny in order to guarantee compliance with both competition principles and consumer rights in access services.⁸

⁸ For more on this topic, see Ganuza and Vicens (2013), and FCC (2013).

5. Conclusion

Reducing access prices is one of the greatest challenges for broadband expansion in LATAM in the coming years. The data presented in this study sheds light on price developments in the residential access market as well as on associated policy challenges. LATAM's fixed broadband market is maturing rapidly. While costs per Mbps have fallen sharply between 2010 and 2013 (-58%), entry level prices have fallen significantly less (-11%), suggesting that operators prefer to compete on quality for the middle- and high-income household segments. These findings support the broadband universalization initiatives launched by several governments in LATAM, whose positive results are already reflected in regional price comparisons. In this sense, revising the high taxes levied on Internet access services in the region (both fixed and mobile) remain a pending matter for governments in LATAM.

This study confirms the potential of mobile broadband to expand Internet access in LATAM. Price comparisons with similar fixed services favor mobile broadband, although the data is inconclusive as to the extent that mobile broadband prices exert competitive pressure on fixed prices. As assumed by some authors (Galperin and Callorda, 2013), the substitution effect of mobile may grow stronger with the increased service quality associated with new wireless network technologies (e.g., LTE).

Finally, the potential of mobile broadband is strongly associated with the increased segmentation of services in this platform, which allows for a better match between users' income and preferences with the access services offered. Yet, some of these segmentation strategies warrant regulatory attention, as they challenge basic openness principles in the Internet environment. In a market with fast-changing technologies and consumer preferences, the best formula hinges on careful monitoring and the establishment of general regulatory principles to guide investments and new business models.

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