FINTECH:

Privacy challenges in the data economy

por los Derechos Civiles

Asociación por los Derechos Civiles

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Fintech

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Table of contents

I. Introduction

Speaking about the "revolution of the financial sector" is no easy task in a country that is famous for its economic ups and downs, the devaluation of the currency, inflation and fiscal burden. However, there is a new wave of ventures that have risen to the challenge. What's their sales pitch? Paving the way for inclusion and financial literacy.

It is therefore worth analyzing in detail the narratives these new solutions have promoted, especially when they refer to goals that seem noble on the surface, taking into account that we are faced with an international arena where the financial sector is trying to establish an agenda based on the exploitation of personal data as the new economic paradigm.

This report aims to raise questions, from civil society's viewpoint, regarding the work done by the fintech sector.

Fintech or "financial technology" refers to the use or application of technology with the view of improving the delivery of services in the financial sector.

The business ventures that have emerged in recent years, ready to burst into the traditional Argentine financial market, are focused on three key axes: access to credits, the promotion of financial literacy and financial inclusion.

It has been more than five years since fintech or financial technology appeared for the first time. If we look at the history of financial services and its milestones, we can see that technology gained importance in this sector, as well as in other spheres of society, by the end of the 20th century. The arrival of automated teller machines or ATMs at the end of the 60s and later the implementation of home banking, enabled by the development of the internet, became a landmark in the way people interacted with banks and the various financial service providers.

So, what changed in the following years for fintechs to call themselves the revolution of the financial industry?

There are three remarkable aspects that help us understand the bases of a business ecosystem entirely focused on the digital world:

1. The ubiquity of technology and the reduction of costs facilitating access to consumption products, such as smartphones and tablets, with app markets that allow developing specific software with the capacity to reach thousands or millions of people.

2. The increasing worldwide access to the internet, which has made it possible for people to be online for the most part of their day and access any online service instantly.

3. The development of new business models based on the generation, collection and analysis of personal data.

When we speak of the fintech sector, we tend to think of a homogenous group of companies sharing the same goals, but in fact these are multiple ventures that specialize in a wide diversity of fields. In the Argentine market, fintech companies can be classified into eight major sectors:

- collective financing;
- insuretech (insurance services);
- investments;
- payments and transfers;
- blockchain and cryptocoins;
- fintech services;
- information security;
- loans.

According to a recent study, there are at least 133 companies working within the Argentine fintech ecosystem, most of which are classified as small and medium-sized companies (*pyme*, in Spanish). Based on this data, by the end of 2018 Argentina was third in Latin America in terms of the number of companies specializing in financial technology, following Mexico and Brazil.[1] Most of the fintech companies located in the country plan on expanding regionally, not only as a way to counterbalance the economic situation, but also because the very same market is limited for their business prospects.

In less than five years, this sector saw an exponential growth. There were many entrepreneurs in the country developing technology in the financial field, pursuing somewhat similar goals in a disorganized fashion and they were doing so even before the term fintech became as popular as it is

today. Under these circumstances, a group made up of the leading businesses in the sector decided to join forces.

By the end of 2017, a group of entrepreneurs in the financial-technological field founded the Argentine Fintech Chamber[2] with the purpose of classifying and grouping companies based on their areas of specialty.

The Chamber works in three areas. Firstly, it represents the fintech's private sector, aiming to introduce the different actors, coordinate actions, share best practices and establish protocols. Secondly, it works with the public sector in order to agree on an agenda and build bridges with state institutions such as the Central Bank of the Argentine Republic (BCRA), the Federal Administration of Public Revenue (AFIP) and the National Superintendency of Insurance (SSN). Finally, the Chamber works in the academy to improve university training courses so as to meet the needs of the financial technology sector and also strives to introduce itself to the student world.

One of the most heated debates in the sector, where consensus was not an easy task, has to do with regulation. Not so much as to whether new rules should be imposed or not, but how it should be done.

In accordance with the current law, the Central Back has no regulatory power over all the fintech companies just because they provide financial services. Based on the Charter of the BCRA and the Law of Financial Entities, the Central Bank does exert power over those companies involved in financial intermediation[3] or other activities supervised by the Bank.

Despite this situation, instead of implementing regulations straightaway, by mid-2016 the BCRA began a dialogue to achieve the cooperation of main players of the financial sector in order to lay the foundations for the development of the different ventures. Some of these players included the most traditional institutions, major banks and also the emerging fintech SMEs.

This is how the Financial Innovation Work Team[4] was born. The initiative is made up of three working groups that aim to develop a policy proposal to be presented before the BCRA. The groups' areas of specialty are: payment methods and infrastructure; technologies and transversal systems; and alternative means of credit and savings.

Since its inception, the Work Team has been the main bridge between the private sector and the State with respect to financial technologies, making it possible to implement various policies: the interoperability between digital wallets and bank accounts; improved functions and uses of the payment method Immediate Debit (DEBIN);[5] implementation of Quick Response codes (QR codes), which helped reach a standard for mobile payments; and finally, it hosted the pilot test of the Digital Identity System (SID)[6] with the National Registry of Persons (RENAPER) for the verification of users by means of face recognition.

At the beginning of 2019, the BCRA's Board of Directors formalized this initiative, which is carried out under the scope of the Financial Regulations Deputy General Management Office and the Means of Payment Deputy General Management Office, by allocating resources from the Managements of Financial Regulations, Financial Development and Payment Systems in order to facilitate coordination efforts.[7]

II. Technology in the financial sector

As mentioned in the previous section, the main goals pursued by fintechs are focused on promoting financial inclusion and financial literacy, so people who are potential clients of their services become acquainted with this sector.

Based on data provided by the Chamber, almost half of the companies in the sector target their business models at end users. Within this group, 65 per cent of the companies have users with a monthly income below 50 thousand pesos, most of whom are young adults between 25 and 40 years.[8] The World Bank informed that in 2017 only 49 per cent of people in Argentina were banked or semi-banked.[9]

According to a recent report issued by the Chamber, there are three concrete obstacles to the inclusion of people outside the traditional market of financial services. First, there is the geographical aspect: providers of traditional services do not cater for the entire population living in different parts of the Argentine territory. Second, service requirements ultimately depend on the credit scoring assigned to each person. It is this scoring which generally determines access to the different financial services. Finally, there is the cost of the services provided.

Beyond the goals of financial inclusion and literacy, we can pinpoint two underlying narratives which drive the technological advances and developments promoted by the sector.

In the first place, there is the identity of individuals, comprised of different facets which make up a unique profile, where "financial identity"[10] and "digital identity"[11] converge. Secondly, there is a narrative regarding the increasing use of different personal data by systems to judge the status of individuals who want to access financial services. These processes are increasingly based upon information which was not designed, created or collected for that purpose. As a result, people are unaware of the repercussions that said information may bring about.

It is worth pointing out that, generally, financial inclusion targets the most vulnerable sectors, in terms of social and economic background. Hence, these practices should be carried out cautiously in order to avoid reproducing a status quo that discriminates against groups of people and turns

certain rights, such as the right to privacy and data protection, in luxuries only accessible to those who enjoy a given economic status.

In the Argentine context, the main revenue models implemented by fintechs focus on licensing fees, financing interests, fees and commission-based transactions, fees for service solutions and commissions for the use of ecommerce platforms.[12]

In Argentina, most fintech ventures still depend on traditional channels for the assessment and credit scoring of users, mainly the Debtor's Database of the BCRA and the reports issued by companies such as Veraz (a subsidiary of Equifax) and NOSIS. Based on the study of the ecosystem published by the Chamber, "the most relevant factors used by the surveyed Fintechs were the payment history, the credit history over time and the total debt, as well as the studies on users' behavior". The study also highlighted that some fintechs use mostly public information. Companies explain that this "allows them to develop more flexible risk policies and get to know the client better".[13]

However, some fintechs have begun to explore the use of alternative methods for credit analyses. One of them is Findo,[14] which is developing a new model to measure a person's credit scoring based on information obtained from various sources, such as their contact networks, downloaded applications, call history, their geolocation and social networks they use. All this data combined is processed by an algorithm[15] that assesses their interactions with other persons from their social and professional circles, along with the remaining information, in order to calculate whether the individual may fail to meet their debt obligations.[16]

Even though the loan sector is but only one of the multiple services offered by fintech companies, the risk that systems are built based on the exploitation of personal data still persists for almost the entire sector.

Undoubtedly, the data users create when using a service or application they download on their phones is utilized to create a unique profile of the individual which is then used by the same company for their own interests or marketed to third parties (as data brokers do).

As one of the main multinational companies, Lenddo has strived to perfect and promote the use of alternative methods for credit scoring. At the beginning of 2011, with its main office in Singapore, Lenddo started offe-

ring loans in the Philippines. In 2015, the company began to provide credit scoring and identity verification services to other financial institutions and stopped offering loans by itself.[17]

The Lenddo model focuses on the use of various nontraditional sources of information; i.e. data which former credit scoring services had not previously used. Some of the traditional information used by credit bureaus for credit scoring includes, for example, whether a person pays their credit card regularly; whether they pay their credit balance in full; the types of credits they obtain and the length of their credit history.

To access non-traditional information, Lenddo offers an application program interface (API) for developers to incorporate the services provided by the firm into their own application. Some of the information they can collect from devices and process using the API includes: contact lists, SMS, call history, user's location, user's browsing history, user's installed apps, calendar events, phone brand and model.[18]

On top of the data that can be collected from devices, other kinds of data can also be collected. The same is possible with account activities in social networks such as Twitter, Facebook and LinkedIn; browsing history in Google or Yahoo, e-commerce transactions and even form filling analytics.[19]

All this data combined from traditional and non-traditional sources is then processed by Lenddo's algorithm to compute a credit score that will be used to decide whether it is convenient to provide the service to the applicant based on their chances of defaulting on their obligations.

Since 2012, Lenddo has begun to expand in Latin America by opening regional offices in Colombia. Currently, the company also works actively in Mexico, Peru and Brazil.[20]

As previously mentioned, the analysis of nontraditional data, in particular data obtained from mobile devices and contents created in social networks, poses new challenges and potential obstacles to the exercise and enjoyment of the right to privacy.

Users' actions in the digital world have consequences that they cannot foresee and which have a lingering effect, thus affecting other aspects of people's lives.

When analyzing the privacy impact that the use of information published on social networks may pose, not only should we consider the actual content of those tweets or posts, but also the metadata, which, on some occasions, tends to be more revealing than what is said in the actual messages.[21]

The time of the postings can reveal information regarding health; for example, whether the user suffers from insomnia and whether their insomnia results from stress. User's location can be yet more revealing, as it allows analyzing average logins in the neighborhood they are located and the websites visited.[22] Based on the language used for postings and the interface of the service, it is also possible to make inferences on the user's educational level.

Regardless, people's individual actions alone are not the only ones that may affect credit scoring. Contact networks, made up of social, professional and intimate circles built over the course of our lives, can also be used to analyze whether people in these other circles have "good habits" that increase their credit value. This means that the behavior of friends, colleagues, relatives and partners pertaining to their financial obligations may end up affecting access to credits, loans, etc.

Building platforms to provide financial services based on these parameters influences social development and interactions among individuals, as it causes relationships to be based upon people's socioeconomic status. As the global NGO Privacy International (PI) affirms: credit scoring does not just measure, it alters behavior.[23]

This situation was pondered by the Global Partnership for Financial Inclusion (GPFI) under Argentina's G20 Presidency in a policy guidance created by the Organization for Economic Co-operation and Development (OECD) on Digitalization and Financial Literacy.[24]

The guide establishes that the increasing use of algorithms constitutes one of the risks introduced by digital financial services, given the potential influence these algorithms may have on decisions regarding access to credits or insurance. This algorithmic influence can lead to denied access to certain services or inappropriate charges based on inaccurate or wrong correlations made without human interpretation. The report was used as reference material in the document published by G20 countries under the Finance Ministers and Central Bank Governors Meeting.[25]

Is the fintech sector envisioning a future where data will be increasingly used to judge users? Taking into account that fintechs need to obtain and process a great volume of personal data to work, inevitably that imagined future will become reality sooner than later.

This concern also has to do with current boycotts against the use of cash which invoke narratives involving the fight against drug trafficking and money laundering. These actions, despite their legitimate roots, have a setback: they propose a scenario where it will become more difficult to use alternative methods not dependent on the surrender of personal data if one wants to avoid being left out of the digital economic system.

Aside from the dependence on personal data as the basis of this new economic development model, there is another narrative concerning the creation of a "digital identity".

In 2015, the United Nations reached a consensus to implement an agenda with the aim of achieving sustainable development in the planet. The agenda comprises 17 Sustainable Development Goals (SDG) on key topics such as water, energy, climate, oceans, urbanization, transport, science and technology.[26] To facilitate progress, the World Bank created its own program, based on the premise that in order to access services and exercise fundamental rights, it is essential that a person be able to easily demonstrate their identity.

The World Bank's initiative, called Identification for Development (or ID4D), promotes the use of technological solutions for identity verification to access essential services.[27] This institution refers to digital identity as "a collection of electronically captured and stored identity attributes that uniquely describe a person".[28]

With the ID4D program, the World Bank aims to influence countries –especially those with emerging economies– for them to adopt identification policies at a national level, thus allowing States to verify that all citizens in their territories "are who they claim to be".[29] One of the main technologies used by digital identity systems is biometrics, particularly those which use fingerprints and face recognition.

Even though the World Bank introduced the work on privacy by design as a necessary characteristic for the development of identity systems, their

impact exceeds this framework, as the whole spectrum of civil, social and political rights are affected and therefore call for consideration.

Likewise, even though universality is one of the principles[30] upheld by the ID4D initiative, this cannot be the starting point for the analysis of identification systems. As Privacy International establishes, policies introducing some sort of solution for identifying persons have to "recognize that this is a system that will include and exclude. Who gets included and excluded is as much a technical question as it is also political, social and economic".[31]

In onboarding[32] processes, in order to speed up and facilitate the process, most fintechs have adopted face recognition biometric technology as a solution for verifying the identity of the person applying for the service.

By mid-2018, the Ministry of Interior and the Modernization Secretariat (formerly a ministry) announced the implementation of a joint project called Digital Identity System (SID) in order to simplify and speed up individuals' requests filed with the State, making it possible to authenticate identity by means of face recognition.

SID is under the scope of the current national administration, which wishes to promote the digital and technological update of the State, making public entities available to citizens. In this context, in December 2017, the Ministry of Interior and the Modernization Secretariat signed a cooperation agreement. It was this agreement that brought SID to life.

To attain its goal, SID uses the database of the National Registry of Persons (RENAPER), which contains face pictures, fingerprints and patronymic data of all citizens and residents of the country. The use of face recognition technology allows SID to verify the identity of persons by checking it against the records found in RENAPER.

The face recognition software implemented by SID, NeoFace Watch, is developed by NEC Argentina S.A., a subsidiary of the Japanese multinational based in Tokyo.[33] The solution was acquired through direct contracting arrangements authorized by the Secretary of Digital Government and Technological Innovation under the Modernization Secretariat at the sum of 834,403.90 dollars.[34] The transaction was facilitated through a loan

granted by the International Bank for Reconstruction and Development (IBRD), one of the five institutions of the World Bank Group.

Based on the reply obtained by ADC to the request for access to public information made before the Modernization Secretariat and the Ministry of Interior,[35] NEC was chosen as a solution "to achieve complete consistency with the system used by RENAPER", given that the Ministry of Interior has been using said technology since 2006.

In addition, the Modernization Secretariat made a request for tender for developing SID's infrastructure, composed of the processing software for biometric verification and the service portal for agencies under the Public Administration. The latter includes a software development kit (SDK), mobile apps for iOS and Android, and the API.

The company selected for the development project was VU Security S.A.,[36] one of the founders of the Argentine Fintech Chamber and a leading company in the region in security and biometric technology development. The agreement with the Modernization Secretariat was for a 4-month period and the total cost of the project, which included the system development and support, was almost 5 million pesos.[37]

In 2017, the Modernization Secretariat contacted the BCRA to assess the needs of the financial system regarding the authentication of people's identity, which granted an invitation by the Innovation Work Team created by the Bank. These conversations paved the way for the agreement entered into between BCRA and RENAPER to implement a "system to verify identity, proof of life, fingerprints and face biometrics" so that new clients may open savings accounts online and use other financial or mobile payment services.[38]

Once SID was developed, a trial period was put in place under the Innovation Work Team. During this stage, companies requested RENAPER to allow them access, by means of a specific and unique password assigned to each applicant, to the non-productive environment[39] of the platform.

III. Conclusions

The Argentine fintech landscape is still at an emerging stage. It is making careful but calculated steps and assessing the results of the initiatives proposed and factors having to do with the economic situation of the country. In this sense, we consider apropos and necessary to incorporate the concerns and questions raised throughout this report into the discussion forums and decision-making of the industry.

Protecting the right to privacy should be a key factor in the development of fintech initiatives. In Argentina, there is room for improvement when it comes to the enjoyment of and protection afforded to this right. This need stems from the fact that, especially for this industry, privacy is seen as exclusively linked to information security and data protection in particular. Thus, broader narratives which envision the development of a society where there's an exhaustive profiling of all people gets lost.

Today, most fintechs in the country do not resort to business models and practices that directly affect the enjoyment of privacy. However, the advancement of narratives signaling a greater collection, storage and processing of personal data, together with the use of biometric technologies, should be more widely debated not only among key stakeholders but also by people using these platforms and services.

When algorithms or automated processes are used in any decision-making process regarding people's profiles, as is the case with bank account authorizations or loans, it is essential to ensure the transparency of the parameters used to justify any decision. The audit of these mechanisms and processes should disclose the information under analysis for users to understand the results behind any decision and have the chance to eventually appeal it through clear and easy channels.

Given that one of the main motivations of fintechs has to do with furthering financial inclusion –particularly focused on groups of people with low income and/or unstable jobs–there is a risk that these groups are forced to surrender their personal data to access essential services.

From a legal perspective, the fintech sector does not represent a single business model or the only technological solution. Any attempt at discussing the need for new laws should consider its diversity and prioritize the

protection of fundamental rights such as privacy and no discrimination, without neglecting the situation of vulnerable groups referred to earlier.

Acknowledging these concerns allows us to start debating the type of future we wish to build for our society and economy, avoiding dystopian scenarios that may materialize if we continue embracing practices that, on their own, seem harmless.

Notes

1 *Informe ecosistema fintech argentino*, Accenture and Argentine Fintech Chamber, 2018. https://www.reportefintech.com/primer-mapa-fintech-pais-se-presento-informe-elaborado-la-camara/

2 https://camarafintech.com.ar/

3 Defined by article 1 of the Law of Financial Entities as those which "act as daily intermediaries between the supply and demand of financial resources."

4 https://ideasdepeso.com/2018/02/08/la-mesa-de-innovacion-financiera-del-banco-central/

5 https://www.bcra.gob.ar/MediosPago/Politica_Pagos.asp

6 https://www.argentina.gob.ar/sid-sistema-de-identidad-digital

7 http://www.bcra.gov.ar/Noticias/Mesa-innovacion-financiera.asp

8 Informe ecosistema fintech argentino, Accenture and Argentine Fintech Chamber, 2018, page 37.

9 The Global Findex Database 2017: https://globalfindex.worldbank.org/

10 Financial identity refers to all the activities a person has carried out in connection with their financial services.

11 Digital identity refers to the combination of various aspects that make up an individual's personality and which are defined by the person's habits, likes and preferences as they result from the use of technology. Digital identity can also be said to involve biometric identification technologies (such as fingerprints and face recognition) which assign persons an alphanumeric matrix containing the person's biological, physiological and behavioral traits.

12 *Informe ecosistema fintech argentino*, Accenture and Argentine Fintech Chamber, 2018, page 16.

13 *Informe ecosistema fintech argentino*, Accenture and Argentine Fintech Chamber, 2018, page 39.

14 https://findo.com.ar/en/ / https://web.archive.org/web/20190424172932/http:/www.findo.com.ar/ [alternative link]

15 An algorithm is a set of instructions which allow solving a problem. For a more technical definition please consult: http://staff.ustc.edu.cn/~csli/graduate/algorithms/book6/chap01.htm

16 Presentation "Application of data science in new reliable models for the financial industry", Master's Degree in Data Exploitation and Knowledge Discovery, UBA, October 31, 2018.

17 Privacy International, "Fintech's dirty little secret? Lenddo, Facebook and the challenge of identity", October 23, 2018, available at: https://privacyinternational.org/feature/2323/fintechs-dirty-little-secret-lenddo-facebook- and-challenge-identity

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21 "You will be surprised by what your Tweets may reveal about you and your habits" https://blog.0day.rocks/you- will-be-surprised-by-what-your-tweets-may-reveal-about-you-and-your-habits-3bc907688bc8

22 https://help.twitter.com/en/safety-and-security/tweet-location-settings

23 Privacy International, "Through An App, Darkly: How Companies Construct Our Financial Identity", January 30, 2018, available at: https://privacyinternational.org/blog/1099/through-app-darkly-how-companies-construct- our-financial-identity

24 Organization for Economic Co-operation and Development (OCDE), http://www.oecd.org/g20/G20-OECD-INFE-Policy-Guidance-Digitalisation-and-Financial-Literacy.pdf (2018)

25 Official release from the Finance Ministers and Central Bank Governors Meeting, July 2018, available at: http://www.bcra.gov.ar/Noticias/Comunicado_oficial_G20.asp

26 https://sustainabledevelopment.un.org/

27 http://id4d.worldbank.org/about-us

28 The World Bank's work on digital identity can be consulted in: https://www.gpfi.org/sites/gpfi/files/documents/G20_Digital_Identity_Onboarding.pdf (2018).

29 Ibid.

30 http://id4d.worldbank.org/principles

31 Privacy International, "The World Bank's ID4D 'Mission Billion Challenge': How a limited conception of 'privacy' threatens our rights", December 9, 2018, available at: https://privacyinternational.org/news-analysis/2541/world-banks-id4d-mission-billion-challenge-how-limited-conception-privacy

32 In the fintech sector, onboarding refers to the process whereby a person is required to register before they hire a service. Generally, this is done through a mobile application that helps the user become acquainted with the company

33 Advertising brochure for NeoFace Watch: https://www.nec.com/en/global/solutions/safety/face_recognition/PDF/Face_Recognition_NeoFace_Watch_Brochure.pdf

34 As stated in the reply given by the Secretary of Modernization to the request for access to public information made by ADC in July, 2018. A copy of the negotiation records can be found in: https://adc.org.ar/wp-content/uploads/2019/10/Acta-de-negociacion-NEC-Modernizacion.pdf

35 Request for access to public information made before the Secretary of Modernization and the Ministry of the Interior on July 24, 2018.

36 https://www.vusecurity.com/

37 Process 450-0023-LPU17: https://comprar.gob.ar/PLIEGO/VistaPreviaPliegoCiudadano.aspx?qs=BQoBkoMoEhzyV7BVT3Fd4rJ7rES99kh1duhkNZMe6rYPPEh9N1jFLPY54O0hkkyyl-jI2z9JAOUgbkchX4qhtF8BnETWSIVtaE8UfHoct4LrurQSogKwKqQ==

38 There is a copy of the Cooperation Agreement between RENAPER and BCRA available in: https://adc.org.ar/wp-content/uploads/2019/10/Convenio-RENAPER-BCRA-SID.pdf

39 The non-productive environment refers to a setting where software is tested and not accessible to the public.


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