



HOW NEW TECHNOLOGIES

ARE TRANSFORMING

FINANCIAL SERVICES

IN LATIN AMERICA AND THE CARIBBEAN



Digital economy

Banks and other
Financial
Intermediaries



INTRODUCTION

Latin America and the Caribbean (LAC) region is amidst a digital revolution, and we are convinced that technological innovations have the potential to significantly accelerate and scale the region's development. These technologies are reshaping both traditional sectors and innovative industries. In this context, this report's primary purpose is to structurally address the disruptive technologies revolutionizing each of the industries where IDB Invest operates. New emerging business models will be reviewed from the standpoint of economic and social development, the cornerstone of the IDB Group. The selection of these models will prioritize inclusion, productivity, and innovation, addressing cross-cutting issues such as environmental sustainability, climate change, and gender equality.

While new technologies offer huge potential to drive efficiency and open up new avenues of value generation, they also pose significant challenges in governance, security, and equity. The rapid adoption of digital solutions has intensified the need to establish a robust regulatory and investment framework that maximizes benefits while mitigating risks.

Accordingly, the role of different economic agents and their ability to adapt and adopt these innovations become critical to catalyzing



sustainable economic and social development. As we extend upon the impact and potential of various key technologies in this report, we must understand that we are not dealing with an isolated phenomenon but part of an interconnected ecosystem that evolves in intricacy and scale. Advances in one area, such as Artificial Intelligence or Automation, are fed back and amplified in synergy with others, such as Big Data or the Internet of Things, creating a multiplier effect on value generation. This report aims to cast light on how this interconnection of technologies is redefining the economic and social scenario of LAC, producing an analysis that goes beyond the current situation to estimate how new technologies will continue to shape the region over the next decade.

CONTEXT

The financial sector is paramount to overcoming the challenges presented to Latin America and the Caribbean economies. Financial inclusion, energy transition, and digitalization of society (individuals and business fabric) are areas of action in which financial institutions play a leading role due to their capacity to facilitate investment.

As a result of the pandemic, two challenges arose that financial institutions must face: the shortage of credit and the acceleration of digital transformation (both internal and societal).



BANK CREDIT SHORTAGE

The swift contraction and expansion of the region's economies in the wake of the pandemic has brought about an inflation increase in the last year that has forced central banks to raise interest rates, making credit more expensive and causing a slowdown in the growth of countries.

Among the main reasons for the rise in prices, both external factors (typical of a more globalized world) and internal factors of each country can be found:

- On a global level, this price increase results from the rising prices of feedstock and imported goods and services, problems in supply chains, and tensions between Russia and Ukraine.
- Additionally, at a local level, fiscal stimuli to avoid crises over the pandemic led to an increase in the purchasing power of households. As restrictions disappeared and economies opened up, purchasing goods and services was significantly expanded. All this is aggravated by a lack of adjustment in companies' production capacity, resulting in substantial stock-outs.

The main challenge for central banks is to ensure price stability, in other words, to keep inflation stable. To do this, they tend to resort to several control/implementation mechanisms of monetary policy (open market operations, change in the reserve requirements of commercial banks). One of the main ones is the movement of interest rates. Rising benchmark interest rates historically tighten the conditions for access to bank credit facilities, especially for the most vulnerable industries and SMEs.



The generation and distribution of credit is the fuel that drives the transformations of societies, even more so when they are in the process of reinvention, such as in the face of the digital revolution. Financial institutions may want to use technology to maximize their capillarity, decrease product distribution costs, and venture into new segments that have not historically been profitable. That is why sources of financing other than traditional banking and new actors (such as fintechs) emerging to mitigate this problem deserve recognition.

DIGITAL TRANSFORMATION

On top of the potential reduction in credit, it is essential to analyze the degree of digital maturity of the different countries and understand where they are in terms of adoption. The pandemic became an ally of the digitalization of the business fabric, leaving those companies with a lower level of maturity in poor shape. Digital went from being an option to being an obligation.

The fourth industrial revolution and the emergence of new players in the financial sector are driving the digital transformation of services through new tools. Three growth levers favor this increase in new competitors:

- **Technological Disruption:** Artificial intelligence, cloud, big data (data & analytics), biometric authentication, and other emerging technologies are changing how financial services are developed.
- **Decreased Barriers to Entry:** Regulations such as Open Banking arise, targeting market disintermediation and greater competition.
- **Change in Consumer Preferences:** The digitalization of society and globalization have created a more pressing demand and changing preferences.

These new financial service providers, many digital natives, leverage new technologies to attain a competitive advantage (offer personalization, real-time management, reduction of marginal costs, etc.), improving the services delivered to customers or assisting customers not being served by traditional institutions.



INDUSTRY'S IMPORTANCE IN THE REGION AND IDB INVEST'S OUTLOOK

The financial sector facilitates the sustainable development of other sectors of the economy through credit. Through financing they provide to companies in different industries, the latter can grow and be more productive, not to mention having funds to innovate goods and services or implement digital solutions that ultimately benefit society.

Some examples of investments that have catalyzed development are:

- **Infrastructure:** The banking sector provides funds for the development of power infrastructure (gas pipelines, electricity transmission lines, power plant control systems), transport (roads, highways, bridges, airports), telecommunications (towers, data centers, underwater cables, and optical fibers) and social infrastructure (health and educational centers).
- **Agriculture:** They also finance companies in the agricultural, forestry, and fishery industries and microcredit to develop rural areas. The contribution of this sector to the region's economies is all-important.
- **Natural Resources:** Latin America and the Caribbean have one of the world's

- largest natural resource reserves. That is why projects about the exploration, extraction, and production of resources, such as green hydrogen and lithium mining, are being funded to advance the transition to clean energy.

Banks also invest in their digital transformation. Significant investments focus on cloud, artificial intelligence, process automation, and cybersecurity. The main goal is to improve operational efficiency and thus reduce the marginal cost per customer to offer them a more accessible and digitalized service.

Brazil is one of the region's most advanced technological development/digitalization countries. Itaú Unibanco is among the country's top banks and plans to migrate between 60% and 70% of its services and systems to the cloud as part of a ten-year contract signed with global public cloud leader Amazon Web Services (AWS). Santander Brasil posted an average of 560,000 monthly digital customer onboardings this year and ended September with 535 million total monthly visits to its digital channels.

IDB INVEST'S OUTLOOK

IDB Invest helps broaden access to financial services with a positive impact in concert with financial intermediaries, including banks, specialized financial institutions, and microfinance institutions.

The primary investment objectives can be summed up as follows:

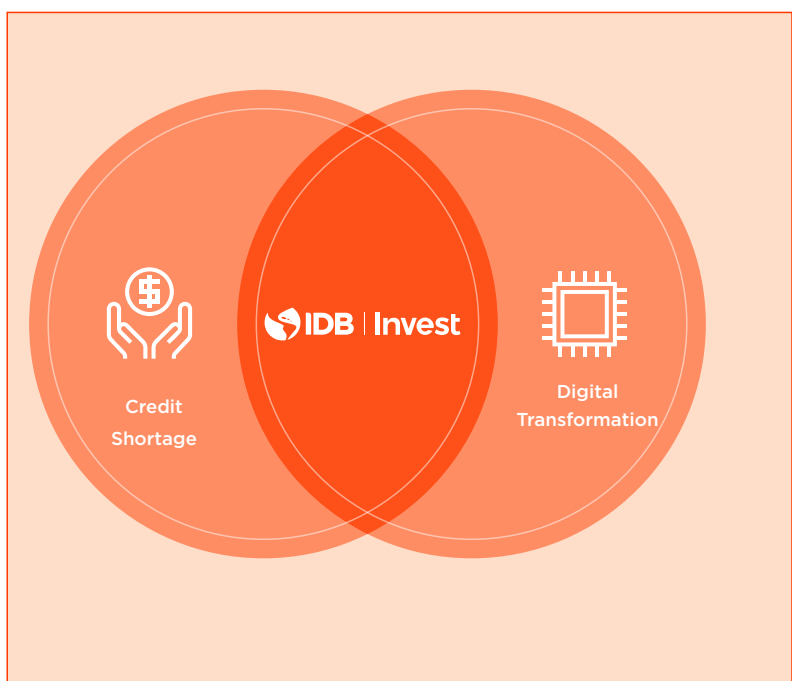
Financial Inclusion:

Serving the population underserved by banking (unbanked population and SMEs) by making services more accessible to these groups.

Climate Change (climate finance):

Adaptation and mitigation of climate change. Both as an internal strategy to build greener banks and indirectly to further greener economies and countries (financing SMEs and companies that generate a sustainable impact).

IDB Invest has the opportunity to support and boost credit in the sector to strengthen the productive fabric of MSMEs and accelerate the digital transformation of agents (new and traditional), tackling the sector's challenges and achieving their objectives.



SECTOR CHALLENGES

Along with the economic uncertainty and digital acceleration discussed in this regard, the financial sector faces several regional challenges and opportunities. Among them are:

Financial Inclusion: According to World Bank data, about 27% of people in Latin America and the Caribbean are unbanked (with unique obstacles for some groups such as women). Although there has been some progress in the region, there is still much room for improvement in the sector. Financial institutions must invest in new technologies to reach these new sectors.



- **Coverage and Connectivity:** In Latin America and the Caribbean, it is estimated that, by 2025, 67% of the population will have mobile internet, of which 83% will access the internet through a smartphone. With the gradual closure of branches, having a good digital infrastructure will be essential to access financial services. Investments in 5G technology and telecommunications infrastructure will help expand the capillarity and reach of banking to new sectors, such as rural areas.
- **Accessibility:** Financial services have to be available and affordable. It is pointless to have coverage and education if a service cannot be paid for. This is why regulators issue regulations that spur competition, thus ensuring greater supply and cheaper banking products. Having affordable prices in the sector is crucial to the progress of societies' banking levels.
- **Financial Education:** Learning is one of the engines of the development of societies, and this also applies to financial services. Banks are responsible for educating their customers on the financial basics so that citizens understand how the products work and use them correctly. As knowledge advances, we move from using essential services such as payments towards more sophisticated products such as credits, generating synergies for developing the economy and people.

Cybersecurity: Financial institutions are especially vulnerable to cyberattacks because they manage transactional data and their customers' personal information. This has led to increased malware, phishing, and identity theft attempts. Consequently, there is investment in technology (such as predictive models of artificial intelligence) and employee training to prevent fraudulent actions.

Digital Talent: Currently, many organizations are wondering how to bridge the gap between the demand and supply of digital talent. Banking faces the problem that professionals skilled in new technologies (blockchain, cloud, data scientists) are often scarce and more expensive. This is challenging because the lack of these profiles can slow down digital transformation and imply a loss of competitive advantages.

Agility of Change: With the development of new technologies, the implementation and development of new innovative goods and services are accelerated. As a result, banks will have to adapt their structures and processes to be flexible in the face of recent technological changes and not become obsolete.



MAIN SECTOR TRENDS

The financial sector is in a profound transformation driven by the application of emerging technologies. The expansion of Artificial Intelligence and Big Data has allowed, for example, the implementation of credit models with alternative information, helping advance banking levels. Another example of transformation is the cost savings derived from cloud technology, which economically stores and processes information. Lastly, automation technologies such as RPAs (Robotic Process Automation), OCRs (Optical Character Recognition), and BPMs (Business Process Management) are being deployed in the sector to boost efficiency and ensure margins against the entry of new competitors.

The main trends in the sector are:



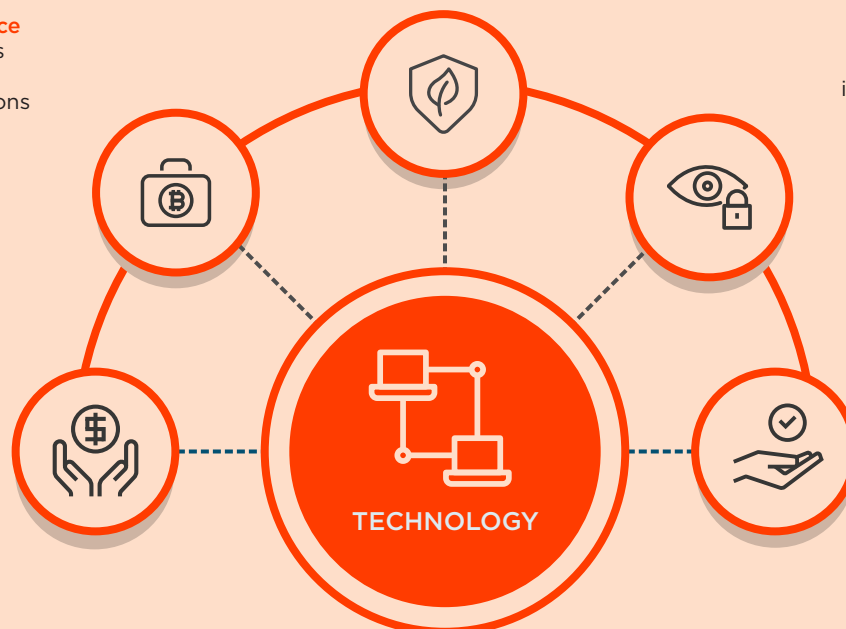
ESG
Search for transformation into a green bank and a developer of societal change

Embedded Finance
Financial services provided by non-financial institutions

Digital Regulation
Pursuit for protection improves the goods and services that customers receive

Operational Efficiency
Automation to reduce costs and improve customer experience

New Business Models
New digital solutions leveraged on technology

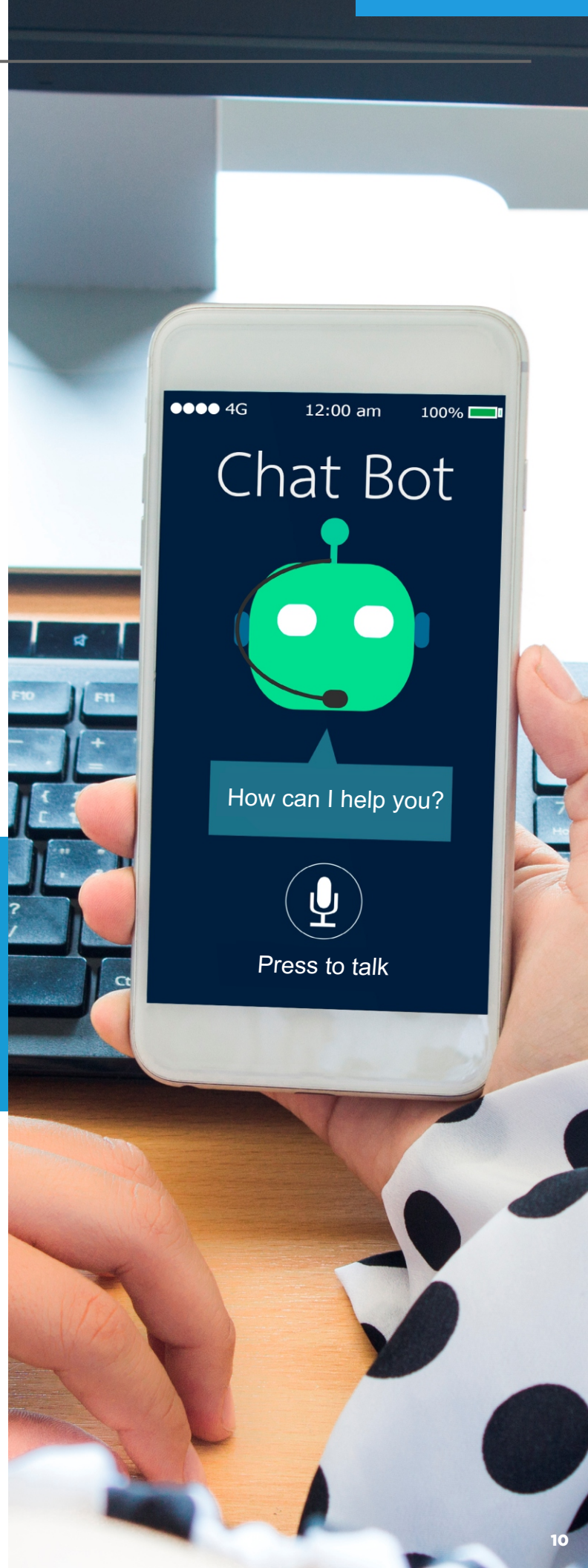


Operational Efficiency: Currently, the banking sector faces the profitability challenge. The drop in pre-pandemic interest rates combined with the increase in new competitors has decreased margins, leading to more significant pressure for banking institutions to be more efficient, which boils down to the following question: How can I reduce my operating costs to be more profitable and reach new customers?

The answer is through the automation of banking processes. This technology comes to help humans reduce or eliminate their involvement in repetitive tasks. This affects the entire value chain of financial institutions, from customer service to back office. Among these solutions, Chatbots for customer service or automated document digitization with OCRs for digital onboarding stand out for their level of adoption. Gradually, we begin to see more advanced use cases, such as RPA robots combined with Artificial Intelligence that speed up KYC (Know Your Customer) or AML (Anti-Money Laundering) processes by predicting customer responses based on previous information.

According to a Gartner study, around **80%** of finance leaders have RPA solutions planned or implemented. On average, RPA technology costs one-third of an offshore employee's and one-fifth of an onshore employee's costs.

For IDB Invest, the investment in automation is an opportunity to encourage financial institutions to offer more accessible financial services, favoring social inclusion. This investment in CAPEX (capital investments or fixed assets) will be profitable due to operational efficiencies, resulting in a reduction in OPEX (operating expenses) in the medium/long term. By gaining efficiency (lower cost to attain a certain income), cheaper services can be offered, and more people can be reached, meeting the region's development goal.



Embedded finance: A concept that means the ability of any company to offer financial services with a non-financial experience, streamlining their consumption by customers. In this way, we find several use cases in different industries, from E-commerce, where it is unnecessary to enter bank details in each purchase operation, to retailers that offer insurance and cards when purchasing a household appliance.

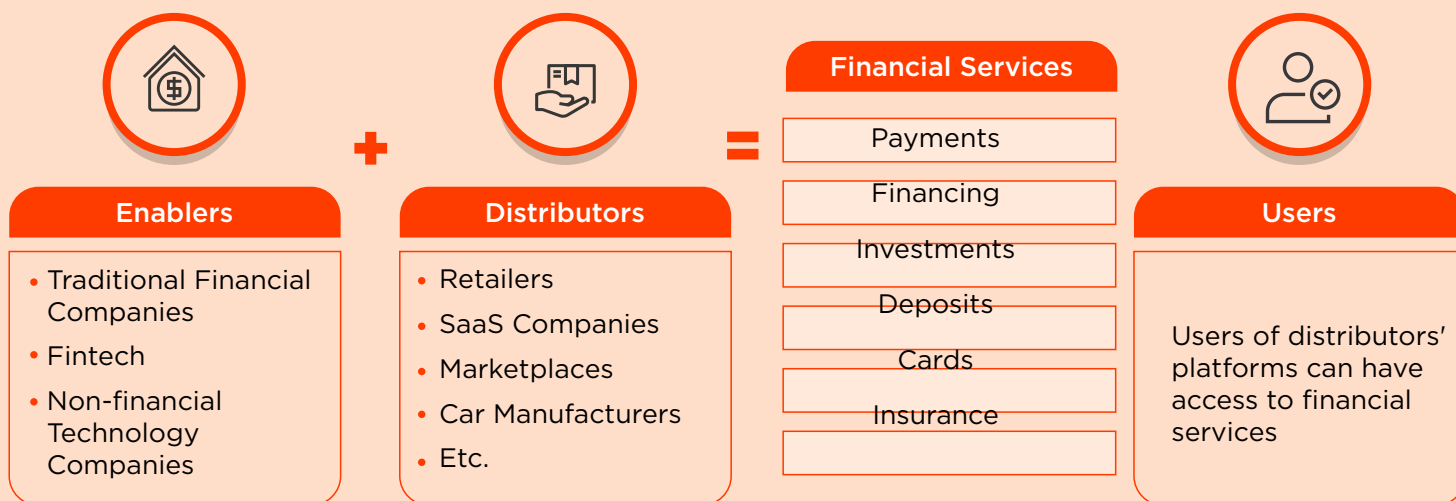
The potential of this trend is growing in Latin America. It has accelerated due to the expansion of technologies that facilitate and automate the connection between different systems. Such connections are mainly made via APIs (Application Programming Interfaces) that enable the connection between two or more software, smoothing the way to exchange data or information.

As a result of this technology, financial inclusion and banking can be forwarded, reaching previously underserved segments. BBVA and

Uber have established a partnership through which the transport company provides a digital bank account to its drivers and delivery people, who manage it directly in the app (while the account, linked to a debit card, is provided and managed by BBVA).

An example of the new solutions for SMEs through Embedded Finance is the Mercado Libre financing offer for its sellers: They have improved their marketplace with credits and cash advances without the requirements of traditional financial institutions, resorting to risk analysis to collateral through a scoring model that feeds on the history of the sellers themselves in Mercado Libre and Mercado Pago.

This trend represents an opportunity for IDB Invest to finance companies from other industries that provide financial services integrated into their value offer with the ability to further financial inclusion and the bankability of new sectors that do not have the capability.

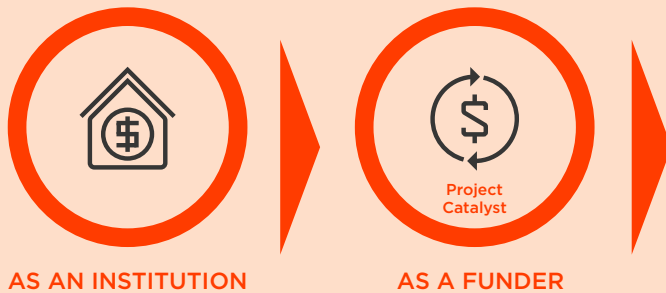


Source: NTT DATA

ESG: Sustainability is a priority on the world leaders' agenda, embodied in the Paris Agreement and the 2030 Agenda for Sustainable Development. The increase in awareness on the part of society has caused stakeholders (customers, suppliers, shareholders, and other stakeholders) to demand that companies be socially responsible and positively impact society and the environment.

The financial system plays two primary roles around sustainability: one, as an institution per se and, on the other hand, as an activator of projects and initiatives through investment and financing that allow a sustainable economic transition:

Technology is enabling the emergence of financial institutions that offer banking intermediation services in a 100% digital way and deployed with an integrated ESG trend. For example, the Brazilian digital bank Nubank has offset its carbon footprint since its founding through sustainable projects in Brazil and Mexico (digital business models tend to pollute less by requiring fewer offices and no branches). About 5.6 M individuals have been included in the financial system with the use of their products (they have launched a credit card for



Main Industries



beginners with a meager spending limit, which increases along with their credit history), and 70% of entrepreneurs consider that the services provided by the bank have a positive impact on their businesses.

Traditional banks such as BBVA have planned out in their roadmap to mobilize 200,000 million euros by 2025 to fight climate change and further sustainable development. They include features in their mobile app that allow customers to calculate their carbon footprint based on data analysis on bill payments (gas, electricity, water, and gas).

Chile, Brazil, and Mexico are the most advanced countries in this product type. IDB Invest has the opportunity to accelerate the region's sustainable digital transformation through advice and by providing funds for ESG bond products or issues.

Increase in Supply of Non-financial Services:

Financial institutions know that competing through prices is increasingly challenging to attract and get customers, especially with the entry of new players. That is why a trend is emerging on the part of banks offering non-financial services to small- and medium-sized enterprises to stay ahead of the competition. With this, banks improve their reputation and brand image in the market. Still, the indirect effect is more significant: they boost the growth of SMEs that start to see financial institutions as a strategic partner for their development and not a mere provider of funds.

Among the primary non-financial services, we find i) customer service through account managers, ii) supply of technological tools and analytical capabilities, iii) publication of information and events, iv) training (workshops or special programs), and v) consulting services and support through partnerships.

An example is Banco Santander's support to SMEs through different solutions. In Brazil, Banco Santander offers planning software for SMEs, accompanied by additional services such as the "Business Assessment" tool that appraises the business potential of start-up companies. In Costa Rica, BAC Credomatic has launched the Mujer Acelera Program, with Vital Voices offering personalized training, advice, and mentoring to support and help entrepreneurial women's companies thrive. Scholarships, financial education, webinars, blogs, and events are the primary non-financial services financial institutions provide to retail customers, improving loyalty. A benchmark is BBVA Mexico, whose scholarship program Becas BBVA para Chavos que Inspiran advances school continuity and social mobility for talented students with socioeconomic needs from high school to university.



“Digital” Regulation: New digital advances and the adoption of disruptive technologies have led regulators worldwide to establish regulations to foster innovation and competition, protect consumers, and ensure they are supplied with the best goods and services in a digital environment. Below we detail areas addressed by regulators in the development of new regulations:

- **Digital and Real-time Payments:** Latin American regulators are promoting regulations that digitize payments and demand real-time operations. These regulations are intended for users of means of payment to prioritize the use of digital payments over cash, taking the first step towards the banking of underserved segments. CODI or PIX are instruments that Mexican and Brazilian regulators have launched to accelerate this adoption.
- **Cybersecurity:** In the financial sector, security is an aspect that has cardinal importance stemming from the sensitivity of data and the operations involved. Digitalizing customer relations and operations has meant regulators must evolve their regulations toward Cybersecurity areas. For example, Chile enacted the Computer Crime Act in 2022, establishing levels of security and auditing that institutions had to implement.
- **Data:** It is estimated that, by 2030, the generation of data worldwide will be about 15 times what was created in 2020. The leading Latin American countries have issued regulations establishing the processes for obtaining, changing, and exploiting customer data. One of the most sensitive aspects of these regulations is the management of customers’ consents to the financial institutions that store and use their data.

For instance, in Mexico, the Data Protection Act allows the processing of personal data by organizations and companies, but permanently, to preserve the user and ensure their authorization is required.





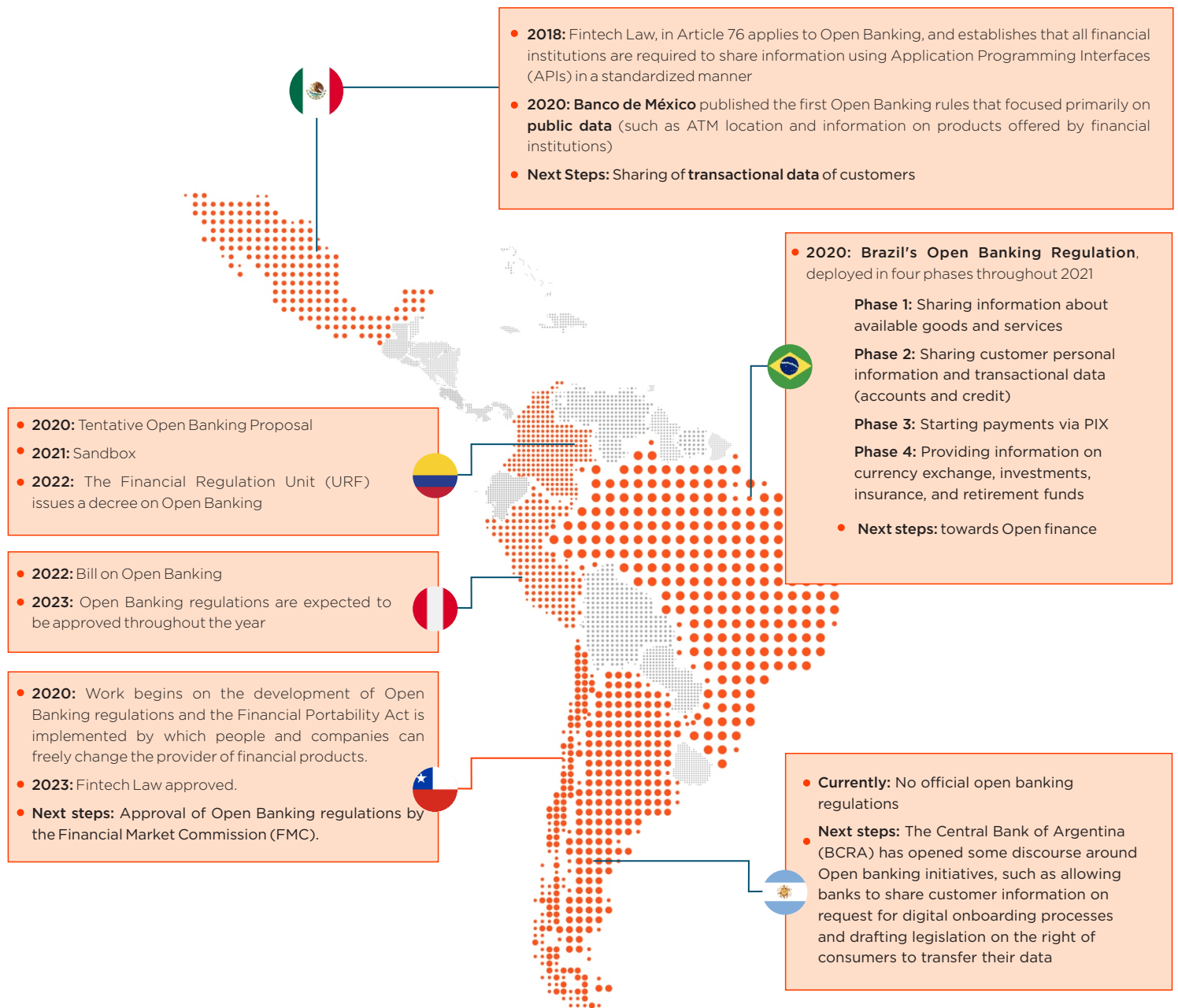
- **Sustainable Finance:** Using European regulations as a baseline, new regulatory trends that reward financial institutions that include sustainability aspects in their corporate strategy are expected to emerge in Latin American markets. In Chile, the Climate Change Act approved in 2021 seeks to spur private investment in sustainable projects. In Mexico, the Ministry of Finance and Public Credit from Banxico and other authorities of the financial system are advancing several sustainable finance projects, such as Sustainable Taxonomy.
- **Central Bank Digital Currencies (CBDCs):** For many Central Banks, the emergence of new unregulated private payment initiatives (i.e., stablecoins) can put financial stability at risk. For this reason, in 2021, the European Central Bank launched the digital euro project. At the regional level, although it is at an early stage in many countries, this has sparked a lot of interest due to the increase in electronic payments, the

gradual decrease in cash, and interoperability. Among the most advanced countries, El Salvador is found, which in 2021 introduced Bitcoin as a currency of legal tender. Earlier in 2020, the Central Bank of the Bahamas launched its digital currency (“Sand Dollar”) to boost the financial inclusion of remote island communities and strengthen payment system resilience in the face of natural disasters and pandemics.

- **Open Banking:** Europe and the United Kingdom began issuing regulations to open financial services to third parties. For the most part, Open Banking regulations require financial institutions to hand over their customers’ information to third parties and to enable financial operations that non-financial institutions can carry out. These new regulatory requirements aim to improve customer services and reduce costs.

Over the past few years, the dilemma around who owns the data and how it should be managed has intensified. This is behind the governments' need to advance regulations that govern open banking for its suitable adoption by companies in the sector. It aims to empower customers by allowing them to own their banking data (ownership passes from financial institutions to consumers) and warranting them the power to share their information with third parties to obtain better goods and services.

Open Banking Regulatory Status in Latin America



Among the critical challenges to its suitable implementation is the establishment of standards for the intercommunication of information through APIs. Meanwhile, the need to establish cybersecurity measures to prevent cyber risks such as data or identity theft is under examination in the face of the exchange of sensitive information.

These regulations have an impact on the sector's ecosystem. On the one hand, it encourages the collaboration of banks and traditional institutions with other agents (especially fintechs) to implement new technologies and digital solutions, increasing innovation and offering better goods and services to customers.

End consumers benefit from these better and more personalized products tailored to their specific needs, and access to credit is facilitated by having more sources of information. Furthermore, citizens can improve control of their finances with solutions that drive financial education and make investment recommendations. A clear example of these services is provided by Fintual, which allows users to organize finances and invest with low fees and products aligned with the customer's risk.

Open Banking greatly favors financial inclusion. The region has one of the highest rates of informal economy and low banking levels. This is where new solutions arise to seize the opportunity to close the funding gap.

One case is using alternative credit models that resort to Open Banking to access various alternative sources of information (such as social media, avoiding relying solely on credit

history) to award financing to people excluded by banks. Dineria is a company specializing in granting loans to support any sector of customers who require an immediate credit solution. In turn, e-commerce companies offer Buy Now Pay Later solutions that enable purchasing without a credit card.

In addition to the above, Open Banking has driven the development of new business models, encouraging innovation. However, it is still challenging to quantify the impact on the region due to its recent implementation. An example is Banking as a Service (BaaS), extended upon in the business model's chapter.

Payroll advance is another emerging model. Already in operation in Spain, Portugal, Colombia, and Peru, Payflow provides employees with instant access to their earned salary at any time of the month to collect when and how they want. They also offer a Flexible Compensation Platform, where workers receive a card with which they can purchase goods and services with significant discounts (meals, public transport, childcare), allowing companies to increase the net salary of their employees without increasing their gross salary.

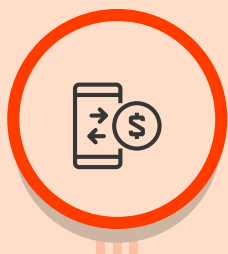


Many countries are seeing the positive results of Open Banking. They are taking a step forward, evolving to Open Finance, which allows financial data to be shared through APIs with third parties, no matter where it comes from. This includes financial data from digital players (large technology companies), fintechs, traditional institutions, tax authorities, payroll service providers, or insurance issuers.

Lastly, the regulatory advances referred to above, together with Open Banking, have allowed new actors to emerge in the financial landscape. In contrast, others have entered to provide financial services without that being their core business. Technology has been an enabler for decreasing barriers to entry to the sector, improving services delivered to customers at a lower cost.

- **New Business Models:** The advancement of new technologies and their regulation to further innovation and competition has led to the emergence of new solutions in the financial sector. A clear example is fintechs, which leverage new technological discoveries to attract customers underserved by traditional banking or customers looking for innovative products that they perceive have greater added value. Their specialization within the value chain in the financial sector allows them to offer more customized services, thus allowing greater engagement and brand loyalty.

Financial Institutions



Fintech

Companies, usually start-ups, which leverage new technologies to provide customers with better products and services with a digital base



Neobanks

Institutions that offer the same or similar financial services as "traditional" banks, but are based on the latest technological advances

Non-financial Institutions



Big-Tech

Large companies operating in various countries and where they have a dominant position.

They have a **large customer base and diversity of data.**

They invest heavily in their **digital transformation and new technologies** to achieve **competitive advantages.**

They start offering **financial services** to develop **new revenue streams.**



Retailers



Telecommunications

In the following section, three new business models that have emerged from technological advances will be discussed in detail, analyzing how these solutions apply digital transformation to facilitate citizens' use and access to financial services.

BUSINESS MODELS

Data Driven Banking

Currently, companies generate large amounts of data to develop their business activities. Emerging technologies enable new models with a strategy based on the standardization of the use and exploitation of data to make business decisions through analysis, leaving aside opinions or emotions. One of the use cases of data utilization by financial institutions refers to the type of service they want to give their customers, adapting their offer to the needs of different sectors: women, older people, SMEs, entrepreneurs, etc.

These models yield improvements throughout the value chain of financial institutions. For these organizations, generating efficiencies is one of the main impacts, as well as developing new revenue lines or maximizing existing ones deriving from data monetization initiatives. For customers, the study of data allows companies to place them at the core of the business, offering them personalized goods and services with greater added value. Take a simplified value chain of a financial institution as an example, some of the primary use cases are:

PRESALE	SALES AND DELIVERY	OPERATIONS	CUSTOMER SUPPORT	MONITORING
<ul style="list-style-type: none"> Recruitment & Campaigns Onboarding 	<ul style="list-style-type: none"> Procurement of goods and services (accounts, cards, funds...) 	<ul style="list-style-type: none"> Management of day-to-day activities (transfers, settlements...) 	<ul style="list-style-type: none"> Inquiries and Complaints Retention 	<ul style="list-style-type: none"> Risk Control Fraud Management and Prevention
USE CASES				
<p>Automation of the onboarding process relying on available information</p> <p>Optimization in the launch of campaigns, decreasing CAC</p> <p>Reduces the need to provide data.</p>	<p>Credit history analysis considering alternative sources of information (better prediction and ability to reach more sectors)</p> <p>Receive products tailored to one's needs</p>	<p>Automation of reporting tasks and regulatory compliance</p> <p>Process automation with the help of RPAs</p>	<p>Improved call center efficiency</p> <p>Self-management capabilities</p>	<p>Analysis and detection of possible risks</p> <p>Fraud prevention and monitoring models</p> <p>Study of buying habits and customer behavior</p>



They can develop customer-centric strategies and internally streamline their operations, achieving competitive advantages



They receive personalized goods and services and get a better experience (more digital, frictionless, and higher value)

Data-driven Banking has three main dimensions to consider implementing this solution successfully:


- I) Collection of data from several sources that are reliable.
- II) Exploitation of data with models enabled by new technologies (big data, artificial intelligence, machine learning).
- III) Up-to-date maintenance of that data.

Several technologies help these businesses go mainstream. On the one hand, APIs (Application Programming Interface) make it possible to exploit data sources external to the company more agilely through connections between different data sources, enhancing

their ability to analyze and use information. This will be driven by the growth of IoT technology in various industries and citizens' lives, which will generate much more data that financial institutions can use.

This plethora of information must be supported by scalable systems that enable massive data storage and cloud technology to save costs and process data faster. Artificial Intelligence, Big Data, Machine Learning, and data analytics that allow predictive analysis capabilities are used for model deployment. These models will enable intelligent robot deployment that automates tasks throughout the value chain. Lastly, it will be emphasized that these companies should have talent and professionals specialized in new technologies.

EXAMPLE: DATA DRIVEN BANKING



"Data driven platform for engagement with customers aimed at financial services"

World leader in financial data-driven personalization and customer engagement for financial services

VALUE PROPOSITION

Its mission is to help banks improve their engagement with customers. To achieve this, its Artificial Intelligence model analyzes financial data in real time to understand the customer's financial behavior in order to anticipate needs. Among its solutions, it allows banks to offer daily information, financial advice, and wellness programs

TECHNOLOGY


- **APIs:** Connection to offer solutions as a house brand
- **Artificial Intelligence and Machine Learning:** Data enrichment, recurrent pattern analysis, behavioral changes, and balance estimation
- **Cloud:** Cloud solutions for on-demand consumption
- **Cybersecurity**

ALLIANCES

Agreements with banks: Partnerships with financial institutions to innovate financial services through automated intelligence in every customer interaction

CUSTOMER SEGMENTS

Leading banks in the world, some of their main customers are:



RESULTS

+120 Million customers worldwide

+58 Trillion customer transactions analyzed

+9 Trillion customer transactions analyzed

KEY CAPABILITIES AND RESOURCES

- Expansion of product development for bank customers.
- Expansion of their customer base.
- Development of solutions for medium-sized and digital banks.
- Talent retention and recruitment.

MAIN REVENUE STREAMS


Solution Sales:

- **Engagement:** Management tool to quickly develop and deploy new content
- **Sustainability Insights:** Helping customers reduce their carbon emissions
- **Automatic and flexible financial wellness programs**

IMPACT

With its solutions, it helps increase financial literacy, simplifies everyday banking tasks, and helps customers achieve financial goals

OTHER PLAYERS



Banking as a Service

The distribution of financial goods and services has traditionally been linked to heavy investments in regulatory licensing, systems, and developments. Emerging technologies have allowed technology companies to develop modular platforms that enable and streamline the partial consumption of systems. These new platforms limit the investment based on service consumption models, converting those significant initial investments into operating expenses.

The banking as a Service model refers to marketing financial platforms in a service format, allowing third-party players to provide banking services through their channels. These models are powered by technological institutions and traditional or innovative financial institutions by investing in new agile systems. They want to maximize their investment by marketing their new capabilities to third parties.

Banking as a Service is a new business model that adds significant value to the industry because it streamlines digital transformation and enables the provision of financial services in historically underserved markets. For example, for countries in the region with a medium or small size, the democratization of these new technologies through BaaS service providers causes local financial institutions to achieve scale and focus on profitable financial inclusion.

The regulators are aware of the technological and operational revolution this entails and are therefore regulating the use of third parties (unlicensed banking providers) in financial services. Advances in Open Banking regulations seek to provide customers with better services under these new economic ecosystems. Pertaining to some of the leading new players in these ecosystems, some of the primary use cases are:

BaaS VALUE CHAIN



USE CASES

Retailers

- Point-of-sale (POS) financing
- Cobranded financial products (cards)
- Loyalty and rewards programs



Bigtechs

- Integrating bank accounts
- Connection with banks
- In-app/web payment initiation



eCommerce marketplaces

- Digital wallets as a means of payment
- Point-of-sale (POS) financing
- Working capital financing



BENEFITS

1 Financial Institutions

- New Revenue Streams

2 Aggregators

- Financial goods and services suite

3 Distributors

- Increased customer loyalty and higher conversion
- Greater customer data to notice growth opportunities
- Increased transaction volume
- New product lines

4 Customers

- Receive higher-value goods and services in a frictionless, personalized digital experience

APIs are the enablers of these new solutions. Traditionally, collaboration between financial and non-financial institutions has always existed, but APIs optimize communication flows between systems and yield operational efficiencies that open new horizons. All this will be enhanced by improving mobile and fixed connectivity (5G and fiber, among others), allowing much faster speed and latency that tends to zero. All this data requires scalable and flexible technologies such as the cloud for storage, sharing, and analysis. Organizations also use Artificial Intelligence and big data models to achieve advantages by offering better goods and services and being more efficient. Due to the importance of information sharing in this model, institutions develop cybersecurity policies and processes and count on experts' labor.



EXAMPLE: BANKING AS A SERVICE (BaaS)

belvo.

"Unleashing the power of Open Finance in Latin America"

Belvo enables more inclusive, efficient, and empowering offerings through technology and data

VALUE PROPOSITION

Its mission is to open the financial market and connect it through technology. Data is at the heart of their model, one of the main goals being to obtain it quickly in order to provide the best user experience in a collaborative ecosystem. Solutions include improving financial health, streamlining onboarding, reducing credit risk, and assessing tax data

RESULTS

- +60 institutions to connect with in Latin America
- +150 customers
- 3 países: Colombia, México and Brazil

OTHER PLAYERS

TECHNOLOGY

- **APIs:** Allows connecting any application with financial data
- **Big Data/Artificial Intelligence:** Data interpretation
- **Cloud:** Uses Amazon Web Services for infrastructure and storage needs
- **Cybersecurity:** Ongoing monitoring and security policies

KEY CAPABILITIES AND RESOURCES

- Expanding product development and platform improvement
- Launch of its bank-to-bank payment initiation solution in Mexico and Brazil
- Geographical expansion
- Talent retention and recruitment

ALLIANCES

Agreements with banks: Alliance with Citibanamex to further develop the Open Finance ecosystem. Belvo uses technology to analyze data and Citi the infrastructure

IMPACT

They seek to democratize access to financial services in Latin America by creating better, easier, and quicker financial experiences for users

MAIN REVENUE STREAMS

Solution sales, freemium model:

- **Test:** Free, for trial purposes
- **Launch:** USD 500/month
- **Growth:** Includes all features, products (banking and tax aggregation) and services (premium support)

CUSTOMER SEGMENTS

From startups to large corporations, some of their main clients are:

Payment as a Channel

The digitalization of economies has accelerated the expansion and development of digital payment solutions. Emerging technologies have enabled innovations in payment methods that are beginning to gain traction instead of using cash. Mobile phone payments, peer-to-peer transactions, and contactless card payments have all posted remarkable increases since the pandemic, but they are just the beginning.

A new wave of disruption is enabled by the entry of large technology companies into the payments market. One example is how they are leveraging biometrics to streamline payments, replacing more traditional methods like cards. Amazon was one of the groundbreakers in implementing them in its supermarkets, linking the digital accounts of its customers to biometric information and allowing them to pay with the palm of their hands. These advances considerably impact the entire payments ecosystem: both users of sending products (individuals) and users of receiving products (SMEs and businesses).

Several factors have been added to the growth and development of these models, which have proven to be very useful for unbanked people:

- I) Entry of new players into the market.
- II) Increase in payments in E-commerce.
- III) Merchants have significant control over the commissions they charge.
- IV) Real-time payment solutions that replace the benefit of immediacy provided by cash.
- V) Regulators' push for interoperable solutions that facilitate sending and receiving payments quickly and cheaply.

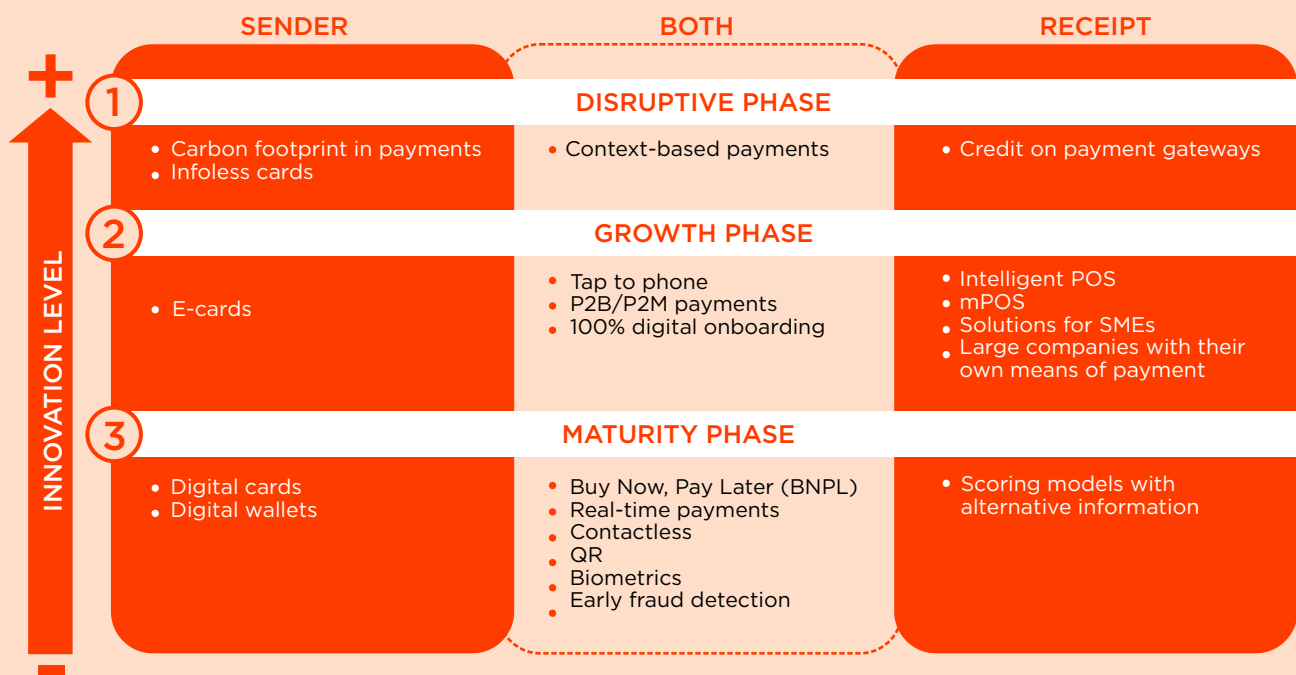


The main challenge for governments is to overcome the obstacle of fear and education of citizens in using these media by raising their awareness of the value of these digital solutions to achieve mass adoption that facilitates financial inclusion and improves banking levels.

To learn about the innovations that are emerging in digital payments, the following trends are illustrated based on their degree of application between issuer and acquirer:




Innovation in payment methods



A remarkable instance is payments between users (Peer-to-Peer, P2P): Due to their ease of operation and other benefits that are not so conspicuous but in place, such as non-existent or minimal commissions and real-time transactions, they have made users' lives easier. Once merchants start charging digitally, the key is to increase their affiliation and income by offering solutions that respond to any needs that may be perceived. For example, it is increasingly common to find mini-ERP solutions, i.e., management and administration platforms for different areas of the business associated with the facilitator's payment solution.

New technologies have made it possible to make payments much faster. Financial institutions are investing in migrating their operations to the cloud to offer agile and scalable payment solutions. Within the payment ecosystem, merchants rely on APIs that enable them to integrate various means of payment and the exchange of information it entails. Many organizations aiming to retain customers and boost the use of new solutions resort to Artificial Intelligence and Big Data analytical models to look into, understand, and predict spending patterns. Additionally, security is a critical issue in payments, as there are money movements. For this reason, advanced analytics models (Big Data and Artificial Intelligence) are also used for the prevention and early detection of fraud.

EXAMPLE: PAYMENT AS A CHANNEL



"The democratization of digital payments in Brazil"

PIX makes it possible to make transfers between people virtually in real time

VALUE PROPOSITION

The Brazilian Central Bank defines it as an instant payment solution, which allows for wire transfers and payments. The solution allows payments and transfers to be made by scanning a QR code, but also through a key (identification of natural or legal persons), an e-mail or cell phone number

TECHNOLOGY

All transactions are conducted through digitally signed messages transmitted in an encrypted way, on a protected network.

It relies on the latest in cybersecurity and fraud prevention, such as encrypted messaging, biometric authentication, tokenization, and uses technologies such as big data, analytics, and artificial intelligence in risk prevention processes

ALLIANCES

It was born as an initiative of the Brazilian Central Bank and all the banks in the ecosystem adopted it

CUSTOMER SEGMENTS

As the goal is to foster financial inclusion, it is open to all agents, which can be summarized as individuals and merchants

IMPACT

- Fostering financial inclusion
- Companies can reach new segments, as PIX is more used than other means of payment




RESULTS

+26,000 Million transactions

+13 Trillion Brazilian Reals in amounts traded

+478 M users

OTHER PLAYERS

KEY CAPABILITIES AND RESOURCES

- Development and maintenance of the application to make it scalable in the face of increased payments or transactions
- Investment in the development of new solutions (such as dashboards for cash flow visualization)
- Investments in security to improve and make transactions safer

MAIN REVENUE STREAMS

Typically, this type of solution does not monetize, thus its massive adoption is key. In the future they are likely to start charging a small percentage of the transaction to customers or merchants for the use.

Conclusion and Map of Leading Players by Industry

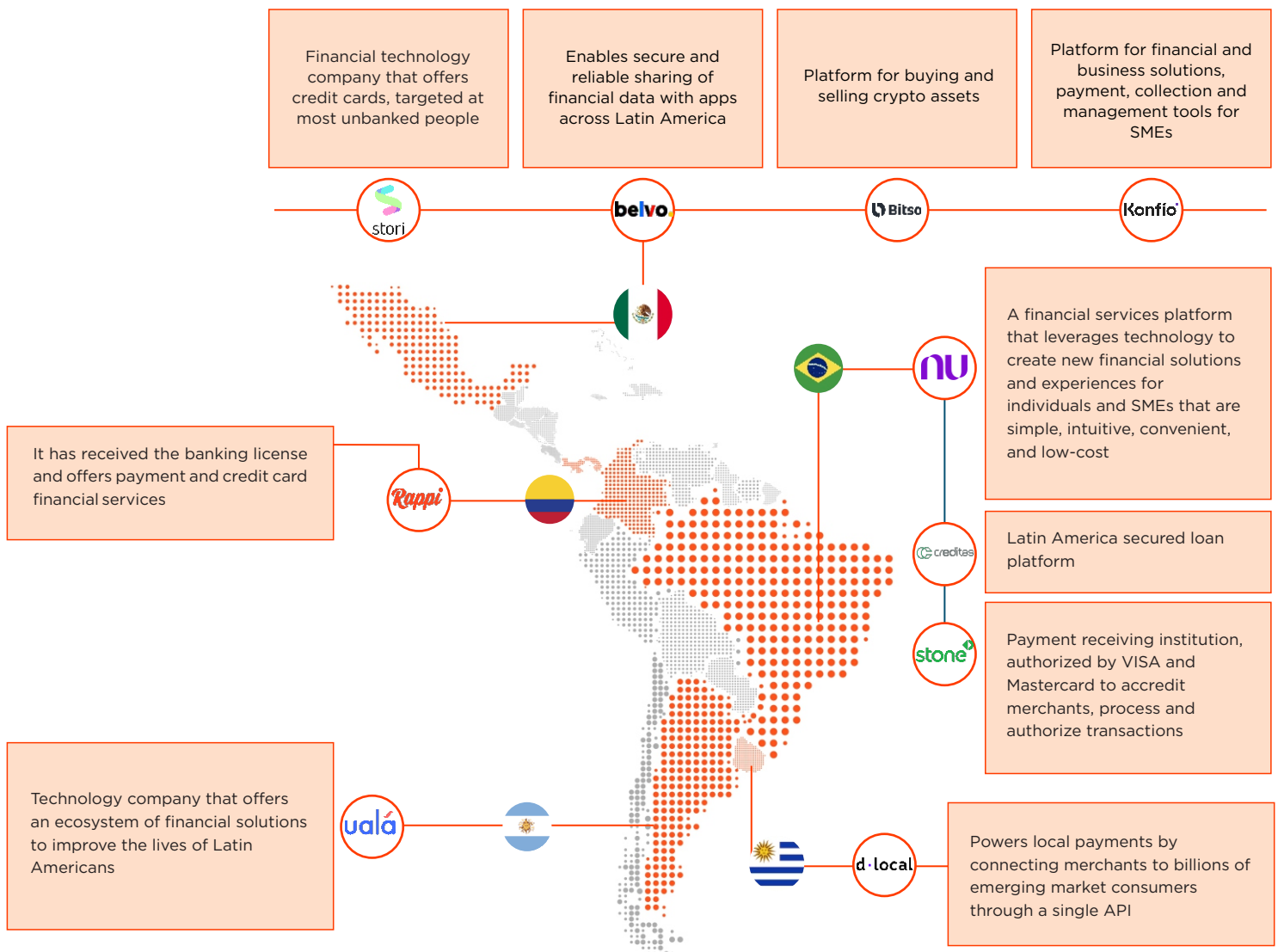
As seen throughout the document, new technologies are changing the game's rules in the traditional financial sector. Institutions are investing in the adoption of these new solutions to solve the challenge of financial inclusion and to be able to remain competitive in the face of new business models.

In addition, they are shaping the trends of the sector. The automation of activities allows for improving companies' operational efficiency.

On the other hand, APIs in embedded finance enable the provision of financial services to companies in different industries that traditionally did not have such capacity.

Alongside this, regulators are progressing in developing and approving digital regulations such as Open Banking, data, and cybersecurity. To conclude, the following illustration depicts the new companies that are being born as a result of the digitalization of the sector and that are benchmarks in the different countries of the region for their large customer base and offer both financial and non-financial solutions that favor the growth of MSMEs and the banking level of citizens.

Map of Relevant Players in the Latin American Financial Ecosystem



CONTINUE THE CONVERSATION



idbinvest.org

 idbinvest.org/linkedin

 idbinvest.org/twitter

 idbinvest.org/facebook

 idbinvest.org/blog

Copyright © 2023 Inter-American Investment Corporation (IIC).

