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The rise of FinTech in the global financial markets

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Glossary of terms

AI : Artificial Intelligence

APR : Annual Percentage Rate of charge

ATM : Automated teller machine

CMP : Contactless mobile payments

CMU : Capital Markets Union

EBA : European Banking Authority

ESAs : European Supervisory Authorities

EU : European Union

FPs : Field partners

GBP : Great Britain pound sterling

GMV : Gross Merchandise Volume

IT : Information Technology

ML : Machine Learning

M&A : Mergers and Acquisitions

NASDAQ : National Association of Securities Dealers Automated Quotations

NFC : Near Field Communication

SEC : Securities and Exchange Commission

SMEs : Small and medium-sized enterprises

P2P : Peer-to-peer

PE : Private Equity

PFM : Personal financial management

PSD : Payment Services Directive

PSD2: Second Payment Services Directive

US : United States

USD : United States Dollar

UK : United Kingdom

VC : Venture Capital

1. INTRODUCTION

When I chose the subject matter of this work, the FinTech, I asked some people if they know the meaning of this word. Most of them, not knowing exactly what the term implies, are everyday users of it, without even realizing it.

According to the National Digital Research Centre in Dublin, FinTech or Financial Technology is “innovation in financial services”. Nevertheless, “the term has started to be used for broader applications of technology in the space, to front-end consumer products, to new entrants competing with existing players, and even to new paradigms such as Bitcoin”¹. Lee (2017) points out that FinTech companies use technology to shake up incumbent financial systems.

Artificial intelligence in banking, peer-to-peer (P2P) lending, Big Data, blockchain, crowdfunding, digital payments and Robo advisors, are some examples of FinTech services. An example is WeChat app, a tool to transfer money, which not only allows to buy insurance products or invest in funds directly from your smartphone, but also book your next doctor appointment, call a taxi, donate to charity, and even find a date without ever leaving the app (Arslanian, 2017).

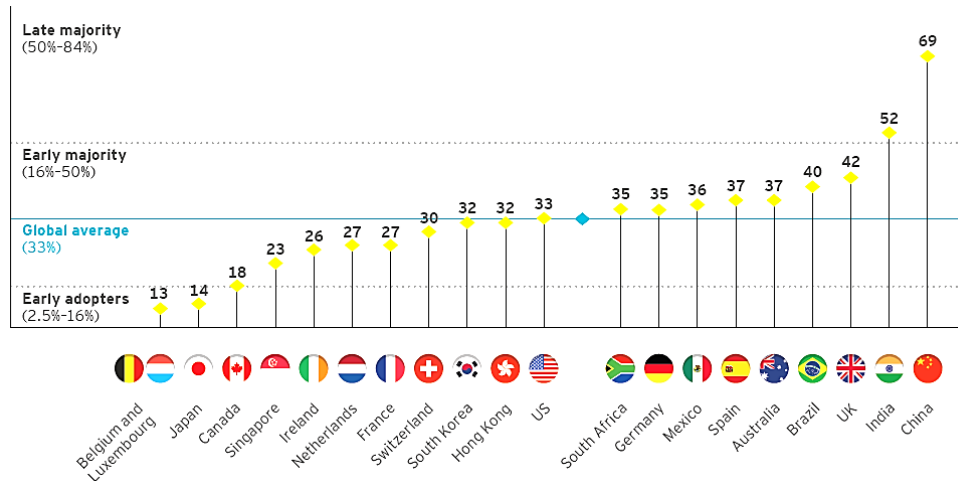
Thanks to FinTech, problems that traditional banks present such as have a certain amount of seniority in the bank, go to the office, fill out all the forms, provide endless documentation and wait even several weeks for the approval, could disappear. Further, a great advantage is that you can get loans without commissions. Nowadays, banks have found a great competitor, and they have increased their efforts, offering the possibility of requesting personal loans through the Internet and with hardly any paperwork. They are trying to compete with the FinTechs.

Based into the EY Fintech Adoption Index (2017), FinTech enterprises are gaining adoption, reaching levels that can influence industry standards and consumer expectations. FinTech adoption rate is defined as the percentage of the digitally active population using certain FinTech services. As Figure 1 shows, Spain is currently situated

¹ Quoted by Lee (2017).

in the sixth place in terms FinTech adoption. It is an amazing feature since it means is the first country in the euro area in terms of adoption of Financial Technology.

Figure 1. Progress of FinTech adoption globally and across 20 markets.

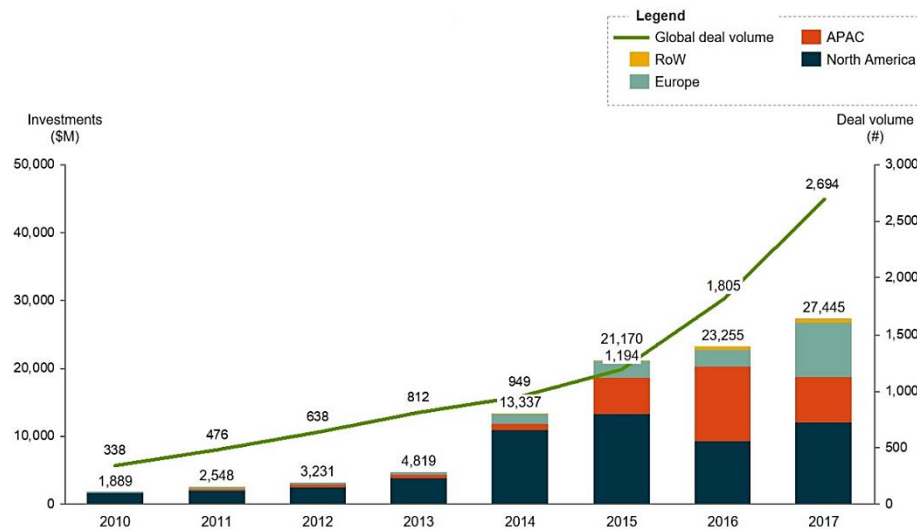


Notes: The figures here show global adoption rates for 2017, including adoption rates for each of the 20 markets, plotted against stages of the innovation adoption curve. All figures are shown in percentages.

Source: EY (2017).

In order to demonstrate the magnitudes this “new” phenomenon is reaching, Figure 2 shows global investment in FinTech ventures reached another all-time high in 2017, supported by a rush in funding for startups in the United States (US), United Kingdom (UK) and India (Accenture Research, 2018).

Figure 2. Global FinTech financing activity by region.



Source: Accenture Research (2018).

The financial platforms of the future are not going to be traditional banks but technology firms (Arslanian, 2017). For example, a new-born today will open his first bank account not with an HSBC or a JP Morgan but rather with a Facebook or Apple. If you are comfortable enough to share your kids' photos on Facebook, would not you use it as well to transfer money to friends and family? If you buy all your daily necessities on Amazon or Taobao, would not you buy insurance products from them? Financial technology is reaching such a dimension that London has decided to approve a measure that allows street performers who act in their streets to receive donations via dataphone or through accounts in telephone applications.

With this Final Degree Project, I show the levels Financial Technology is reaching in financial markets, and more specifically in the banking sector. FinTech is transforming the ecosystem and many facts display it.

The project is structured as follows. Section 2 starts with the history of FinTech, in order to establish its origin and evolution. In Section 3, we will show the main activities in which Financial Technology is involved. In Section 4, it is analysed the current situation in the banking sector, highlighting the competition or the cooperation strategy with FinTech startups. Finally, in Section 5 we will go in depth with the regulatory framework which enclose this FinTech sector, showing some opinions about it too.

2. HISTORY OF FINTECH

We could affirm that FinTech is a new term for an old sector. According to Arner et al. (2015), its definition gives rise to three specific observations:

- FinTech is not a new development for the financial services industry.
- The financial services industry has been one of the main buyers of services and products of information technology (IT), reaching expenses close US\$ 200 billion in 2014.
- The concept FinTech is not limited to specific areas such as financing or business models, like P2P lending: it collects all the products and services financial services can offer from the beginning.

2.1 FinTech 1.0 (1866-1987): From analogue to digital

Many experts argue that the financial revolution was originated in Europe in the late 1600s. According to the study by Arner et al. (2015), this period could be divided in two main stages:

2.1.1 The beginnings of financial globalization and the post-war period

The end of the 19th century was considered the beginning of financial globalization by many people. Technology applied to finance was basic, practically nil; nevertheless, the financial sector contributed with its resources to the development of telegraphs, railroads, channels, steamships and other technologies.

During the post-war period, information technology companies such as International Business Machines (IBM) developed code decryption tools in early commercial computers. The 1950s were also marked by the time Americans were introduced to credit cards. This consumer revolution was supported by the initial establishment of the Interbank Card Association, nowadays MasterCard (Arner et al., 2015).

2.1.2 The modern facts: 1967-1987

This period is marked by the fact that financial services moved from an analogue industry to a new digital industry; the launch of the first calculator produced by Texas Instruments and the automated teller machine (ATM) in 1967 began the modern period of FinTech 1.0.

During these years, significant developments set the foundations for the second financial globalization period. As it is established by Arner et al. (2015), the following set of innovations announced the technology arrival in different areas of banking:

- Payments. In Great Britain, the Inter-Computer Bureau, formed the basis of today's Bacs2, while the Clearing House Interbank Payments System (CHIPS) was established in US in 1970.
- Interconnecting cross-border payments. Society of Worldwide Interbank Financial Telecommunications (SWIFT) was established, headquartered in Belgium.
- Securities. The establishment of NASDAQ³ in the US in 1971, and the eventual enhancement of the National Market System signified the change from physical dealing of securities to today's electronic securities trading. Nowadays, NASDAQ helps drive FinTech growth by offering precise and cost-effective data solutions to startups and mature firms (Nasdaq, 2018).

2.2 FinTech 2.0 (1987-2008): Progress of Traditional Digital Financial Services

These years stood out for the appearance of a new period in which normative attention focused on the risks entailed by financial interconnections and their intersection with technology. An iconic picture from these years is that of an investment banker

² "Bacs", formerly the acronym for Bankers' Automated Clearing Services, is responsible for the electronic bank-to-bank payment system, either via Direct Debit or via Bacs Direct Credit within UK. It is operated and managed by Bacs Payment Schemes Ltd.

³ Acronym for National Association of Securities Dealers Automated Quotations.

holding an early mobile telephone. Financial institutions' computerized trading systems bought and sold automatically according to the established price levels, known as program trading (Arner et al., 2015). The reaction led to the introduction of a diversity of procedures, particularly in electronic markets, to control the speed of price changes ("circuit breakers")⁴. Around the world, security regulators began working on procedures to support cooperation.

The first FinTech companies appeared towards the second half of the 90s with the mass use of the Internet and the flourishing of electronic banking and commerce. It should be remembered that:

- In 1991 the World Wide Web (www) was launched, which facilitated the exchange of information through the Internet.
- In 1994 the e-commerce company Amazon was founded and a year later the company eBay (Silva and Ramos, 2017).
- By 1998, financial services had become the first digital industry for all digital purposes.
- Later, by 2001, eight banks based in US achieved at least one million clients online, with other major jurisdictions all over the world quickly evolving similar regulatory structures and systems to face risk (Arner et al., 2015).
- By 2005, the first banks without physical branches were founded (such as ING Direct or HSBC Direct) in the UK (Bestard, 2015).

Consequently, in the early years of the 21st century, banks had become completely digitized their internal processes, communications with outsiders and a growing increase of the number of their interactions with retail customers. These facts were underlined by the relevancy of IT spending by the financial services industry. Besides, technology was being used by regulators to a greater extent, foremost in the context of securities exchanges.

⁴ "Circuit breakers" are pre-defined values in percentage terms, which activate an automatic check when there is a quick or uncontrollable move in any security or index.

2.3 FinTech 3.0 (2009 – current): Democratizing Digital Financial Services?

Customers have experienced a transformation in their behaviour with respect to the way they consume financial products. Many authors point out that the beginning of this change came as a result of the 2008 global financial crisis, known by experts as the start of the FinTech 3.0 era (Arner et al., 2016). In the evolution of FinTech companies had a great importance the development of digital technology and the launch of smart phones. Financial innovation can be considered as a new entity that implies the reduction of costs and risks, or the provision of a product, service or instrument that provides greater satisfaction to the needs of the consumer against the existing options (Frame and White, 2014)⁵.

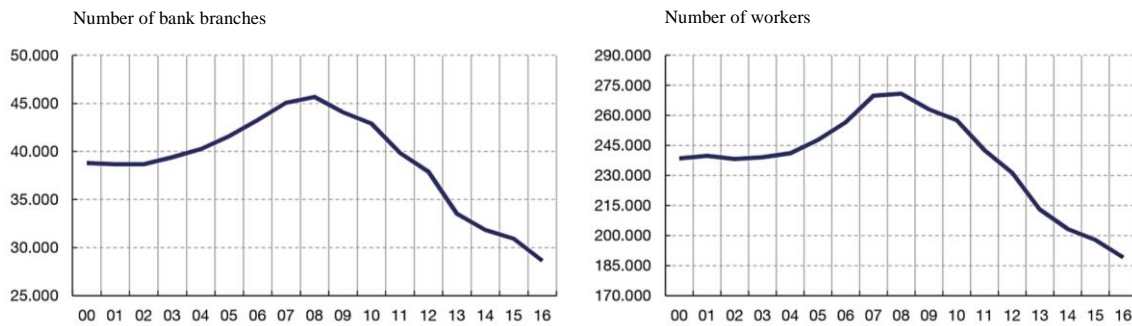
As we will analyse in this section, innovative characters in the market in the financial services industry have appeared. As Arner et al. (2015) suggests, among the factors that have contributed to the rise of Fintech, are: **public perception, regulatory scrutiny, political demand and economic conditions**.

First, related to the factor of the *public perception*, it has his origin in the financial crisis mentioned before, which caused people changed their public perception of banks. For instance, aggressive lending methods targeting disenfranchised communities not only breached the consumer protection obligations of banks, they also severely damaged their solvency (Agarwal et al., 2014).

In Spain, the important restructuring of the financial system is reflected in the strong reduction in the number of entities, mainly in the savings bank sector. Based on a report by the Bank of Spain (2017), this readjustment is appreciated not only in the number of entities, but also in the distribution networks (see Figure 3), which have been significantly reduced in order to improve efficiency. People were realizing that financial institutions were not as solvent as they seemed to be before the financial crisis.

⁵ Quoted by Zavolokina et al. (2016).

Figure 3. Reduction of the installed capacity.



Source: Bank of Spain (2017).

As Zavolokina et al. (2016) suggest, Financial Technology offers opportunities for the creation of new services and business models, and also proposes challenges to traditional providers of financial services; in consequence, people consider them as a new opportunity or way to avoid traditional banks. It is difficult to know if the banks will recover the appreciation lost by the users when the new competitors offer the same services and have not caused a global collapse so far.

Second, there has been a fairly intense *regulatory scrutiny*, increasing legal requirements for banks. These measures are intended to prevent problems such as those that caused the 2008 financial crisis. Furthermore, it has been required to banks to prepare Recovery and Resolution Plans (RRPs), and conduct stress tests to evaluate their viability (Barberis, 2012).

As Arner et al. (2015) suggests, these new regulatory obligations, as Dodd Frank Act⁶ or Basel III⁷, are welcome in light of the social and economic effect of the financial crisis. The new regulation is very important since it is expected to provide tools to deal with institutions of systematic importance (Acharya, 2012). However, these post-crisis reforms had the consequence of instigating the rise of new technological players, taking advantage of limitations imposed on banks to compete.

⁶ “The Dodd-Frank Wall Street Reform and Consumer Protection Act” is a reform legislation on finance as response to the global financial crisis of 2008, passed by the Obama administration in 2010.

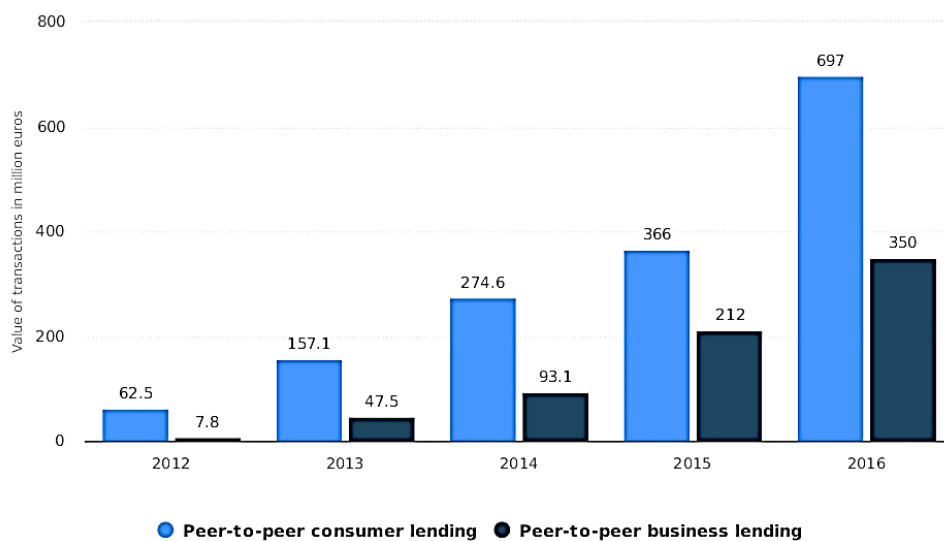
⁷ “Basel III” is an International regulatory framework within the banking sector elaborated by the Basel Committee on Banking Supervision as a consequence of the financial crisis of 2007-09.

By way of illustration, Basel III agreement reflected the rise of the minimum capital requirements for common equity capital. Banks will required more Tier 1 capital ratios, and a conservation buffer of 2.5 percentage points to avoid restrictions on dividends and bonuses from the year 2019. In addition, the impact of Basel III on the issuance of bank loans is calculated based on the accounting identities applied to the aggregate balance sheets of the sector (Slovik and Cournède, 2011).

The measures undertaken by Basel III enhance market stability and risk-absorbing competence, but they also reroute capital from Small and Medium-sized enterprises (SMEs) or private individuals. This is why so many of these individuals have to turn to P2P lending platforms or other innovations to meet their need for credit. This is one of the reasons why there could be an increasing trend and positive results related to P2P lending in Europe.

Conforming to Statista (2018), Figure 4 shows how, on the platforms of commercial lending and P2P consumer lending in Europe (excluding the UK), the transaction value between the years 2012 and 2016 has significantly increased. If we emphasize the total amount of 697 million euros in total transactions in 2016 with respect to P2P consumer lending, we can see an increase in value of more than 330 million euros compared to the previous year.

Figure 4. P2P consumer and business lending transaction value in Europe (excluding the UK) from 2012 to 2016 (in million euros).



Source: CME Group Foundation (2017).

The third critical factor is the *political demand*. After the outbreak of the financial crisis, banks were rescued by the political powers, mostly with public money. In other words, the governments of the different countries of Europe decided to use public money to save the financial system, and to rescue banks. Partly because of this, some national governments, pressured by European institutions, had to take austerity measures to cut public spending in order to reduce public debt.

The argument stating that if the banks fell the whole system would collapse, had some opponents who did not support it. For this reason, new political voices appeared, and were much more bellicose with the traditional financial system; it was necessary the appearance of alternatives that weaken the power of banks, which can keep the financial system running, and in the event of a new economic crisis, that justify letting banks fall because households and firms have other channels to access funds.

The fourth main factor is the *economic conditions* which could be translated into the extent that the latest technology is available in an economy. Technical advances are in the midst of the greatest significant drivers of entrepreneurship (Arend, 1999), since technological revolutions generate possibilities that may be mainly developed by enterprising firms (Stam and Garnsey, 2007)⁸. Technological changes allow the irruption of new practices and business models to arise and, in the case of FinTech startups, affect the usual financial services sector too.

The mentioned technology-driven changes in the past, occurred with the move from banking branches to ATM machines, and from ATM machines to online banking and telephone. Additionally, the researchers Haddad and Hornuf (2016) suggest that modern computer-based technology has extensively been used in financial markets through the application of trading algorithms.

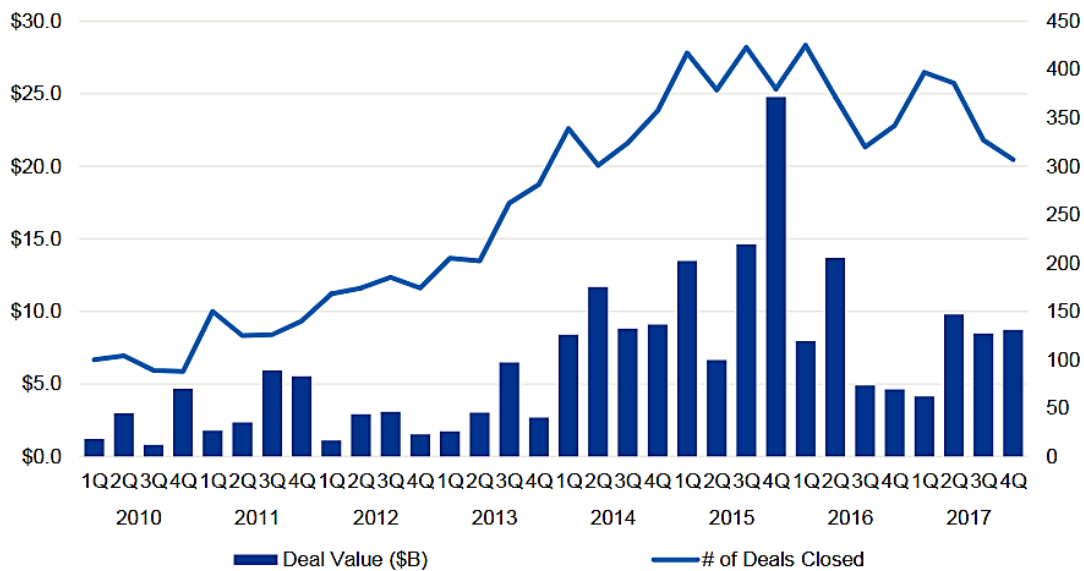
In recent years, the rapid advance of Financial Technology, has attracted considerable attention within the finance industry. Many observers have welcomed the rise of FinTech, claiming that newly-emerging technologies have the potential to radically

⁸ Quoted by Haddad and Hornuf (2016).

transform banking, payments, asset management, insurance, and brokerage by making financial transactions less expensive, more convenient, and more secure.

As it can be observed in Figure 5, the global FinTech trend has a positive evolution in the recent years. Miller (2018) based on KPMG International (2018), establishes that the number of venture capital (VC) transactions exceeded 1,000 for the fourth consecutive year in 2017, with private equity (PE) deals reaching a new high of 139. Fintech Mergers and Acquisitions (M&A) also closed 2017 with 336 transactions. Furthermore, it is evidence that large financial institutions and technology firms are increasingly investing in FinTech innovation (Chen et al., 2018).

Figure 5. Global investment activity (VC, PE and M&A) in FinTech companies.



Source: KPMG International (2018).

Focusing on the current FinTech situation in Spain, we could summarize the main figures that characterize its national ecosystem. Approximately 300 companies make up the FinTech sector in Spain, and as we have seen, Spain is the sixth country in the world by FinTech adoption rates.

It is a sector with more than 3,500 workers and more than 100 million euros in revenue. According to information collected from FinTech Global (2018) database, an indication of the growing maturity of the Spanish FinTech funding landscape is that the

proportion of deals valued above \$5 million grew from none in both 2015 and 2016, to 23.6 percent in 2017.

In most countries, it is the capital of the country that attracts the technological investments, while in Spain the market is divided between Barcelona and Madrid, followed at a great distance by Valencia, Seville, Malaga and Bilbao.

3. CLASSIFICATION

Many financial companies are evolving in FinTech and they have to renew themselves constantly to survive in such a competitive world. However, it seems that the startups of the FinTech are still a step above traditional banks in tasks of technological innovation, and increasingly offer customers more variety and quality for digital payments and electronic portfolios, loans, asset management, Big Data or bitcoin among others.

According to the Everis Next (2015), it could be established a FinTech landscape compounded by nine main types which can be observed in Figure 6.

Figure 6. FinTech Landscape.



Source: Everis Next (2015).

In order to make an easy description of this complex landscape, we have developed a separated explanation of each group. In addition, we are going to examine one important example from each of them, in order to observe real cases that can help us to analyse the current situation.

3.1 Digital and Mobile payments

Digital and mobile payments are one of the most important topics within the world of financial technologies. A great change has been taking place for some years both in credit institutions and in shops of all kinds of goods and services. Fundamentally, the way in which products are bought and sold, in addition to financial services, is based on the mobile payment system.

Abrazhevich (2004) shows the online or electronic payment system as a type of financial engagement in which the buyer and the seller are enabled by the use of electronic infrastructures.⁹

Digital and mobile payments are based on online, mobile and cloud-based services that compete with those provided by conventional organizations such as banks. As Khan et al. (2017), some better-known systems of online payments are: Braintree, Icpay, PayPal, Alipay, Worldpay, Serve (from American Express); Intuit GoPayment, Stripe, Amazon Payments, WePay, and Google Wallet/Google Checkout. Some interesting startups included in Figure 6 are: Dwolla, Square, LifeLock Wallet, Paytouch, and Card Flight (Everis Next, 2015).

Mobile payments, in some cases, can create new channels to purchase goods and services using mobile phones for consumers. Mobile payment applications are ready to replace traditional cash, checks, credit and debit card throughout the world. Currently, some business and startups use mobile phones to offer financial services for those “unbanked” (Leng et al, 2018). This is something which FinTech has enabled, it is a tool for people who had not access to banking services.

It could be supposed that with a digital wallet Visa/MasterCard or a domestic debit card it is possible to carry out banking operations throughout Europe but, as Statista (2018) points out, this would not be the case. Every time a European country makes online and offline payments, it has its own needs and structures. As with the implementation of

⁹ Quoted by Khan et al. (2017).

the PSD2¹⁰ in January 2018, this diversity could be further increased. Therefore, this payment-related legislation authorizes bank customers, both private and business consumers, to use external providers to manage their finances. There are companies such as Google, Apple and Amazon, which have earned access to consumer bank accounts getting the possibility of creating services on the banking and data infrastructure. As a consequence, could it happen that in the near future every European client has his own way of paying money? It cannot be guaranteed yet, but it is an option to be taken into account.

In the area of Digital and Mobile payments, we have selected the worldwide business of Alipay. According to Lu (2017), Ant Financial Services Group (Ant Financial or Alipay) tops the list as the world's most valuable FinTech business, which become it in the best example to illustrate how FinTech companies have been rewriting the existing rules of the financial industry.

Figure 7. Logo of Alipay.



Source: Alipay.

According to information collected from Alibaba Group, the corporation was founded in the year 1999 by 18 people led by Jack Ma, a former English teacher from Hangzhou, China. Based in Hangzhou, in 2003, it started as Alipay, which was originally a simple online payment tool attached to Taobao.com, the online shopping website operated by the e-commerce giant Alibaba. Over 14 years, it has gradually developed into a fully-fledged FinTech business empire covering online and mobile payment, online-based banking, wealth management and credit rating.

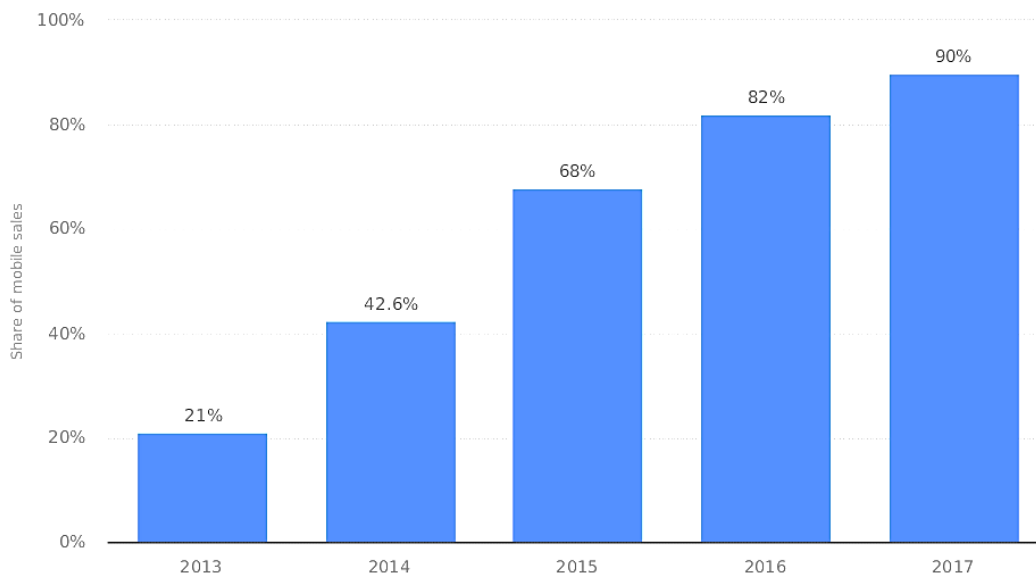
It is estimated, Ant Financial is worth \$75 billion, which is more than the market capitalization of Goldman Sachs (Chen, 2016). Thus, it is considered as the most influential disrupter of traditional financial institutions. Alipay's mobile payment business controls over 50% of the Chinese market, where it contests fiercely with rivals including Tencent's WeChat Pay, UnionPay, Apple and Samsung. Based on an article in The Economist (2017), the rapid shift to digital payment is mostly due to the popularization of smartphones, as nowadays 95% of internet users in China go online via

¹⁰ PSD2 is the revision of the Payment Services (PSD 1)-Directive 2007/64/EC. It is a European regulation in digital payment services.

mobile equipment. In the UK, a number of department stores including Harrods and Selfridges already accept Alipay (Crabtree, 2016).

Figure 8 shows the mobile share of consumer spending on the 24-hour Singles Day sales which is the China's, and the world's, biggest online shopping event and runs for 24 hours featuring steep discounts that are driven by the main Alibaba platform, Tmall. In 2017, mobile buyers on tablets and smartphones accounted for 90 percentage points of Gross Merchandise Volume (GMV).

Figure 8. Mobile share of Alibaba's GMV on Singles Day from 2013 to 2017.



Sources: Statista (2017).

As my experience working as an employee in the department store El Corte Inglés, I have chosen the following clear example of the dimension these financial technologies are reaching. In the last months, El Corte Inglés has integrated the Alipay mobile payment, used by 520 million people worldwide, to attract Chinese customers, who tend to spend much more on their trips than European tourists. Users of Alipay will be able to pay with it in El Corte Inglés department stores.

Around the world, mobile payment takes place in a variety of forms, including contactless payments or contactless mobile payments (CMP), quick response (QR) codes and cloud-based pay, depending on different technologies adopted (Englund and

Turesson, 2012). In Europe, mobile payment services usually embrace the Near Field Communication (NFC) technology. As a response, main players such as Visa and MasterCard, rather than the traditional magnetic stripe and chip, have sequentially started to use contactless NFC technology in their credit and debit cards. On the other hand, communication networks such as Global System for Mobile communications (GSM), 3G or the internet are used for remote payments, where the user's location is independent.

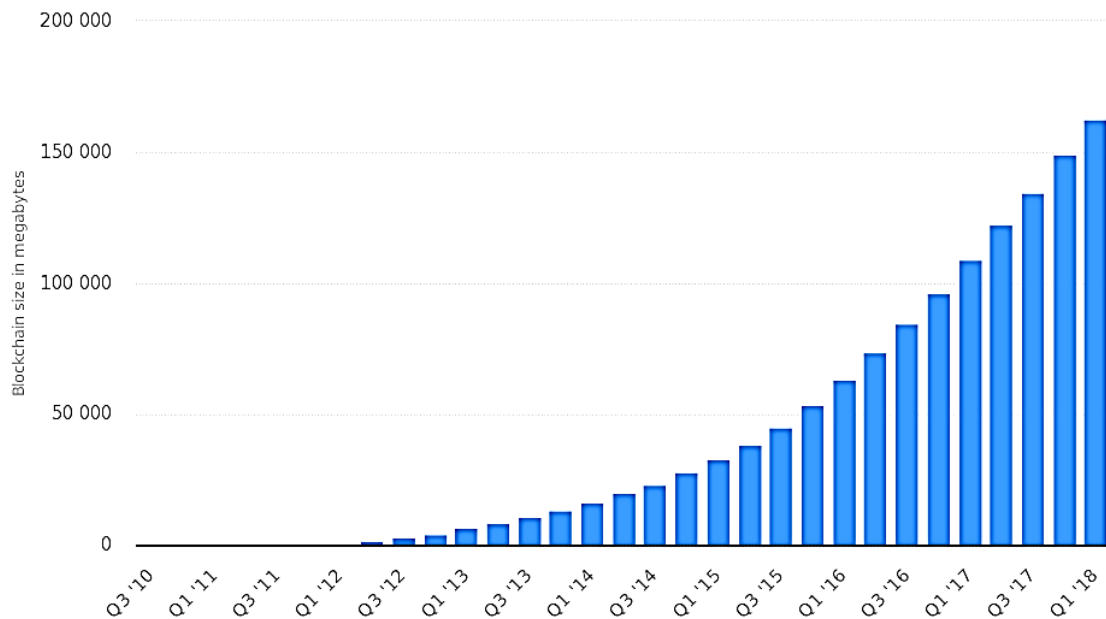
3.2 Bitcoin and Cryptocurrency

There is not a specific definition for a cryptocurrency because of his complexity, but it could be defined as a virtual currency that serves to exchange goods and services through a system of electronic transactions without the need of an intermediary. The cryptocurrencies introduce the principles of cryptography to implement a safe, anonymous and decentralized economy (Bunjaku et al., 2017). Bitcoin, created in 2009, was the first decentralized cryptocurrency. In April 2018, there were in circulation over 16 million bitcoins with a total market value close to \$138 billion. Instead of using the control model of central banking and centralized electronic money systems, Bitcoin and its derivatives use a decentralized control (Gurusamy et al., 2018).

Bitcoin is transforming the commercialization of payment processing and new payment protocols, drastically lowering the transaction cost for traders. It creates an enormous opportunity to unite the world with a global monetary system. Some absorbing cryptocurrency startups included in Figure 6 are: Xapo, Circle, Cripto-Pay, Ripple Labs, and Pagobit (Everis Next, 2015).

Based into data provided by Statista (2018), the total amount of the Bitcoin blockchain is observed in the Figure 9, where it is showed the database which have a continuously increasing list of Bitcoin deals and records, from the third quarter of 2010 to the first quarter of 2018. The size of the Bitcoin blockchain has been in an increasing trend since its creation, reaching approximately 163 gigabytes in size in March 2018. For Domingo (2018), Bitcoin and Ethereum are the ones with the most possibilities for the future, one as a currency and the other as a decentralized application development platform.

Figure 9. Size of the Bitcoin Blockchain worldwide from 2010 to 2018, by quarter (in megabytes).



Source: Statista (2018).

In the area of Bitcoin and Cryptocurrency, we have selected the firm Xapo which combines the convenience of a daily bitcoin wallet with the security of a deep cold storage vault. According to information offered by the company, Xapo has raised \$40 million from Benchmark, Greylock Partners, Index Ventures, Fortress Investment Group, Ribbit Capital and Emergence Capital Partners (Xapo).

Figure 10. Logo of Xapo.



Source: Xapo.

In order to place the company in context, The Wall Street Journal has described Xapo as the “Fort Knox”¹¹ of bitcoin storage. Xapo, based in Hong Kong, has an office in Palo Alto, California, and operates worldwide.

It offers a Bitcoin debit card which is associated with a Bitcoin wallet too, enabling customers to spend Bitcoin easier than most other services. While there is a fee

¹¹ Fort Knox is a military base of the United States Army located in the State of Kentucky, famous throughout the world for its constant mention in American films, but especially for the treasures it stores. In this military enclosure is the vault with the largest amount of gold in the world.

to acquire the card (\$20 USD), it shows an intriguing form to bring Bitcoin into the real world (Garner, 2017).

However, Xapo does not provide to the public information on possible purchase limits. Therefore, it is important to be sure that our account is financed before making any kind of purchase. With respect to rates applied, the company applies 1% in all purchase orders, adding processing fees according to the method of payment.

3.3 Capital markets and Investing markets

Capital and investment markets are the place where capital and debt instruments are bought and sold. These markets are necessary for the functioning of the economy. FinTech ventures in this field have focused on reducing the total cost of trading and issuing financial instruments.

In the area of Capital markets and Investing, we have selected the well-known firm Darwinex which is a technology provider helping traders develop their skills, and build a verifiable track record. Other significant startups that appear in Figure 6 are: Next Capital, Dough, Mercatus, Invesdor, and 6Fusion (Everis Next, 2015).

Darwinex is a broker through which we can trade mainly in the foreign exchange market, although lately they have also added some global indexes to their offer of financial instruments. Furthermore, it is not only a broker but also a financial asset manager; a Darwin is the financial asset traded on the Darwinex market for the benefit of independent traders and investors (Darwinex).

Figure 11. Logo of Darwinex.



Source: Darwinex.

Founded in 2012, Darwinex main office is in London, although it also has offices in Madrid, since its creators are Spanish. Darwinex is the trademark of the company Tradeslide Trading Tech LD. The firm is regulated by the Financial Conduct Authority (FCA). Therefore, the company has insured his funds in case of bank insolvency for an amount of GBP 50,000 or about 64,000 euros.

Darwinex technology is bolted to its exchange by providing traders with regulatory cover to charge a 20% success fee. It offers the possibility of operating in 34 currency pairs, in 9 indices and in 6 commodities that are oil, gold, silver, natural gas, palladium and platinum (Darwinex).

The leverage or level of margin offered by Darwinex is variable, with a maximum leverage of 1: 200 for the most liquid currency pairs, equivalent to a margin of 0.50%, 1:20 or 5% of margin for less liquid currencies.

People can operate with micro lots, or 0.01 standard lots, in trading Forex¹². A micro lot is equivalent to 1,000 units of the base currency in a forex trade (LiteForex Investments Limited, 2016); and the minimum deposit to open an account is 500 euros, although once the first deposit is made there is no minimum to put money back. The 500 euros are only necessary to open the account with them. For instance, traders do not need to start operating with 500 euros, they can put 500 euros in the Darwinex wallet to open the account. Then they can deposit in the trading account lower amounts to start trading. It also offer the possibility of opening corporate accounts with a minimum deposit of 10,000 euros.

Regarding Darwinex commissions, we could say they have one of the lowest in the market. As a Straight Through Process (STP) broker, they do not charge people any commission via spread, since traders operate directly in the interbank market, where the spreads are ridiculously low.

3.4 Banking and Corporate Finance

First, we could establish that the main objective of corporate finance is to maximize or increase the value of shareholders. Short-term issues include current asset management and current liabilities, inventory control, investments and other short-term financial issues. The long-term issues include new acquisitions of capital and investments (Everis Next, 2015).

¹² The Foreign Exchange Market, generally known as the Forex market, is the largest financial market in the world.

The main aim of corporate banking is to offer consumers timely and safe financial services that ensure the development of sophisticated plans and corporate financial requirements for SMEs, large companies, governments or other institutions.

Scott-Briggs (2016) suggests that FinTech is delivering corporate-banking products with a specialized service: automated electronic payments and invoicing, standardized and digitized offerings, which allows FinTech to sell products and services at substantially lower prices, or digitally enhanced features.

In the area of Banking and Corporate Finance, we have selected the startup Coupa, which is an integrated cloud-based spend-management solution that addresses all aspects of your business where employees spend money. This unified expense management is created from scratch with the aim of ensuring the success and profitability of your business by amplifying your purchasing power and reducing your business spending (FinancesOnline). Other interesting startups included in Figure 6 are: Avalara, Bill.com, Alkami, and BlueTarp (Everis Next, 2015).

The company possesses quite complex characteristics and capabilities. Among them, it is worth highlighting some of them such as expenditure management, budgets, expense analysis, supplier networks, contracts, catalogs and dashboards.

Figure 12. Logo of Coupa.



Source: Coupa Software.

With its cloud-based acquisition application, Coupa enables customers to instantly introduce and deploy solutions so they can quickly achieve significant savings. In other words, it helps its clients conduct their business to success, while keeping their operational and other costs within their assigned budget.

According to the source FinancesOnline¹³, Coupa is one of the top 20 Contract Lifecycle Management Software products, and one of the top 50 Procurement Software products too. Coupa helps to optimize the spending power of a company or organization while still keeping its costs within its pre-set budget. This cloud-based expense

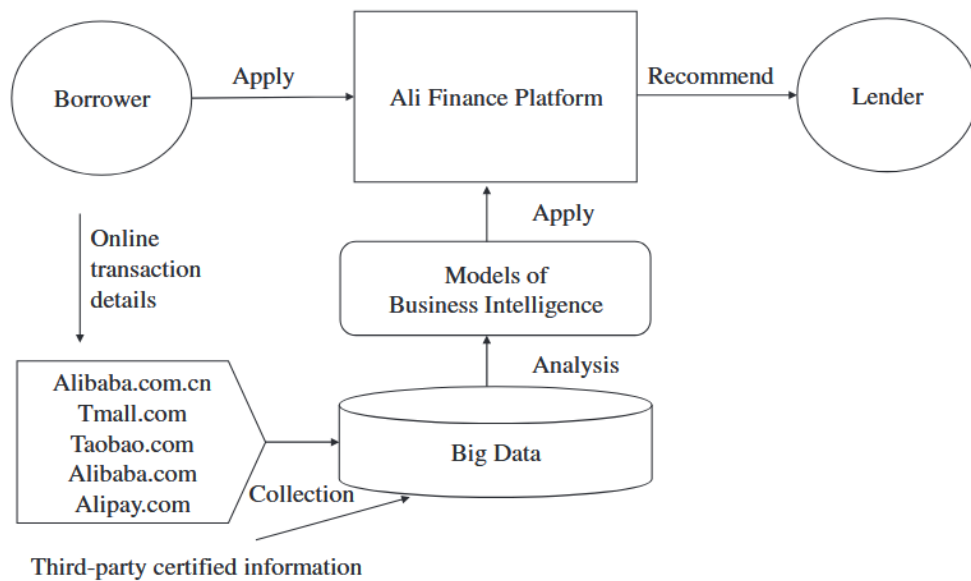
¹³ FinancesOnline is an independent software review platform, founded in 2012, and based in California.

management solution ensures maximum profitability through financial control and smart spending, allowing companies to generate significant savings that fall directly to the bottom line.

3.5 Big Data and Analysis

So far, this is one of the main groups that affect the industry, and its technological innovation allows access to quality investment data, especially long-term data. As a result, financial institutions, brokerage and consulting firms examine and treat your information much deeper today than 20 years ago; Big Data reduces information asymmetry in P2P lending, allowing online P2P lending platforms help lenders and borrowers to reduce both the search and signalling costs (Yan et al., 2015, see Figure 13).

Figure 13. Big Data Analysis for credit Risk Management in Ali Finance Platform.



Source: Yan et al. (2015).

Thanks to the availability of several data sources, Big Data offers a much more completed image of a borrower, with different data formats and sizes. P2P lending platforms use a large range of data to estimate credit risk. However, most traditional banks have not yet acquired that technical capacity or the analytical skills needed to use these

new forms of data. These platforms examine other more dynamic data from agencies and public records. Within this framework, we could include examples such as credit card purchases, accounting records of small commercial offices, and some curious cases like the time study that the borrower has used the same email address, and the number of connections on Facebook, Twitter or other social networks (Moldow, 2015)¹⁴.

Digital transactions have created an exponential rise in the amount of data generated. Getting ‘Right insights from Right data’ is the biggest challenge faced by most financial services companies. Data analytics has opened up huge opportunities for organizations around the world in terms of understanding their customers and identifying the key to marketing their products successfully.

In the area of Big Data and Analysis, we have selected the startup Eagle Alpha. Since 2012, it has provided a full service solution that allows asset managers to obtain alternative data. Other interesting startups included in Figure 6 are: Contix, 1010 Data, ZestFinance and Feedzai (Everis Next, 2015).

Eagle Alpha has built a product team that is modeled on alternative data teams in asset management firms. The product team has four groups: 1) data collection professionals whose task is to search for interesting alternative datasets; 2) analysts with buy-side and selling side experience that understand asset classes and research strategies; 3) data scientists who have strong quantitative skills for back testing and data exploration; and 4) engineers to deliver a solution to customers.

Figure 14. Logo of Eagle Alpha.



Source: Eagle Alpha.

Asset management clients include quantitative funds, discretionary hedge funds and traditional fundamental asset managers. The company works with clients who are beginning to integrate alternative data, as well as sophisticated users who use Eagle Alpha to supplement their in-house capabilities (Eagle Alpha).

¹⁴ Quoted by Yan et al. (2015).

Eagle Alpha is a recognized leader in the alternative data space. The firm regularly host flagship events on alternative data in New York, London and Hong Kong; and in addition, they are authors of some of the most valued content on the subject, and have been heavily referenced in alternative databases by the largest investment banks in the world.

3.6 Financial platforms

FinTech platforms can offer consumers much fees and lower rates than traditional banks or brokers. People are now choosing these platforms because they offer them more advantages, instead of going with a broker or an investment bank (Everis Next, 2015). Some relevant startups included in Figure 6 are: Biz2Credit, Borro, UpStart, Tilt, and Loan Logistics.

Microfinance lending platforms link lenders to borrowers in developing countries in order to provide financing to people who do not have the opportunity to get capital and to create small businesses. Almost all these platforms use local “field partners” (FPs), loan agencies in the countries of the borrowers who actually pay and manage the loans. According to Bollinger and Yao (2017), these FPs operate as intermediaries between lenders and borrowers. The microfinance platforms are usually non-profit organizations which do not charge interest or take a commission, yet the same cannot be said of the FPs. The local field partners do collect interest on the loans, and these FPs are for the most part for-profit firms. As borrowers repay their loans, the payments are divided between the lenders, and the field partners, which receive the interest on the loans.

In the area of Financial platforms, we have selected the venture firm Upstart. It was founded in 2012 by ex-Googlers, and is based in California. The company is considered the first lending platform to leverage artificial intelligence and machine learning to pricing credit and automating the loan process. It maintains one of the highest consumer ratings in the industry according to the main consumer review sites.

Figure 15. Logo of Upstart.



Source: Upstart Network.

Based on the official website source Upstart Network, this company was initially created with the goal of helping young people and unbanked people to obtain a form of financing. However, not only does this contribute, the firm collaborates with banks by providing their technology, credit unions and other partners through a "Software-as-a-Service" offer called Powered by Upstart.

Upstart is recognized as a pioneer in applying Artificial Intelligence/Machine Learning (AI/ML) to the multi-billion dollar credit industry. It uses unusual variables to provide superior credit performance and improve consumer access to it. In response to the daily productivity of the loan and the default data, the system constantly improves, optimizes and learns.

Since its beginning, the company has collaborated with the different regulatory entities in order to ensure safety when operating within the law. AI/ML-based lending amplifies the access to affordable credit by constantly finding new forms to identify qualified borrowers. Yet, the model must stay away from unlawful statistical tendencies that would be harmful to disadvantaged groups. Upstart has demonstrated to regulators that its platform does not introduce bias to the investment decision and has developed reporting procedures to ensure that future versions of the model remain fair (Upstart Network). In September 2017, it became the first company to receive a letter of no action from the Consumer Financial Protection Bureau (CFPB). This letter authorizes Upstart Network to operate without concern that its practices will provoke a supervisory or enforcement action.

3.7 Crowdfunding and P2P lending

The key understanding of P2P lending is that without the interference of traditional financial institutions, a group of investors lend to one person or business (Everis Next, 2015). It could be remark, the notable growth has suffered P2P lending platforms in the past decade. They provide a way for individuals who want to invest and lend to those who want to borrow (Demyanyk et al., 2017).

Kleemann et al. (2008) stated that “crowdsourcing takes place when a profit-oriented firm outsources specific tasks essential for the making or sale of its product to the general public (the crowd) in the form of an open call over the internet, with the intention of animating individuals to make a (voluntary) contribution to the firm's production process for free or for significantly less than that contribution is worth to the firm”. It could be established that crowdfunding is a specific type of crowdsourcing (Bollinger and Yao, 2017), because of that it could be defined as the use of small amounts of capital from a big number of individuals to finance a new venture. Some interesting startups in this field included in Figure 6 are: Kickstarter, Indiegogo, Fundera, Our Corwd, and Avant (Everis Next, 2015).

In the area of Crowdfunding and P2P lending platforms, we have selected the well-known company Lending Club. This outstanding company competes with other platforms that are dedicated to P2P lending platforms, such as Prosper and Peerform, and not just P2P companies, also against direct lenders as is the case of Avant. The business line that follows the company Lending Club is based on unsecured personal loans for individuals. It also offers the service to business owners and two specific products: medical loans and automatic refinancing loans.

Figure 16. Logo of Lending Club.



Source: Lending Club.

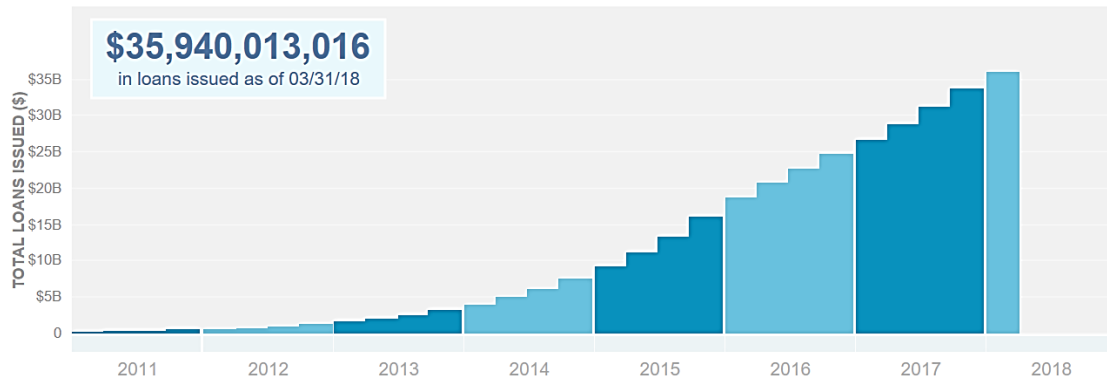
According to a review made by Martucci in Money Crashers¹⁵, Lending Club's individual loans range from \$1,000 to \$40,000 in size and have terms of 36 or 60 months. Borrower interest rates range from 5.9 percentage points to 35.89 percentage points, depending on credit score, credit history, and past borrowing record with Lending Club. The firm does not tie its rates to an index such as Libor, however, it recommends that rates may rise or fall depending on “market conditions”.

The company also offers business loans and lines of credit with terms of 12, 24, 36, 48, or 60 months and principals from \$5,000 to \$300,000. Business products' annualized interest rates range from 9.77 percentage points to 35.71 percentage points (Martucci). In Figure 17, we can observe the increasing trend of the total loan issuance

¹⁵ Website ranked as one of the top personal finance blogs online.

by Lending Club. Reaching the amount of more than thirty-five billion of loans issued at the end of the first quarter of 2018.

Figure 17. Total loan issuance by Lending Club.



Source: Lending Club Statistics (2018).

Based into information collected in the own source of Lending Club, one of the reasons which explain the success of the company is the possibility of using the technology to operate in a credit market at a lower cost than that offered by traditional banking loan programs. It manages to transfer savings to borrowers in the form of lower rates (over a 24% lower) and to investors in the form of much stronger returns.

As reported by Jagtiani and Lemieux (2017), in the case of Lending Club, borrowers are assigned a grade rating from A to G based on the complete set of information. The loan application process is as follows: 1) the application is submitted online, 2) the credit model of the Lending Club immediately grades and prices the loans in the application, and 3) the applicant receives feedback immediately on the terms of the loan for which he is qualified. Besides, the verification process takes place before funding. For instance, if the data sources of the credit model indicate that the application is fraudulent, the request may be declined. Otherwise, after submitting an offer, a validation of earnings or employment may be appealed, according to the company proprietary structures that establish whether a loan application should be checked. About 70 percent of all loans made through Lending Club platform were verified in 2015 (Jagtiani and Lemieux, 2018).

According to Nowak et al. (2018), there is still relevant data about the viability of the project that cannot be acknowledged on a simple credit score in spite of the use of Lending Club programs to assess the risk and assign a credit rating to each borrower. As a consequence, as well as credit rating information, borrowers write a paragraph that explains the project to try to engage investors to support their effort.

Lending Club has managed to obtain among the highest satisfaction ratings in the financial services industry following a procedure by providing borrowers with better rates, and investors with attractive, risk-adjusted returns (Lending Club).

3.8 Personal financial management

Personal financial management refers generally to computer software tools and utilities that assist the user in money tracking, and budgeting. They may include, but are not necessarily limited to, permitting a user to view account activity, budget future expenses and savings or accomplish electronic bill pay. Keeping the household budget may be supported by specialized methods, so called “Personal Financial Management (PFM) methods” (Gafrikova et al., 2015).

According to Caldwell (2014), PFM data can be used not only to direct relevant ads to the user for his situation and personal habits, it can also be used to analyse, calculate and/or compare the user's current situation or activity with both an ad and an explanation of the personalized advantages of the advertised product. For instance, if the user has a car loan, the user's auto loan could be analysed in comparison to an advertising offer for car loans.

FinTech startups are building applications and services aimed at helping everyone who wants to become better at handling his money (Taylor et al.). Some interesting startups included in Figure 6 are: Activehours, SmartAsset, FutureAdvisor, Personal Capital, and MileIQ (Everis Next, 2015).

In the area of Personal financial management, we have selected the startup FutureAdvisor; the company is an award-winning investment advisory firm that manages people's existing IRA¹⁶, taxable, and other investment accounts. They serve as a fiduciary, which means they put your financial interests ahead of theirs. FutureAdvisor is a Robo-advisor registered with the US Securities and Exchange Commission (SEC). The fact of being registered in the SEC guarantees protection to users. Their portfolio management service automatically monitors, rebalances, and tax-manages our current investments, adding low-fee index funds where necessary to bolster our portfolio (FutureAdvisor).

Figure 18. Logo of FutureAdvisor.



Source: FutureAdvisor.

As O'Shea (2018) suggests in her review, the company charges 0.50% as a management fee and needs a balance of \$10,000 or more for all-inclusive investment management with automatic rebalancing, tax-loss harvesting and the opportunity to consult with a group of financial advisors. Accounts are held with two important brokers, Fidelity or TD Ameritrade, and FutureAdvisor currently manages over \$1 billion in assets.

3.9 Blockchain technology

The blockchain is considered as the first technological innovation of Bitcoin, since it is constituted as proof of all the transactions in the network (Everis Next, 2015). A blockchain is a digital information-recording method which is capable of recording data using a logbook approach and with the following strictly necessary features: 1) ordered, 2) incremental, 3) sound (cryptographically verifiable up to a given block) and 4) digital (Conte de Leon et al., 2017).

Blockchain can push financial inclusion to new heights. It has managed to reduce business costs, but more importantly, it has the potential to change the way the business

¹⁶ An IRA or Individual Retirement Account is type of investment or savings account, provided by many financial institutions, for retirement savings. It let saver defer paying taxes on the earnings and growth of your savings until you actually withdraw the money.

is carried out. It gives rise to a new governance structure and how governance is being applied. It enables transparency in digital business models and can help generate new revenue streams (Chuen and Deng, 2017). Some interesting blockchain startups included in Figure 6 are: BLOCKCHAIN, BitGo, PeerNova, Coinsetter, and Mirror (Everis Next, 2015).

In the area of Blockchain technology, we have selected the company Blockchain. It is considered the world's leading software platform for digital assets, offering worldwide the largest production block chain platform; besides, using new technology they are trying to build a radically better financial system (Blockchain).

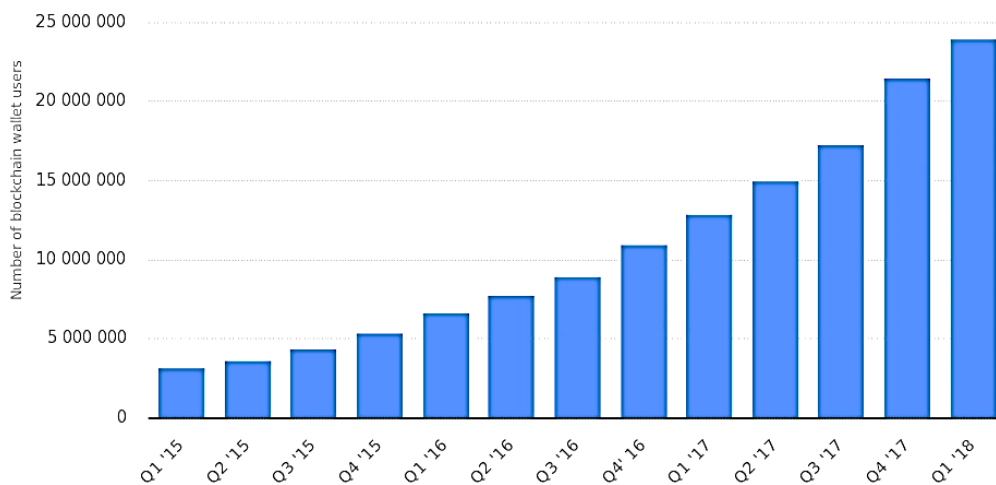
Figure 19. Logo of Blockchain.



Source: Blockchain.

Blockchain's digital wallets have reached almost 24 million (see Figure 20), and they have processed more than 100 million of transactions (160,000 daily), empowered users in 140 countries across the globe to transact quickly and without costly intermediaries. Many tools are offered for developers by them, and real time transaction data for users to analyse the burgeoning digital economy (Peterson, 2017).

Figure 20. Number of Blockchain wallet users worldwide from the first quarter 2015 to the first quarter 2018.



Source: Blockchain.¹⁷

¹⁷ Quoted by Statista (2018).

The company was founded in August 2011. You can download Blockchain apps for iOS and Android. The company claims to be “the world’s leading software platform for digital assets” and offers “the largest production block chain platform in the world.” In addition to functioning as a basic wallet, Blockchain allows you to buy and sell bitcoin through the app, or view new research on cryptocurrencies.

In summary, after describing the different divisions of Financial Technology, we could say that FinTech composes a new wave of companies that are characterized by changing the way of payment of customers, new forms of sending money, the manner in which money is borrowed, lent and invested by people. The birth and evolution of this Financial Technology is linked to the financial crisis mentioned above and to the erosion of the confidence it generated (Menat, 2016). Therefore, in this context is how FinTech suppliers arose, proposing new services with much lower costs thanks to platforms and mobile applications. Collective funding is also being offered as a way of access to investment opportunities. A significant fact is that FinTech in developing countries is not just about making existing services more convenient: it is creating new infrastructures, and providing greater inclusion of millions of people in the real economy (Koffi, 2016).

4. THE FUTURE OF BANKING

Financial technology plays a leading role in the transformation of banking (Boot, 2016). As Arslanian (2017) suggests, the FinTech revolution is going to change banking as we knew it. It is important to have in mind that what happened was that a gap was created between what your banks were offering you and what you, as a customer, came to expect, especially from a user experience and convenience perspective, and that interval is what the FinTech industry is tackling right now. But that gap was so big that even non-traditional banking players decided to jump in and capture this opportunity, mainly technology firms. For instance, think about the iPhone, Airbnb, Uber, WhatsApp or WeChat; elements and tools that have transformed the global financial market.

On the one hand, FinTech companies have understood that they either need access to a critical number of customers and/or a bank's infrastructure. Thus, many have opened up for cooperation. On the other hand, banks have become aware of the disruptive potential of FinTech and their capability to innovate and digitalize. Hence, banks have acknowledged cooperation with FinTech as an opportunity to increase flexibility, speed and innovativeness.

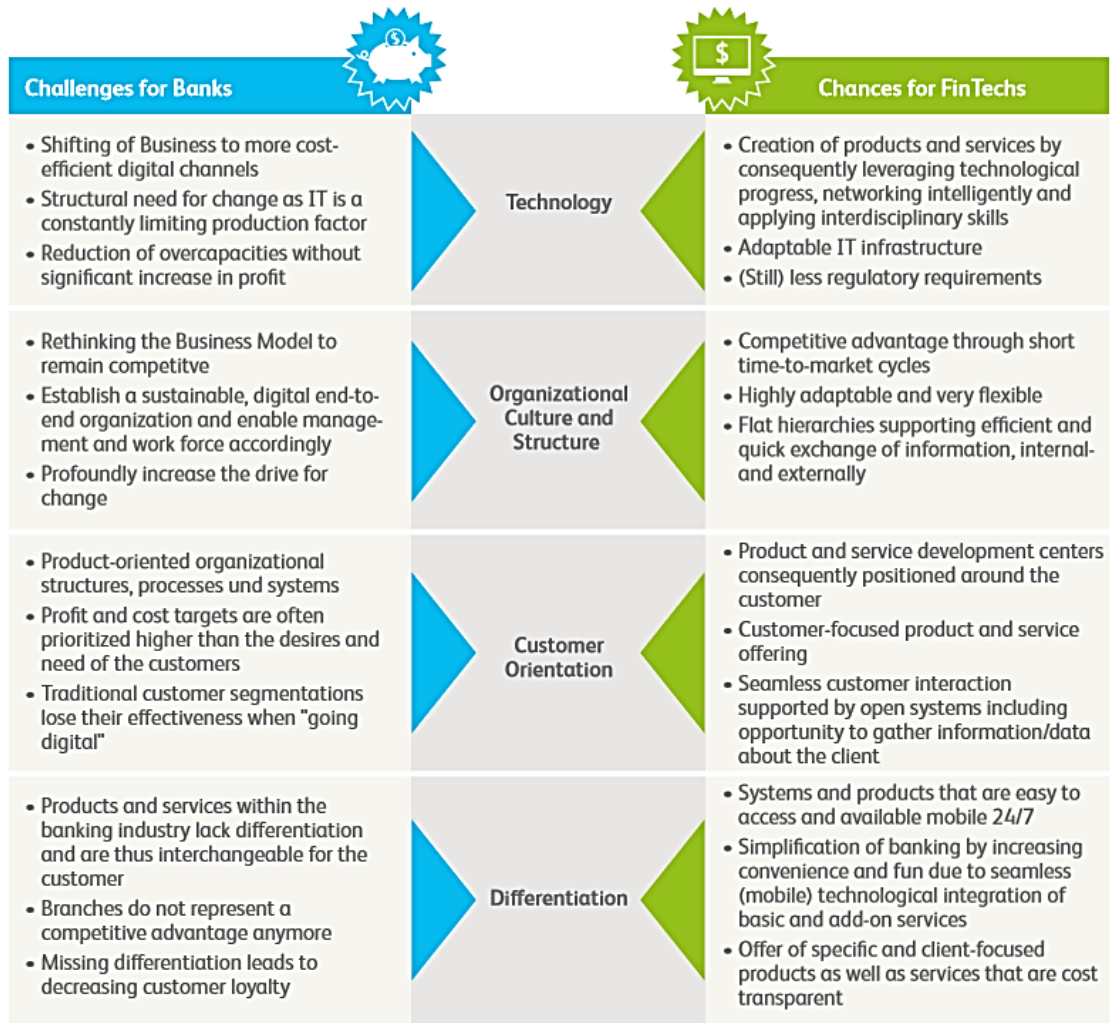
Some traditional banks have already discovered that combining and sharing strengths between them and entrepreneurial FinTech could bring about a win-win situation for both. Some banks consider this as an option that will allow greater satisfaction for the client. However, while there is no complete agreement, there will be individuals who will see it as competition and will not want to work together. This dilemma between cooperation and existing competition could best be described as "Coopetition" (Kerényi et al., 2018).

4.1 Competition between banks and FinTech

The industry is undergoing a big change and customers want products and services at their digital convenience. Analysts predict that banks need to move out of their comfort zone, and start digitizing, in addition to diversify (Nilsson Andersson and Holmgren, 2017).

Shrinking profit margins, changing customer behavior, exponentially increasing use of mobile devices, digitalization and rising competition exert pressure on the banking industry. Some call the development a “Revolution”, emphasizing its speed and disruptiveness. Others name it an “Evolution”, accentuating its fundamentality, as it can be observed in Figure 21.

Figure 21. Revolution or Evolution?



Source: Grewe et al. (2016).

Overall, the rapid technology development simplifies the market entry for new players and fuels the competition between established and new market entrants (Grewe et al., 2016). The new competitor species is not only aiming at snatching market share from banks, but is attacking banks’ business models.

FinTech pursues the development of financial products or services that satisfies the customer, facilitating their daily life thanks to technological disruption. Compared with traditional entities, Fintech's aim is to provide financial services that are highly focused on the client and at lower costs. Because of that, we could analyse that the competitive advantages of FinTech over banks are:

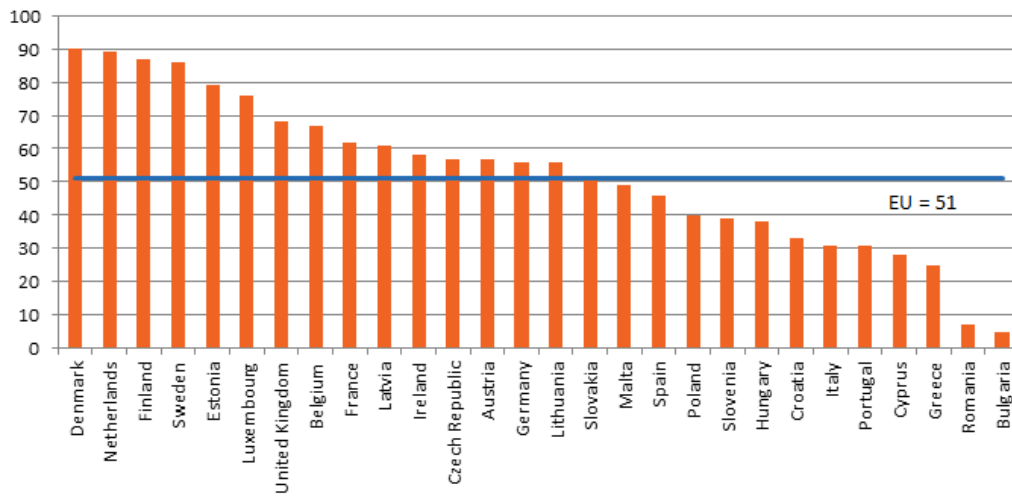
1. **Financial products totally online**, without the need for consumer displacement, efficiently using digital channels, taking advantage of the mass of Internet and smart devices. They use the convenience of an application or an attractive interface to offer customers products previously reserved for traditional banking.

Based on data from Eurostat (2018), around half (51%) of adult Europeans use Internet banking. This share is constantly increasing and has doubled since 2007, when it stood at 25%. Internet banking is especially well liked among 25 to 34 year old, with 68% using this facility. In line with the education level of the user, the use of Internet banking tends to increase. While close to 25% of those have low education use e-banking, the rest possesses a high education.

In Figure 22 it can be observed the percentage of use of Internet banking among EU Member States. It is most common in Denmark (where 90% of people aged 16 to 74 said they were using it) and the Netherlands (89%), followed by the other Nordic countries, Finland and Sweden. The lowest shares were registered in Bulgaria (5%) and Romania (7%). Less than 30% of those between the ages of 16 and 74 use Internet banking in Greece (25%) and Cyprus (28%) (Eurostat, 2018).

Furthermore, in accordance with Statista (2016), digital content such as mobile applications, mobile games or tickets for events are some important drivers of mobile consumer spending. Online stores such as Google Play or Apple's iTunes are able to produce revenue through digital media sales, because of the increasing affordability of media downloads and streaming. In addition, Chat applications such as LINE or KakaoTalk have started to monetize through the sales of stickers and games, all of which are paid through the mobile device on which they are running.

Figure 22. People who used Internet banking, 2017 (% of individuals aged between 16-74).



Source: Eurostat (2018).

2. Enable solutions in a fast way using **disruptive technologies, flexible structures and agile methodologies.**

As Rojas (2016) proposes, the disruptive potential of FinTech companies is related with its competitive features and value proposition, better than those of traditional banks: they simplified the technology to offer the customer a simple, friendly and convenient interface, accessible at any time and place. Being fully "online", FinTech businesses have a lighter cost structure than a bank, without the weight of physical infrastructure and old technological systems, as well as associated salaries. FinTech companies take advantage of the technology to better understand the customer and overcome the operational inefficiencies of traditional institutions (Capgemini et al., 2018). All this allows them to attend population groups that have been normally neglected by banks, such as small businesses.

Big Data is also helping FinTech companies acquire new clients, as well as keep customers by offering a better customer-service experience. By combining large data with ML, FinTechs are able to identify and resolve fraudulent transactions, a service that is valuable to customers since they do not like their money to be stolen. Big Data is analysed to create a usual spending

profile for each client, so that the system can identify when a transaction is outside the typical day-to-day expense (NeuroChain, 2018).

As a result of Big Data and predictive analytics, FinTechs have achieved a competitive advantage over banks by reducing the risk of loans, offering a better customer experience and providing easier methodologies.

3. They pursue a **customer centric approach** and therefore aim to add value to current financial services with a more personalized and immediate treatment.

The culture of creativity, customer-centered design and the aggressive desire to explore new opportunities are some of the traits that are commonly associated with FinTech. FinTech startups are also known for having an innovation-driven culture that has been producing similar or even much better services than the banks themselves (Gulamhuseinwala et al., 2015)¹⁸. Banks are more observant of activities in the FinTech space identifying the leaders within the ecosystem and to monitoring the threats posed by FinTech (Oshodin et al., 2017).

According to Arslanian (2017), “Robo advisory platforms offer consumers asset-management solutions that are not only more transparent in what they charge but also substantially cheaper”, and what probably worries banks the most is that these newcomers have the ability to pick and choose the parts of banking they want to get involved in, obviously the most profitable ones, focusing on what you really should be taking into account, the clients.

4. FinTech has a **disintermediated model** to cover a specific need, on which they focus and develop their idea.

Online financing models and P2P loans offer direct access to retail investors. Experts describe this feature as a form of "disintermediation". The

¹⁸ Quoted by Oshodin et al. (2017).

advantage of disintermediation is the reconstruction of the connection between the borrower and the saver directly. Through the use of digital platform-based technologies, affordable disintermediation appears to be available; these platforms manage to match the supply and demand for capital, and offer comparative information, choice and access. Using the information published in the online portals of Crowdfunding and P2P lending, investors investigate directly their borrowers in order to determine whether or not to extend their contribution, with the associated increase in credit risk. This is a change in the complete intermediation model offered by the depository banks and the partial intermediation models (Chiu, 2016).

P2P lending platforms now offer consumers an alternative to loans that used to be available only at banks. Requesting personal loans was never an easy task. In order to obtain financing, we had to have a certain amount of seniority in the bank, go to the office, fill out all the forms, provide endless documentation and wait even several weeks for an answer.

One of the reasons for this increase is the willing credit deficit. The population often needs more and smaller loans that are not attractive to banks due to their low profitability and high risks. That is why there are good prospects for companies in the field of P2P financing (Kalmykova and Ryabova, 2016).

5. Encourage commitment because they favor **the financial inclusion** of unbanked population groups and because they democratize access to a greater number of financial services (Demirguc-Kunt et al., 2018). They also promote greater transparency in financial offers.

Arslanian (2017) supports that there are more than 2 billion people who are completely unbanked currently in the world; these are individuals who do not have access to a bank account, who cannot borrow money from a bank, and for whom the only way to save money is to literally hide it under their mattresses.

This situation perpetuates a vicious circle of poverty and, moreover, this is not only a problem in developing countries, but also one in developed ones. In

the US, for instance, in cities such as Miami or Detroit, more than 20% of homes are completely unbanked.

But not all are bad news, since it is the first time in modern history, which can be offered to these individuals different financial services, and this is very favorable. According to the World Bank, over the past five years, about 700 million people had the opportunity to move from being unbanked to having access to financial products and services. For many people it is only the beginning, because the Fintech industry is working progressively to transform the way in which financial services are provided; that is why it is not only a user experience and convenience, but mainly access and cost savings (Arslanian, 2017).

Artificial intelligence power chatbots that mimic human conversation and messaging apps are being tested to replace those call centers that we all probably hate. Biometric data and voice recognition tools are being tested to replace not only passwords but those tokens that we probably hate even more. Others are connecting FinTech to the Internet of things (IoT), and wearable technologies and bedding banking in your day to day life so that in the future you will not even need to worry about it (Schulte and Liu, 2017). Imagine your car insurance premiums automatically going down because your car knows that you have been driving safely, and automatically notifies your insurer. Others are experimenting with a gamification in virtual reality as tools to provide financial services to Millennials in ways they may actually enjoy, and that is an important area of focus. A recent study shows that more than 70% of Millennials would rather go to the dentist than hear what their banks have to say.

6. Significant **reduction** of the level of current services costs. For instance, many Fintech companies avoid joining traditional banking ecosystems that typically rely on established institutions to processing loans or providing the backbone of payments with credit cards or currencies. With highly automated, scalable, software-based services and no physical distribution expenses, these new individuals have a significant cost advantage and, consequently, often offer more attractive terms than the banks' websites. They use techniques such as modern

data analysis to experiment credit rating approaches or use social media to analyse any change in customer conduct (Dietz et al., 2016).

Due to the unsteady nature of interest rate movements, it also lets for more competitive pricing and reliability when it comes to getting the best possible deal (Network Capital Funding Corporation, 2017). The fact that FinTech ventures can easily grant loans in worldwide areas make possible for a higher volume of applications, making them equal to, if not more experienced than, a traditional bank. We can observe competition between traditional banks, which have improved their methods with the introduction and use of the new Financial Technology, and the FinTech ventures startups that offer competitive loans with low interest and very low or inexistent commissions.

I would like to show a little in depth, and based on data from OCU provided Vivas (2018), how new banks led by the FinTechs, are reducing costs working from apps and eliminating almost any kind of commission. These banks are supervised by the Bank of Spain and should not imply any risk, as can be N26 based in Germany, or Bnext with headquarter in Spain.

A great added advantage of these exclusive mobile accounts stands out when you are going to move or spend money abroad. Many of them remove the commissions when users shop outside, when they make payments or transfers in currencies and when they take money and use an ATM in another country. For instance, Bnext, in relation to the commissions by transfer does not practice any charge (in euro zone, in currencies, extra commission for change of quota). Another case, such as N26, only applies 0.50% in commission for currency transfer; in contrast, send transfers abroad with Santander Bank usually has a minimum cost of between 6 euros and 40 euros, depending on whether the country belongs to the EU and the type of transfer used¹⁹. And another common example, such as the euro-zone extraction commissions with the debit card, FerratumBank allows four free extractions per month; as my personal knowledge, other

¹⁹ Based into PDF "Precios Estándar" of the noticeboard of Santander Bank (2018), it can be founded in <https://www.bancosantander.es/es/tablon-anuncios>

traditional banks like BBVA charge five euros for each extraction in countries like Italy.

It is clear that the differences among the commissions between the traditional banks and this new bank led by the FinTech is very large, and it is something obvious why people is starting to change their habits and are leaving their traditional accounts.

In summary, FinTech is able to offer competitive, easy and flexible alternatives or complements to banking solutions at a lower cost level. Flat hierarchies and permeable organizational structures usually allow them to adapt quickly to market changes and benefit from shorter marketing time cycles. Their customer focus, the transparency of offers, as well as the ability to innovate clearly distinguish them from banks.

Thus, the survival of banks will depend on their ability to offer services that blend with the digital life of their clients and that provide unique and exceptional experiences to the client. Instead of boosting customer centricity, banks often still focus on reaching higher levels of operational excellence and improving efficiency within their traditional business model. In contrast, FinTech have begun to strike some parts of the banking value chain by succeed in dealing with the long-established inefficiencies that customers tend to perceive. These include high costs, lack of transparency or tedious processes. The easy-to-access and easy-to-use products and services have contributed to the success. Although banks may have played down the power and disruptive potential of FinTech at the beginning, it has become quite clear that the FinTech have come to stay (Grewe et al., 2016).

4.2 Traditional banking system response to the threat of FinTech

While banks have some disadvantages compared to startups, they also have advantages. Being controlled by regulatory entities may seem like a burden, but on the contrary, it is proven it generates confidence to the consumer. A long history brings legacy systems with it and also builds trust brands and provides rich historical data, not to mention a banking license and an important start in compliance initiatives. And, of

course, banks understand banking; especially the risks involved, while new entrants often do not, a cost which could be crucial in the short-term (Kalmykova and Ryabova, 2016).

As we have reported, banks will respond and will try to be players in the FinTech world themselves, with the aim of remaining the benchmarks. They may also configure platforms, and in this way hold on to the client interface (Bofondi and Gobbi, 2017).

Banks have realized that new technologies can help reduce costs. An effective application of technology allows to standardize the provision of services, and therefore, reduce labor and service costs (Everett, 2015). In addition, new technological developments allow expanding delivery options and reaching consumers who did not have access through other channels.

For several years, banks have seen this new trend, and therefore, they have decided to adapt to new social and consumer demands. This can be easily seen with the appearance of online banking in general and online loans in particular. After the closing of the financing tap by the banks, the fast online credits offered by private companies became popular. Banks found a great competitor in FinTech startups and they started to put their helmets on, since it is one of the main sources of revenues for them: they started to offer the possibility of requesting personal loans through the Internet and with hardly any paperwork.

If we access the different websites of the main financial entities, we can find different online loan offers (Battioli, 2016). These are some examples of personal online loans that we can get without leaving home:

- “Préstamo Naranja de ING”. With a maximum amount of 40,000 euros. Interest from 6.11 % Annual Percentage Rate of charge (APR). Conditions: 1) No commissions. 2) No need to domicile the payroll. 3) No linked products. 4) Online application. 5) Pre-approval immediately.
- “Préstamo Open de Open Bank”. With a maximum amount of 18,000 euros. Interest from 9.76% APR. Conditions: 1) For customers with at least 6 months

in the bank. 2) With reductions in the APR for linked products. 3) Online application.

- “Préstamo Expansión de Banco Sabadell”. With a maximum amount of 60,000 euros. Interest from 9.88 % APR. Conditions: 1) Approval in 24 hours and money in the account in the next 24 hours for amounts of up to € 18,000. 2) Possibility of requesting an initial 3-month grace period. 3) You can pay in 12 or 14 annual installments. 4) Application through the Internet.

Perhaps, many people do not know that this use of technology applied to banking generates enough benefits, besides lowering costs which can be applied in the improvement of the service to the consumer (Schnabl and Vickery, 2018). We could remark that the basic difference is the use of new technologies:

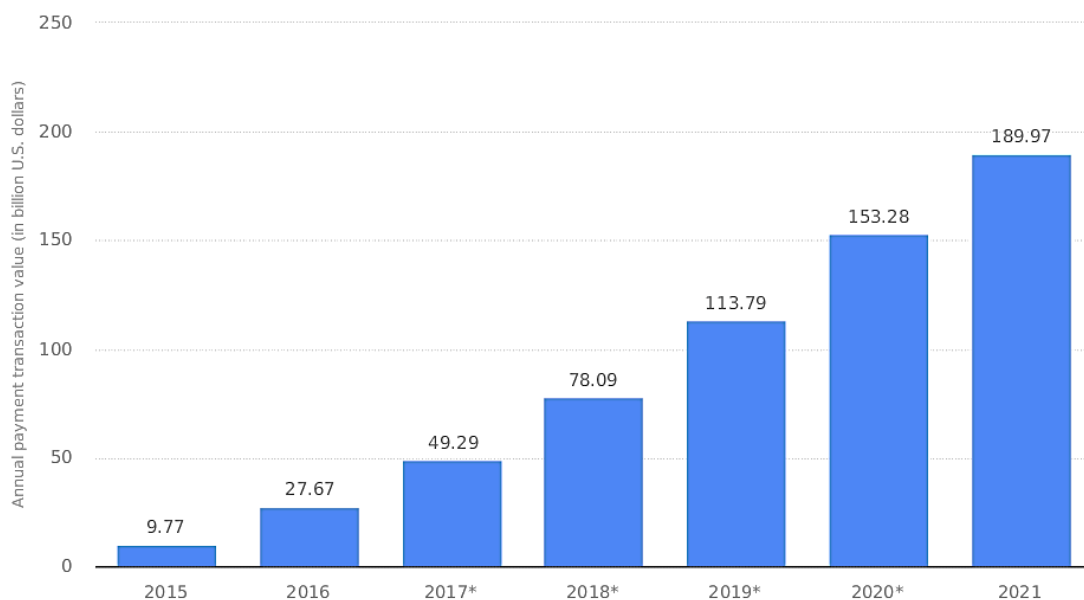
1. Speed: thanks to the automation of personal loan application forms, currently, banks are able to perform the preliminary analyses in just minutes, and will allow us to obtain a response at the moment. Customers could avoid boring queues and gain time.
2. Documentation: the use of Big Data allows us to get personal loans in an entity even if we are not customers. Delivering a bank statement of the entity where we are customers or linking our account so that they have access to the information of our movements, will be enough for another bank to evaluate if they will grant us or not the personal loans.
3. Ease: being able to make the online application without having to go to the bank's offices, avoiding waiting, sending the documentation in the same form or having the bank put a messenger at our disposal are part of the improvement of the experience of requesting financing (Battioli, 2016).

As a result of the big changes that are facing the demand for financial services, bank entities are acting in different ways to this digital challenge, with different proposals and rates, because of not all conceive it in the same way. In general, we are expected to

prioritize the final consumer ahead of product creation, looking for what the user really wants, since it is the focal point for which the range of products and services offered is defined, and there is some consensus that the concept of digital banking it is applied above all to retail banking (Cuesta et al., 2015). This digital transformation depends on the set of circumstances with which each institution starts out, although it is obvious that there are several phases depending on the level of maturity.

Traditional banking, apart from having worked in the improvements in personal loans, are applying new technologies in other areas. An example is digital wallet applications to pay with our cards via mobile phones, to activate or deactivate them at will or even having alarms to avoid spending too much (Battioli, 2016). It is expected the global mobile payment revenue to be greater than \$1 trillion in 2019. As a clear example, the Figure 23 discloses data on the proximity mobile payment transaction value in the US from 2015 to 2021, in billion US dollars. It is estimated that NFC or other CMPs will generate close to \$190 billion in transaction value in 2021.²⁰

Figure 23. Forecast of proximity mobile payment transaction value in the United States from 2015 to 2021 (in billion US dollars).



Source: eMarketer (2017).

²⁰ Quoted by Statista (2017).

The spread of mobile devices like smartphones and tablets has led to the strong growth of mobile commerce. In many physical stores, mobile devices can also be used as payment method by using NFC technologies to scan digital wallets (Statista, 2016). Due to the mentioned facts and data, we believe this is a great opportunity for banks to invest, because it is a market in which many firms are getting important results and revenues, with a new generation of consumers.

4.3 “Fintegration”. Cooperation between FinTech and banks.














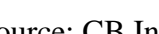
Cooperation is possible between traditional large financial institutions and disruptive financial innovators like FinTech firms. The possibility of creating partnerships is a real option that many individuals of this ecosystem are applying (Omarini, 2017). Therefore, instead of sending all banking reality into chaos, there is real ground for cooperation between FinTech companies and traditional banks (Silicon Valley Innovation Center).

Some experts talk about “Fintegration”, in reference to the strategy of purchases and investments led by banks to accelerate their digital transformation through the acquisition of technology, skills and talent (Cea, 2017). There are numerous investments that are being made with the aim of adapting to demand, and nowadays, it is impossible to find any bank that has not invested anything in Financial Technology.

We have used the CB Insights (2018) database to study the FinTech investment activity by the top European banks, by assets under management, from 2012 to the second quarter of 2018. In keeping with Figure 24, among Europe-based banks, Banco Santander is the most active in the framework of FinTech investments. Over the last few years, the banking giant included 8 new investments from FinTech to the bank's portfolio, and therefore leads the ranking as the European bank with the largest number of unique investments for FinTech startups. An important reason of this leadership is due to its venture branch Santander InnoVentures. The company has made 23 equity investments to 19 unique FinTech startups. The largest investment it participated in was a \$135M Series E investment in Q3'15 to small business lender Kabbage, which also included participation from ING among other investors.

A final curiosity from Figure 24 is that the firm with the most co-investments in this cohort is R3. This is a startup established by a partnership of financial services firms and is carrying out use cases for blockchain applications. The company raised a financing round of \$107M in the second quarter of 2017 that included participation from HSBC, Credit Suisse, BBVA, Societe Generale, ING, Deutsche Bank, Royal Bank of Scotland, UBS, BNP Paribas, and Barclays Bank, among others (CB Insights, 2018).

Figure 24. Top European banks by assets, ranked by Fintech portfolio companies (Equity financing 2012 – Q2’2018).

	Rank	Blockchain	Data Analytics	Personal Finance	Wealth Management	Capital Markets Software	Lending	Payments & Settlement	Regulatory Technology
	1	Digital Asset elliptic ripple R3	visible alpha	Curve	Roostify SIGFIG	personetics TRADESHIFF	AutoFi Kabbage	payever PAYJOY PayKey iZettle MyCheck	SOCURE
	2	R3	Dataminr		canopy	SYMPHONY iCapital NETWORK	WeLab PROSPER		ACADIASOFT Digital Reasoning
	3	Digital Asset R3	visible alpha		SIGFIG	SYMPHONY iCapital NETWORK	信而富 Credit Asset Finance		ACADIASOFT Digital Reasoning
	4	R3				SYMPHONY OpenExchange CURVEGLOBAL		FORM3 FINANCIAL CLUB	Digital Reasoning iCloud9
	5	R3		solarisBank Atom saveUp DESTACAME.cl				sum up*	
	5	R3				SYMPHONY CURVEGLOBAL	PayCan		Digital Reasoning ACADIASOFT
	5	R3	visible alpha. quantexa			TRADESHIFF			ACADIASOFT kyriba
	8	R3				TrustBills SYMPHONY		tyfone	ACADIASOFT
	8	R3				ERIS SYMPHONY		TagPay	ACADIASOFT
	8	Digital Asset		solarisBank tink			CLOUD LENDING SOLUTIONS		BehaveSec
	8	R3					fintonic WeLab Kabbage	twisto	
	12	SETL		Linxa					
	13	R3							
	13	R3							

Source: CB Insights (2018).

Non-European banks are also making significant capital investments by acquiring FinTech firms in order to avoid internal development costs. For instance, Fifth Third invested in ApplePie Capital, an online lender specializing in franchise loans. Bank Alliance, a network of over 200 banks, associated with the Lending Club and Foundation

Capital to enable members to give small consumer and business loans. Members may also purchase loans from these FinTech companies to add to their balance sheets. JPMorgan Chase has licensed technology from OnDeck (a technology-enabled financial platform which provides loan financing to SMEs) to offer Chase customers small business loans in a complete digital process (Jagtiani and Lemieux, 2017).

As stated in an interesting post of Silicon Valley Innovation Center, in order to cooperate successfully, banks have to integrate the advantages FinTech offers into their processes, giving way to some innovation and a change in approaches. Large banks such as Citibank, Bank of America, Wells Fargo, Santander, Barclays, Capital One and BBVA, among others, have discovered that they can collaborate instead of competing with FinTech companies and use open innovation to achieve several objectives.

First, banks have a huge resources and influence on regulatory frameworks. FinTech companies are able to innovate quickly and bring products to very specific customer segments. By combining these two together, you are able to not only take advantage of the bank's resources, but also make use of the technical ability of FinTech companies to bring products to the market very quickly, and determine which add value to end users and the company.

Second, banks can also take advantage of this relationship in order to reduce the learning curve. Banks working with Fintech companies are learning much quicker businesses that are different from the ones they have managed for years.

Third, banks can use their advantage in terms of financial stability to support FinTech startups. This gives startups the much-needed financial freedom to work on innovative and disruptive solutions, while giving banks early exposure to emerging startup technologies (Silicon Valley Innovation Center).

And fourth, banks can use data from digital channels offered by FinTech companies. This collaboration allows banks to use the talent FinTech have in abundance, while investing in training the human resources they need in different areas such as data analysis, artificial intelligence, design, cybersecurity, blockchain and others.

It is very unlikely that you will see a FinTech startup wanting to become a deposit-taking institution. They are very happy to control the front end, the consumer-facing part, and leave the boring back end to the traditional banks: things like post rate settlement, reconciliation or regulatory reporting. This sharing may create a new banking model in the future where the traditional banks are handling the back end, acting as suppliers of these new companies, and FinTech startups who control the front end and the consumer experience (Arslanian, 2017).

The most concrete example of this collaboration between FinTech and banks could be Application Programming Interface (API), a technological protocol that allows communication between different information systems, and in our case those of banks and FinTech, allowing the former to connect their customers with the services offered by the latter (Nienaber, 2016). Banks have the opportunity to incorporate the technology innovation of FinTech firms in key areas where support is required, reducing and simplifying the process of adding new services by joining together building blocks of services.

As it is established by Capgemini et al. (2018), the FinTech Ant Financial was quick to recognize the importance of partnering. In 2005, just one year after its launch, Alipay established collaborative relationships with Visa, China Merchants Bank, and China's Industrial and Commercial Bank. In 2009, five large state banks and 15 national banks had established cooperation with Alipay. In addition, Alipay has been actively building FinTech partnerships. For example, it partnered with Stripe and allowed FinTech's network of merchants, to accept payments from hundreds of millions of Chinese consumers worldwide. The continued collaboration with other firms has helped Ant Financial expand offers and built customer confidence.

In conclusion, banks have realized that the landscape is changing and in order to survive they need to evolve. Some banks will succeed and being able to develop this culture of innovation and entrepreneurship along the organization, nevertheless, many will not, and this has consequences. Every individual must be prepared to the change.

5. THE GOAL OF A “DIGITAL SINGLE MARKET”

One of the most controversial issues at the beginning of the FinTech phenomenon was the competitive advantage that this type of companies had, not being subjected to the strict and rigorous regulation of traditional banking. Accordingly, the emergence of these new actors necessitates a revision of the existing regulation, since it presents shortcomings and is not adapted to the current technological advances.

The financial sector is the largest user of digital technologies, and an important driver of the digital transformation of the economy. As we have been showing and analysing throughout this paper, FinTech is changing our lives with an innovation in ground-breaking convenient, profitable and innovative payment services for consumers, increased security (blocks can make transactions faster, more traceable and safer), and finally with more opportunities (online financing platforms for small businesses and non-professional investors).

At the end of 2017, the European Banking Authority (EBA) estimated that around one third of the FinTechs they had information about, were not subject to any regulation, despite the fact that their activities included sensitive services as means of payment, credits, deposits and investment management.

As a consequence, the European Commission, as part of its efforts to create a “Digital Single Market” and further to build more competitive and innovative Capital Market Union (CMU), announced its FinTech Action Plan on March 8, 2018 (Dechert, 2018).

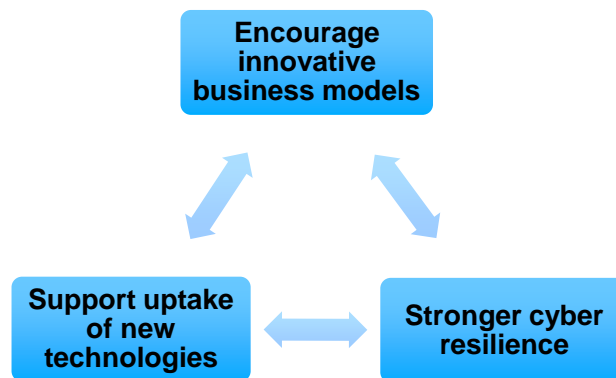
5.1 FinTech Action Plan

“The Action Plan is part of the Commission's efforts to develop a CMU and a true single market for consumer financial services. It is also part of its drive to create a Digital Single Market” (European Commission, 2018). The Commission aims to make EU rules more future-oriented and aligned with the speedy advance of technological development. It aims to address a wide range of issues like cryptocurrencies, cybersecurity, data

protection, blockchain innovation and EU compliance and supervision of these new technologies.

The Commission's Action Plan could be divided into three parts (see Figure 25), which has the common objectives of obtaining a more competitive and innovative financial market and the creation of a Digital Single Market.

Figure 25. Commission's Action Plan goals.



Source: Own elaboration. Data obtained from European Commission (2018).

For the European Commission, Europe should become a global hub for FinTech, where consumers can find a market and EU companies and investors know how to get the most advantages. Moreover, and because of the demand from banks and consumers, the Commission is introducing new rules that will help meet the demands of both groups and will contribute to the development of the EU's single market.

One of the points that is getting the most controversy is to what extent FinTech should be controlled just like traditional entities. From the point of view of the consumers, two are the issues on which regulation should focus on: cybersecurity, and the protection of personal data. Precisely in these two fields, the European Commission has developed different standards in his Action Plan that must serve to guarantee services that are not only agile and efficient, but also safe and reliable. It is important to note that not only the authorities are interested in the correct regulation of these new financial services, but

FinTechs also demand themselves regulatory changes that allow the development of innovations from a culture of good business practices.

In summary, these are the highlights of the FinTech Action Plan from the European Commission (2018) communication, so the Commission will:

1. Establish a group of experts to assess before Q2 2019 whether there are unfair regulatory obstacles to financial innovation in the current Financial Services Regulation.
2. Assist in the development of standards for the FinTech by the Q4 2018, working with the European Committee for Standardization and International Organization for Standardization (ISO), including the blockchain area.
3. Support the efforts of companies to develop, by mid-2019 of 'standardized application programming interfaces' that comply with the Payment Services Directive (PSD) and the General Data Protection Regulation (GDPR).
4. Present a best practice guide on limited regulatory environments, based on the guidance of the European Supervisory Authorities (ESAs).
5. Host an EU FinTech Laboratory where European and national authorities will work with tech providers. Nevertheless, as far as we know, this measure would need a great amount of money for developing. Currently, we have not found or received information about how much money the European Commission will use for it.
6. On cryptocurrencies, work with ESAs and international partners to assess the risks, opportunities and relevance of existing standards. The Commission will continue to closely monitor developments in the market and the risks that may arise, while the ESAs will continue to assess the applicability of EU financial regulations to cryptocurrencies. Depending on the results of this evaluation, the Commission will decide if concrete initiatives are required at EU level. Any initiative will have to be put in an international context, since Europe represents only a small part of the global cryptocurrency trade (European Commission, 2018).
7. Organize a public-private workshop in the second quarter of 2018 to explore and assess the barriers that limit the exchange of information about cyber

threats among financial market participants and to identify possible resolutions while guaranteeing that data protection standards are sustained.

8. Maintain to work on its strategy to examine the legal implications of distributed accounting technology and blockchain to all areas of the economy, including a pilot project to implement the European Financial Transparency Gateway based on distributed accounting technology.

While the objective of becoming an international precursor certainly required a robust legislative framework, the complexity of the domain and a large number of affected actors explain the Commission's decision to move forward with the non-legislative action of the exploratory nature in this stage (European Parliament, 2017)²¹. Indeed, there is an element that becomes essential in this situation: the importance of industry, which is in charge of the rapid development, and which has the necessary technical knowledge. Therefore, the EU is likely to have established an angle of supervision, rather than a strictly statutory one, to give the industry the opportunity to take shape and to grow before the legislation itself takes its own measures.

5.2 The Regulation in numbers

The project proposed by the EU is complex and hopes to achieve good results in the coming years. The FinTech is a sector that does not have a clear regulation. This Plan of action will seek to implement it and create definitively a Digital Single Market. However, it is difficult to know for sure the results you will get, although it is possible to know the opinion and collaboration you are going to receive.

As reported by KPMG (2017), we have been able to obtain different statistics regarding the opinions of the individuals who form the FinTech market on whether more regulation is necessary. It is found that 20% of the companies surveyed believe that more regulation is not necessary, while 80% believe it is necessary, and therefore the measures taken to encourage its development would be favorable.

²¹ Quoted by Binová and Dorný (2018).

On the one hand, 42% of the FinTech surveyed consider that new regulations should suit to the market and correspond with the technological advances, because if the FinTech market is regulated by imitating certain patterns of the non-digital world, it would not benefit any group. On the other hand, 38% of companies think that a regulation should be set up to achieve a common legal environment that sets the rules of the game for all and that allows all companies to operate on an equal footing.

In terms of regulation in the EU, thanks to the KPMG (2017) study, it can be said that the regulatory situation of the 1,500 companies dedicated to FinTech in the EU is very varied. For instance, from the total number of companies of which the EBA has detailed information:

- 18% are payment institutions regulated within the framework of the current PSD payments directive while 11% are investment firms according to the Markets in Financial Instruments Directive (MiFID) standard.
- 14% are subject only to national legislation. 31% are not subject to any regulation, whether of the EU or of a national nature. Within this unregulated percentage, 33% provide payment services; 20% credit, deposits and capital services, and 11% investment services or investment management.

In conclusion, achieving the goal of a more future-oriented regulatory framework that encompasses digitization, will mean finding the right balance between innovation, standardization and resilience (European Commission, 2018).

It is very complicated to foresee results that may result from the different measures proposed by the European Commission. As far as I am concerned, if you really have a keen interest in promoting, controlling and regulating the FinTech sector in Europe, large sums of money must be assigned for it. Otherwise, they will be just words that try to please those involved in the problem for the moment.

6. CONCLUSION

After this work, I came to the conclusion that what is clear is that the FinTech has reached the financial system to remain either as independent services or hand in hand with banks and traditional insurance companies. The conventional practice of offering the maximum range of banking products it is something traditional banks may need to reevaluate, since it is not going to be the technology itself that will be the answer preventing the system from continuing as usual, but the way in which the company brings into effective action this technology, trying a new approach to clients.

This paper explores the new revolution of Financial Technology in the banking sector, the increasing trend FinTech has followed in the global market and the different impacts it is producing in different areas. Firstly, we could establish FinTech is the application of Digital Technology to finance; in other words, the innovative use of technology in the conception and delivery of financial services, and consequently it is changing completely the banking world as we know it.

Secondly, in the Section “History of FinTech” we have analysed the origin of this phenomenon and its recent history, following its main phases in order to put it in context.

Thirdly, the Section “Classification” established the main landscape of this ecosystem, showing the sectors in which FinTech has produced a significant impact. In addition, we have developed and studied a relevant example of startup from each of them.

Fourthly, in the Section “The Future of Banking” we have explored, on the one hand, the strong competition between Fintech startups and traditional banks but, on the other hand, argue that there is also room for cooperation between them, as banks have seen it is necessary to survive the change in the banking sector. Consumers demand different things, gaining time and better suited to their tastes.

Finally, in Section “The goal of a Digital Single Market” we reflected how the European Commission Action Plan opts for a balance between an excessively prescriptive and hasty regulation that entails the risk of inefficient results and the absence of regulation

that can place EU financial service providers at risk, for example, due to cyberattacks. That is why the Action Plan wants to combine support measures to facilitate the adoption of FinTech solutions and foster technological innovation in the financial sector, while guaranteeing financial stability and cybersecurity, serving the people who rely on it.

As far as I am concerned, and after investigating and analysing the rise of FinTech in the global financial market, I believe the future of banking will continue changing in the future. This new revolution in the sector will cause banks to continue taking measures in order to adapt to the FinTech market. Some will cooperate and survive, others will adapt and compete, and those who are not able to invest in this market will end up disappearing.

From my point of view, the one key change is probably the way we train the next generation of talent, since in the future bankers and those who will outline the upcoming years of this sector are not going to be like bankers we have known until now, but rather designers, programmers and innovative thinkers. However, they should always consider that the aim, their goal, is clients; because if these FinTech are not what users need, what customers expect, new technologies will find the same final as the traditional bank.

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