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The genie is out of the bottle. Technology is transforming every sector, region, and habit. It is no longer a question of if but only of when. Latin America’s experience is no different; the waves of digital transformation have been pounding our shores. The 2020 Covid-19 pandemic has served to turn the waves into a veritable tech tsunami.

Latin America presents a unique set of circumstances that is unlike any other region in the world, and because of that, we should realize that attempting to shoehorn its story into pre-existing frameworks may not always produce adequate results.

In fact, it is this uniqueness that has enabled some Latin American tech companies to become global leaders in their sectors (Nubank in digital banking and iFood for food delivery, to name a few). Further, this same situation has made Latin America a key market for global tech giants ranging from Uber (which has its two largest cities in the region) to Facebook (where it represents one of the largest user bases for both WhatsApp and Instagram, which, coincidentally, was founded by a Brazilian). For those that still believe Silicon Valley has a monopoly on innovation, it is worth noting that venture capital funds from Latin America have strongly outperformed global benchmarks.

In this report we seek to discuss the underlying factors and drivers of change that can help us brace for what is to come.

We compiled this report for a global audience, and thus construct our story from the ground up, covering many foundational elements that a local reader may take for granted (especially in the first two chapters).

Latin America is a vast heterogeneous region and treating it as a single unit risks glossing over some of this diversity. Thus, whenever appropriate we highlight differences between countries (or include it in the data-rich Appendix that accompanies this report).

Latin America can be divided into two groups (that have much further diversity within them) – that of Portuguese-speaking Brazil and that of the Spanish-speaking majority. Although Brazil is only one country, it is the largest player (in size, wealth, and income) in the region, and for this reason we prioritized it when illustrating a theme. Often, we added Mexico as a second example given its size and relevance among the Spanish-language nations.

Reviewing the recent history and trends of technology in the region is critical to understanding its present state and developing a view about the future. As you will see, for each major topic and section we begin with an eye to the past before we focus on the present. Generally, we shied away from forecasting as we prefer that readers come to their own conclusions, even if at times we provide a gentle nudge towards a particular direction.

The reader will notice that we often borrow the words and wisdom of others to make a point about strategy or mindset. These quotes are not meant to be feel-good motivation, but instead should help crystalize some of the takeaways and lessons we deem central to grasping the essence of the region today.

Finally, it is critical that we view the digital transformation the region is undergoing through the lens of the exponentiality that is frequent in technology. Today, we see a virtuous cycle from increasing attraction of top talent to the field, fueled by greater capital investment, and aided by a generally open regulatory environment. This triad creates an accelerating flywheel that makes the tech transformation happen, as Hemingway famously put it, “first gradually, then suddenly.”
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Latin America Digital Transformation Report 2020

- Socioeconomic Foundations
- Technology Penetration in 2020
- Drivers of Digital Acceleration
- Conditions for Sectorial Transformation
“The future is already here – it’s just not very evenly distributed.”

- William Gibson
Latin America Digital Transformation Report 2020

- Socioeconomic Foundations
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Latin America is big: Population is twice that of the United States and its GDP is half of China’s.

Income and wealth are unevenly distributed, with much of the region’s population still living in poverty.

This unique mix of large opportunity with vast inequality and myriad problems creates a unique environment for novel tech-centric businesses.
Latin America is home to 600M people and skews younger than other advanced economies

Population of Latin America*
Millions of people in 2019

- **Mexico**: 128
- **Brazil**: 211
- **Colombia**: 50
- **Argentina**: 45
- **Chile**: 19

Latin American population is equivalent to twice the United States and half of China and India

Percentage of population by age 2019

<table>
<thead>
<tr>
<th>Country</th>
<th>0-14 years old</th>
<th>15-64 years old</th>
<th>65 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>21%</td>
<td>69%</td>
<td>9%</td>
</tr>
<tr>
<td>Mexico</td>
<td>26%</td>
<td>66%</td>
<td>7%</td>
</tr>
<tr>
<td>Colombia</td>
<td>23%</td>
<td>69%</td>
<td>9%</td>
</tr>
<tr>
<td>Chile</td>
<td>21%</td>
<td>69%</td>
<td>10%</td>
</tr>
<tr>
<td>Argentina</td>
<td>26%</td>
<td>64%</td>
<td>11%</td>
</tr>
<tr>
<td>China</td>
<td>17%</td>
<td>71%</td>
<td>12%</td>
</tr>
<tr>
<td>United States</td>
<td>19%</td>
<td>65%</td>
<td>16%</td>
</tr>
</tbody>
</table>

*Note: see appendix for Population and GDP for Latin America and other emerging and developed economies

Source: The Economic Commission for Latin America and the Caribbean
The region’s demographic bonus, the faster growth of the working population vs. non-working, will soon end

Latin America has a short window of opportunity to benefit from a demographic bonus, where low dependency ratios and younger populations fuel economic expansion.

*Dependency ratio: measures the number of dependants aged 0-14 and over 65 (non-working population) compared with the total population aged 15-64 (working population).
Source: The Economic Commission for Latin America and the Caribbean 2019
Latin America’s GDP, 1/3 of which is comprised by Brazil, is nearly half of China’s but the same on a per capita basis.

Growth of Economic Activity, 2000-2019
GDP in current US$ T

Economic Activity*
GDP and GDP per Capita in 2019*

*For reference, the United States (population of 328 M people) has a GDP of US$ 21.44T and a GDP per capita of US$ 65,118
Source: The World Bank
Latin America is the most unequal region in the world; inequality could pose a major obstacle to sustainable growth.

Inequality in Latin America\(^1\)
Gini Index (0 = full equality, 100 = no equality)

The Gini Index is expected to increase with COVID-19 between 1.1% and 7.8% for several countries in the region\(^2\)

<table>
<thead>
<tr>
<th>Country</th>
<th>Gini Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>29</td>
</tr>
<tr>
<td>US</td>
<td>41</td>
</tr>
<tr>
<td>Argentina</td>
<td>41</td>
</tr>
<tr>
<td>Chile</td>
<td>44</td>
</tr>
<tr>
<td>Mexico</td>
<td>45</td>
</tr>
<tr>
<td>Colombia</td>
<td>50</td>
</tr>
<tr>
<td>Brazil</td>
<td>54</td>
</tr>
<tr>
<td>South Africa</td>
<td>63</td>
</tr>
</tbody>
</table>

Sources: (1) The World Bank Open Data – most recent data available for each country, (2) The United Nations Impact of COVID-19 in Latin America 2020
Eradication of poverty continues to be a central challenge for countries in Latin America

Latin Americans were estimated to live in poverty in 2019, representing nearly 31% of the population.

Additional Latin Americans are predicted to have their income fall short of US$5.50/day in 2020 as a result of COVID-19. This increases the percentage of the population living in poverty to 37%.

Percentage of the population living below poverty lines in 2018

*World Bank poverty threshold for upper-middle income countries (32/115 countries), which includes all countries in this comparison. The median poverty line for these countries is US$ 5.48/day, equivalent to US$ 2000/year

Sources: The World Bank 2018 Data, Economic Comission for Latin America and The Caribbean Social Panorama 2019, Atlantico analysis
Latin America has made progress in tackling corruption and in improving the ease of doing business.

Bribery rates in Latin America are falling
Percentage of public service users that paid a bribe in the last twelve months¹

<table>
<thead>
<tr>
<th>Country</th>
<th>2017</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>11%</td>
<td>16%</td>
</tr>
<tr>
<td>Argentina</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Chile</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>Colombia</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>Mexico</td>
<td>51%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Time required to open a business is decreasing
Number of days required to start a business²

<table>
<thead>
<tr>
<th>Region</th>
<th>2015</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>86</td>
<td>17</td>
</tr>
<tr>
<td>Argentina</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>Colombia</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Mexico</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Chile</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>European Union</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>United States</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

Sources: (1) Transparency International Latin America Global Corruption Barometer 2019 (17,000 respondents aged 18+ across LAC), (2) World Bank Open Data 2018
The region is on track for economic growth by 2021, following the economic slowdown caused by COVID-19

Projected GDP Growth – As of 2Q20

Source: International Monetary Fund Latin American Economic Outlook (2019 and 2020)
Huge economic potential

Latin America is a massive market, both in terms of population and economic potential. Young urban populations coupled with long-term economic growth paint an exciting picture for the next decade.

Some unsolved problems

Poverty and inequality still pose an obstacle to sustainable growth and tackling these challenges through regional and global efforts will be key to safeguarding growth in the region.

Rising digital penetration

Internet usage and mobile adoption are growing at an incredibly fast rate, presenting big opportunities for tech penetration across Latin America. Despite very strong tech growth, the region has only begun to scratch the surface.

Fertile soil for innovation

A budding class of entrepreneurs is emerging and tackling some of the region’s biggest problems. While the gig economy is creating jobs and new income sources, digitally-native banking, healthcare and education companies are delivering access to the masses at higher quality and lower prices.
Latin America Digital Transformation Report 2020

- Socioeconomic Foundations
- Technology Penetration in 2020
- Drivers of Digital Acceleration
- Conditions for Sectorial Transformation
Technology Penetration in 2020

- Technology penetration (as a % of GDP) has been rapidly growing (65% yoy) in the region but still significantly lags other regions.
- Internet access and usage is high (above China and India) and continues to grow, fueling one of the most digitally-active regions in the world.
- E-commerce and digital advertising/media were already a growing part of daily lives, but have now been catapulted by the Covid-19 pandemic.
In 2011 Marc Andreessen famously wrote “software is eating the world.”

Back then, in the United States, the market cap of public tech companies as a % of GDP stood at 15%.
Less than a decade later, the market cap of public tech companies as a % of GDP nearly tripled to **39%**.

*For 2020, tech market cap at the beginning of each quarter divided by the GDP at the close of previous quarter
Source: Capital IQ, US Bureau of Economic Analysis, Atlantico Analysis*
Technology penetration in Latin America still lags other regions, presenting significant opportunity for growth.

Technology company market cap as a % of GDP
Q3-2020

- USA: 39%
- China: 27%
- India: 13%
- Brazil: 2.5%
- Latin America*: 2.2%

*For all countries we used average for Q3-2020. For Latin America, we used the average for the period between Q419 and Q320 as not yet available.

Sources: Capital IQ for market cap data ("tech companies" definition used excludes telecom), World Bank Open Data 2019 for GDP, Atlantico analysis
While tech penetration in LatAm is lower than in other regions, it is growing at a faster rate and catching up fast.

- Latin America’s tech market cap as % of GDP has been growing at an average YoY rate of 65% since 2003.
- In comparison, US’s tech market cap as % of GDP has been growing at a rate of 11% and China’s at 40%.

*Average tech market cap as a % of GDP between 4Q19 and 3Q20.
Sources: Capital IQ for market cap data (“tech companies” definition excludes telecom), World Bank Open Data 2019 for GDP. Atlantico analysis.
Internet and Mobile Internet penetration in Brazil and Mexico is growing fast, and is higher than China and India

Internet Penetration
Number of internet users divided by total population

Mobile Internet Penetration
Number of mobile internet users divided by total population

Note: Internet penetration and Mobile Internet Penetration for other Latin America countries can be found in the Appendix

Source: (1) We Are Social and World Bank, (2) We Are Social
Latin American countries have some of the highest internet usage in the world, especially of messaging and social media.

**Time per day using the Internet in hours**

Any device, internet users aged 16-64, Jan 2020

<table>
<thead>
<tr>
<th>Country</th>
<th>Hours</th>
<th>Source: (1) We Are Social, (2) Statista survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines</td>
<td>9:45</td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>9:22</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>9:17</td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>9:10</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>9:01</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>8:47</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>7:59</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>7:57</td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>7:29</td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>7:17</td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>7:11</td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>7:10</td>
<td></td>
</tr>
<tr>
<td>Worldwide</td>
<td>6:43</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>6:42</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>6:30</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>6:00</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>5:53</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>5:50</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>5:41</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>5:41</td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>5:28</td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>5:22</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>5:08</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>4:52</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>4:22</td>
<td></td>
</tr>
</tbody>
</table>

**Percentage of Internet users that use each service**

Apr 2019

- **Instant messaging**: 92%
- **Social networks**: 82%
- **Music Streaming**: 73%
- **Video Streaming**: 73%
Latin America’s high internet usage and adoption has come despite slow internet speeds and expensive mobile data

Mobile Internet connection speed*
Average download speed of mobile internet connections, in mbps, 2020¹

Cost of mobile data as a percentage of monthly salary
Average cost of 1GB of mobile data divided by average monthly salary after taxes, 2019²

*See appendix: Mobile internet connection speed is slow despite having grown nearly 6X over the last 3 years; Cost of broadband internet dropped 80% in past decade
Source: (1) We Are Social 2020 (2) Cable.co.uk and World Bank 2019, Atlantico analysis
## Spotlight: The Ubiquity of WhatsApp in Brazil

### Ranking of Mobile Apps

Ranking of top mobile apps by average monthly active users in 2019 in Brazil

1. WhatsApp Messenger
2. Facebook
3. Facebook Messenger
4. Instagram
5. Uber
6. Netflix
7. Mercado Livre
8. Spotify
9. Caixa Econômica Federal
10. Waze

### WhatsApp statistics in Brazil

- **99%**
  - Percentage of smartphones with WhatsApp

- **79%**
  - Percentage of people for whom WhatsApp is their primary source of information

- **76%**
  - Percentage of WhatsApp users who communicate with businesses using the app

- **72%**
  - Percentage of small businesses that use WhatsApp to communicate with clients

- **60%**
  - Percentage of people who use WhatsApp to work; only 20% use email

---

Source: (1) We Are Social, (2) Panorama Mobile Time/Opinion Box, DataSenado, Sebrae, Croma Insights, press clippings
E-commerce’s increasing role in Latin Americans’ daily lives is another byproduct of accelerating tech penetration

E-commerce penetration in Brazil\(^1\)
E-commerce as a percentage of overall retail sales

<table>
<thead>
<tr>
<th>Year</th>
<th>E-commerce Penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2.0%</td>
</tr>
<tr>
<td>2010</td>
<td>2.1%</td>
</tr>
<tr>
<td>2011</td>
<td>2.3%</td>
</tr>
<tr>
<td>2012</td>
<td>2.4%</td>
</tr>
<tr>
<td>2013</td>
<td>2.7%</td>
</tr>
<tr>
<td>2014</td>
<td>3.0%</td>
</tr>
<tr>
<td>2015</td>
<td>3.6%</td>
</tr>
<tr>
<td>2016</td>
<td>4.0%</td>
</tr>
<tr>
<td>2017</td>
<td>4.5%</td>
</tr>
<tr>
<td>2018</td>
<td>4.8%</td>
</tr>
<tr>
<td>2019</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

E-commerce penetration by country\(^2\)
2019

- **China**: 28.2%
- **United States**: 15.2%
- **Germany**: 11.7%
- **Brazil**: 5.8%
- **Mexico**: 5.0%
- **India**: 4.8%

E-commerce use is growing in Mexico and Brazil at similar rates to India and China, while growth in the U.S. and Germany has slowed.

*E-commerce penetration by Latin American country in 2019 can be found in the appendix*

Sources: (1) E-commerce penetration figures for 2018-2020 are from MCC-ENET. Figures for 2009-2017 were estimated applying Euromonitor’s historical penetration growth to MCC-ENET data; (2) Euromonitor Retailing Data, unless for Brazil which data comes from (1)
Digital advertising may be the next big opportunity to materialize, with continued tech growth in Latin America.

Digital marketing as a % of total marketing spending

US had the same level of digital advertising as BR and MX in ~2015-17

Advertising spend per media vs. Time spent per media
Comparison between % of media advertising spending per media type (light blue) and % of time users spend in each media type (dark blue)

Source: e-Marketer
A peek at the future: Tech companies are becoming the most valuable in the region, just as they did globally in the last decade

Largest companies by market capitalization in US$B

**December 31st, 2010 (Historical US$) **August 30th, 2020 (Latest US$); Magalu or Magazine Luiza is a hybrid company which was a traditional retailer that made a shift into one of Brazil’s largest e-commerce players and is widely seen as a "tech company" by the markets

Source: Capital IQ
The Tech Tsunami: The Impact of Covid-19
“There are decades where nothing happens; and there are weeks where decades happen.”

- Vladimir Lenin
10 years in 10 weeks: E-commerce in 2020, Part 1

E-commerce Share of Retail (Brazil)

Source: E-commerce penetration figures for 2018-2020 are from MCC-ENET. Figures for 2009-2017 were modeled applying Euromonitor's historical penetration growth to MCC-ENET data.
Despite providing a superior experience in many ways, as offline retail reopens and grows to pre-pandemic levels, e-commerce share of total retail decreases as a result of this "denominator growth"
LatAm’s leading e-commerce platform shows accelerating growth from both new merchants going online and same-store sales.

**Acceleration of new SMB* e-commerce stores**
Indexed to 100

**Annual growth (year-over-year) in same store sales for large-enterprise clients**

*SMB = Small and Medium Business clients, here defined as those selling US$ 1M or less per year
Source: VTEX internal data, Brazil-only
Growth in food delivery in Brazil greatly expanded during the pandemic, both in total orders and spend per user.

**Number of orders in iFood (Brazil)**
2020, indexed to 100

**Average monthly spend in food delivery apps by Guiabolo users in Brazil**
2020, R$2

Source: (1) iFood internal data, (2) Guiabolso internal data
Across LatAm we saw a similar explosion in food delivery growth, including from new users searching for services.

Rappi Total Sales (GMV) in Latin America (ex Brazil) Indexed to 100

Average Weekly Search Volume for Top Food Delivery Apps in Mexico
First 30 days of the Pandemic, 2020, indexed to 100

Source: (1) Rappi internal data (2) Google trends search data for Rappi, Uber Eats, and Cornershop in Mexico for 30 days starting 3/12/20 (7 day trailing avg)
The pandemic has accelerated growth in digital media penetration, further eroding traditional channels’ position

Streaming services are becoming increasingly popular in the region
Quarterly downloads of video streaming apps in Brazil, in millions

Social video apps are entering the Latin America market in full force
Quarterly downloads of TikTok in Brazil, Colombia, Mexico, and Argentina, in millions

Source: Appfigures
“Flight to Tech”: Stock market performance suggests the pandemic is accelerating digital transformation

Stock market performance change since Feb. 1st, 2020*

*Data points displayed for the beginning and middle of each month
**Data from BM&FBOVESPA Brazilian Stock Exchange Index listed in the NASDAQ, which includes the 50 largest public companies by market cap in Brazil
***S&P 500 index re-weighted without Amazon, Apple, Facebook, Microsoft, and Google. Data as of Sept. 14th, 2020

Sources: Capital IQ, Russel Investments
The future for Latin America is digital

Tech penetration is at an all-time high
LatAm’s digital landscape is growing exponentially and there are big opportunities for growth compared to developed economies

Tech adoption is undeniable
Social media, e-commerce, and digital media have penetrated Latin Americans’ daily lives and there’s no going back

A lifeline during the pandemic
COVID-19 was the unexpected catalyst for tech adoption, as a rising number of Latin Americans look to tech for everyday services

We are on the path to a digital future
Latin America is at an inflection point and all trends point to a digital transformation over the next decade
Latin America Digital Transformation Report 2020

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Drivers of Digital Acceleration

• The region’s top graduates are choosing tech and entrepreneurship above all other fields, however, unmet demand for tech talent persists.

• The gig economy has become one of the largest employers in the region.

• Capital flow to fund innovation has greatly increased from various local and global sources.

• The region has a history of pro-innovation regulation, but not without faults and risks.
We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.

- Amara’s Law
Drivers of Digital Acceleration: A Framework

• We found three broad factors that drive the **timing** and **magnitude** of tech penetration.

• The **socio-economic context** in which these factors occur define their behavior and likely impact, often leading to **unique outcomes** for different regions and times.

• Key to understanding these factors is that they are inter-dependent and can **reinforce each other’s impact**.

• The **acceleration** we live is explained by the **flywheel** created as these factors continually reinforce each other.
People

While new graduates are eager to fill tech jobs and launch startups, gig workers increasingly turn to startups for flexible sources of income.
Historically, there has been a shortage of technical talent in Latin America

When we look at STEM* graduates relative to the population, Brazil and Mexico lag even other emerging economies

<table>
<thead>
<tr>
<th>Country</th>
<th>Total number of STEM* graduates in the last 20 years, in millions</th>
<th>Total STEM* graduates by 2019 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>67.8</td>
<td>4.9%</td>
</tr>
<tr>
<td>India</td>
<td>34.7</td>
<td>3.1%</td>
</tr>
<tr>
<td>US</td>
<td>10.0</td>
<td>2.5%</td>
</tr>
<tr>
<td>UK</td>
<td>3.3</td>
<td>2.1%</td>
</tr>
<tr>
<td>Mexico</td>
<td>2.6</td>
<td>2.0%</td>
</tr>
<tr>
<td>Brazil</td>
<td>2.5</td>
<td>1.2%</td>
</tr>
<tr>
<td>Colombia</td>
<td>1.0</td>
<td>1.1%</td>
</tr>
<tr>
<td>Argentina</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

*STEM: Sciences, Technology, Engineering and Mathematics
Source: Atlantico Analysis with data from Euromonitor International – Economies and Consumers Annual Data and World Bank
The talent pool is growing, but not fast enough, leading large startups to “acqui-hire” to scale beyond current constraints.

### Compound Annual Growth Rate 2010-2019

<table>
<thead>
<tr>
<th>Country</th>
<th>Science graduates*</th>
<th>Engineering graduates**</th>
</tr>
</thead>
<tbody>
<tr>
<td>🇺🇸</td>
<td>5.4%</td>
<td>1.9%</td>
</tr>
<tr>
<td>🇬🇧</td>
<td>5.1%</td>
<td>1.0%</td>
</tr>
<tr>
<td>🇮🇳</td>
<td>4.0%</td>
<td>6.1%</td>
</tr>
<tr>
<td>🇨🇳</td>
<td>3.0%</td>
<td>5.4%</td>
</tr>
<tr>
<td>🇧🇷</td>
<td>3.1%</td>
<td>10.9%</td>
</tr>
<tr>
<td>🇮🇹</td>
<td>8.9%</td>
<td>4.4%</td>
</tr>
</tbody>
</table>

### Companies pursuing acqui-hires to fill the gap for technical talent

News headlines from 2019 and 2020; translated from Portuguese

- **iFood** “iFood acqui-hires Brazilian startup for AI talent”
- **Loggi** “Loggi acqui-hires WorldSense”
- **Gympass** “Gympass buys Portuguese artificial intelligence startup”
- **Nubank** “Fintech Nubank acqui-hires Plataformatec and its team of engineers”
- **Nubank** “Nubank acquires US technology company Cognitect”

* ISCE definition, includes Life sciences, Physical Sciences, Mathematics, Computing, ** ISCE definition, includes Engineering and Manufacturing
Source: Atlantico Analysis with data from Euromonitor International – Economies and Consumers Annual Data and UNESCO.
Students are looking to startups and technology companies to start their careers and are eager to start their own

We conducted primary research with nearly 1700 Brazilian students from 301 universities to understand their career aspirations

- 26% of students want to work for startups or big tech*
- 39% of students plan on founding a startup in the future

Note: more information about the survey in the Appendix
* This number jumps to 77% when considering only Computer Science students (n=103) ** Based on Times Higher Education ranking, best universities in Brazil, n = 454
Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 Brazilian students in 65 universities abroad
The pipeline for “Stock Option Millionaires” is strong among regional unicorns and should accelerate attraction of talent

“Unicorn Millionaires”
Number of employees with equity valued* at over R$1M

- Historically, only founders got rich from successful startups
- With the widespread adoption of stock option programs, employees now share in the upside they contributed to build
- Employee stock options typically represent 6-10% of total equity in LatAm unicorns

---

* Equity value considers vested and unvested stock options and grants and does not consider strike price of options
** Each company here represents a real Latin American unicorn and numbers are real, company identities have been preserved for confidentiality

Source: Atlantico interviews with Latin American companies that have publicly been labelled “unicorns” by the media or by company releases
There is a growing demand and supply of gig workers to help scale tech companies, pushed further by the 2020 pandemic

**Demand**

In 2019, Uber, 99, iFood and Rappi became, together, the *largest private employer* in Brazil

3.8 M self-employed workers using delivery apps as a source of income in Brazil in 2019

Prior to Covid, Brazil was Uber’s largest market by rides, with 22 M monthly active users; and São Paulo and Rio de Janeiro are the #1 and #3 largest cities globally by rides

1.8x iFood almost doubled its number of couriers in 4 months (from 95K in Nov/19 to 170K in Mar/20)

*Research conducted with 1241 delivery workers between the 23rd and 26th of April
Source: IBGE, Instituto Locomotiva, iFood internal materials, interviews, press clippings

**Supply**

Unemployment in Brazil reached a record rate of 14.3% during the 2020 pandemic

40% of workers have the app as their only source of income

92% of workers plan on continuing to work with delivery after quarantine is over

70% of workers prefer this flexible work arrangement

*Research conducted with 1241 delivery workers between the 23rd and 26th of April
Source: IBGE, Instituto Locomotiva, iFood internal materials, interviews, press clippings*
Capital

Although capital inflows to fund innovation have been rapidly increasing, the region is still far from its full potential.
Venture Capital investment in LatAm is at an all-time high, however, it still lags other regions when adjusted by GDP.

Venture Capital Investment in LatAm, in US$ M:
- 2011: 143
- 2012: 387
- 2013: 425
- 2014: 526
- 2015: 594
- 2016: 500
- 2017: 1,141
- 2018: 1,976
- 2019: 4,603

Venture Capital Investment as a % of GDP, 2019:
- US: 0.62%
- India: 0.34%
- Europe: 0.11%
- Latam: 0.09%

Source: (1) LAVCA, (2) Pitchbook, Statista, International Monetary Fund
Local tech company growth has reached record levels in the private and public markets, with multiple liquidity events.

Count of Private Tech Companies in Brazil by Valuation

2018-2019 Liquidity events showed that larger tech companies can go public in US exchanges or pursue acquisitions by international tech players.

<table>
<thead>
<tr>
<th>Company</th>
<th>Valuation</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>$1Bn</td>
<td>Acq: Didi</td>
</tr>
<tr>
<td>Stone</td>
<td>$16Bn</td>
<td>IPO (NASDAQ)</td>
</tr>
<tr>
<td>Pagseguro</td>
<td>$12Bn</td>
<td>IPO (NYSE)</td>
</tr>
<tr>
<td>Arco</td>
<td>$2.2Bn</td>
<td>IPO (NASDAQ)</td>
</tr>
</tbody>
</table>

2020 Local Tech IPO Pipeline on Brazil’s B3 has shown liquidity is available for Brazilian players.

<table>
<thead>
<tr>
<th>Company</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locaweb</td>
<td>Completed</td>
</tr>
<tr>
<td>Mosaico</td>
<td>Expected Q4</td>
</tr>
<tr>
<td>Enjoei</td>
<td>Expected Q4</td>
</tr>
<tr>
<td>Méliuz</td>
<td>Expected Q4</td>
</tr>
</tbody>
</table>

Source: Atlantico Analysis and interviews; Market capitalizations as of 09/30/20
Growth in tech has helped local venture funds out-perform global benchmarks and is attracting global investors to the region.

Distribution of Regional Venture Funds*
% of funds performing in global benchmark top quartiles

<table>
<thead>
<tr>
<th></th>
<th>Global Distribution</th>
<th>LatAm Funds Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Quartile</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Top Quartile</td>
<td>25</td>
<td>66</td>
</tr>
</tbody>
</table>

2020 Global Investors (examples)

*Distribution is estimated based on Atlantico analysis and interviews; Based on 16 of the largest funds from 9 managers with vintages between 2011-2018; Venture Capital performance benchmarks based on Burgiss data for Sept-2019
Traditional capital from Brazilian family offices also anticipates a near doubling in its allocation to venture capital

In a survey of 30 of the largest family offices in Brazil, families shared their plans to more than double their allocations to venture capital, driven primarily by a desire to seek greater returns in a scenario of low interest rates.

Source: Atlantico “Family Office Radar 2020,” interviews with 31 family offices in Brazil, July-Sept 2020
Regulation

Although the region has a history of pro-innovation regulation, there are several critical ongoing debates often fueled by special interest groups that put progress at risk.
Red tape and a complex tax system make it harder to do business in Latin America

Ease of Doing Business 2020 Ranking

<table>
<thead>
<tr>
<th>Country</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>6th</td>
</tr>
<tr>
<td>UK</td>
<td>8th</td>
</tr>
<tr>
<td>China</td>
<td>31st</td>
</tr>
<tr>
<td>Chile</td>
<td>59th</td>
</tr>
<tr>
<td>Mexico</td>
<td>60th</td>
</tr>
<tr>
<td>Colombia</td>
<td>67th</td>
</tr>
<tr>
<td>Peru</td>
<td>76th</td>
</tr>
<tr>
<td>Brazil</td>
<td>124th</td>
</tr>
<tr>
<td>Argentina</td>
<td>126th</td>
</tr>
</tbody>
</table>

Time required to prepare and pay taxes

<table>
<thead>
<tr>
<th>Country</th>
<th>Hours per year, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>114</td>
</tr>
<tr>
<td>China</td>
<td>138</td>
</tr>
<tr>
<td>United States</td>
<td>175</td>
</tr>
<tr>
<td>Mexico</td>
<td>241</td>
</tr>
<tr>
<td>Colombia</td>
<td>256</td>
</tr>
<tr>
<td>Peru</td>
<td>260</td>
</tr>
<tr>
<td>Chile</td>
<td>296</td>
</tr>
<tr>
<td>Argentina</td>
<td>312</td>
</tr>
<tr>
<td>Brazil</td>
<td>1,501</td>
</tr>
</tbody>
</table>

Brazil is considered to be the 2nd most complex jurisdiction for financial compliance, after China.

Source: The World Bank, (1) TMF Group
However, Latin America has a history of pro-innovation legislation

**Chile: The Law of Businesses in One Day**
Chile passed a law that allows entrepreneurs to start a business in just one day with no cost, with all paperwork available online

**Brazil: New Regulations for the Innovation Law**
Brazil passed a decree which allows public entities to support projects by science, technology and innovation companies and concedes tax exemptions on goods imported for R&D and innovation projects

**Argentina: The Entrepreneur’s Law**
Argentina passed several measures to improve the ease of doing business, create new channels of financing, provide attractive tax breaks and incentives for investors, and support accelerators/crowdfunding platforms

**Latin America: Open Government Data**
The LAC region has the largest number of countries adopting the International Open Data Charter. 81% of countries have an appropriate medium-term OGD strategy

---

*Compared to the 84% OECD average
Sources: (1) Techcrunch, (2) The American Bar Association, (3) SP Global, (4) OECD Government at a Glance Latin America 2020
The COVID-19 crisis pushed regulatory change even further

**Education & Healthcare**

- **ámbito**
  - They enact the law that enables distance education

- **MEC**
  - authorizes distance learning in classroom courses

- **senado noticias**
  - Senate approves use of telemedicine during covid-19 pandemic

**Communications & Teleworking**

- **CNN**
  - Argentina approves teleworking law

- **G1**
  - Anatel decides that offer of channels on the Internet is not pay TV service

- **CHILE reports**
  - President Piñera enacts the law to regulate remote working, giving workers more opportunities and greater freedom

Source: press clippings; all news were translated from Portuguese or Spanish
Loft: Brazilian Real estate platform paved the way for regulatory flexibility to eliminate red tape and accelerated GMV growth

- Loft completed Brazil’s first online deed signing, accepted by regulators due to pandemic
- Restrictions on face-to-face interactions are triggering behavioral shifts toward tech solutions such as the Loft Broker App, which combines workflow tools with virtual home visits
- Number of qualified leads generated via the Loft broker app grew 5X during the pandemic reaching a peak of 40k in the month of August
Important decisions for innovation in the region remain in limbo

- 5G implementation will allow for a 10x faster connection, essential to promote Internet of Things (IoT), telemedicine, remote work, among other innovations.
- If not implemented fast enough, LatAm will become a buyer of 5G applications instead of developer - a big missed opportunity for innovation in the region.
- In Brazil, concerns about national security by the Federal Government and competition from new entrants is delaying decision-making.
- A bill to regulate the relationship between gig workers and service platforms is under debate.
  - It proposes that companies contribute to social security, pay a minimum amount per hour, pay for waiting time (although not in full), provide personal protective equipment and do not terminate a worker without a legal reason.
- The LGPD (Brazilian data protection law) will come into force in September 2020 and its regulatory body’s structure has just been defined.
  - It’s still under discussion who will compose the body: military, businesspeople, or a mix of both. This definition will say whether the body will act pro-innovation or not.

Source: Why 5G in Latin America, press clippings; all news were translated from Portuguese or Spanish
Digital drivers are fueling lasting societal change

People

While Latin America still has a large technical talent gap to fill, the future is promising. New graduates are eager to start their careers in technology and become entrepreneurs themselves, while unemployed and underemployed workers are turning to start-ups to boost their income.

Capital

As capital flows towards entrepreneurship and innovation, start-ups are seeing the results, with multiple liquidity events and foreign investors entering the region. There is still plenty room for growth compared to developed economies.

Regulation

Despite bureaucracy and implementation challenges, Latin America is showing an increase willingness to pass pro-innovation legislation. Legislators are fuelling tech penetration and adoption across the region even during the COVID-19 crisis.
Latin America Digital Transformation Report 2020

- Socioeconomic Foundations
- Technology Penetration in 2020
- Drivers of Digital Acceleration
- Conditions for Sectorial Transformation
• The mix of dissatisfied customers, a large financial incentive, and regulatory changes have ushered in transformation by fintechs entering the financial services sector.

• Healthcare and education share similar traits to that of financial services, and are showing early signs of being fertile grounds for digitalization.

• The Covid-19 pandemic accelerated transformation by driving the removal of outdated regulatory barriers kept in place by special interest groups.
Financial Services is perhaps the most notable sector to be impacted by tech. So far.

This is only the beginning. Ironically, the accelerating pace of disruption can quickly turn today’s disruptors into tomorrow’s disrupted.
Financial Services:
Why the future arrived here first
Around 49% of people in Latin America remain excluded from formal financial institutions.

- It is expected that this number for Brazil in 2020 reaches 85%, since stimulus payments during the Covid-19 crisis in Brazil were distributed through Caixa Tem, an app that created a deposit account for the unbanked population.

- In high-income economies, the average account ownership is 80%, reaching levels above 95% in countries like the UK and the US.

Source: World Bank Global Findex database, Atlantico interviews
Latin Americans lack access to credit, and cash payments dominate commercial transactions

Credit card ownership among population aged 15+ in 2017

In-person payment method used for commercial transactions in 2018

Source: (1) World Bank Global Findex database, (2) Federal Reserve Bank of San Francisco and Worldpay Global Payments Report 2018
Large banks in Brazil enjoy growing profit pools and the largest returns on equity (ROE) in the world

Annual profits of four largest banks (R$ B)¹

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>50</td>
</tr>
<tr>
<td>2017</td>
<td>58</td>
</tr>
<tr>
<td>2018</td>
<td>69</td>
</tr>
<tr>
<td>2019</td>
<td>82</td>
</tr>
</tbody>
</table>

83% of Brazilian assets are concentrated in five banks*

The largest private banks in Brazil have the highest ROEs in the world

Return on Equity on 3Q19**²

<table>
<thead>
<tr>
<th>Bank</th>
<th>ROE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santander</td>
<td>19.2%</td>
</tr>
<tr>
<td>Itaú</td>
<td>18.6%</td>
</tr>
<tr>
<td>Bradesco</td>
<td>18.0%</td>
</tr>
<tr>
<td>Banco do Brasil</td>
<td>17.7%</td>
</tr>
<tr>
<td>Royal Bank of Canada</td>
<td>16.1%</td>
</tr>
<tr>
<td>HDFC Bank</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

The median ROE in Brazil was 18.3%, while in the US it was 10.7% for the same period.

* Asset concentration for other countries in LatAm can be found in the Appendix, ** Only banks with over 100 B US$ in assets and ADRs listed on NYSE

Source: (1) S&P Global, Banco Central do Brasil, (2) Economatica
While customer satisfaction with Brazilian traditional banks is low, satisfaction with neobanks is very high.

Net Promoter Score (NPS) by bank in Brazil

Source: Opinionbox Insights
The combination of customer dissatisfaction and a large financial prize created the perfect storm for fintech disruption.

Fintech is booming in Latin America, receiving the most Venture Capital investment in the region.

Fintech start-ups by country in 2018:
- **Mexico**: 273 startups, 36% of VC investment, 30% of VC deals
- **Colombia**: 148 startups, 3% of VC investment, 15% of VC deals
- **Brazil**: 380 startups, 36% of VC investment, 19% of VC deals
- **Chile**: 84 startups, 9% of VC investment, 19% of VC deals
- **Argentina**: 116 startups, 73% of VC investment, 27% of VC deals

Source: (1) Inter-American Development Bank, PitchBook, Atlantico Analysis
COVID-19 is accelerating disruption, as an increasing share of the population gains access to financial services

Caixa Tem monthly downloads, in millions*
CaixaTem, an app by Brazil’s federal bank, was created in April 2020 to distribute emergency funding during COVID-19

Finance app downloads in Brazil
Volume of downloads, indexed to 100**

*Data from April 1st to Aug. 19th 2020
**The index combines the number of downloads of the top 25 apps in Brazil’s Finance category on Google Play/Apple Store, and compares it to the total on Jan. 1st, 2018
Sources: Appfigures for app downloads, Instituto Locomotiva 2019, Estadão de Minas 2020

In 2019, Brazil was estimated to have 45M people without access to bank accounts. Through the Caixa Tem app, by mid-May, 20M people without previous access had opened a digital bank account.
Beginnings – Disruption in Payments

A Case of “Innovators Dilemma”
“The reason [why great companies failed] is that good management itself was the root cause. Managers played the game the way it’s supposed to be played. The very decision-making and resource allocation processes that are key to the success of established companies are the very processes that reject disruptive technologies: listening to customers; tracking competitors’ actions carefully; and investing resources to design and build higher-performance, higher-quality products that will yield greater profit. These are the reasons why great firms stumbled or failed when confronted with disruptive technology change.

Successful companies want their resources to be focused on activities that address customers’ needs, that promise higher profits, that are technologically feasible, and that help them play in substantial markets. Yet, to expect the processes that accomplish those things also to do something like nurturing disruptive technologies – to focus resources on proposals that customers reject, that offer lower profit, that underperform existing technologies and can only be sold in insignificant markets– is akin to flapping one’s arms with wings strapped to them in an attempt to fly.”

- Clayton Christensen, “The Innovator’s Dilemma”
Brazil was the first country to end acquirer exclusivity and allow price differentiation, leading to MDR* decline

Relevant Central Bank regulation for payments

2010 End of Visanet and Redecard duopoly
Brazil’s Central Bank determined that all acquirers should accept all credit cards, ending the exclusivity contracts between Redecard and Mastercard, and Visanet and Visa.

2013 Creation of SPB
The Brazilian Payments System was created (SPB), allowing the Central Bank to regulate electronically all aspects related to interbank fund transfers and settlement of transactions.

2017 Price differentiation among payments
Encouraged use of debit cards instead of credit cards by allowing merchants to differentiate prices by method and payment period

MDR: Merchant Discount Rate – rate charged to a merchant for payment processing services of credit and debit cards

*Source: Banco Central do Brasil, ABECBS
New players grew by targeting ignored SMBs, and incumbents, stuck in the Innovator’s Dilemma, were slow to respond

**Market Share of Acquires in Brazil over time (%)**

- **PagSeguro**: The Strategy: PagSeguro decided to enter the market by selling POS terminals, while incumbents rented. Soon they were acquiring the best customers, who were focused on long-term profits.

- **Innovators Dilemma**: traditional merchant acquirers refused to forgo revenue from POS terminal rent. When they realized the industry shift, it was too late to react.

- **Stone**: The Strategy: Stone offered cheaper rates, no rent fee for POS terminals and developed a strong network focused on client relationship with the merchant, as well as proprietary technology.

- **Innovators Dilemma**: again, traditional players refused to adopt Stone’s new standards, that would later become best-in-class in the industry.

Source: Banco Central do Brasil, Credit Suisse
“Success breeds complacency. Complacency breeds failure. Only the paranoid survive.”

- Andy Grove
Digitalization, financial inclusion and instant payments are the main trends in payments in Latin America

<table>
<thead>
<tr>
<th>Digitalization</th>
<th>Inclusion</th>
<th>Instant payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital payments are expected to increase significantly due to Covid-19</td>
<td>New players are finding ways to capture value by providing better rates and products to clients traditionally excluded from financial services</td>
<td>Latin American Central Banks are developing instant payments platforms to lower transaction fees and lower cash usage</td>
</tr>
<tr>
<td>• 59% of online consumers in Brazil increased e-commerce purchases amid the pandemic</td>
<td>• Credit and debit card services offered at low rates</td>
<td>• Mexico’s Codi launched in 2019</td>
</tr>
<tr>
<td>• 20% of consumers in Mexico and Colombia made their first e-commerce transaction during the quarantine</td>
<td>• Digital wallets represented 15% of online transactions in 2018</td>
<td>• Brazil’s PIX planned launch in November 2020</td>
</tr>
<tr>
<td>• 4th largest mobile POS payments market is Brazil, only behind UK, US and China</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Americas Market Intelligence’s COVID Consumer Snapshot Studies, Banco de México, Banco Central do Brasil
As digital wallets gain traction, even the challengers are being challenged on their POS-centric solutions

Monthly downloads for digital wallet apps in Brazil
Average number of total monthly downloads across leading digital wallet apps, in thousands*

*Sum of monthly Ame, PicPay, and Mercado Pago downloads in Brazil from Google Play and Apple Store. Average taken by quarter
Source: Appfigures for downloads

Growth during the first quarter of COVID-19
Asset Management

Unbundling the bank, episode 1
“The battle between every startup and incumbent comes down to whether the startup gets distribution before the incumbent gets innovation.”

- Alex Rampell
Double-digit interest rates conditioned Brazilians to develop a culture of fixed income and investment through large banks.

Interest rate (Taxa SELIC) in Brazil by date

Investment Assets - Market Share in 2017

Source: Banco Central do Brasil, XP Inc Prospectus
Now, with all-time low interest rates, investors have turned to independent financial advisors to diversify their portfolio.

**Interest rate (Taxa SELIC) in Brazil by date**

**Number of independent financial advisors registered in Brazil across the years**

Source: Banco Central do Brasil, XP Inc Prospectus
The perfect scenario for XP Inc: a brokerage firm focused on independent advisors and financial education

XP changed the market by combining financial education services, with financial advisory and an investment platform. As Brazilian investors flocked to the stock market, XP was positioned to beat incumbents in the investment management game.

**Independent Financial Advisors**

XP partnered with independent financial advisors, who work as independent channel partners, to provide best-in-class personalized service and expand to different regions in Brazil.

**Financial Education**

Through investment classes, they taught Brazilians how to invest in the stock market, educating the market and building a customer base for their advisory services.

**Unbundling**

XP chose one banking segment/service, traditionally done by incumbents, and excelled at it. They digitalized faster and provided the best investment management experience in the market, as seen in their always high NPS score.

**Expansion**

XP is expanding by acquiring several fintechs, offering investment banking services, zeroing commission in one of its brokerage platforms and launching their own credit card to retail customers.

In 2019, XP achieved growth of:
- **72%** in gross revenue
- **103%** in assets under custody
- **100%** in active client base

XP’s IPO in December 2019 was the 9th largest IPO in the world, raising US$2.25 B on the Nasdaq.

XP was valued at **over US$ 25 B** as of early September 2020.

Source: Banco Central do Brasil, XP Inc Prospectus
As the number of people in the stock market continue to rise, digitally-native advisors are challenging XP’s model

Brazilians are flocking to the stock market
Number of individual investors in the Brazilian stock exchange, in thousands¹

There is still room for growth
Equity investments as a share of investment fund assets²

Digitally-native advisors take on the challenge
Thousands of clients at Warren: leading Brazilian digitally-native advisor co-founded by one of XP’s founders³


Brazilian digitally-native investment advisors
Latin America has the largest number of cryptocurrency users in the world\(^1\)
As of June 2020*

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
<th><strong>Investment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>United States</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>

- 12% of people in Brazil own cryptocurrency, compared to 7% in the United States.
- 18% of people in Brazil planned to purchase cryptocurrency in the next year.
- 11% of people in Mexico own cryptocurrency, just below the 13% that own equity investments.
- 16% of people in Mexico planned to purchase cryptocurrency in the next year.

Cryptocurrency investment is growing in Brazil
Assets Under Management at Hashdex\(^2\), the largest regulated crypto asset manager in Brazil (in millions of US$)**

<table>
<thead>
<tr>
<th>Month</th>
<th>Assets Under Management (in millions of US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-19</td>
<td>0.96</td>
</tr>
<tr>
<td>Apr-19</td>
<td>1.3</td>
</tr>
<tr>
<td>Jul-19</td>
<td>5.3</td>
</tr>
<tr>
<td>Sep-19</td>
<td>11.0</td>
</tr>
<tr>
<td>Jan-20</td>
<td>9.9</td>
</tr>
<tr>
<td>Apr-20</td>
<td>12.0</td>
</tr>
<tr>
<td>Jul-20</td>
<td>21.0</td>
</tr>
<tr>
<td>Sep-20</td>
<td><strong>41.6</strong></td>
</tr>
</tbody>
</table>

*Survey conducted between May-June 2020 with 12,600 respondents per country.

**Exchange rate between USD and BRL at the end of the first day of each month. Includes onshore and offshore investments.

Sources: (1) Statista Global Consumer Survey 2020, (2) Hashdex internal data.
Neobanks
Unbundling, then rebundling
“There are only two ways to make money in business: One is to bundle; the other is to unbundle.”

- Jim Barksdale
Regulation allowed the creation of fully digital banks, reducing the cost of entry for new players

Brazil’s Central Bank allowed retail customers to open bank accounts digitally, without the need of going to a physical branch.

Companies of any size were allowed to open bank accounts digitally.

Big banks started closing physical branches to reduce costs. Itaú closed over 400 branches.

Neobanks entered with fully digital services and gained significant traction in Brazil

Banked population with account at a neobank (%)

- Brazil: 32%
- China: 50%
- India: 4%
- Germany: 3%
- UK: 6%
- US: 2%

Neobank as main account (%)

- Brazil: 9%
- China: 42%
- India: 6%

Incumbent and Neobank application usage (%)*

- Brazil: 79%
- China: 66%
- India: 76%
- Germany: 97%
- UK: 98%
- US: 96%

*Number of app sessions out of the last 10 times

Sources: (1) Banco Central do Brasil, (2) Kantar Future Finance Report 2019, Guiabolso internal data
Neobanks are now extending their portfolios, rebundling products while excelling at CRM and user experience

Today, in addition to a credit card, Brazil’s largest neobank, Nubank, offers a fully digital bank account, a financial management app, a rewards program, lending services and bank account for businesses.

In Sept. 2020, Nubank announced the purchase of online brokerage firm Easyinvest, indicating it will also be moving to investment products.

Source: Nubank, (1) Kantar Future Finance Report 2019
Instant, Open, and Ubiquitous

Regulators’ ambitious goals and initiatives
Brazil’s Central Bank is launching two important pillars for innovation this year: Instant Payments (PIX) and Open Banking

<table>
<thead>
<tr>
<th><strong>PIX</strong></th>
<th>Instant payments at virtually no cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIX will be a platform for instant payments operated by the Central Bank. Any authorized financial or payment institution will be able to integrate PIX into its system, providing customers with instant payments directly or through QR Codes at virtually no cost. PIX also supports planned, recurring payments. It is scheduled to be launched on November of 2020.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Open Banking</strong></th>
<th>Shift ownership and control of data from banks to consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Banking is a regulatory framework divided in four phases: the first one starts in August 2020, and the last is scheduled for October 2021. It will allow customers to give access to their financial information stored with financial institutions through standard APIs (Application Programming Interface).</td>
<td></td>
</tr>
</tbody>
</table>
Currently, payments in Brazil are dominated by cash, credit and debit cards, and *boletos*.

Payment method most used for in-person transactions in Brazil in 2018:

- Cash: 60%
- Debit card: 22%
- Credit card: 15%
- Others: 3%

Ecommerce payment value split by method in Brazil in 2019:

- Cards: 59%
- Boleto: 23%
- Digital wallet: 8%
- Bank transfers: 6%
- Other: 4%

* "Boleto Bancário" is a popular cash-based post-pay method in Brazil. It comes as a payment slip that can be paid in various physical locations.

The PIX instant payment system will directly compete or complement all existing payment methods

PIX beats most payment methods on cost, time to complete a transaction and accessibility, except for cash. However, it beats cash by far on convenience.

<table>
<thead>
<tr>
<th></th>
<th>PIX</th>
<th>Bank transfer (TED, DOC)</th>
<th>Cash</th>
<th>Boleto</th>
<th>Debit card</th>
<th>Credit card</th>
<th>Digital wallet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>R$ 0.001 to merchant (free for P2P)</td>
<td>R$ 11.50* to sender</td>
<td>R$ 0</td>
<td>Between R$ 1 and 5 to merchant</td>
<td>Average 1.3% of transaction to merchant</td>
<td>Average 2.4% of transaction to merchant</td>
<td>% over transaction, varies by player</td>
</tr>
<tr>
<td><strong>Time to complete transaction</strong></td>
<td>Instant</td>
<td>Between a few minutes to next day</td>
<td>Instant</td>
<td>Up to 3 working days</td>
<td>From instant to up to 10 hours</td>
<td>From instant to up to 2 working days</td>
<td>Instant</td>
</tr>
<tr>
<td><strong>Accessibility</strong></td>
<td>Anyone with a smartphone or bank account</td>
<td>Anyone with a bank account</td>
<td>Anyone</td>
<td>Anyone</td>
<td>Must have a bank account</td>
<td>Only 30% of population</td>
<td>Anyone with a smartphone and bank account</td>
</tr>
<tr>
<td><strong>Integrates with PIX?</strong></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* Average calculated by Brazilian Central Bank

Source: Banco Central do Brasil, (1) ABECIS, Atlantico Analysis
Brazil’s unique regulatory framework for Open Banking is one of the most ambitious worldwide

Brazil has the most comprehensive legislation and the shortest amount of time for implementation:

Open Banking implementation is divided into four stages. In each stage, a specific set of data has to be ready to be shared:

1. **August 2020**
   - Product and service offerings

2. **May 2021**
   - Personal client information

3. **August 2021**
   - Payment initiation services

4. **October 2021**
   - Investments and insurance

**Central Bank Goals:**
- Fostering competition and efficiency
- Lowering information asymmetry
- Reducing entry barriers in the market

Open Banking in Brazil has large potential for impact, promoting competition between dominant players to offer better products and services to clients

**Source:** Atlantico Analysis, Banco Central do Brasil
Industry leaders are optimistic about PIX and Open Banking; their view on impact on the industry varies widely

We conducted 43 interviews with industry leaders across different sectors to understand their views on the new regulation

- The majority felt the Central Bank’s objectives and plans are positive and ambitious
- Most highlighted Itaú as the incumbent most prepared to protect itself and Bradesco and Santander as very vulnerable and unprepared
- Many highlighted Nubank as very well-positioned for the opportunities ahead
- Many anchored their expectations to the experience in Europe and the UK, but appeared not fully-informed about differences with Brazil

How leaders from different groups categorize the degree of impact expected on the financial sector from Open Banking and PIX

<table>
<thead>
<tr>
<th>Open Banking (high impact)</th>
<th>Low impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Startups</td>
<td></td>
</tr>
<tr>
<td>Incumbents</td>
<td></td>
</tr>
<tr>
<td>Legal/Regulators</td>
<td></td>
</tr>
<tr>
<td>Investors</td>
<td></td>
</tr>
<tr>
<td>Experts</td>
<td></td>
</tr>
</tbody>
</table>

Source: 43 interviews with industry leaders across different sectors related to financial services and fintech; conducted from June to September 2020
If financial services was the first frontier, what’s next?

Can the same combination of customer dissatisfaction and regulatory change pave the way for transformation in Healthcare and Education?
Healthcare: Can innovation be the cure?
Despite adequate health expenditure, Latin Americans remain dissatisfied with current healthcare services

Health expenditure in Latin America as a % of GDP

- European Union: 9.9%
- Brazil: 9.2%
- Chile: 8.9%
- Colombia: 7.2%
- Mexico: 5.5%

Recommended by WHO: 6.0%

General opinion on the quality of healthcare

As a percentage of respondents

<table>
<thead>
<tr>
<th>Country</th>
<th>Poor</th>
<th>Neither good nor poor</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>25%</td>
<td>37%</td>
<td>37%</td>
</tr>
<tr>
<td>Mexico</td>
<td>18%</td>
<td>26%</td>
<td>55%</td>
</tr>
<tr>
<td>Colombia</td>
<td>28%</td>
<td>31%</td>
<td>44%</td>
</tr>
<tr>
<td>Argentina</td>
<td>15%</td>
<td>28%</td>
<td>58%</td>
</tr>
<tr>
<td>Chile</td>
<td>15%</td>
<td>31%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Sources: (1) OECD Health at a Glance 2019, (2) IPSOS Global Views on Healthcare 2018 (1,000 respondents per country)
Latin America lags developed economies in quality of healthcare indicators, but is not far behind

Sources: (1) OECD Data 2018, World Health Organization Data 2018, (2) IPSOS Global Views on Healthcare 2018 (1,000 respondents per country), (3) OECD Data 2019, World Bank Data 2019
While overall healthcare quality is lacking, the small group of people that can afford it, has access to world-class quality.*

Brazil is the only country in Latin America to be listed in the top 100 global hospitals.

Average indicators for quality of health in São Paulo’s ten wealthiest neighborhoods compared to the EU average**

<table>
<thead>
<tr>
<th>Location</th>
<th>São Paulo, SP</th>
<th>São Paulo, SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Quality Index Score*</td>
<td>98.8%</td>
<td>94.6%</td>
</tr>
<tr>
<td>World Ranking**</td>
<td>38</td>
<td>64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>São Paulo’s 10 wealthiest neighborhoods²</th>
<th>European Union Average³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital beds</td>
<td>20</td>
<td>6.1</td>
</tr>
<tr>
<td>(per 1,000 people)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant mortality</td>
<td>3.2</td>
<td>3.3</td>
</tr>
<tr>
<td>(for every 1,000 children)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer mortality</td>
<td>69.5</td>
<td>208.9</td>
</tr>
<tr>
<td>(for every 100,000 people)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Scores are based on recommendations from medical experts, results from patient surveys, and medical KPI’s on hospitals. Scores are comparable only between hospitals in the same country; **Latest available data by country ranging from 2013-2019. Sources: (1) Newsweek and Statista World’s Best Hospitals 2020, (2) Rede Nossa São Paulo Inequality Map 2019, (3) WorldBank and OECD open data.
Incumbents continue to dominate healthcare in Brazil with increased consolidation

The medical device and pharma markets are fragmented, with international and domestic players controlling the space.

Diagnostic laboratories are dominated by DASA and Fleury, who have acquired more than 20 companies in the last decade.

Within health providers, Rede D’Or emerges as the winner with 95+ hospitals/clinics and annual revenue of US$2.9B in 2018.

Amil, Bradesco, and SulAmerica held 34% market share of the Brazilian health insurance market in 2017.

The boom of healthcare startups shows new players joining the effort to tackle the sector’s biggest issues

**Number of healthcare startups in Brazil**

- **24%** Management and EHR
- **15.5%** Marketplace
- **16.3%** Access to information
- **10.9%** Pharma and diagnostics
- **8.9%** Relationship with patients
- **7.7%** Medical Devices
- **7.9%** Telemedicine
- **5.5%** AI and Big Data
- **3.4%** Wearables and IoT

**5.8%** of VC deals from 2010-2019

*Pitchbook: there were 1,864 VC deals across all industry, rounds, and stages in Brazil from 2010-2019. 109 of them were with health-related startups.

Source: (1) Distrito Healthtech Report 2019, (2) Pitchbook
The Case of Telemedicine

Necessity is the mother of deregulation
With easing concerns and need for healthcare during Covid-19, telemedicine is becoming essential for Latin Americans

Brazilian physicians are willing to adopt telemedicine use¹

"If it were regulated by the Medical Regulatory Council and had the necessary ethical and safety tools, would you use telemedicine at your clinic or hospital?"

- Yes: 63%
- No: 25%
- Maybe: 12%

COVID-19 catalysed favourable regulatory changes in Brazil²

- 2011: Telemedicine is officially authorized for health professionals in the public health care system
- 2018: The legislation is revoked per request of Brazil’s Federal Council of Medicine
- 2020: Brazil’s Health Ministry authorizes the use of telemedicine for the duration of the coronavirus pandemic.

Startups across the region are providing high-quality services

*Respondents were 2,258 Brazilian physicians
Sources: (1) São Paulo’s Association of Medicine 2020 as cited in Conexa’s internal materials, (2) Brazilian Health Ministry
Conexa: Brazilian telemedicine startup grew usage more than 500-fold in 9 months, fuelled by the pandemic

Average number of calls per day\(^1\)

Latin America telemedicine market size\(^2\)
In US$ B

Source: (1) Conexa internal materials; (2) Global Market Insights
Filling the Health Insurance Gap

Just what the doctor ordered
While the public health system covers all of Brazil’s population, private insurance is still popular in the country.

Percentage of population covered by private health insurance

- Brazil: 24%
- Colombia: 8%
- Mexico: 9%
- Argentina: 8%

Percentage of population covered by private health insurance by region

- North: 4%
- Northeast: 14%
- Central-west: 7%
- Southeast: 61%
- South: 15%

*Does not include those with private insurance plans that exclusively cover dental expenses.

Sources: (1) OECD Health at a Glance 2019, (2) Brazilian National Health Confederation “Panorama of hospitals in Brazil” 2019, Atlantico analysis.
The market for private health insurance has become more concentrated over time

% of market share held by top private health insurance companies¹

Verticalization is a growing trend in the sector, with health insurance providers that offer medical services at their own hospitals and clinics gaining market share.

Net margin* of top private health insurance providers worldwide²

**Europe excluding France

*Net margin refers to the underlying earnings divided by underlying revenue in the health segment only (excluding life) from Jan 1st-Dec. 31st 2019

Sources: (1) McKinsey Digital Report 2019, (2) Individual company financial reports 2019, Atlantico analysis
Dr. Consulta: a leading tech-powered network of primary care clinics and virtual care for the uninsured

Dr. Consulta operates low-cost clinics that serve as a one-stop-shop for medical procedures. In eight years, they expanded to 60 clinics and 1.5M+ patients, launched a telemedicine service and released an app for bookings, prescriptions, and payments online.

Number of Brazilians with private health insurance\(^1\)
In millions of people

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>44.4</td>
</tr>
<tr>
<td>2011</td>
<td>46.0</td>
</tr>
<tr>
<td>2012</td>
<td>47.8</td>
</tr>
<tr>
<td>2013</td>
<td>49.5</td>
</tr>
<tr>
<td>2014</td>
<td>50.4</td>
</tr>
<tr>
<td>2015</td>
<td>49.2</td>
</tr>
<tr>
<td>2016</td>
<td>47.6</td>
</tr>
<tr>
<td>2017</td>
<td>47.1</td>
</tr>
<tr>
<td>2018</td>
<td>47.2</td>
</tr>
<tr>
<td>2019</td>
<td>47.1</td>
</tr>
<tr>
<td>2020*</td>
<td>46.7</td>
</tr>
</tbody>
</table>

CAGR: +2.9% from 2010 to 2020

Number of unique patients at Dr.Consulta\(^2\)**
In millions of people

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0.1</td>
</tr>
<tr>
<td>2016</td>
<td>0.3</td>
</tr>
<tr>
<td>2017</td>
<td>0.7</td>
</tr>
<tr>
<td>2018</td>
<td>1.1</td>
</tr>
<tr>
<td>2019</td>
<td>1.7</td>
</tr>
</tbody>
</table>

CAGR: 139% from 2015 to 2019

*As of June 2020
**If a patient has seen a medical professional more than once during the electronic health record reporting period, that patient is only counted once by the company.

Source: (1) Brazilian Agency of Supplementary Health, (2) Dr. Consulta internal materials
Education: Striving towards a passing grade
Latin America has lower education attainment than developed economies, but enrollment rates are on the rise.

Share of population 25 years and older by educational attainment*1

<table>
<thead>
<tr>
<th>Region</th>
<th>Bachelor's or short-cycle tertiary</th>
<th>Upper secondary</th>
<th>Primary</th>
<th>No schooling or incomplete primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>20%</td>
<td>31%</td>
<td>13%</td>
<td>20%</td>
</tr>
<tr>
<td>Mexico</td>
<td>15%</td>
<td>19%</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>Chile</td>
<td>8%</td>
<td>23%</td>
<td>30%</td>
<td>6%</td>
</tr>
<tr>
<td>United States</td>
<td>13%</td>
<td>32%</td>
<td>45%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Share of post-secondary school enrollment** by region1

- East Asia & Pacific
- Latin America & Caribbean
- North America
- Europe & Central Asia
- Middle East & North Africa

*Educational attainment for additional countries in LatAm, China and India are available in the appendix.

**Population enrolled in post-secondary education as a percentage of total population in the age group that officially corresponds to that level.

Source: (1) World Bank Open Data 2018
While the region spends an above-average share of its GNI in education, there is significant room for quality improvements.

Share of Gross National Income spent in Education^1

Access to basic services and education quality indicators^2

<table>
<thead>
<tr>
<th></th>
<th>LAC</th>
<th>North America and Western Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of schools with access to electricity*</td>
<td>91%</td>
<td>100%</td>
</tr>
<tr>
<td>Share of schools with access to internet*</td>
<td>58%</td>
<td>97%</td>
</tr>
<tr>
<td>Share of schools with access to computers*</td>
<td>70%</td>
<td>99%</td>
</tr>
<tr>
<td>Teacher to student ratio</td>
<td>21:1</td>
<td>14:1</td>
</tr>
<tr>
<td>Adult literacy rate</td>
<td>94%</td>
<td>99%</td>
</tr>
<tr>
<td>Student performance: PISA overall scores (0-700)**</td>
<td>411</td>
<td>499</td>
</tr>
</tbody>
</table>

---

*Average access to basic services across primary, lower secondary, and upper secondary schools
** The Programme for International Student Assessment (PISA) measures basic competences of students in math, science, and reading
While most of education funding is directed to public institutions, LatAm’s education market is largely private.

**Exchange rate from BRL to USD at 2019 yearly average: US$ 1 = R$ 3.95**

**Average of primary and secondary school students enrolled in private institutions as a percentage of total primary and secondary school enrollment**

Sources: (1) OECD Data 2018, (2) World Bank Open Data 2018
Local players dominate the Brazilian private education market and continue to consolidate market share

Total household expenditure in education (in US$ B*)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expenditure (in US$ B*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>34</td>
</tr>
<tr>
<td>2015</td>
<td>36</td>
</tr>
<tr>
<td>2016</td>
<td>37</td>
</tr>
<tr>
<td>2017</td>
<td>41</td>
</tr>
<tr>
<td>2018</td>
<td>44</td>
</tr>
<tr>
<td>2019</td>
<td>47</td>
</tr>
</tbody>
</table>

CAGR +6.9%

Brazil’s largest companies in the education sector in 2018 by net revenue (in US$ B**)

<table>
<thead>
<tr>
<th>Company</th>
<th>Net Revenue (in US$ B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cogna Educação</td>
<td>2.65</td>
</tr>
<tr>
<td>YDUQS</td>
<td>0.99</td>
</tr>
<tr>
<td>FGV</td>
<td>0.35</td>
</tr>
<tr>
<td>Ser Eduacional</td>
<td>0.35</td>
</tr>
<tr>
<td>Cruzeiro do Sul</td>
<td>0.34</td>
</tr>
<tr>
<td>ãnima</td>
<td>0.30</td>
</tr>
<tr>
<td>ADT/ALEM</td>
<td>0.24</td>
</tr>
<tr>
<td>Mackenzie</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Cogna Educação is Brazil’s largest private educational group, having acquired the country’s third largest group, Somos Educação, for US$ 1.3 B in 2018.

*Exchange rate from BRL to USD at 2019 yearly average: US$ 1 = R$ 3.95; **Exchange rate from BRL to USD at 2018 yearly average: US$ 1 = R$ 3.65; ***"Net margin" here refers to the underlying earnings divided by underlying revenues from Jan 1st-Dec. 31st 2018

Sources: (1) Euromonitor International from national statistics/Eurostat/UN/OECD, (2) Valor Econômico ‘The Largest 1000’ 2019, Atlantico analysis
Startups and venture investors are eager to address the shortcomings of education in the region

VC capital raised by education startups in Brazil (in US$ M)\(^1\)

6.1% of VC deals from 2010-2019\(^*\)

Percentage breakdown of Brazil’s 434 education startups by type of education business\(^2\)

21%
New ways of learning
- Gamification, VR, AR
- Accessibility and inclusion
- Corporate training
- Digital learning institutions

25%
Institutional tools
- Management for schools
- Tech for the classroom
- Communication for learning
- Data analytics for education

17%
Alternative credentials
- Technology
- Business and Finance
- Languages
- Health

17%
Educational Platforms
- Online courses and distance learning
- Educational marketplaces
- Learning management systems (LMS)

13%
Focus on the student
- College preparation
- Studying and productivity
- Vocation and career

4%
Educational content
- Books
- Videos

3%
Education financing
- Scholarships and student loans
- Crowdfunding

CAGR 57.0%

*There were 1,864 VC deals across all industries, rounds, and stages in Brazil from 2010-2019. 114 of them were with education startups.

Sources: (1) Pitchbook, (2) Distrito EdTech Report 2019
Distance Learning
Education without (physical) frontiers
In LatAm, distance learning has grown by 10X in the last decade and is now a reality for millions of satisfied students.

Enrollment in accredited and non-accredited distance learning courses in Brazil in millions of students

Distance learning snapshot in Brazil and Mexico in 2019

- Of internet users in Brazil have taken an online course, 24% of which successfully completed an online undergraduate degree.
- Of those who had completed an online course in Brazil would recommend their course to others.
- Of students in Mexico enrolled in an online program spent over 20,000 pesos (~1,050 US$) in online learning.

Sources: (1) Brazilian Census for Distance Learning 2019, (2) Ibope Conecta Distance Learning Study 2019 (2,000 internet users across Brazil aged 16+), (3) Estudio de Educacion en Linea en Mexico 2019 (474 internet users across Mexico)
Descomplica: Brazilian education technology startup becomes the first 100% digital university in the country

Growth in postgrad courses sold per quarter
Baseline for 1Q19 set to 100

Descomplica expects to reach >20k postgrad students in under two years of operation, becoming a relevant player in Brazil's postgrad market of R$1.5B

Growth in postgrad sales booking per quarter
Baseline for 1Q19 set to 100

*November data overwritten as an average for the period to eliminate an outlier caused by special promotional pricing during the month of November

Source: Descomplica Internal Materials
Alternative Credentials
Not your parents’ kind of degree
In Latin America, education startups are capitalizing on the strong demand for new ways of learning

<table>
<thead>
<tr>
<th>Technology and Business*</th>
<th>Credentials across subjects*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platzi</td>
<td>Griky</td>
</tr>
<tr>
<td>alura</td>
<td>descomplica</td>
</tr>
<tr>
<td>TRYBE</td>
<td></td>
</tr>
<tr>
<td>mine-class</td>
<td>veduca</td>
</tr>
<tr>
<td>crehana</td>
<td>Aprende</td>
</tr>
<tr>
<td>UBITS</td>
<td>learncafe</td>
</tr>
<tr>
<td>BEU</td>
<td></td>
</tr>
<tr>
<td>Digital House</td>
<td>KULTIVI</td>
</tr>
<tr>
<td>Coding School</td>
<td>PORTAL EDUCAÇÃO</td>
</tr>
<tr>
<td>collective</td>
<td>eduK</td>
</tr>
<tr>
<td>ca academy</td>
<td>viva da sua paixão</td>
</tr>
<tr>
<td>ACÁMICA</td>
<td>Thincrs</td>
</tr>
<tr>
<td>teachlr</td>
<td></td>
</tr>
</tbody>
</table>

- 84% of Latin Americans are willing to learn new skills if it makes them more employable, compared to 63% in Europe¹
- 10% of Coursera users are in Mexico and Brazil²
- 38% of internet users in Brazil had completed technical studies or foreign language courses online in 2019³

Sources: (1) BCG Decoding Global Trends in Upskilling and Reskilling 2019, (2) OECD The Emergence of Alternative Credentials 2020, (3) Brazilian Census for Distance Learning 2018

*Non-exhaustive sample of players in the Latin American alternative credentials market based on Holon IQ’s Top 100 Latin American EdTech Startups 2020
Trybe: Brazilian startup offers fully-financed yearlong training for high-paying tech jobs

In Brazil, the digital crunch is among the worst in the world: 14M people are unemployed but 70k tech jobs remain unfilled, even while paying 2.8X the national average salary. The crunch is expected to worsen as 420k new tech positions are added by 2024

- 75% of companies in Latin America express difficulty in finding and hiring IT-educated workers
- 50% of companies don’t find candidates with the skills they need, compared to 36% in OEDC countries
- 80% of millennials would change to a job with the same salary but more skills training opportunities
- 93% of millennials would spend their own free time and/or money on further skills training

Sources: (1) OECD Policy Note on Latin America 2020, (2) Educational institutions websites, Trybe internal data; Disclosure: Atlantico is an investor in Trybe
Sources used in this presentation

ABECS
Americas Market Intelligence’s COVID Consumer Snapshot Studies
Anatel
Anexo Estatístico de Pobreza en Mexico 2018
Appfigures
Atlantico “Family Office Radar 2020”
Banco Central do Brasil
Banco de México
BCG Decoding Global Trends in Upskilling and Reskilling 2019
Brasil Bolsa Balcão Individual Investor Data
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Brazilian Agency of Supplementary Health
Brazilian Census for Distance Learning 2019
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DataSenado
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Distrito
Economática
E-Marketer
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OECD
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Panorama Mobile Time
Pitchbook
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São Paulo’s Association of Medicine
Sebrae
SP Global
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Statista
TechCrunch
Technavio Alternative Credentials Market for Higher Education
The American Bar Association
The Economic Comission for Latin American and the Caribbean
The Nilson Report
The United Nations
The World Bank
TMF Group
Transparency International Latin America Global Corruption Barometer
Trybe Internal Data
Uber Newsroom
UNESCO
US Bureau of Economic Analysis
Valor Econômico
VTEX internal data
We Are Social
World Economic Forum Gender Index Report
World Health Organization
XP Inc Prospectus
For further information and to access additional materials

Visit:
http://www.Atlantico.vc

Write:
DigitalReport@atlantico.vc
Appendix
Socioeconomic Foundations
Latin America is expected to reach maximum population by 2058 and continues to benefit from a young population.

Population growth for Latin America and Caribbean
Millions of people

Population pyramid for the LAC* region
Percentage of population by age in 2020

*Latin America and the Caribbean
Source: The Economic Comission for Latin America and the Caribbean 2019
Lower fertility rates and longer life expectancies are leading to an ageing population in Latin America.

**Crude birth rate**
Per 1,000 people

**Life expectancy at birth**
In years

**Old to Young Ratio**
Per 100

Source: The Economic Commission for Latin America and the Caribbean 2019
The vast majority of Latin Americans are Catholic and many claim that religion is very important in their lives.

LatAm’s population distribution by religion
Percentage of respondents by self-identified religion

- 59% Catholic
- 20% Evangelic or Protestant
- 16% Atheist or Unaffiliated
- 5% Other
- 0.4% Agnostic

Importance of religion
Percentage of people for whom religion is very important

- Brazil 72%
- Mexico 44%
- Colombia 77%
- Chile 41%
- Argentina 43%

Sources: (1) Pew Research Survey 2014 (1,500 respondents per country), Latinobarometro Census 2018 (1,000-1,200 respondents per country across 18 Latin American countries)
Latin America is home to a diversity of races and ethnicities, with 39% of people identifying as mixed-race.

LatAm’s population distribution by race
Percentage of respondents by self-identified race

- 23% White
- 39% Mestizo*
- 10% Indigenous
- 6% Black
- 5% Mulatto**
- 3% Other
- 14% Does not know
- 0.4% Asian

*A person from Latin America that is part European and part American Indian
**Mixed white and black ancestry

Sources: Latinobarometro Census 2018 (1,000-1,2000 respondents per country across 18 Latin American countries)
Latin America underwent rapid urbanization since the 1960s, becoming the world’s second most urbanized region

Urban vs. Rural population in Latin America and the Caribbean

- Latin America has 80% of its population living in cities, compared to 82% in North America and 74% in Europe
- Developing nations like China and India are at 60% and 34%, respectively
- Urbanization varies across the region’s largest economies, from 93% in Argentina to 78% in Mexico
- Nearly half of Latin America’s population is economically active, split equally between rural and urban regions

Sources: (1) The Economic Commission for Latin America and the Caribbean, (2) The United Nations “Sustainable cities, human mobility and international migration” 2018, (3) World Bank Open Data 2019
Urbanization differs across countries and the share of economically active people is similar for urban/rural areas

<table>
<thead>
<tr>
<th>Country</th>
<th>Rural</th>
<th>Urban</th>
<th>Rural</th>
<th>Urban</th>
<th>Of which are economically active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>13%</td>
<td>87%</td>
<td>19%</td>
<td>81%</td>
<td>54%</td>
</tr>
<tr>
<td>Colombia</td>
<td>19%</td>
<td>81%</td>
<td>19%</td>
<td>81%</td>
<td>56%</td>
</tr>
<tr>
<td>Mexico</td>
<td>22%</td>
<td>78%</td>
<td>19%</td>
<td>78%</td>
<td>49%</td>
</tr>
<tr>
<td>Chile</td>
<td>10%</td>
<td>90%</td>
<td>19%</td>
<td>90%</td>
<td>49%</td>
</tr>
<tr>
<td>Argentina</td>
<td>7%</td>
<td>93%</td>
<td>19%</td>
<td>93%</td>
<td>49%</td>
</tr>
</tbody>
</table>

Source: Economic Commission of Latin America and the Caribbean 2019
While a large portion of the population lives in slums, this is declining and is smaller than other developing regions.

**Urban population living in slums**

*In percentage, 2015*

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Saharan Africa</td>
<td>62%</td>
</tr>
<tr>
<td>South Asia</td>
<td>35%</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>31%</td>
</tr>
<tr>
<td>East Asia</td>
<td>28%</td>
</tr>
<tr>
<td>West Asia</td>
<td>25%</td>
</tr>
<tr>
<td>Oceania</td>
<td>24%</td>
</tr>
<tr>
<td>Latin America</td>
<td>24%</td>
</tr>
<tr>
<td>North Africa</td>
<td>13%</td>
</tr>
</tbody>
</table>

**Urban population living in slums over time**

*In percentage*

- Brazil: 62% in 1990, 22% in 2015
- Mexico: 35% in 1990, 13% in 2015
- Colombia: 31% in 1990, 11% in 2015

In March 2020, there were ~13.6M Brazilians living in slums, equivalent to 6.4% of the population. Before COVID-19, the total annual income of Brazil’s slum population amounted to US$25B*, equivalent to 1.5% of Brazil’s GDP.

---

* *Average exchange rate for March 2020 used: US$ 1 = BRL 4.85
Sources: (1) World Bank Open Data, (2) Data Favela (in partnership with IBGE)
Brazil and Mexico still lag other developed and emerging economies in quality of infrastructure

Quality of Infrastructure in 2018, (1-7 Best)

<table>
<thead>
<tr>
<th>Country</th>
<th>Overall</th>
<th>Roads</th>
<th>Ports</th>
<th>Air Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>3.1</td>
<td>3.1</td>
<td>3.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Mexico</td>
<td>4.1</td>
<td>4.4</td>
<td>4.3</td>
<td>4.4</td>
</tr>
<tr>
<td>China</td>
<td>4.5</td>
<td>4.6</td>
<td>4.6</td>
<td>4.9</td>
</tr>
<tr>
<td>India</td>
<td>4.6</td>
<td>4.3</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
<td>US</td>
<td>5.9</td>
<td>5.7</td>
<td>5.8</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Source: World Economic Forum Global Competitiveness Index 2018 (via World Bank Open Data)
Rising unemployment and informality still threaten economic prosperity and productivity in the region

**2019 Snapshot**

- **8.1%**
  - Of the total labor force is currently unemployed
  - This represents a 0.1% increase from 2018. Unemployment is forecast to reach roughly 11.5% in 2020 due to the coronavirus pandemic.

- **53%**
  - Of the working population toil in the informal economy
  - The sizeable informal sector in LAC, which comprises all paid work not registered or regulated by the government, means a significant share of workers experience precariousness and low-quality employment.

- **40%**
  - Of the employed population earns below minimum wage
  - This represents all employed Latin Americans earning wages below the minimum established in their country. This number is even higher among women and youth.

Latin America shows higher levels of inequality than other large economies, with the top 10% holding 40% of wealth.

Percentage of wealth held by the population\(^1\)

<table>
<thead>
<tr>
<th>Country</th>
<th>Highest 10%</th>
<th>Middle 80%</th>
<th>Lowest 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>30%</td>
<td>68%</td>
<td>2%</td>
</tr>
<tr>
<td>Brazil</td>
<td>43%</td>
<td>57%</td>
<td>1%</td>
</tr>
<tr>
<td>Chile</td>
<td>36%</td>
<td>61%</td>
<td>2%</td>
</tr>
<tr>
<td>Colombia</td>
<td>40%</td>
<td>59%</td>
<td>1%</td>
</tr>
<tr>
<td>Mexico</td>
<td>36%</td>
<td>62%</td>
<td>2%</td>
</tr>
<tr>
<td>China</td>
<td>29%</td>
<td>68%</td>
<td>3%</td>
</tr>
<tr>
<td>Germany</td>
<td>25%</td>
<td>73%</td>
<td>3%</td>
</tr>
<tr>
<td>United States</td>
<td>31%</td>
<td>68%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Inequality in Latin America: a day in the life

**Name:** Maria Andrade  
**Profession:** CEO of Brazilian real estate company  
**Income group:** Top 1%*

- **Salary:** R$ 40,000 per month  
  Maria lives in a wealthy neighbourhood in São Paulo. She drives her car to work everyday.
- **Health insurance:** private  
  Maria leaves work early so she can go to the doctor. There is almost no wait time and her appointment is covered by insurance.
- **Education:** Bachelors in Engineering  
  Maria graduated in Engineering from a private university. She meets her friends from college for a drink after work.
- **Access to water:** not a problem  
  Maria gets home, boils some water and cooks herself pasta. She goes to sleep early for the next day of work.

**Name:** Jorge Silva  
**Profession:** Construction worker  
**Income group:** Bottom 50%**

- **Salary:** R$ 962 per month  
  Jorge lives in an urban slum in São Luís, Maranhão (Northeast of Brazil). He takes the bus to work everyday.
- **Health insurance:** public  
  Jorge has a fever so he goes to a public clinic during lunch. He is unable to see the doctor because the line is too long.
- **Education:** Upper Secondary  
  Jorge leaves work and takes the bus home. He is trying to save money to get a vocational degree later on.
- **Access to water:** not today  
  Jorge gets home and wants to take a shower after a long day at work. There is no water, so he goes straight to sleep.

Sources: The World Bank, OECD, WHO, Atlantico analysis  
*The average monthly salary of a CEO is R$40,000; 23% of Brazilians have supplementary health; 18% of Brazilians completed tertiary education, of which 75% attended private universities.**The median salary in the Northeast is R$ 1,441 per month, for informal workers it falls to R$962; One in five Brazilians live in the slums; 73% of Brazilians agree the public healthcare system is overstretched; 47.5% of Brazilians completed upper secondary and only 8% of adults between 30-39 are enrolled in formal education; 15% of Brazilians don’t have access to water supply.
Latin America compares favorably to both emerging and developed economies in gender equality

**Economic Participation & Opportunity**

<table>
<thead>
<tr>
<th>Country</th>
<th>Economic Participation &amp; Opportunity</th>
<th>Educational attainment</th>
<th>Health and Survival</th>
<th>Political empowerment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>Of women in Colombia participate in the labor force, compared to 86% of men.</td>
<td>64%</td>
<td>0.76</td>
<td>22</td>
</tr>
<tr>
<td>India</td>
<td>Of women in India participate in the labor force, compared to 82% of men.</td>
<td>25%</td>
<td>0.75</td>
<td>25</td>
</tr>
<tr>
<td>Mexico</td>
<td>Of women in Mexico participate in the labor force, compared to 82% of men.</td>
<td>30%</td>
<td>0.75</td>
<td>57</td>
</tr>
<tr>
<td>Argentina</td>
<td>Of women in Argentina participate in the labor force, compared to 82% of men.</td>
<td>30%</td>
<td>0.75</td>
<td>30</td>
</tr>
<tr>
<td>Chile</td>
<td>Of women in Chile participate in the labor force, compared to 82% of men.</td>
<td>57%</td>
<td>0.72</td>
<td>57</td>
</tr>
<tr>
<td>Brazil</td>
<td>Of women in Brazil participate in the labor force, compared to 82% of men.</td>
<td>92%</td>
<td>0.69</td>
<td>92</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>Of women in the United States participate in the labor force, compared to 82% of men.</td>
<td>21%</td>
<td>0.77</td>
<td>21</td>
</tr>
<tr>
<td>China</td>
<td>Of women in China participate in the labor force, compared to 82% of men.</td>
<td>69%</td>
<td>0.68</td>
<td>69</td>
</tr>
</tbody>
</table>

**Global Gender Index Score (0-1)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Global Gender Index Score (0-1)</th>
<th>Ranking (1-153)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>0.76</td>
<td>22</td>
</tr>
<tr>
<td>Mexico</td>
<td>0.75</td>
<td>25</td>
</tr>
<tr>
<td>Argentina</td>
<td>0.75</td>
<td>30</td>
</tr>
<tr>
<td>Chile</td>
<td>0.72</td>
<td>57</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.69</td>
<td>92</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>0.72</td>
<td>53</td>
</tr>
<tr>
<td>China</td>
<td>0.68</td>
<td>106</td>
</tr>
<tr>
<td>India</td>
<td>0.67</td>
<td>112</td>
</tr>
</tbody>
</table>

*153 countries measured based on gender gaps in economic participation, educational attainment, health and survival, and political empowerment

**Science, Technology, Engineering, and Mathematics (STEM)**

Source: World Economic Forum Gender Index Report 2020
The region still has a long way to go in reducing racial and ethnical disparities

Brazil’s population by race

- White: 47%
- Mixed Race (Parda): 43%
- Black: 9%
- Other: 1%

Source: (1) Instituto Brasileiro de Geografia e Estatística 2018, (2) Data Favela 2018, (3) Anexo Estatístico de Pobreza en México 2018

Snapshot of indigenous population in Mexico

- Of Mexico’s population is either Amerindian-Spanish (Mestizo), Mostly Amerindian, or Amerindian: 90%
- Of Mexico’s indigenous population lives in extreme poverty, compared to only 7% of non-indigenous: 32%
- Of the indigenous population don’t have access to at least 3 basic services, compared to 19% of non-indigenous: 55%

Average monthly salary (in R$)

- White: 2.796
- Black or Mixed Race: 1.608

People in management positions (%)

- White: 69%
- Black or Mixed Race: 30%

Slum population (%)

- White: 33%
- Black or Mixed Race: 67%
Latin America compares favorably to other large emerging markets such as India and Indonesia in economic activity.
The service sector comprises more than half of Latin America’s GDP and is increasing rapidly in proportion

GDP Breakdown by Sector in 2010
Sector contribution as a % of GDP

GDP Breakdown by Sector in 2019
Sector contribution as a % of GDP

Source: The World Bank Open Data, Atlantico analysis

*Normalized contributions to be out of 100% of GDP, as exchange rates and the fact that there are no deductions for depreciation of fabricated assets or for depletion and degradation of natural resources cause minor inconsistencies across countries
Government spending has increased across Latin America and Brazil’s deficit is still the highest in the region*

**Government Spending**
Government final consumption expenditure as a percentage of GDP

- Brazil
- Chile
- Colombia
- Mexico

**Government Deficit**
As a percentage of GDP

- Brazil
- Chile
- Colombia
- Mexico

Source: OECD

*Among countries compared here
Labor productivity has been increasing slowly in Latin America, though it still lags far behind the United States

Source: The World Bank Open Data
Mexico's trade flow represents almost 80% of its GDP, more than double that of Brazil's

Trade volume
As a percentage of GDP

<table>
<thead>
<tr>
<th></th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>23%</td>
<td>61%</td>
</tr>
<tr>
<td>2019</td>
<td>29%</td>
<td>78%</td>
</tr>
</tbody>
</table>

Main trading partners in 2018

**Brazil**
- China: 27% of exports, 19% of imports
- United States: 12% of exports, 16% of imports
- Argentina: 6% of exports, 6% of imports
- Netherlands: 5.5% of exports, 1% of imports
- Germany: 2% of exports, 6% of imports

**Mexico**
- United States: 76.5% of exports, 47% of imports
- China: 1.5% of exports, 18% of imports
- Japan: 1% of exports, 4% of imports
- Germany: 1.5% of exports, 4% of imports
- Canada: 3% of exports, 2% of imports

Source: World Bank World Integrated Trade Solution
*China, United States, Argentina, Netherlands, Germany; **United States, China, Japan, Germany, Canada
While Mexico’s stock market performance has declined, Brazil’s showed tremendous growth except for in 2020

Ibovespa annual percentage change
The Bovespa Index is the benchmark index of 75 stocks accounting for most of the trading and market capitalization of the Brazilian stock exchange (B3)

The average closing price as of Sept. 1st, 2020 was US$ 96,245. Since April, performance has been improving and the index closed on Sept. 1st at US$ 102,167.

S&P/BMV IPC annual percentage change
The Mexbol Index is the benchmark index measures the performance of the largest and most liquid stocks listed on the Mexican stock exchange (BMV)

The average closing price as of Sept. 1st, 2020 was US$ 38,036. Performance has remained relatively steady since April, and the index closed on Sept. 1st at US$ 37,488.

Source: Bloomberg
Latin American currencies were trending towards historical stability, but have taken a blow from the COVID-19 crisis.

Real effective exchange rate index*
(2010 = 100)

Nominal exchange rate
US$ per local currency, period average

*Nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator
**Period average as of September 20th, 2020
Source: World Bank Open Data, Exchange Rates UK
Interest rates have been declining in the last decade, but interest rate spreads remain high, especially in Brazil.

Base interest rates
In percentage

Interest rate spread
Lending rate minus deposit rate, in percentage

*Interest rates as of August 2020
Sources: (1) Economic Commission for Latin America and the Caribbean 2019, Brazil Central Bank 2020, Mexico Central Bank 2020, (2) World Bank Open Data 2019
Inflation rates have been declining across the region, reaching similar levels to those of developed economies.

**Inflation – GDP Deflator**
Annual percentage growth

- Brazil
- Mexico
- LAC
- OECD members

**Inflation – Consumer price index**
Annual percentage growth

- Brazil
- Mexico
- LAC
- OECD members

*Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency (i.e. Nominal GDP/Real GDP).

**Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services.

Source: World Bank Open Data
Technology Penetration
Tech penetration in Brazil has been growing at a yearly average rate of 40% over the past two decades

Brazil technology company market cap as a % of GDP

*Average tech market cap as a % of GDP between 4Q19 and 3Q20
Sources: Capital IQ for market cap data (excludes telecom), World Bank Open Data 2019 for GDP, Atlantico analysis
Internet and mobile internet penetration in Chile, Argentina, Peru and Colombia have grown rapidly in the past years

Internet Penetration
Number of internet users divided by total population

- Chile
- Colombia
- Argentina
- Peru

Mobile Internet Penetration
Number of mobile internet users divided by total population

- Chile
- Colombia
- Argentina
- Peru

Source: (1) We Are Social and World Bank, (2) Passport Euromonitor
Internet penetration in Brazil varies a lot based on household income

### Households with Internet access in Brazil by income

<table>
<thead>
<tr>
<th>Income</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to US$ 3.4k</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>US$ 3.4-6.8k</td>
<td>66%</td>
<td>34%</td>
</tr>
<tr>
<td>US$ 6.8-10.3k</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>US$ 10.3-17.1k</td>
<td>89%</td>
<td>11%</td>
</tr>
<tr>
<td>US$ 17.1-34.3k</td>
<td>92%</td>
<td>8%</td>
</tr>
<tr>
<td>US$ 34.3k or more</td>
<td>95%</td>
<td>5%</td>
</tr>
</tbody>
</table>

% of households with Internet access by annual household income in US$ thousands, 2018

---

1 CETIC reports data in number of monthly minimum wages earned by the family. Data was converted to US$ using 2018’s minimum wage in reais and average real-dollar exchange rate. To convert to annual earnings, it was multiplied by 13.3, accounting for 13th salary and vacations.

Source: CETIC
Penetration of other tech devices in LatAm is at the level of other developed economies and higher than China and India

Penetration of devices
As a % of Internet Users aged 16-64 with these devices, 2020

<table>
<thead>
<tr>
<th></th>
<th>Laptop or Desktop Computer</th>
<th>Tablet</th>
<th>Device for TV streaming</th>
<th>Games Console</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US</strong></td>
<td>77%</td>
<td>50%</td>
<td>34%</td>
<td>39%</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td>88%</td>
<td>51%</td>
<td>22%</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Brazil</strong></td>
<td>73%</td>
<td>38%</td>
<td>20%</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Mexico</strong></td>
<td>76%</td>
<td>50%</td>
<td>19%</td>
<td>45%</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>58%</td>
<td>36%</td>
<td>8%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>India</strong></td>
<td>62%</td>
<td>23%</td>
<td>15%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Source: We Are Social
Connectivity in Latin America lags behind developed countries.

Mobile connections by technology

**2019 - Actual**
- Latin America:
  - 2G: 17%
  - 3G: 35%
  - 4G: 47%
- North America:
  - 2G: 6%
  - 3G: 82%

**2025 - Forecast**
- Latin America:
  - 2G: 5%
  - 3G: 21%
  - 4G: 67%
  - 5G: 7%
- North America:
  - 2G: 6%
  - 3G: 45%
  - 4G: 48%

Source: GSMA – The Mobile Economy 2020
As today’s barriers of slow internet and costly access get chipped away, usage should increase even further

**Mobile Internet connection speed**
Average download speed of mobile internet connections in Brazil, in mbps¹

**Fixed broadband cost**
Average cost (in R$) of 1Mbps of fixed broadband internet connection per month in Brazil²

Source: (1) We Are Social, (2) Anatel
The success of messaging and social media has come even in the face of a large representation of simple phones.

Tech companies such as Facebook, Uber and Spotify are launching “lite” apps in developing countries. They take up less space on devices, have fewer features and use less mobile data, while still trying to provide a similar user experience.²

Source: (1) StatCounter, (2) CNBC

---

1. Mobile Operation System Breakdown

2. Mobile Manufacturer Market Share
E-commerce penetration varies across Latin American countries, with Chile leading the way at 6.1%

E-commerce penetration by country, 2019¹

<table>
<thead>
<tr>
<th>Country</th>
<th>E-commerce penetration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chile</td>
<td>6.1%</td>
</tr>
<tr>
<td>Brazil²</td>
<td>5.8%</td>
</tr>
<tr>
<td>Argentina</td>
<td>5.8%</td>
</tr>
<tr>
<td>Mexico</td>
<td>5.0%</td>
</tr>
<tr>
<td>Ecuador</td>
<td>4.7%</td>
</tr>
<tr>
<td>Uruguay</td>
<td>2.3%</td>
</tr>
<tr>
<td>Colombia</td>
<td>2.2%</td>
</tr>
<tr>
<td>Peru</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

Sources: (1) Euromonitor Retailing Data (2) E-commerce penetration figures for 2018-2020 are from MCC-ENET. Figures for 2009-2017 were estimated applying Euromonitor’s historical penetration growth to MCC-ENET data
Retail brands continue to gain market share in the e-commerce sector, with electronics as the most popular buy.

Latin American top retail brands by e-commerce market share

Sectors as a share of total e-commerce revenue
2020

Source: Euromonitor, Statista Digital Market Outlook
Brazil and Mexico invest in advertising considerably less than the US and are less focused on digital media.

Source: eMarketer Database

Total media ad spending, by media
US$ B, 2019

<table>
<thead>
<tr>
<th>Media</th>
<th>US</th>
<th>Brazil</th>
<th>Mexico</th>
<th>China</th>
<th>Germany</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td>104.9</td>
<td>13.4</td>
<td>5.1</td>
<td>242.1</td>
<td>21.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Print</td>
<td>55%</td>
<td>42%</td>
<td>7%</td>
<td>68%</td>
<td>38%</td>
<td>31%</td>
</tr>
<tr>
<td>OOH</td>
<td>7%</td>
<td>7%</td>
<td>8%</td>
<td>7%</td>
<td>7%</td>
<td>5%</td>
</tr>
<tr>
<td>Radio</td>
<td>8%</td>
<td>5%</td>
<td>4%</td>
<td>6%</td>
<td>28%</td>
<td>5%</td>
</tr>
<tr>
<td>TV</td>
<td>29%</td>
<td>42%</td>
<td>39%</td>
<td>9%</td>
<td>4%</td>
<td>39%</td>
</tr>
</tbody>
</table>

Advertising investment as a % of GDP

Source: eMarketer Database
Mobile Ads as a percentage of digital ads in Mexico is higher than the US and in line with China

Breakdown of digital ad spending by mobile* and computer**
US$ B, 2019

- **Brazil**: 4.6 USD B, 64% Mobile, 36% Computer
- **Mexico**: 2.1 USD B, 81% Mobile, 19% Computer
- **US**: 132.5 USD B, 66% Mobile, 34% Computer
- **China**: 71.7 USD B, 82% Mobile, 18% Computer
- **Germany**: 8.2 USD B, 63% Mobile, 37% Computer
- **India**: 1.9 USD B, 58% Mobile, 42% Computer

* Includes tablet, ** Includes laptop and desktop
Source: eMarketer Database
Digital advertising should continue to advance propelled by accelerating tech growth in Latin America

**Media advertising spending vs. media time spending**
Comparison between % of media advertising spending per media type (light blue) and % of time users spend in each media type (dark blue)

- **Share of Budget (%)**
- **Share of Attention (%)**

<table>
<thead>
<tr>
<th></th>
<th>Digital</th>
<th>TV</th>
<th>Radio</th>
<th>Print</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>37</td>
<td>45</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Mexico</td>
<td>69</td>
<td>41</td>
<td>18</td>
<td>8</td>
</tr>
</tbody>
</table>

- **There is a misalignment between budget and attention split in Brazil and Mexico:**
  - Although 70% of time is spent in digital devices, only 37-45% of the advertising budget is allocated to digital
  - Most of the budget is spent on traditional media (TV, Print and Radio), which accounts for only 30% of the time spent

- **In the US and China, attention and budget are much more aligned**

Source: E-marketer, Atlantico analysis
Brazil’s LTV/CAC ratio is in line with the US, while in Mexico acquiring customers is more expensive.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>0.01</td>
<td>0.03</td>
<td>0.33</td>
</tr>
<tr>
<td>Mexico</td>
<td>0.04</td>
<td>0.08</td>
<td>0.50</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.04</td>
<td>0.04</td>
<td>1.00</td>
</tr>
<tr>
<td>US</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Germany</td>
<td>0.40</td>
<td>0.32</td>
<td>1.25</td>
</tr>
</tbody>
</table>

Note: LTV and CAC reflect not only country differences, but also other factors such as different targeting strategies and channel mix.

Source: Historical data aggregated for top-ranking apps (>10M downloads) in iOS and Android platforms.
Drivers of Change
Students are looking to startups and technology companies to start their careers

We conducted research with nearly 1700 students from 301 universities to understand their career aspirations.

**In which sector do you want to work?**

- Startup: 14%
- BigTech: 12%
- Consumer Goods: 14%
- Consulting: 13%
- Finance: 16%
- Other: 9%
- Medicine: 7%
- Law Firm: 5%
- Academia: 11%

26% of students want to work for startups or big tech.

**Where are you currently interning?**

- Startup: 19%
- BigTech: 8%
- Consumer Goods: 17%
- Consulting: 12%
- Finance: 19%
- Other: 2%
- Law Firm: 13%
- Academia: 10%

27% of students are currently interning at startups or big tech.

Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 Brazilian students in 65 universities abroad.
University students aspire to found their own startups

39% of students plan on founding a startup in the future

The three sectors most chosen by students

What kind of startup do you want to found?

- Education: 23%, 19%
- Fintech: 17%, 15%
- Healthcare: 12%, 11%

32% of students plan on founding a startup in the future

* Based on Times Higher Education ranking, best universities in Brazil, n = 454

Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 students in 65 universities abroad
The trend towards entrepreneurship is even stronger among computer science students

We surveyed 103 computer science students to learn about their career plans

Where do you want to work?
- Big Tech: 61%
- Startup: 16%
- Finance: 10%
- Academia: 5%
- Consulting: 8%
- Others: 5%

Where are you currently interning?
- Big Tech: 40%
- Startup: 23%
- Finance: 18%
- Academia: 11%
- Consulting: 5%
- Others: 3%

Do you plan to found a startup in the future?
- 60% of students have founded or plan on founding a startup

- Education: 26%
- Fintech: 16%
- Healthcare: 11%

103 computer science students were surveyed, 85 in Brazilian universities, and 18 in universities abroad
Source: Atlantico Study June 2020: n = 1682, 1516 students in 236 universities in Brazil, 166 students in 65 universities abroad
Venture Capital investments in the region grew rapidly, with investments becoming more evenly distributed over time.

Venture Capital investment by country
US$ B

<table>
<thead>
<tr>
<th>Country</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>75%</td>
<td>66%</td>
<td>54%</td>
</tr>
<tr>
<td>Mexico</td>
<td>8%</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>Colombia</td>
<td>6%</td>
<td>4%</td>
<td>14%</td>
</tr>
<tr>
<td>Argentina</td>
<td>7%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>4%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: LAVCA
Venture Capital investment in Brazil as a percentage of its GDP is higher than Latin America and Europe

Investment in US$ M

Source: (1) LAVCA, (2) Pitchbook, Statista, International Monetary Fund
Financial Services
Reasons cited as barriers for not having an account at a formal financial institution

- Insufficient funds to open a bank account: 60%
- Financial services are too expensive: 53%
- Lack of documentation required: 23%

Source: World Bank Global Findex database

Note: Respondents could choose more than one answer
## Ending acquirer exclusivity was the first step to open payment markets in Latin America

### Country | Market Overview | Acquirers | Operators
---|---|---|---
**Mexico** | Mexico’s Central Bank has pushed for **innovation through regulatory action**. Financial cards and payments are **highly fragmented**, offering alternatives to the unbanked population, such as pre-paid debit cards. | • No exclusivity  
• BBVA Bancomer, Banamex-EVO, Banorte, Elavon, HSBC | • International: Visa, Mastercard, Amex  
• Local: Carnet

**Brazil** | Brazil’s Central Bank is regulating to **open the market to competition**. Digital payments have been growing significantly in the country, with **increasing mobile wallet adoption and credit card penetration**. | • No exclusivity  
• Cielo, Rede, getnet, PagSeguro and Stone share the market | • International: Mastercard, Visa, Amex  
• Local: Elo, HiperCard

**Argentina** | Until 2018, **Prisma was the only merchant acquirer for Visa**, controlling 75% of card transactions, and **FirstData held MasterCard exclusivity**. Exclusivity contracts ended in late 2018, but transactions remain mostly with these two acquirers. | • Exclusivity until 2018  
• Prisma and First Data | • International: Mastercard, Visa, Amex  
• Local: Tarjeta Naranja

**Chile** | Chile’s regulators have now focused on opening the market to new acquirers – **all transactions were processed through Transbank**. Evo and Bci are the first players to announce entry in the Chilean market. | • Exclusivity until 2019  
• Transbank | • International: Visa, Mastercard  
• Local: Transbank

Source: The Nilson Report 2018, Euromonitor
Asset Concentration in Latin America

Brazil and Colombia lead in asset concentration, with 75% of assets in only five banks
Asset concentration in five largest banks by country (%)

Banks in Brazil, Mexico and Colombia hold the most assets in Latin America
Total assets of 10 largest banks in Latin America in US$ B

## Payments industry evolution in Brazil until 2018

### Payments Market Snapshot

<table>
<thead>
<tr>
<th>Addressable Sector</th>
<th>Total Retail Sales</th>
<th>Card Penetration</th>
<th>Card TPV (Credit + Debit)</th>
<th>Growth (5 Year CAGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>$1.1T</td>
<td>70%</td>
<td>$2.3B</td>
<td>7%</td>
</tr>
<tr>
<td>Middle</td>
<td>$0.6T</td>
<td>60%</td>
<td>$1.8B</td>
<td>11%</td>
</tr>
<tr>
<td>Small</td>
<td>$0.5T</td>
<td>50%</td>
<td>$2.5B</td>
<td>15%</td>
</tr>
<tr>
<td>Micro</td>
<td>$0.5T</td>
<td>35%</td>
<td>$3.5B</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2.7T</strong></td>
<td><strong>57%</strong></td>
<td><strong>$10B</strong></td>
<td><strong>16%</strong></td>
</tr>
</tbody>
</table>

### Market Players

<table>
<thead>
<tr>
<th>Player</th>
<th>Founded</th>
<th>(% of TPV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>cielo</td>
<td>1995</td>
<td>39%</td>
</tr>
<tr>
<td>rede</td>
<td>1998</td>
<td>28%</td>
</tr>
<tr>
<td>getnet</td>
<td>2002</td>
<td>12%</td>
</tr>
<tr>
<td>PaySeguro</td>
<td>2006</td>
<td>7%</td>
</tr>
<tr>
<td>stone</td>
<td>2013</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: Credit Suisse Research
The battle between neobanks and traditional institutions is far from over

The drop in neobank app downloads globally during COVID-19 shows challengers must still prove customers they can provide the same level of security in uncertain times as traditional banks, who are being pushed to up their digital offerings.

Quarterly growth of banking app downloads in Brazil*

*Sum of quarterly downloads of Nubank and Banco Inter for “Neobanks” and Bradesco, Itaú, and Banco do Brasil for “Traditional banks”

Sources: (1) Appfigures, (2) Individual Newspapers, (3) Estimated based on Guiabolsso internal data

Although growing fast, only 20-25% of Nubank’s users are exclusive³
Long-term trends indicate a promising future for neobanks in Latin America

In 2017, Nubank and Banco Inter were far below traditional banks in number of app downloads. By mid-2019, Nubank had surpassed all traditional banks while Banco Inter had started to compete closely with Itaú and Bradesco.

Quarterly downloads of banking apps in Brazil, in millions

* Banco do Brasil, despite being traded on the Brazilian stock exchange, is owned by the federal government. Alongside Caixa, Banco do Brasil was used to distribute emergency funding to the Brazilian population during COVID-19, partially explaining the sudden rise in downloads in 1Q20.

Source: App figures
The Central Banks of Brazil and Mexico created regulatory frameworks and platforms to foster financial innovation

**Brazil**

**2013** Sistema Brasileiro de Pagamentos (SPB)

When the Brazilian Payments System was set in place, a new service category was created: Payments Institutions (IPs). This change **authorized payment fintechs to participate in regulated financial transactions.**

**2018** SCDs e SEPs

Sociedade de Crédito Direto (SCD) includes a direct credit businesses. Sociedade de Empréstimo entre Pessoas (SEP) includes P2P lending businesses. This regulation **facilitated the operation of lending fintechs** by creating new categories in the financial system specially for them.

**Mexico**

**2018** Ley Fintech

One of the **most comprehensive fintech laws in the world.**
Regulates digital payments institutions, crowdfunding, virtual currencies and financial advisory services, creating a specific committee to oversee new regulation and potential penalties.

**2019** CoDi

CoDi (Cobro Digital) is a digital collection and payment platform administered by Mexico’s Central Bank. CoDi allows anyone holding a savings account in the participating banks to **make wire transfers at no cost through a QR Code system.**

Source: Atlantico analysis
PIX will directly impact profits from payment transactions

With PIX offering payment transactions at virtually no cost, credit and debit cards become comparatively even more costly options to merchants.

- Acquirers, card operators and digital wallets will have to innovate, offering best-in-class or new services to justify high rates.
- Banks will immediately lose profits on bank transfers and Boletos.
- New players will be able to integrate with PIX and provide new services.

Source: Atlantico Analysis, interviews with 50 key stakeholders in financial services
Open Banking was implemented first in the UK in 2018

United Kingdom

Financial industry context

- Well established with nine big banks and wide range of financial products and offerings
- 96% of population has a bank account

Open Banking launched in early 2018

Slow initial adoption

- 1M customers have used products that require Open Banking API calls, which equals 2% of UK’s banked population

Starting to pick up

- API calls have seen a month-to-month growth between 30% and 40%

Source: Atlantico Analysis and interviews
Open Banking is being implemented in Brazil, which has a very different context from developed countries that have adopted it.

**Brazil**

**Financial industry context**
- 70% of the Brazilian population has a **bank account**
- Only **30% has access to credit cards**, a starter financial product for credit
- Market is highly inefficient, with **five big banks** holding 83% of all assets and having **exclusive access to financial information**

**Open Banking planned launch for 2020**

**Central Bank Goals:**
- Fostering competition and efficiency
- Lowering information asymmetry
- Reducing entry barriers in the market

**Open Banking in Brazil has large potential for impact, promoting competition between dominant players to offer better products and services to clients**

Source: Atlantico Analysis and interviews
A lot of the technical details underpinning Open Banking have yet to be defined for implementation to begin

The Central Bank has created a committee with representatives from six different financial players: large banks, medium banks, acquirers, credit and debit card services, and two fintech representatives. Along with an independent consultant from the Central Bank, this committee oversees the definition of API standards and specifications. The first meeting was in July 2020.

These specifications and standardization must be very detailed to make sure banks will provide a seamless sharing experience. Brazil has the advantage of learning from UK’s mistakes and creating an improved system, generating more widespread adoption.

Source: Atlantico Analysis, Banco Central do Brasil
New players unbundled big banks by focusing on a great starter product, built atop completely digital foundations

<table>
<thead>
<tr>
<th>Startup</th>
<th>Country</th>
<th>Launch</th>
<th>First Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>NuBank</td>
<td>Brazil</td>
<td>2013</td>
<td>Free credit card with lower credit history requirements than incumbents</td>
</tr>
<tr>
<td>Albo</td>
<td>Mexico</td>
<td>2016</td>
<td>Digital account with smart budgeting app and a prepaid MasterCard debit card</td>
</tr>
<tr>
<td>ualá</td>
<td>Argentina</td>
<td>2017</td>
<td>Financial management app linked to a MasterCard card with no fees</td>
</tr>
<tr>
<td>Klar</td>
<td>Mexico</td>
<td>2018</td>
<td>Digital account, no minimum balance or transfer fees, and MasterCard debit card</td>
</tr>
</tbody>
</table>
Healthcare
Latin America’s out-of-pocket health expenditure is much higher than the 15-20% recommended by the WHO.

**Per capita health spending (US$)**

- **Mexico**: 1,138, 51%, 49%
- **Colombia**: 960, 74%, 26%
- **Brazil**: 1,280, 43%, 57%
- **Chile**: 2,182, 58%, 42%

Sources: (1) OECD Health at a Glance 2019, (2) OECD Health Spending Data 2019
Latin Americans show concern for the state of the healthcare system and the lack of access to information

State of Health\(^1\)
Percentage of respondents that is satisfied with the availability and quality of healthcare in their cities

<table>
<thead>
<tr>
<th>Country</th>
<th>Uruguay</th>
<th>Argentina</th>
<th>Mexico</th>
<th>Latin America average</th>
<th>Brazil</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>73%</td>
<td>52%</td>
<td>51%</td>
<td>44%</td>
<td>39%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Information on Healthcare Services\(^2\)
Percentage of respondents that agree with the statement: “In my country, information about healthcare services is readily available when I need it.”

<table>
<thead>
<tr>
<th>Country</th>
<th>Brazil</th>
<th>Mexico</th>
<th>Colombia</th>
<th>Argentina</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>53%</td>
<td>33%</td>
<td>43%</td>
<td>20%</td>
<td>33%</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>30%</td>
<td>30%</td>
<td>46%</td>
<td>34%</td>
<td>40%</td>
</tr>
<tr>
<td>Disagree</td>
<td>22%</td>
<td>37%</td>
<td>27%</td>
<td>46%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Sources: (1) Gallup Poll 2019 (1,000 respondents per country), (2) IPSOS Global View on Healthcare 2018 (1,000 respondents per country)
Public opinion in Brazil and Mexico confirm there is major room for improvement when it comes to healthcare

Source: IPSOS Global Views on Healthcare 2018 (1,000 respondents per country)
The global market size for telemedicine is growing at a dramatically fast rate, and Latin America is no exception.

**Global telemedicine market size**

<table>
<thead>
<tr>
<th>Year</th>
<th>Size (US$ B)</th>
<th>Growth Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>2026</td>
<td>176</td>
<td>3.8X</td>
</tr>
</tbody>
</table>

**Latin America telemedicine market size**

<table>
<thead>
<tr>
<th>Year</th>
<th>Size (US$ B)</th>
<th>Growth Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1.6</td>
<td>2.2X</td>
</tr>
<tr>
<td>2023</td>
<td>3.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Global Market Insights
Before COVID-19, Latin Americans were open to using telemedicine but still harbored important concerns.

**Attitude towards telemedicine use**

Percentage of respondents in 2018

<table>
<thead>
<tr>
<th></th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have used it and will use it again</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Haven’t used it but would try</td>
<td>42%</td>
<td>41%</td>
</tr>
<tr>
<td>Have used it but would not use it again</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Haven’t used it and wouldn’t try</td>
<td>15%</td>
<td>25%</td>
</tr>
</tbody>
</table>

*30% were unsure

*25% were unsure

**Attitude towards technology use in healthcare**

Percentage of respondents in 2018

- "I am concerned about the privacy of my health data":
  - Brazil: 15%
  - Mexico: 24%
- "I am not interested in technology for my health":
  - Brazil: 11%
  - Mexico: 17%
- "I don’t understand how my data will be stored":
  - Brazil: 11%
  - Mexico: 14%

Source: IPSOS Global Views on Healthcare 2018 (1,000 respondents per country)
Telemedicine has now become essential for Latin Americans and concerns have begun to ease

Brazilian physicians’ attitude towards technology in healthcare and telemedicine in 2020*

*Respondents were 2,258 Brazilian physicians
Source: São Paulo’s Association of Medicine 2020 as cited in Conexa’s internal materials
Although regulatory challenges still pose a barrier to telemedicine, the pandemic has catalyzed change in Brazil

<table>
<thead>
<tr>
<th>2002</th>
<th>2011-2018</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telemedicine allowed in specific cases</td>
<td>Conflicts over expanding telemedicine</td>
<td>Telemedicine allowed during COVID-19</td>
</tr>
<tr>
<td>Brazil’s Health Ministry allows the use of telemedicine in specific situations, such as emergencies and for patients who have already had an in-person consultation</td>
<td>In 2011, telemedicine is officially authorized for health professionals in the public health care system. In 2018, the legislation is revoked per request of Brazil’s Federal Council of Medicine</td>
<td>Brazil’s Health Ministry authorizes the use of telemedicine for the duration of the coronavirus pandemic. Whether or not this legislation will become permanent is still being discussed</td>
</tr>
</tbody>
</table>

Source: Brazilian Health Ministry
Latin American insurance premiums are largely driven by Brazil, where business insurance is the most popular plan.

Health insurance premium volume, 2018¹
In US$ B

<table>
<thead>
<tr>
<th>Region</th>
<th>Premium Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>17,803</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
</tr>
<tr>
<td>Rest of Latin America</td>
<td></td>
</tr>
</tbody>
</table>

Latin America’s health insurance premium volume rose by 8% from 2017.

Private health insurance plans in Brazil, 2019²
Distribution of private health insurance users by type, in percentage

- 67% Collective by business
- 14% Collective by membership
- 19% Individual
- 0.1% Other collective
- 0.3% Not informed

Sources: (1) Statista, (2) Brazilian National Health Agency
There’s been a surge in start-ups entering the affordable care market, with many focusing on health insurance.

Number of insurance (all types) startups in Brazil

1.2% of VC deals from 2010-2019*

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Gaining efficiency through data

- Sami works as a smart layer for operators, giving crucial data to improve the patient journey
- It currently serves 200,000 lives through Unimed and Pátria, some of Brazil’s largest providers

A new way of providing health insurance

- Launched in July 2020, Alice is a startup in Brazil offering individual health insurance plans
- The plan focuses on preventative health, integrated data, and access to private doctors

More transparency in corporate health plans

- Pipo aims to connect companies with the best corporate health plans for their employees
- It aims to bring down the medical loss ratio in companies and provides management tools

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*Pitchbook: there were 1,864 VC deals across all industry, rounds, and stages in Brazil from 2010-2019, 22 of them were with insurtech startups
Source: (1) Distrito Insurtech Report 2020, (2) Brazil Journal
Education
Chile and Argentina show higher educational attainment than other Latin American countries

Share of population 25 years and older by educational attainment, 2020

- **Argentina**: 40% Tertiary, 21% Upper secondary or post-secondary non-tertiary, 32% Below upper secondary
- **Brazil**: 46% Tertiary, 51% Upper secondary or post-secondary non-tertiary, 15% Below upper secondary
- **Chile**: 34% Tertiary, 30% Upper secondary or post-secondary non-tertiary, 28% Below upper secondary
- **Colombia**: 30% Tertiary, 42% Upper secondary or post-secondary non-tertiary, 28% Below upper secondary
- **Mexico**: 24% Tertiary, 49% Upper secondary or post-secondary non-tertiary, 7% Below upper secondary
- **United States**: 51% Tertiary, 42% Upper secondary or post-secondary non-tertiary, 13% Below upper secondary
- **European Union Average**: 44% Tertiary, 42% Upper secondary or post-secondary non-tertiary, 15% Below upper secondary
- **OECD Average**: 45% Tertiary, 40% Upper secondary or post-secondary non-tertiary, 15% Below upper secondary

Chile and Argentina show higher educational attainment than other Latin American countries.
Brazil leads the way in educational expenditure, investing more of its GNI in education than other large economies

**Education expenditure by country, 2018**

<table>
<thead>
<tr>
<th>Country</th>
<th>Education expenditure in current US$ B</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>916</td>
</tr>
<tr>
<td>China</td>
<td>243</td>
</tr>
<tr>
<td>Brazil</td>
<td>112</td>
</tr>
<tr>
<td>India</td>
<td>83</td>
</tr>
<tr>
<td>Mexico</td>
<td>58</td>
</tr>
<tr>
<td>Argentina</td>
<td>25</td>
</tr>
<tr>
<td>Chile</td>
<td>13</td>
</tr>
<tr>
<td>Colombia</td>
<td>13</td>
</tr>
</tbody>
</table>

**Education expenditure as a share of GNI, 2018**

<table>
<thead>
<tr>
<th>Country</th>
<th>Education expenditure as a percentage of GNI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>6.1%</td>
</tr>
<tr>
<td>Argentina</td>
<td>5.0%</td>
</tr>
<tr>
<td>Mexico</td>
<td>4.9%</td>
</tr>
<tr>
<td>Chile</td>
<td>4.6%</td>
</tr>
<tr>
<td>United States</td>
<td>4.4%</td>
</tr>
<tr>
<td>Colombia</td>
<td>4.1%</td>
</tr>
<tr>
<td>India</td>
<td>3.1%</td>
</tr>
<tr>
<td>China</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Source: World Bank Open Data
The number of institutions and employees in Brazil’s education sector has been increasing in the last decade

Number of companies in the educational sector*
In thousands

Number of employees in the educational sector
In millions

*Includes private and public companies and institutions in the educational sector
Source: IBGE
National and foreign investors are showing a growing interest for education businesses in Latin America.

Education was the third largest sector for VC and PE investment in Brazil in 2018.

Value of VC and PE investments in Brazil by sector, in US$ M*

- Financial services: 739
- Food & beverage: 562
- Education: 421
- Retail: 317
- IT: 302
- Health and pharma: 288
- Logistics: 250
- Agribusiness: 169
- Energy: 130
- Infrastructure: 114

FDI in education services in Mexico increased by 85% in 2018.

FDI in education, in US$ M

- 2017: 30.2
- 2018: 55.9

*Average exchange rate for 2018 used: US$ 1 = R$ 3.65
Sources: (1) KPMG Data Consolidation 2019, (2) Mexico Ministry of Economy FDI in Mexico and in the World 2018.
Innovative startups and capital inflow are helping fuel a digital revolution in education

COVID-19 is pushing for rapid digital transformation in Brazil’s education system

- 74% of public-school students in Brazil received distance teaching activities during COVID-19
- 69% of these activities were digital, via internet, mobile phone, or computers
- 49% of schools hired one or more solutions from education startups to support teaching and learning during the quarantine period
- 60% of Brazilian education leaders believe a digital revolution will occur in education in the next two years and 36% believe it will happen before 2030

Trends indicate a long-term shift in education across Latin America

Relevance beyond the crisis: Latin America’s innovative education strategies
- Latin America was unprepared for distance learning
- Governments have responded with innovative strategies
- The trend toward more technology in education will continue

Technology takes classes to homes of students from all over Brazil during the pandemic

The coronavirus pandemic has affected the routine of millions of students and teachers across the country. States are investing in technology to ensure learning.

Technology integrates the "new normal" in Post-pandemic Education

Entrance exams and online assessments, parents meeting via app and students seeking knowledge alone must be the new reality

Sources: (1) Distance Education study conducted by Fundação Lemann, DataFolha, Imaginable Futures, and Itaú Social in June 2020 (2) Future Education “Impact in the Brazilian Ecosystem of Innovation in Education: COVID-19” 2020, (3) News headlines during the COVID-19 pandemic
Even before the COVID-19 pandemic, distance and hybrid learning were gaining traction across the globe

*Predictions were made based on 2019 surveys and market data, not taking the digital acceleration caused by COVID-19 into account
Source: Statista Global Market Insights 2019
Sparked by the pandemic, rapidly rising demand for distance learning is benefitting startups and incumbents alike

Number of students enrolled in Cogna Educação’s distance learning programs

Source: Cogna Educação Quarterly Results
Digitalization and demand for reskilling and upskilling have made alternative credentials popular across the globe

Alternative credentials – such as micro-credentials, digital badges and industry-recognized certificates – offer learners a cheaper and more targeted way to acquire (and display) new skills compared to traditional degrees.

Adults participating in micro-credential courses by characteristic*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Higher Education</th>
<th>Employed</th>
<th>Higher Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education attainment</td>
<td>68%</td>
<td>34%</td>
<td>70%</td>
</tr>
<tr>
<td>Employment Status</td>
<td>55%</td>
<td>35%</td>
<td>45%</td>
</tr>
</tbody>
</table>

Enrollment by MOOC subject**

- Technology: 20%
- Business: 20%
- Other: 15%
- Education and Teaching: 9%
- Engineering: 8%
- Health and Medicine: 8%
- Social Sciences: 11%
- Art and Design: 8%
- 8% Health and Medicine
- 9% Education and Teaching
- 9% Engineering
- 15% Other

*Data refers to OECD countries and economies that participated in at least two of the Survey for Adult Skills (PIAAC) conducted in 2012, 2015, and 2018.
**Across top global providers of Massive Online Open Courses (MOOC), which serve as the main form of delivery for alternative credentials.
***Individuals who earn the median and higher wage (defined by each country) are labelled as ones with “higher” incomes.

Source: OECD The Emergence of Alternative Credentials 2020
The COVID-19 pandemic dramatically accelerated growth in the alternative credentials market

Growth of the alternative credentials market
Predictions for the alternative credentials market for higher education following analysis of COVID-19’s impact and recovery (2020-2024)¹

16% Is the estimated year-over-year growth rate for the alternative credentials market in 2020

17% Is the predicted CAGR during 2020-2024, which would bring growth of US$ 1.18 B to the market

57% Of the growth between 2020-2024 will originate from North America

Growth of key providers during COVID-19*
Key figures on alternative credentials in 2020²

- 10.3M enrollments in 30 days, 644% up from 2019
- Over 5M user registrations post COVID-19
- Online course enrollment surged 425% in March
- In April, growth has largely remained above 300%
- 260% increase in revenue at the first half of 2020
- Average monthly usage was up more than 50%
- Testing volumes for alternative credentials grew to 580,000 compared to 66,000 in H1 2019

*Coursera, Udemy, Udacity, and Pearson were listed by Technavio amidst the top ten global providers of alternative credentials
Sources: (1) Technavio Alternative Credentials Market for Higher Education 2020-2024, (2) Providers’ 2020 half-year results