

Fintech - Digital way of ID Verification and Biometric Verification in 2020

Vivek Dubey

Insights and Data, Capgemini, Glasgow, United Kingdom

Copyright © 2019 ISSR Journals. This is an open access article distributed under the **Creative Commons Attribution License**, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT: In this paper, an attempt is being made to analyze and explain fintech in detail. Fintech companies occupy an increasingly relevant position within the current business fabric. Fintech is a type of biometric method. It provides financial services that facilitate our daily lives through technological disruption. The arrival of the technology industry to financial services has implied the emergence of thousands of startups, which through technological platforms offer a wide range of products or services to their consumers quickly and easily, fostering alliances with traditional banking and opening new challenges for the industry. a continuous expansion of these technologies is being observed related this innovation. Therefore, main emphasis in this paper is laid on its evaluation and emergence till 2020.

KEYWORDS: Biometrics, Fintech, 2020, technologies, innovation, Digital Banking.

1 INTRODUCTION

Biometrics is often mentioned as an option to make authentication methods more secure. In practice, the expectations of biometrics as a replacement for passwords often proved to be a bit too high: the password has been declared dead many times. However, the use of second-factor authentication, such as SMS and other One Time Password authentication tools, has recently taken flight, with a name for large-scale consumer applications. Biometrics has also been on the rise in the consumer domain in recent years: think of the fingerprint reader on new iPhones, face recognition on Android devices, and voice recognition in the ING mobile banking app.

Biometric recognition can be applied in two ways (13):

- **Verification** (1: 1 matching): where the biometric data of a person is compared with the biometric data in the database of the same person. This is to verify whether the person is who he claims to be.
- **Identification** (1: N matching): In it, the biometric data of a person is compared with all biometric data in the database. This is to find the person in the database or to exclude them from being included in the database (negative identification).

Some popular biometric features are:

- **Face:** location and distance between facial features such as eyes, nose, lips, chin, and global shape are used for recognition.
- **Fingerprint:** the spatial distribution of ridges, valleys, and branches on the finger and sweat pores are used for recognition.
- **Iris:** the stripes, pits, and grooves of the colored ring in the eye are used for recognition.
- **Palmprint:** the wrinkles (papillary lines) on the inside of the palm are used for recognition.
- **Hand geometry:** hand features such as finger length, thickness, circumference, and spread are used for recognition.
- **Voice:** physiological characteristics such as shape, size of vocal cords, lips, nasal cavities, mouth, and behavioral characteristics of a spoken word are used for recognition.
- **Writing/keystroke:** characteristics in form, speed, acceleration, pressure, and order during the written word are used for recognition.

- **DNA:** the deoxyribonucleic acid present in every cell of the human body is used for recognition.
- **Blood vessel patterns:** the patterns of blood vessels under the skin are used for recognition.

A biometric signal must be recorded in terms of process and linked to identity to create a reference template in a database (registration). FinTech injected one-click onboarding and payment solutions from anyplace and anytime in the world. The comfort of use and rapidity of technology that is user identification process by any scanned government ID and verification through selfie has made the life of people comfortable.

The financial services industry is undergoing one of the deepest stages of transformation reminded of it. In the last few years, there have been endless technological companies with very disruptive value proposals within the financial products and services environment. These companies make up the already well-known Fintech sector, whose name comes from the union of the terms Finance and Technology.

A current issue is a **present and the future of FinTech and banking**, who are beginning to take advantage of the new opportunities offered by the market and the current demand of consumers of financial services. Many changes are removing **the economy, finances, and the ICT sector**. The growing digitalization of these sectors in both business and personal fields; the minimum cost of mass data storage with the trend towards *data*-driven. The incredible capacity of the evolution of technology. And the development of the **blockchain** and the smart contracts that are revolutionizing the payments sector.

On the **user's** side of **financial services**, there is a demand for increasingly specific and efficient services, as well as simple and intuitive, with a major claim of adaptation of services to mobile devices.

All these circumstances and the rupture of the oligopoly of banking in the offer of financial services, with the entry of *FinTech* and the big technology companies *BigTech*, are fueling competitiveness in the sector. Banks are making real investment, development, and technological innovation efforts, partnering with these new agents operating in the sector, or turning their strategies around.

The **bank** has been found not only with the challenge of developing digital technologies to deliver financial services increasingly high "zero points" numbering. Above all, it has had to devise new business models to take full advantage of those opportunities. This is what the market situation and the users themselves demand, whether they are companies, organizations, or citizens.

As we already share in the blog, there are many *FinTech* business solutions that have achieved a massive adoption of their services by users and have reached high turnover figures. Their business model is already mature, and they have overcome the challenge faced by these relatively new agents in the financial sector. That their business model is sustainable over time since the margins with which they work are small and need to grow in a way exponential to cover fixed costs.

In order to face both challenges, **banks, and FinTech**, they have convinced the great advantage of working together. That is to grow in competitiveness, generating **new business models** in which jointly offered **technical, financial solutions** adapted to the current needs of users and can Take advantage of all your customers. An example we have already mentioned is the alliance between Bankia and events to offer the SCF **BilliB** solution.

The "FinTech infrastructure" is characterized by agility and flexibility in the development and application of **financial technologies**. Let's see how agile and flexible **technological, financial innovation** is supporting collaboration between *FinTech* companies and banks.

This Academic Note aims to highlight through the "FinTech" concept how innovation, disruption, and digital transformation are impacting the financial sector. We also want to reflect on what the challenges of the concept are and what solutions it poses. Then, the situation of FinTech companies in the world, and in particular in Peru, will be detailed. The Note will end with some final thoughts on this process of transformation in the financial sector.

2 LITERATURE REVIEW

2.1 CHANGES IN THE WORLD AND BANKING

Innovation has become an important factor in developing the competitiveness of countries and companies. Innovation, disruption, and digital transformation are concepts to which they are even turning companies into mature industries. Examples like Airbnb, Uber, PayPal, eBay, Amazon, Alibaba, Netflix, Dropbox, Google, Spotify, between Many other ventures generated radical innovation and disruption to which no sector seems to be foreign (7).

Co-creation, collaboration, community are keywords in the axis of the innovative business culture that creates value for customers and users and also leaves the commonplaces of each industry. The financial sector remained with incremental changes for decades, without radical disruption; However, the digital revolution is transforming the way customers access global financial products and services. The status quo of this industry is it has been altered by the change in the preferences and habits of customers, their most demanding expectations, unfulfilled services, the use of technologies, and the appearance of non-stakeholders conventional (9).

FinTech startups (fusion of Finance and Technology) identify customer problems and solve them with technology; for this reason, they are scalable and innovative value propositions. In addition, they are based on technology, such as artificial intelligence and machine learning, which can capture customers from traditional businesses.

This is why more and more collaborative FinTech cases are seen. FinTech startups adapt to innovative technologies and integrate them into risk management, customer relationship management, and pricing in order to improve service. Today we talk about the FinTech revolution, driven by Smart Data, Artificial Intelligence, and Machine Learning. Advances in areas such as artificial intelligence, big data, and blockchain generate opportunities for called the "FinTech" wave, opening new growth paths and offering greater operational efficiency and productivity.

Startups incorporate Smart Data, and data is the main element within the Fintech revolution since a significant difference with traditional financial institutions is the ability to change and adapt quickly to changes thanks to the generation, aggregation, and analysis of the data.

The use of new technologies, such as artificial intelligence and machine learning, help FinTech develop agile and scalable technological solutions. Which can impact more customers at lower costs, so they can help the financial services industry to reach unattended clients with simpler and faster processes? Machine learning It derives from Artificial Intelligence because it is based on experience to perform a given task better and better. The main objective of every machine learning process is to use facts and evidence validated in reality to be able to create hypotheses and be able to respond to new, unfamiliar situations. This is very powerful if used for projects in markets where banking qualifications traditional do not work, and validations can be created with new behavior-based indicators (6).

The FinTech sector covers a wide range and is increasingly expanding, and the "other" item is left for new and difficult to identify models, expanding the FinTech business. In the study "The Startup View: a Year in Fintech" by PWH and Startupbootcamp FinTech (2017), applicants to the Startupbootcamp program were classified using the same categories as in their 2015 report, which was originally established by the World Economic Forum (2):

1. "Cloud solutions and improved processes": referring to cloud solutions and improved processes that, through new technologies, are helping financial services companies improve processes and achieve efficiency through outsourcing to FinTech providers (5).
2. "Cashless world": they are the payment systems in the world without cash, as startups adopt new payment methods.
3. "Smarter, faster machines": blockchain, (3) machine learning, artificial intelligence are used to increase the reach and reduce computer costs (8).
4. "Shifting customer preferences": Startups create new models for customers to interact with financial services, driving change throughout the industry.
5. "Empowered investors": new technologies are transforming the way institutional and retail investors make investments.
6. "Crowdfunding": the new ways of attracting and investing capital are changing the landscape of capital markets.
7. "Alternative lending": the new ways of assessing solvency and issuing credits are transforming the loan markets (12).
8. "Newmarket platforms": regulation and technological advances in capital markets have led to the emergence of several new commercial platforms.
9. "Emerging payment rails": cryptocurrencies and other new technologies are transforming the way individuals and businesses make payments.

2.2 FINTECH FIGURES

FinTech startup financing doubled in 2018 and reached \$ 12.2 billion, compared to \$ 5.6 billion in 2017, according to PWH's Global FinTech Report (2019). As for the investment, in the year 2015, 22,230 million dollars were invested worldwide, and in the first quarter of 2018, the investment was 5,300 million, which represents an increase of 67% over the same period of the previous year. Still, more is done. The strong growth of this sector is evident when the investment growth figures for the last five years are compared (11).

In the study "Uk FinTech: on the cutting edge" prepared by a researcher (10), the factors that determine the development of FinTech entities in a country are capital, regulation, talent, and demand. The United Kingdom, one of the global leaders in innovation, stands out for the incentive to the FinTech ecosystem. In addition, they have had incentives to attract foreign investors (for example, from Canada, South Korea, and Japan). In the European case, regulators are following the example of the United Kingdom, as they seek to foster an agile and innovation-friendly environment.

In the United Kingdom, during 2018, the Financial Conduct Authority (FCA) launched "Project Innovate" to encourage innovation in the interest of consumers and promote competition in the market. It highlighted a regulatory sandbox where FinTech startups tested products or services by launch to the market, which was interesting because they had the support of regulatory entities. The consequences were learning, reducing the time to innovative market solutions, obtaining feedback for FinTech and financial sector stakeholders, as well as valuable learning and regulatory recommendations. As an example of external incentives of this FinTech ecosystem, it is observed that in July 2016 initiated the "FinTech Bridge," a bilateral agreement with South Korea, for the promotion of investments in FinTech entities for its global expansion to the Asian market and the attraction of Korean investors to its territory.

In Spain, 130 million euros have been invested. In the United Kingdom, investment in FinTech entities exceeds 650 million euros, with revenues of more than 6,600 million pounds and generates employment for more than 60,000 people (Association of Fintech, 2017). Israel is another global focus of the FinTech sector. According to researchers (4), in 2015, Israel a total investment of 408 million dollars, 53 rounds of investment that form a total of 430 FinTech companies as well as 14 global centers of innovation and development.

In Peru, EmpreundeUP of the Universidad del Pacífico has identified 22 FinTech startups, of which the third part has started operations. In addition, in March 2017, the Fintech Peru Association was formed in order to promote the union of startups in innovation and financial technology in the country in order to build a FinTech community and become a reference in the development of Peru and Latin America. The challenge for this nascent cluster is to create spaces to promote FinTech knowledge so that together, they can work on an agenda that drives a more innovative, inclusive, dynamic, and solid financial system.

The emerging startup segment has demands embodied in local or regional FinTech associations, where a regulatory and consensual framework of good practices, advice, and revitalization of the financial sector is requested. In the older FinTech outbreaks, pilot projects have been developed to understand and develop a comprehensive regulatory framework for the phenomenon

FinTech and safe for all parties. This need for regulation of FinTech also comes from traditional financial institutions (1). However, as we present in this article, banks and FinTech not only compete but can also generate synergies and collaboration. Currently, partnership initiatives increase. For example, there is an initiative to bring together local Fintech associations in an Ibero-American Alliance. In order to generate synergies between the experiences of each country and promote the development of the FinTech and InsurTech ecosystem at an international level.

2.3 THE REPLACEMENT OF LEGACY BANKING SYSTEMS

Banks have legacy systems of obsolete technologies, which are complex technological infrastructures to manage and maintain in 2020. They do not facilitate innovation in financial products or services oriented to the real needs of current market customers.

The *FinTech* can help banks to leverage the cloud to reduce costs in providing financial services and deliver innovative financial tools to their customers, which adapt flexibly to the needs they have and how they use them. For example, **BilliB**, as an SCF tool, is a *cloud* solution that allows for scaled integration in companies, being able to choose their degree of automation from different options. In addition, its services are offered under a "success" model (*success fee*) in which there is no registration fee or fixed costs, only a small monthly percentage of the benefit obtained by the **discount for early payment** of invoices is charged to the customer to suppliers.

2.4 CENTRALIZATION OR N DISPARATE CUSTOMER DATA AND SERVICES

The *Fintech* takes advantage of the programming in the cloud and new technological tools such as Artificial Intelligence and *Machine Learning*, for advanced management of large customer information with banks, hitherto untapped, in order to offer some financial products and an operation that suits your needs.

2.5 BANKING AS A PLATFORM OPEN TO THIRD PARTIES - OPEN BANKING

Since the revised Payment Services Directive (PSD2) was approved in 2015, collaboration platforms have been created where banks and *FinTech* can work together, offering innovative products and services, complementary to those already offered by banks.

Indeed, PSD2 allowed third-party access to bank customer information (obviously, with their permission), through application programming interfaces known as APIs (*Application Programming Interface*).

Many banks are generating **collaborative ecosystems** through these platforms (APIs), allowing *FinTech* companies, developers, and other companies to integrate with the banking infrastructure and access their customers' accounts.

3 CONCLUSION

The *FinTech* disruption is here to stay and is expanding, and the future of the financial services industry will continue to be transformed. Take into account the forces of the transformation that affects the industry is vital to generate strategies according to the new challenges.

Many questions arise, some of which are answered in the newspaper act of the markets. Can banking and *FinTech* work collaboratively and generate impact and financial inclusion? Is the startup of business collaboration between the major financial service providers and *FinTech* startups viable? Are classic companies prepared to be more open to failure, learn quickly, and differentiate themselves with innovation and disruptive transformation challenges? Is there a unique collaboration model? How to measure the success of relationships with *FinTech* companies? Can the traditional Key Performance Indicator (KPI) approach be inappropriate for *FinTech* startups? And in relation to traditional banking, how long can it take to integrate a collaborative relationship between *FinTech* startups and banking institutions to consolidate?

In short, it is already a reality the creation of diverse and new collaborative business models of *FinTech* and banks, with which they can **grow in competitiveness and profitability**. *FinTech* has exponentially enhanced the reachability, acceptability and demonstrating the efficiency of digital onboarding of customers and end to end payment solutions with the digital channel of choice through biometric assistance. With this, a **new era** has begun in the deployment of **functionalities and digitisation of financial services** to offer to customers.

ACKNOWLEDGMENT

Dr. Prashant Dubey, Assitant Professor, Indira Institute of Management, Pune, India for providing guidance on financial banking operational working challenges and technology acceptance

REFERENCES

- [1] Arner, Douglas W., Janos Barberis, and Ross P. Buckley. "150 years of Fintech: An evolutionary analysis." *Jassa* 3 (2016): 22.
- [2] Britchenko, Igor, Alla Ivashchenko, Mykhailo Dyba, Yevheniia Polishchuk, Yuliia Sybirianska, and Yuri Vasylyshen. "Fintech platforms in SME's financing: EU experience and ways of their application in Ukraine." (2018).
- [3] Burger, C., A. Kuhlmann, P. Richard, and J. Weinmann. "Blockchain in the energy transition. A survey among decision-makers in the German energy industry." *DENA German Energy Agency* (2016).
- [4] Fenwick, Mark, Joseph A. McCahery, and Erik PM Vermeulen. "Fintech and the financing of SMEs and entrepreneurs: From crowdfunding to marketplace lending." In *The Economics of Crowdfunding*, pp. 103-129. Palgrave Macmillan, Cham, 2018.
- [5] Fisher, Oliver, Nicholas Watson, Laura Porcu, Darren Bacon, Martin Rigley, and Rachel L. Gomes. "Cloud manufacturing as a sustainable process manufacturing route." *Journal of manufacturing systems* 47 (2018): 53-68.
- [6] Gawke, Jason C., Marjan J. Gorgievski, and Arnold B. Bakker. "Measuring intrapreneurship at the individual level: Development and validation of the Employee Intrapreneurship Scale (EIS)." *European Management Journal* (2019).
- [7] Gu, Chao, Cyril Monnet, Ed Nosal, and Randall Wright. *On the Instability of Banking and Financial Intermediation*. No. WP1901. 2019.
- [8] Lemieux, Victoria Louise. "Trusting records: is Blockchain technology the answer?." *Records Management Journal* 26, no. 2 (2016): 110-139.
- [9] Milne, Alistair. "Competition policy and the financial technology revolution in banking." (2016).

- [10] Nicoletti, Bernardo. "Financial Services and Fintech." In *The Future of FinTech*, pp. 3-29. Palgrave Macmillan, Cham, 2017.
- [11] Phillips, Olayanju. "The Leapfrog Model: Venture Capital as a Cure to Africa's Funding Paralysis." *Available at SSRN 3366908* (2019).
- [12] Reddy, Srinivas K., and Werner Reinartz. "Digital transformation and value creation: Sea change ahead." *GfK Marketing Intelligence Review* 9, no. 1 (2017): 10-17.
- [13] Wu, Shun-Chi, Peng-Tzu Chen, A. Lee Swindlehurst, and Pei-Lun Hung. "Cancelable biometric recognition with ECGs: Subspace-based approaches." *IEEE Transactions on Information Forensics and Security* 14, no. 5 (2018): 1323-1336.