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EVOLUTION OF FINTECHS IN ARGENTINA

Dimensión Empresarial

EVOLUTION OF FINTECHS IN ARGENTINA
EVOLUCIÓN DE FINTECHS EN ARGENTINA
EVOLUÇÃO DOS FINTECHS NA ARGENTINA

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Abstract

The purpose of this paper is to analyze the fintech industry in Argentina. The methodology adopts an exploratory approach based on Actor-Network theory. Secondary data sources and the use of three case studies support information gathering. Results show that there are more than one hundred fintechs. Cases reveal that a key fintechs' competitive advantage is to offer a service much more agile, simple, and in less time than a brick-and-mortar bank. Practical insights on how to interact with other actors in a business ecosystem and build on network effects to capture value are discussed. The regulatory framework is still on making what poses a major challenge for enterprises.
Keywords: Fintech, financial services, digital transformation, Actor-Network-theory, Argentina.

Resumen

El objetivo de este trabajo es analizar la industria del Fintech en Argentina. La metodología adopta un enfoque exploratorio basado en la teoría Actor-Red. Se utilizan datos secundarios y estudio de tres casos para dar apoyo a la recopilación de datos. Los resultados muestran que existen más de cien fintechs. Los casos revelan que la ventaja competitiva clave es ofrecer un servicio mucho más ágil, simple y en menos tiempo que un banco tradicional. Se presentan hallazgos prácticos sobre cómo construir sobre efectos red para capturar valor. El marco regulatorio está en desarrollo lo cual representa un desafío importante para las empresas.
Palabras clave: Fintech, servicios financieros, transformación digital, teoría Actor-Red, Argentina.

Resumo

O objetivo deste artigo é analisar a indústria de fintech na Argentina. A metodologia adota uma abordagem exploratória baseada na teoria Ator-Rede. Fontes de dados secundárias e o uso de três estudos de caso suportam a coleta de informações. Os resultados mostram que existem mais de cem fintechs. Os casos revelam que a principal vantagem competitiva da fintech é oferecer um serviço muito mais ágil, simples e em menos tempo do que um banco tradicional. Discutem-se idéias práticas sobre como criar efeitos de rede para capturar valor. A estrutura regulatória ainda está em desenvolvimento, o que representa um grande desafio para as empresas.
Palavras chave: Fintech, serviços financeiros, transformação digital, teoria do ator-rede, Argentina.

INTRODUCTION

For more than a decade fintech start-ups have displaced traditional financial institutions with unique and personalized services. Several factors and circumstances have contributed to this phenomenon. The financial crisis of 2008 has had two major impacts in terms of deterioration of public perception of banks and human capital (Arner, Barberis, & Buckley, 2016). Many financial professionals lost their jobs and found in the Fintech 3.0 a place in which to apply their skills (Esposito & Tse, 2014) (as cited in (Arner, Barberis, & Buckley, 2016)). At the same time, in a world of network effects, user interactions are the new sources of competitive advantage and market dominance (Van Alstyne, Parker, & Choudary, 2016). This has given rise to platform business models (e.g. crowdfunding) taking advantage of network-induced economies of scale (McAfee & Brynjolfsson, 2017). The virtual community builds network effects, that is, users creating value for other users. The maturity of technologies such as data analytics, machine learning, and mobile devices, and the increasing experience in defining use cases based on the combined use of these technologies contributes to start-ups being able to define solutions aware of customer needs: cost reduction, personalization, inclusion, and convenience. Thus, new business models emerge in the financial sector, proposed by start-ups, and adopted by traditional banks that do not want to lose market share. Moreover, companies outside the financial industry, such as digital giants (e.g. Google, Amazon, Facebook, and Apple) or retailers, provide financial solutions that enshrine them as a new source of competitors.

The rapid emergence of FinTech ecosystems raises a variety of questions ranging from the redefinition of the company's relationships with its suppliers, customers, competition, and the government; the emergence of new business models; open innovation; the role of complementary products; regulations, among many others. Because it is an emergent sector, there are no recipes to guarantee successful results, let alone the starting points of each country. In this work, we aim to analyze the fintech industry in the context of Argentina. The specific goals are (a) to provide a view on fintech evolution from regulators to understand how regulations are being adapted; and (b) describe insights into start-ups and how they respond into their business models to operate and realize opportunities in a platform-mediated setting.

To respond to the goals of this paper, the research methodology is based on both on Actor-Network theory and an in-depth case study as explained in section 3. Section 2 depicts a brief introduction of relevant concepts. Section 4 is devoted to present the cases and the evolution of fintech in Argentina. The discussion section explores the possible implications of the research. Section 5 summarizes contributions.

MATERIAL AND METHODS

Exploratory research is adopted to examine the phenomenon of FinTech. The translation model proposed by Actor-network theory (ANT) guides the description of the FinTech change. Shim and Shin (2016) observe that ANT provides a powerful tool to reveal the complexities and dynamics of a technology-driven industry.

The Actor-network theory is rooted in science and technology research and focuses on how networks form, hold together, and fall apart. ANT offers a vocabulary for interpreting and describing the adoption of a technology based on the connection (network) between human and non-human entities (actors), providing a social and technical description of the process of ordinance and associations of heterogeneous elements (McBride, 2003).

ANT regards a network as a dynamic process in which technologies, financial resources, institutions, and regulations act together to produce an innovation. This process is called "translation". In translation, one group of actors may try to advance certain agendas, mobilize resources, and translate the interests of others in hopes of engaging them (Jarrahi & Sawyer,

2019). There are four moments in this process. "Problematization" identifies the moment when a problem is defined, and a particular solution is presented in a manner that enables other actors to recognize it as their problem. "Interessement" marks the movements of this initial group to line up the solution defined with the main actor's interests. "Enrolment" is characterized by the stages of consensus built up among the diverse actors around the negotiated solution. Some interested actors begin to participate in finding a solution to the problem (Iyamu, Nehemia-Maletzky, & Shaanika, 2018). "Mobilization" comprehends the articulation needed to define an implementation model, considering the means to make it happen. Mobilization includes a set of methods used by the focal actor to ensure that all actors have their representatives or spokespersons act according to the agreement and not betray the interest of the initiator (Gunawong & Gao, 2010). If the actor-network is mobilized, it may have stability as an actor-network.

Also, a case study approach (Yin, 1989), (Eisenhardt, 1989), (Eisenhardt & Graebner, 2007) is used because as Saunders et al. (2007) note, provided the cases are rich, they reveal big narratives and details of causal relationships between agents and with different levels of the environment. The analysis is based on secondary sources of information. These methodologies are appropriate for exploratory research as indicated by Gregor (2006). Wilobank S.A. (Wilobank in what follows) (Wilobank S.A., 2019) is a suitable case study since it is the first digital bank in Argentina; Wilobank's business focuses on investments, payments and transfers, and loans that represent more than the 50% of services provided in the country according to Accenture (2018). Mercado Pago is a payment processing service that started operating on Mercado Libre platform. Mercado Libre Inc. is the largest online auction site in Latin America that engages in the provision of an online commerce platform with a focus on e-commerce. The third case is Crowdium which business model is crowdfunding that essentially follows the rules of the platform business.

The results of the previous stages will enable us to derive different aspects that define the level of transformation of FinTech at the national level.

RESULTS

Evolution of FinTechs in Argentina

According to the biannual Fintech report published by KPMG International (2019), the global investment in Fintech companies hit $111,8 billion with 2 196 deals. Investment in the Americas reached $54,5 billion, $34,2 billion in Europe and $22, 7 billion in Asia. The top companies are Refinitiv from USA ($17 billion), Ant Financial from China ($14 billion), and Worldpay from UK ($12,9 billion). FinReg refers to the use of technology to facilitate the delivery of regulatory requirements. Regarding the Latin American region, Nubank and PagSegaro from Brazil had reached unicorn status (KPMG International, 2019).

In Argentina, these companies are leveraged in the low levels of access to credit and in the broad field of which they have to promote financial education and encourage inclusion (Accenture, 2018). Companies have a wide range of services and high billing indices in established companies, although low availability of financing and investment capacity by their size and turnover. According to a report elaborated by Accenture (2018), 133 Fintech are operating in Argentina and most are national. Predominant business models resulted in licensing fees and other digital services (17%); interest on financing (13%); brokerage fees and commissions (12%); fees for as-a-service solutions (25%); commissions for use of e-commerce platform and/or marketplace (33%). Fintechs offer their services through mobile apps and the fixed Internet penetration rate per 100 households grew by 3%, and mobile communications penetration is 128.91 accesses per 100 inhabitants by April-June 2019 (almost 2% decline from October-December 2018) (Ente Nacional de Comunicaciones, 2019).

As mentioned before, Fintechs target to a diversified, low-income segment. The Inter-American Development Bank defines financial inclusion as access to quality financial services (credit, savings, insurance and payment, and transfer services), and its use by households and businesses, under a framework of financial stability for the system and users (Olloqui, Andrade, & Herrera, 2015). The report

on Fintech ecosystems in Argentina (Accenture, 2018) indicates three fundamental barriers to inclusion, namely: traditional institutions do not reach the entire territory and do not offer solutions to the entire population; scoring mechanisms (not much flexible) determine access to financial services; and the cost of providing the services. While increasing cell phone penetration may lead to overcoming barriers, this depends on the hypothesis that cell phones are used to access financial services. Fintechs included in the report prepare the credit scoring taking into account payment history, credits over time, total debt, and other factors based on user behavior (Accenture, 2018). Inclusion is also reflected in insurance services (insurance to rural producers in areas where supply is often limited), and in financial education.

Regarding collaboration, Fintechs consider digital natives (e.g. Google, Microsoft, AWS), other Fintech companies, banks and insurers, government, educational institutions, and accelerators as their largest collaborative partners. The report identifies the following categories: crowdfunding (6%), insurtech (8%), investments (11%), payments and transfers (20%), blockchain and cryto (8%), Fintech B2B services (20%), informatics security (3%) and loans (24%) (Accenture, 2018).

The loan category is one of the most developed. Their business models rely on peer-to-peer or marketplace to obtain funds or market financing and avoid using their capital. Loans with their capital have rates similar to or higher than those of the market to offset the increased risk they assume (Accenture, 2018). The second most developed category is payments and transfers that include services such as virtual wallets, or international transfers. Fintech B2B services based on a software-as-a-service model include vendor payments, and sales management systems (Accenture, 2018). Companies that make up the collective financing model digitally bring together individuals and companies to raise funds to be allocated to a given project (crowdlending platforms).

Since 2016, we observe several events, regulations, the appearance of fintech start-ups in a somewhat isolated way that make it difficult to define the translation stages of ANT. To understand the evolution of fintechs, we define the following moments.

1. *Problematization* (before 2017). The creation of the innovation hub by the central bank of Argentina (Banco Central de la República Argentina or BCRA). BCRA is the focal actor who states the problem and creates a collaborative environment to promote a modern and efficient financial system. Hubs contribute to the dialogue among different participants. Before that, in 2004, Mercado Pago started operating on Mercado Libre platform. But there was not a well-defined regulation framework. One of the most relevant regulations is related to e-commerce transactions. In 2011, AFIP states that Mercado Libre should charge VAT (value-added tax) on new product sales. In 2016, the BCRA creates an innovation hub for supporting the application of technologies on financial services.

2. *Interessement* (2017- mid-2018). The Argentinian Chamber of Fintech was settled in 2017 by 13 firms (123 Seguros, Afluenta, Motormax, Increased Card, Invertironline.com, Primary Ventures, Invoinet, Mercado Libre, Moni, Bitex, Poincenot, VU Security and Western Union bank) (Esparragoza, 2017). The chamber has been growing since then and by 2020 there are 29 registered FinTech start-ups, 22 full FinTechs, and 13 partners (Cámara Argentina de FinTech, 2019). The Argentinian Chamber of Fintech plays a key role in building relationships between actors. As stated in its web site the chamber has as its purpose to lead the transformation process in the financial industry. The chamber organizes the Argentinian Fintech Forum where the main players are together to interchange visions and opportunities and creating a common purpose and new connections (Cámara Argentina de Fintech, 2020). In addition, through its website and social media disseminates news, webinars, and good practices. On collaboration with universities, they offer executive programs exploring emerging fintech trends including both financial and technological topics.

3. *Enrolment* (mid-2018, now). The innovation hub created in 2016 is currently working on three axes: payment infrastructure, technology, and transversal systems, and alternative credit and saving channels (BCRA, 2019a), (The Standard CIO, 2019). The BCRA incorporates as regulated subjects only FinTechs with activities of financial

intermediation or other activities regulated by the BCRA. The legal and regulatory framework of the national payment system arises from the provisions of the BCRA Organic Charter and the law of financial institutions; the specific rules on payment instruments; and the regulations issued by the BCRA. Also, there are so-called "CIMPRA Bulletins" that constitute the agreements reached based on consensus within the Interbank Commission of Payment. CIMPRA bulletins act as a persuasive force or recommendation (BCRA, 2019b). More recently, the BCRA defines "Payment Services Providers" as any legal person that performs at least one function within the retailer payment system. All funds should be deposited insight accounts of national financial entities. At the same time, funds can be transferred to common investment funds within the country (BCRA, 2020a), (BCRA, 2020b).

The evolution of the actor-network is still taking shape and the last regulation dated 30th January 2020. Hence, it is sensible to state that the actor-network is not stable and a translation to a "Mobilization" phase has not occurred.

Case Wilobank

Wilobank is the first digital bank in Argentina (Wilobank S.A., 2019a). It was settled in July of 2018 and has more than 25.000 users. With no branches, it offers customers the ability to perform 24-hour phone operations, providing omnichannel and personalized attention. Wilobank is part of Corporación América Holding which developed diverse enterprises in different parts of the world. Wilobank is a financial institution regulated by Law No. 21.526 on Financial Institutions and therefore its

activity is regulated by the central bank of Argentina (BCRA) (Wilobank S.A., 2019b). Besides, considering the social typology adopted it is regulated by Law No. 19.550 on Commercial Companies.

The company targets the unbanked consumer market. By April of 2019, 50% of its customers are not part of the banking system (RoadShow, 2019). To become a customer, a person only needs to register using an app and request a saving account. To confirm that customers are who they claim to be, Wilobank uses a combination of motion-based biometrics and smartphone-based Know Your Customer review (KYC). KYC reviews prevent money laundering, fraud, and improve customer authentication in the financial services sector.

Reloadable credit cards are issued to consumers that do not qualify for credit cards. Initially, the credit limit is low, but it increases according to the credit record of the consumer. It allows developing a historic credit record of the consumer. Also, young people under 18 years may request an international debit or credit card provided an adult has a saving account and is who sets the daily extraction limit (Infobae, 2019b), (La Nación, 2019).

Loans to small enterprises are provided in partnership with Garantizar – a financial institution with more than 20 years of experience in the sector of SMEs financing (Infobae, 2019a).

To operate fully online, Indra is the strategic partner. Indra's Minsait business unit provides the Onesait Banking platform (Goldbergber, 2019). On the other hand, the aforementioned platform allows interaction with other partners that are necessary for the operation of a digital bank (López, 2018).

Table 1. Development of actor networks in Argentina's fintech industry

	Problematization (before 2017)	Interessement (2017-mid-2018)	Enrolment (mid-2018, now)
Focal actor(s)	Government (BCRA)	Government and Cámara Argentina del Fintech	Government (BCRA, ARBA, AFIP, CNV)

	Problematization (before 2017)	Interessement (2017-mid-2018)	Enrolment (mid-2018, now)
Actors	1. BCRA. 2. Financial institutions. 3. ATMs. 4. Credit card administrators. 5. Internet infrastructure. 6. Mercado Pago[1], Crowdium[3].	1. Cámara Argentina del Fintech. 2. Fintech firms.	1. Fintech firms (e.g. Wilobank[2]). 2. Financial institutions.
Policy /regulations	1. Innovation hub (2016). 2. Innovation programs (since 2017)		1. Online identity validation (BCRA, 2018b). 2. BCRA regulates QR payments (BCRA, 2018a). 3. CNV regulates crowdfunding platforms (Comisión Nacional de Valores, 2017). 4. ARBA withholds gross income tax on fintechs (ARBA, 2019), (iProfesional, 2019). 5. BCRA regulates Payment Service Providers (BCRA, 2020a), (BCRA, 2020b).
Government goals	The BCRA creates a friendly environment for innovation and supporting the application of new technologies on financial services.		Government (through many agencies such as AFIP, ARBA) aims to decrease informal business and at the same time provide an agile fiscal procedure (iProfesional, 2019).

1Mercado Pago started operating in 2004 only on Mercado Libre platform. 2Settled in 2018. 3Settled in 2015.
Source: own elaboration.

Regarding information technology infrastructure, the local firm IPlan is the data center partner (housing and hosting). Considering that the BCRA requires that transactions should be made on its equipment, Wilobank invested US$ 22 million while IPlan made a $1 million investment in the purchase of servers.

For the digital onboarding process, Wilobank partnered with VU Security - an Argentinian company specializing in security solutions - that uses biometric technology based on machine learning. Behavioral analysis and information belonging from different sources are also used to validate the digital identity of the future customer (FinTech Americas, 2019).

Another key provider is First Data, a licensee for Mastercard's Southern Cone, whose function is to be the data processing platform. The company Atento provides a Customer Relationship Management system, GLM provides the Enterprise Resource Planning system (GLM, 2019), (Goldbergber, 2019), and COA is a system integrator solution provider (Francos, 2017).

Tables 2 summarizes the services and products offered by Wilobank. All services are accessed through Wilobank app and there are no commission costs (only in the case of debit cards, and international ATM extraction charge). In summary, Wilobank is a financial entity regulated by BCRA which differentiates from traditional banks in that (a) its fully digital; (b) targets to unbanked citizens; (c) credit scoring is based on data analytics. Incumbent bank's credit scoring is based on BCRA debtors' reports.

Table 2. Description of Wilobank's solutions.

Name	Market
Saving account (in Argentinian pesos and US dollars)	Unbanked and banked consumers
Debit card	Unbanked consumers
Credit card	Unbanked consumers
Personal loans	Unbanked consumers
International reloadable credit card	Consumers that do not qualify for a credit card
Debit card for young people	Consumers under 18 years old
Salary account	Banked consumers
Fixed deposits	Banked consumers
Punto efectivo (cash point)	Unbanked consumers
CashPlus	Debit or credit card consumers
DEBIN	Saving account consumers
Loans for enterprises	Small enterprises and entrepreneurs (through Garantizar)
Pagos Link (Link payments)	Banked consumers
Automatic debit	Banked consumers

Source: own elaboration based on data published in the company's web site.

Table 3. Wilobank ecosystem

Actor	Role
Minsait (Indra unit)	Software partner supporting most IT projects.
IPlan	Technology infrastructure partner (connectivity between data centers).
VU Security	Onboarding security partner.
Atento	CRM partner.
GLM	Accountant ERP partner.
First Data	Transaction platform partner.
COA	Software integrator.
Link Pagos	Platform mediator. Integrates saving account with invoice payment.
RapiPago	Payment collectors (customer deposits money using RapiPago).
Mastercard	Debit and credit card administrator. CashPlus service.
Supermarkets	CashPlus provider. Supermarkets reduce money transport costs.
Link, Banelco	ATM network provider.
Apple iOS, Android OS	App store provider.
Garantizar	Guarantee for enterprises (investor).
Veraz S.A.	Debtors record provider.
Consumers	Customers.
Government	

Source: own elaboration.

Case Mercado Pago

Mercado Pago is a financial service provider that started operating in 2004 on Mercado Libre platform. Mercado Pago aims at facilitating transactions on Mercado Libre by providing a mechanism that allowed the users to securely, easily, and quickly send and receive payments online (Johnson, Mekikian, & Barnett, 2020). Mercado Libre, Inc. provides an online commerce platform with a focus on e-commerce and its related services. It is the largest online auction site in Latin America. The firm provides users a mechanism for buying, selling, and paying as well as collecting, generating leads, and comparing lists through e-commerce transactions. Mercado Libre, founded by Marcos Galperín in 1999 in Buenos Aires operates in twelve Latin American countries and the first quarter of 2019 enabled the sale of more than 82,8 million items (Cronista, 2019). Nasdaq market stock valuation exceeds $12.7 billion.

Mercado Libre expanded Mercado Pago into a stand-alone, off-platform payment processing service in Brazil (2015) and Argentina (2016). This expansion into the financial sector is motivated by the opportunity posed by an inefficient payment system for online transactions. As described by Johnson et al. (2020) payments of online purchases were handled via a voucher or ticket system, cash payments were made to a local physical agent who would then convert the transaction into an electronic payment. The new service involved many solutions such as mobile point of sale, Botón de Pago, and a digital wallet. In response to the need to credit access of the unbanked population, Mercado Pago created other financial solutions like savings and investment accounts, and loans to Mercado Libre's buyers. Table 4 details Mercado Pago solutions offered through its platform. By 2019, the fact that off-platform transactions surpass on-platform ones in terms of total volume highlights Mercado Pago's role as a key player in the financial sector.

Table 4. Mercado Pago solutions.

Name	Market
QR payment system	Merchants with little technology knowledge.
Mercado Pago Point (payment system)	Merchants with little technology knowledge.
On line payment solutions (Botón de pago, Smart checkout, Mobile checkout, Web tokenize checkout)	Merchants with little technology knowledge (Botón de pago), and merchants with technology knowledge (Smart checkout, Mobile checkout, Web tokenize checkout).
Social media payment system	Social media eCommerce.
Prepaid credit card (Mastercard)	Unbanked and banked consumers (RoadShow, 2019).
Mercado Credito (loans)	Merchants registered in Mercado Pago surpassing minimum sales volume and a good credit record.
Digital wallet payment	Banked and unbanked customers. Payments per transaction oversee the seller (Castiglione, 2019).
Mercado Fondo (common investment fund)	Registered users on Mercado Pago with funds surplus can invest their stored balance.

Source: own elaboration based on data published in the company's web site.

Table 5. Mercado Pago ecosystem.

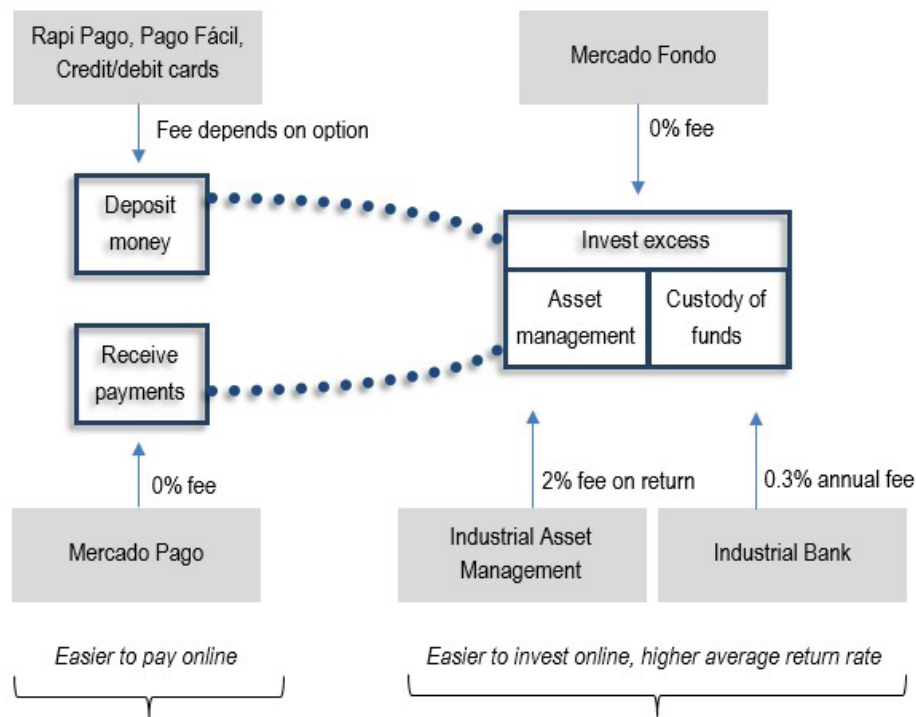| Actor	Role
Industrial Asset Management	Common Investment Funds manager. Receives 2% over funds' returns.
Banco Industrial	Funds custody. Annual fee of 0.3%.
Banco Santander Rio S.A, Citibank Argentina, Banco Hipotecario, ICBC, Banco Nación, Banco Patagonia, Banco Provincia, among other banks	Custody of funds generated by transactions. Banks receive an account maintenance fee.
Mastercard	Prepaid cards provider.
Pago Fácil, RapiPago, Link, Cobro Express, Banelco	Digital wallet payment collectors.

Stores	Affiliated stores are the acceptors of payments.
Buyers	Consumers, business.

Figure 1 depicts the Customer's Value Chain based on Mercado Fondo service. The service is available for registered users on Mercado Pago. Users may deposit money using digital wallet payment collectors and/or have a balance surplus after receiving payments. Users may then decide to invest excess. Investments are performed through Mercado Fondo. The investment activity involves asset management and the custody of funds that oversee other companies. This is transparent for the user although it generates costs. "Receive payments" is a decoupled activity that is also present in Mercado Libre's customer value chain.

Figure 1. Customer's Value Chain based on Mercado Fondo.

Case Crowdium

This paper focus is the analysis of platform-based business models in the financial sector. In this sense, crowdfunding essentially follows the rules of the platform business. Crowdfunding is the practice of raising many small amounts of money from many people, typically via the Internet. According to the World Bank, there are two main categories of crowdfunding: donation or investing. The donation crowdfunding includes donation-based and reward-based crowdfunding. The investing crowdfunding includes equity-based, lending-based, and royalty-based crowdfunding.

Crowdium is the first collaborative real estate platform in Argentina and registered as a financial fiduciary in the National Commission of Stock Market (Comisión Nacional de Valores, 2020). The company offers real estate investment opportunities to small and medium savers (banked) (Crowdium, 2020).

Crowdium chooses from several top real estate projects and suggests users where to invest. CFA Compañía Fiduciaria Americana S.A. develops an escrow to allow access to users and manages funds deposited in a corporate account at a bank. After making the investment and transferring the funds, the user acquires a portion of the escrow. When all funds are reached among all users, Crowdium orders CFA to purchase the selected property. From this point on, each user owns a percentage of the property. CFA manages the asset for the specified period, by the end of the term sells the property, and distributes the entire capital generated among the users.

Table 6. Crowdium ecosystem.

Actor	Role
Investors	Funds providers.
Compañía Fiduciaria Americana S.A.	Fiduciary administrator.
Banco Galicia S.A.	Custody of investors' funds.
Tanoira Cassange	Legal advice.
ARG Capital	Financial advice.
Real estate project developers	Create real estate projects.
Real estate brokers	Intermediary in selling and rental of properties.
National Commission of Stock	Responsible for the promotion, supervision, and control of the stock market in Argentina.

Source: own elaboration.

DISCUSSION

The research work illustrates the presence of different fintech solutions. Wilobank is a bank registered as such in the BCRA but unlike traditional banks, (a) it was born digital, (b) operations are carried out completely online thanks to cutting-edge technologies savviness, and (c) targets unbanked consumers. Wilobank is a local referent in the implementation of biometric identification technologies and the use of machine learning for the development of credit scoring. Another feature that sets it apart from incumbent banks is that loans are granted in partnership with a financial company. One of the competitive advantages of Wilobank is to offer a service much more agile, simple, and in less time than a brick-and-mortar bank. Mercado Pago illustrates how a platform in the retail sector, thanks to its reliable technological capabilities (Teece, Pisano, & Shuen, 1997) and attentive to the need for a convenient payment system, develops the first electronic payment solution in the region. Mercado Libre adds credit and investment services and thus installs itself as a strong competitor for traditional banks in the investment service and provision of loans. The case can be analyzed from the perspective of the customer's value chain decoupling (proposed by Teixeira) and observe how Mercado Libre implements a payment service that is adopted outside the platform because it is very easy for both consumers and issuers. Mercado Pago was first devised as a complementary service of Mercado Libre retail platform and later extends to other e-commerce sites. Crowdium shows how to use network effects to implement a robust crowdfunding solution regulated by the CNV. While these cases are not intended to be exhaustive in the scope of the fintech sector in Argentina, they allow us to appreciate the maturity and diversity of solutions.

The growth of fintech, its positioning as competitors for established and regulated financial players, contributes to the government's work in regulating these activities. There are no regulations regarding the operation of a sandbox, i.e. it is not comparable to highly regulated sandboxes such as in the United Kingdom. On the other hand, the BCRA regulates the operation of payment service providers. These regulations protect users and at the same time have an impact on the transfer of funds abroad, which appears to be motivated by a monetary policy criterion rather than consumer risks. Incumbent banks-driven regulations that require everyone who provides financial services to conform to the same regulations reflect a market dynamic that still does not appear to have stabilized.

Findings may be important for practice. Firms should develop technological capabilities —including data analytics— through new partnerships with digital providers; invest in creating solutions that add value to customers; and learn to operate in network-induced economies of scale.

CONCLUSIONS

This work aims to show the evolution of fintech in Argentina. The research attempts to pass through purely local aspects to technological, market, or regulatory issues relevant in any context and thus provide insights germane to a wider scope. The research contributes to fintech literature in terms of describing its evolution in a Latin American country where fintechs have more potential than is currently being realized. Based on the case studies we were able to infer key organizational capabilities required to grow in the fintech ecosystem. Unlike the United States, the rise of fintechs was not the result of start-ups from unemployed finance experts, but more isolated initiatives targeting the non-banked consumer market. The most prominent proposal, the Mercado Pago payment system, was developed in 2004 – long before the explosion of fintech in the world – and in response to the inefficiency of the payment system for e-commerce transactions. The solution - initially defined as a complementary product - evolves into an independent business unit adopted in several Latin American countries. Its success is due to the technological capabilities and market knowledge of Mercado Libre. Mercado Pago benefits from the large Mercado Libre platform user base, and hence consumers appreciate its ease of use and then adopt it on any other eCommerce site. As a result, Mercado Libre develops a service adopted even by competitors. Mercado Libre develops the financial service Mercado Crédito that uses its scoring model based on the user's sales/purchase history in Mercado Pago. The expansion of the loan service may be limited by government regulations. On the one hand, regulations aim to reduce users' risks but a restriction on international funds transfer makes it difficult to provide a service expected in any payment system.

There is a growth in the use of technologies in financial services within incumbent banks, but the most innovative case comes from a digitally native bank. The latter highlights the challenge of traditional banks to digitize their operations and to conceptualize a business model based on the benefits of emerging technologies such as mobile, big data, or machine learning.

Finally, ANT based analysis allowed for the ordering and consistency of aisled events and shaping the evolution of fintechs. Globally, considering all stakeholders: consumers, small businesses, traditional banks, and the government, the dynamics are still on the making (mobilization phase) illustrating that the rules of the game are not yet consolidated.

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