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FinTech, among finance and ICT: analysis of the innovative sector and competitive context. The case of Satispay.

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INTRODUCTION

Fintech is a word that nowadays is widely used. It represents a concept that embraces a great variety of instruments and phenomena and, even if until a few years ago it could be considered as a domain of narrow groups of experts possessing specific knowledge and competences, today Financial Technology has spread like wildfire in everyday life and transformed from a specialised vertical into a horizontal sector, encircling more and more industrial areas.

The following paper will analyse the causes and effects of the boosting pace of Fintech in recent years providing both qualitative (social and cultural) and quantitative (statistical) evidences aimed at understanding and realizing how much the disruptive technology can become deeply-rooted in people's lives and to what extent it can change the global perspective of modern economy. It will also focus on the Italian landscape and, in particular, on a Fintech start-up that is revolutionising the payment system: Satispay.

Specifically, chapter one will provide the reader basic information to understand what Fintech is and how it works, also examining its history, the socio-economic context in which it was born and the regulations and policies that governments, in particular EU, promulgated in order to understand why it can be considered as a disruptive innovation.

Moreover, some statistic trends and data will be analysed to point out the fast growth of Fintech in modern society and, in particular, in the Italian context.

The second chapter will deepen a subsector of Fintech that is Payment, which is the most used and known and, in particular, its Italian ambassador: Satispay.The Italian start-up will be all-round studied, starting from its origin of a scalable start-up up to the established firm it is today, lingering on its Fintech tool used, its strategy and the way in which it exploited the European policies to build its brand and customer base.

Finally, in the third chapter, the effects of Fintech on the social and environmental global context will be examined, focusing on the role of Impact Investing and the Fintech tools it exploits to improve the wealth of society.

CHAPTER 1

FinTech as a disruptive innovation: definition, regulatory context and Fintech as an innovative break in

Financial technology was born in a period of deep crisis and economic recession.
After Lehman's crisis in 2008 Fintech emerged as a disruptive innovation and revolutionised the concept of Finance along with the economic panorama all over the world.
Moreover, it influenced people's everyday life and now it seems impossible to stop its growth and development.
The aim of the chapter is to introduce the reader to the Fintech world, leading him/her to understand what it is and how it works, analysing its origin and what impact it has on people and economy.
Starting from an insight on the rules governments promulgated in order to adapt to fast changes on society that Fintech brought about and an insight on the Italian situation and on the current sanitary emergency, the chapter deals with the technological revolution and the consequences it had on the global economy, and, more in general, on the global society.

1.1 Fintech panorama: history of a global phenomenon

Until November 2019 Italian people who used a Fintech service were 14 million[1], 31% more than the year 2018.
Incumbent companies are living a period of rapid and deep change in the financial sector: the technological means of the XXI century and the need for digitalization which makes procedures faster, easier and at the same time more effective, have led to the birth of Fintech.
According to PwC, Fintech can be defined as «a combination of technology and financial service that is transforming the way financial businesses operate, collaborate and transact with customers, their regulators and others in the industry».
This global phenomenon, that today is shaking up the concept of Finance, is not so recent.
The 90s can be considered in a certain way the pre-Fintech phase; the diffusion of PCs all over the world and the consequent spread of the internet determined a first fundamental evolution in financial services: the rising of the e-commerce.
Platforms like Tesco, the first website of on-line shopping, E-Bay, Amazon and Alibaba are some of the most relevant examples of innovators that found a *Blue Ocean* by creating a 'technological' niche in the sector of retail and could unleash a new way of buying and selling products and services.
Thanks to e-commerce, many actors began to invest in services that make on-line shopping easier, like Paypal, but the turning point was only in 2008 when the global economic crisis led people to question the current banking system.
In this world-wide scenario, Fintech found breeding ground to develop and grow and many start-ups were founded[2].

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[1] Aliperto Domenico, *Fintech al galoppo: 14 milioni di italiani usano lo smartphone per 'muovere' denaro*, www.corrierecomunicazioni.it, 27/11/2019
[2] *Dagli ATM al FinTech: breve storia dell'innovazione finanziaria*, www.megliobanca.it, 24/01/2017

Successively, in 2010, also the banking model changed: in USA, *Dodd–Frank Wall Street Reform and Consumer Protection Act*[3] was promulgated, a reform that ensured more financial protections to consumers and also thanks to the trust gained Fintech became the new face of Finance.
With fast grow and expansion, Fintech is changing the already known methods of traditional banking and ways of doing business and regulators always consider new tools to facilitate the delivery of risk and compliance functions to make decisions based on real time information, in fact the EU government in 2018 promulgated the Payment Services Directive 2 or simply PSD2[4], that ensured all the e-commerce platforms had to implement new and innovative authentication systems, like SCA (strong customer authentication[5]), for instance, permitting all the customers to access their personal banking data without worrying about frauds, in order to make the payment management safer all over Europe.
But the main issue of this regulation is the growth of competition in the financial sector, in fact, banks and all the financial service providers must share customers information with TPP (Third Party Provider) to open frontiers to new players enhancing rivalry and create value to enable a complete and thorough customer experience.
This was the starting point to create a new "Open Bank" model that not only did it guarantee a safer and easier experience by simplifying digital payments but also improved and enlarged that little niche created by Fintech pioneers in the 90s.

[3] *Dodd–Frank Wall Street Reform and Consumer Protection Act,* www.wikipedia.org
[4] *PSD2: Guida alla nuova normativa europea sui pagamenti digitali*, www.axepta.it, 25/01/2019
[5] It is a requirement of the EU Revised Directive on Payment Services (PSD2) on payment service providers within the European Economic Area. The requirement ensures that electronic payments are performed with multi-factor authentication, to increase the security of electronic payments (from www.wikipedia.org)

1.2 A Disruptive innovation and the Eight Forces

Today Fintech is changing the world-wide financial panorama and it is considered as a disruptive innovation. According to Christensen's framework, «a disruptive innovation refers to the creation of new markets and value networks that eventually disrupt existing markets and value networks, displacing established market leaders. Financial history is full of culminating moments of disruption, while the current wave of Fintech specifically focuses on the embodiment of digital technology into finance; different aspects of which have also required innovation in technology[6]».

The core innovations used by Fintech are substantially two: the online crowdfunding and peer-to peer financial services that can be referred to the so-called lending-based crowdfunding.

The new "financial products" have become soon very popular since they have distinguished themselves from traditional bank services by creating a unique on-line user interface evaluating consumer needs by empowering customers to choose their own solution and not to be suggested, hence increasing customer responsibility and, above all, ease of use.

In particular, Crowdfunding lets people participate in a funding project by donating small amount of money.

Usually Crowdfunding can be divided into four types: 'equity-based' crowdunding in which people invest money in exchange for shares thus becoming part-owners of the firm or getting a financial return; 'Donation-based' crowdfunding in which investors are people who support no-profit organizations or a person or a cause in particular; 'Lending-based' crowdfunding or peer-to-peer lending in which the funders expect a return on their investment by applying an interest on it; 'Reward-base' crowdfunding in which there is no money return on the

[6] Iris H-Y Chiu, *The disruptive implications of FinTech-Policy Themes for Financial Regulators,* www.ucl.ac.uk, 2016

funders' investment but usually a kind of reward. This is normally correlated with the project and can be, for example, a prototype of the product or a discount coupon[7].

In particular, the two last kinds of crowdfunding are the ones which helped the rise of many start-ups that today dominate worldwide and Italian Fintech panorama the most.

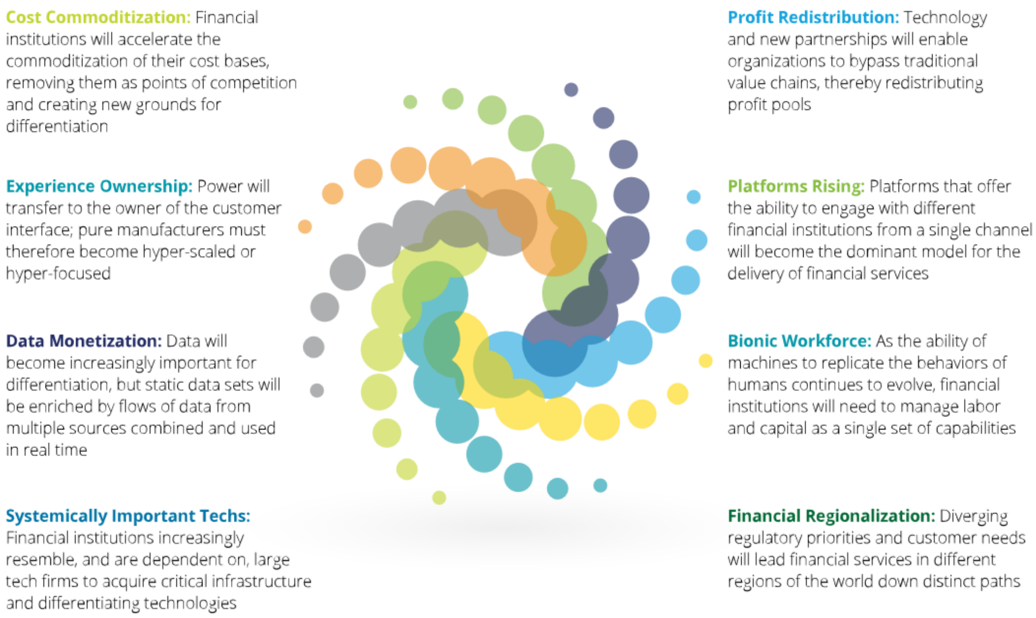

Figure 1: Key forces impacting financial services[8]

The above framework is a study on Fintech carried out by a team of researchers in Deloitte Inc.

It describes 8 ‘forces’ impacting financial sector: cost commoditization, experience ownership, data monetization, technology, profit redistribution, presence of platforms, bionic workforce and financial regionalization.

Together the forces are shifting the old financial panorama into a more technological one creating breeding ground for a new paradigm proliferation.

[7]Course material of Corporate Governance and Finance, Elisa Ughetto, 2019
[8] *Beyond Fintech: A pragmatic assessment of disruptive potential in financial services*, Deloitte report, 2017

But let us drill down and analyze the 8 forces in detail:

- **Cost commoditization**: It is crucial for both new entrants and incumbents because it allows them to save margins and concentrate on new strategies.

  The approaches used by firms are three: automation; creating more margin to standardize processes and to avoid duplication of assets; outsourcing activities.

  In particular, the former and latter, which were brought about by the Fintech revolution, allow companies to diminish (and also share) risks and costs.

  The financial industry is entering a new era in which its value chain will flatten and the sector will pay more attention to partnership also because sharing sensible customer data with third parties can increase customer security and digital protection.
- **Profit redistribution**: Fintech is turning the financial sector upside-down. Incumbent firms are trying to pair or acquire start-ups, willing to deploy them against their traditional partners; e-sellers are accepting on-line payments bypassing the traditional need for a bank account; regulators are gradually diminishing the control of financial institution over their sector. It is clear the reason why Fintech is bringing a profit redistribution into the industry.
- **Experience ownership:** The distribution issue: traditionally, companies used to distribute their own products. The Fintech shake up is approaching a period in which many platforms and distribution channels are arising and distribution is being no longer controlled by incumbents that need a lock-in strategy. What firms recognized to have the most value is customer experience and so, both incumbents and start-ups are shaping strategies based on extreme focus and customization. If trends like these take hold, customers will interact with increasingly fewer distributors as the market consolidates. Established financial institutions and greater firms have competitive advantage, due to

their customer base data and their brand. However, Fintech new entrants will not stop striving to become distributors.

- **Platforms rising**: Since customers are asking for more choices in financial services, the rising of many digital platforms allowing to have their needs and desires fulfilled all over the world was inevitable. Eventually these platforms will become the unique means of distributing financial products and this will strongly affect financial industry, in fact, companies must focus on differentiation since platforms owners set the price (creating an advantage for those firms which can count on economies of scale) and platform owners must balance sellers' and customers' needs.
- **Data monetization:** Customer data are a crucial knowledge in the current Fintech environment because they are not considered a gathering of snapshots anymore but a real flow of information whose details can be used in real-time, combining and filtering multiple resources.

  Having early understood the importance of data, many firms started to collect customer information and now they have the lead.

  Other companies which have more competitive advantage are technological enterprises because they have competences in order to better manage information.

  Anyway, all the firms are aware of the importance of that particular knowledge and they are trying to find more and more ways to enlarge their customer data set such as asking the customers for more data offering them additional features or value and pairing up with other companies sharing competences and data.

  In this new environment the aim of regulators is not only to protect customers privacy from improper use and hacking but also to make them understand the implication of giving their personal information to third parties.
- **Bionic workforce:** Artificial intelligence is becoming increasingly capable to replicate human behaviours. Firms' challenge is to perfectly coexist with it and manage the balance

between people and machines and the best way to do it is understanding the potentiality and the limits of technology.
People must learn how to work close to AI exploiting its ability in reducing time and effort for standardized actions leaving to humans more time to think and create new strategies.
Compliance and control are the main tasks of regulators.

- **Systemically important technologies**: Many financial firms depend on cloud-based utilities to stock their data. They are also approaching technology companies in the way they manage customer data.
  Obviously, the highest risk is to become technology-dependent and the best way to overcome this problem is pairing up with technology firms, accepting to lose a bit of control in order to have more data to process and so, more value.
  Fintechs are in the middle between financial and technology enterprises and they can act as intermediaries granting a "win-win" relationship, in fact they can provide technical talent to financial institutions and they can help big tech companies to enter the financial market.
- **Financial regionalization**: Regulations and policies are very different from country to country. In Europe, for instance, regulators are putting pressure on incumbents by enhancing data (and, consequently, customer) protection and transparency. In U.S.A. there is an uncertain regulatory situation, which lets big established financial companies lead the game and make any innovation to be incremental. In the end, in China, the lack of consumer-friendly banks and outdated regulators has left most power in the hands of big technology companies.
  Due to this variegated situation, many regional fintech hubs are rising ('our' example is Italiafintech, an organization which gathers all the main members of Italian Fintechs to discuss about regulations and policies and promote their technologies and visions)thus creating breeding ground for new specific regional focused firms and establishing existing ones in local territory before expanding abroad.

Fintech has an influence on all these aspects, in fact, as you can see in the figure 1 it is creating breeding ground for diversification and new competition by commoditizing costs, it is transferring all the power and focus on customers, stimulating technology, redistributing profits bypassing the old value chain, designing new platforms that will create value by network externalities and regionalizing Finance that is creating a specific market for each region of the world due to different needs and priorities both for customers and regulators.
In the light of the reasons previously described in the Deloitte's framework and because of its rapid growth, it is clear why Fintech is a fully-fledged disruptive innovation.
This recent spread like wildfire and speed of disruption are hard to understand and to foresee. This applies even to the greatest and most well informed firms. Indeed, across all industries, there is clear evidence that the technologies that support this new revolution are having a major impact on businesses, but none of the industry in the market have been experiencing so much disruption as banks and financial Institutions, in fact, the innovation introduced by Fintech is going to take market shares away from Financial Institutions and provide more options to consumers and commercial customers that are less expensive, faster, more convenient, more efficient, outside traditional banking channels and they represent a more customized experience.

1.3 Fintech panorama: world and Italy trends and statistics, regulations and policies

Nowadays Fintech panorama is heterogeneous; the new financial paradigm can be considered to be established in many parts of the world. Indeed, since Fintech was born it has gone through many evolutionary phases.
During its path worldwide Fintech crossed three crucial stage gates[9]:

- first disruption or revolutionary phase (about 2005) where many new innovative start-ups were born thinking, maybe with a bit of arrogance, they could provide financial solutions easier and better than traditional banks and insurance firms;
- a second stage gate made of awareness and conflicts in which the new entrants of Fintech realized they could not overcome easily regulatory problems and they could not gain customer trust in little time since they had to compete with very big firms with established brands and the incumbents companies, on one hand felt threatened by the new technology that simplified so much their ancient and established work and, on the other hand they understood the great possibility Fintech could bring to old Finance and that they could gain great advantage by acquiring this kind of knowledge (about 2014);
- a revolutionary phase in which, thanks to many partnerships, mergers and acquisitions Fintechs and incumbents worked together in creating a totally new business model (about 2017).

In Italy this phenomenon started much later and we can place our country in the "conflict phase".

[9] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020

The Italian fast, even if late, growth is mainly due to European regulation PSD2 but, although there is clear evidence of lack of resources to fund the new Financial innovative entrants, many important results have been reached in the awareness and knowledge of the new technology and in the development of many online platforms[10].
Nevertheless, signs of a strong cultural change that, in my personal opinion, are the crucial point for a fully-fledged radical innovation are still missing even if Italian academies have already begun to react to one of the most common bottlenecks in this sector: the lack of skilled workforce.
In fact, many universities in Italy created courses and masters to remedy educating new talents and updating the established ruling class with masters in finance and digital innovation, masters and courses in fintech, masters in blockchain and risk management, masters in product innovation and masters in Fintech applied to insurance.
In 2019, the number of Fintech start-ups all over the world was 21700, almost double of the trend in 2018 with 12100. North America is the region which leads the game with more than 40% of the Fintechs (about 5700) followed by Europe, Africa and Saudi Arabia with almost 3600[11].
Also investments in Fintech companies have grown faster in recent years showing only a shy stop in 2019, in fact, last year 135.7 B$ were invested in Fintech, an amount which is very similar to the one of 2018[12] (111.8 B$) but nevertheless, prior to 2018, investments were almost doubled each year[13].
Moreover, statistics are positive about fintech market: whether USA is going through a phase in which industry can be considered mature,

[10] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020
[11] *L'ascesa delle startup fintech: un trend destinato a perdurare*, www.we-wealth.com, 07/04/2020
[12] Phil Blackman, *Global fintech investment rockets to a record $111.8B in 2018, driven by mega deals: KPMG Pulse of Fintech,* www.home.kpmg.com, 13/02/2019
[13] KPMG, *Pulse of Fintech H2 2019*, February 2020

"Finanso.se" foresees a positive and increasing trend for Europe, dealing with a 11% per year growing within 2025[14].

Let us drill down through the Italian landscape.

Italy has been a laggard in accepting and absorbing Fintech as a paradigm with respect to other regions like USA, UK and France. Nevertheless, today its growth is rapid and seems unstoppable.

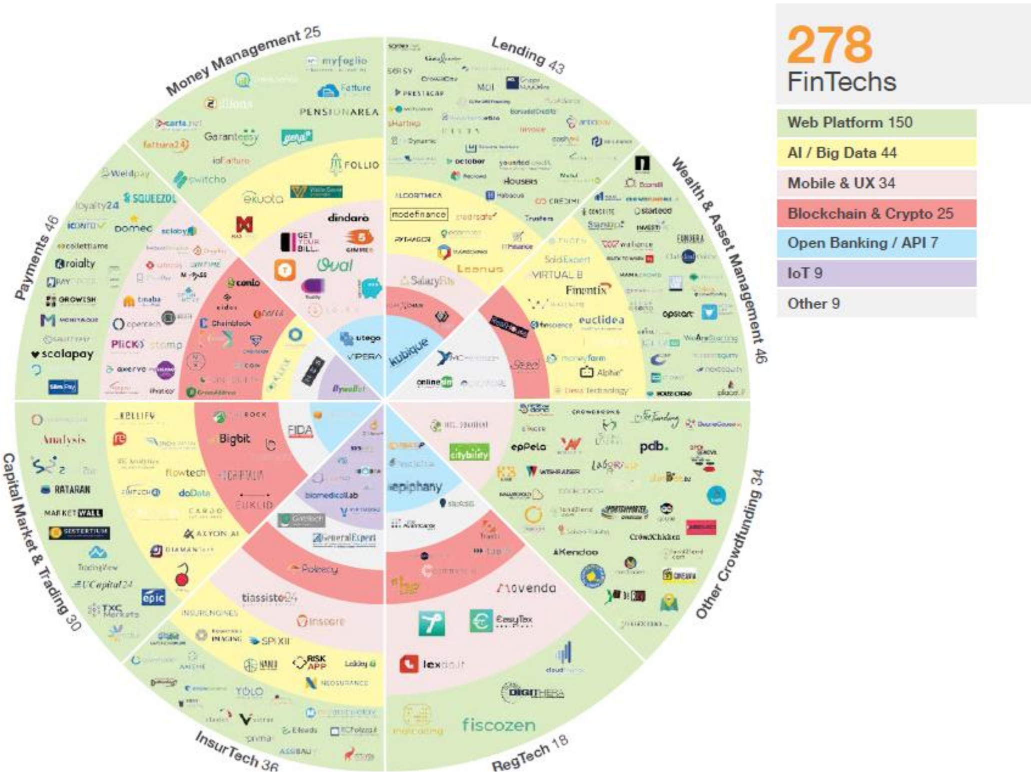

Figure 2: The Iitalian Fintech landscape[15]

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[14] *L'ascesa delle startup fintech: un trend destinato a perdurare*, www.we-wealth.com, 07/04/2020

[15] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020

Italian Fintech panorama is variegated: as we can see in figure 2, PwC's analysts have performed a thorough analysis and identified eight categories of business segment:

- **Payments**, the most wide spread together with Wealth and asset management, the one which contributed the most to Fintech financing. It gathers solutions like peer-to-peer payments, crypto currency, digital wallets and next generation POS solutions;
- **Money management**, divided into solutions for retail such as price comparison, assisted savings and multi-banking aggregators and solution for SMEs such as enterprise financial management, online invoicing and treasury management;
- **RegTech**, short for 'regulation technology', that is innovation aimed at helping firms to better understand regulations and policies and better be compliant to them[16]. It embraces solutions like Fiscal assistance, regulatory and compliant software development, personal data and document management;
- **InsurTech**, short for 'insurance technology', that is supplementing digital technologies which can be useful for the insurance segment[17]. It collects solutions such as peer-to-peer insurance for home, life, cars;
- **Lending,** which includes Real Estate lending Crowdfunding, Business and consumer lending, invoice financing, risk and rating and loans comparison;
- **Capital Market & Trading,** which includes Data providers, financial social networks, marketplaces and crypto investing and trading;
- **Wealth and asset management,** which gathers Equity crowdfunding, intermediaries and RoboAdvisors;
- **Other crowdfunding,** which includes donation and retail crowdfunding.

[16] *Che cos'è il Regtech, la tecnologia per trasformare le regole in vantaggi*, www.economyup.it,2016
[17] *Insuretech*, www.wikipedia.it

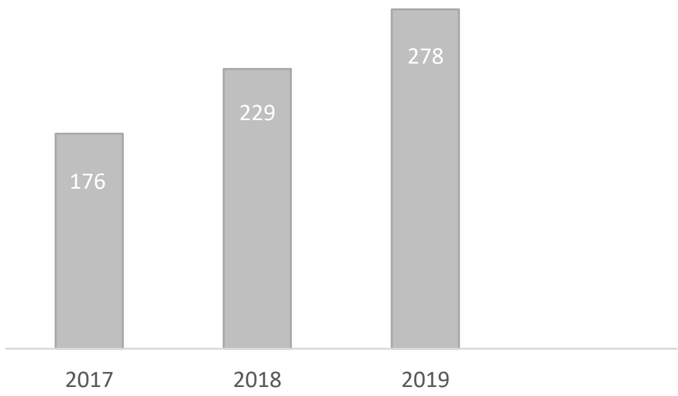

Figure 3: Italian FinTechs in recent years

Fintech companies until 2019 were 278; they've been grown by almost 50 firms per year since 2017[18].

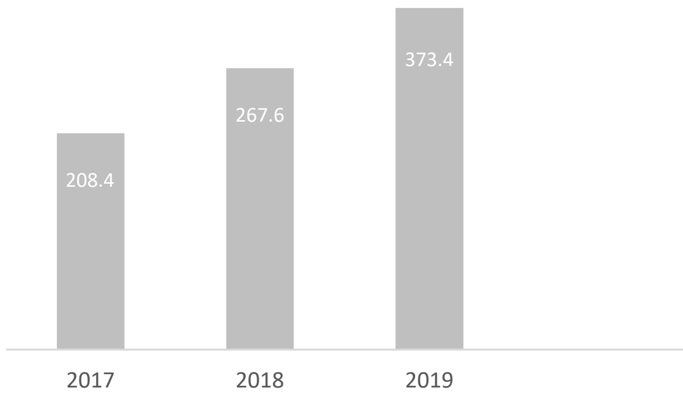

Figure 4:Italian Fintech revenues (million euros) in recent years

Revenues for Fintech companies have grown too, showing a stunning (almost) duplication from 208 Million € in 2017 to 373 Million € in 2019.

Investments in worldwide FinTech continue to grow. Except for some sore thumbs, worldwide investments remain stable even if in 2019 in Europe they grew by 71% compared with the year before.
But all the data suggest that a maturity phase is coming for most of the developed countries of the world.

[18] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020

But for Italy it is not the same. As the 2020 Fintech report by PwC suggests, Italy is weak. It is ranked as 24th in the world and the main cause is poor investments.

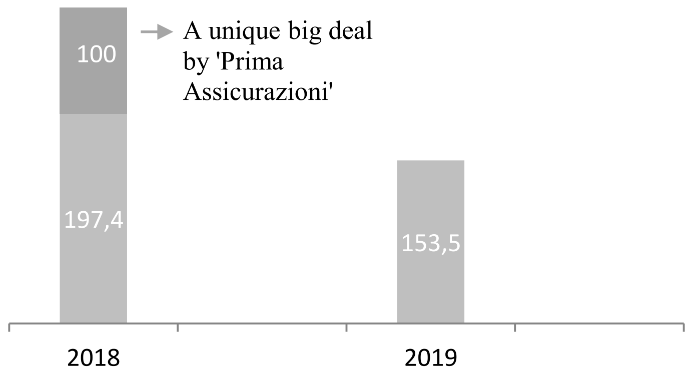

Figure 5: Italian investments in FinTech

Investments in 2018 were 197 Million € and only 154 Million € in 2019: the funding decreased and maybe we can point out a sort of polarization of funds as a cause.

In fact, 75% of funds in 2019 were given to just 5 big deals meaning that the start-ups, in spite of the pool of laws made to encourage the development of them, had a lot of difficulties to emerge in the Italian Financial panorama. They are not able to find resources for their business and many of them are forced to move abroad looking for more convenient regulations and different cultures.

Nevertheless future is not so tragic: Italian government trusts its policies and expects its results in the following years, in fact many laws in past years have been promulgated to stimulate innovation and growth of start-ups, promoting venture capital by reducing taxes (50% for buying an innovative start-up) and sandbox and innovation hubs were created to share the risk and increase consumer protection.

In Italy, the evolution of payment services start, as all Europe does, from the PSD, Payment Service Directive.

Indeed, PSD provided a fully-fledged regulatory framework for SEPA[19], but the fast evolution of digital technology together with the birth of

[19] Single Euro Payments Area, a project provided by ECB born after the EU shift to Euro in 2002 and concluded in 2014 is focused on integrating payments without cash all over the eurozone creating an area in which citizens can benefit from payment systems with the same ease and security as the they are able to do in their own country.

Fintech obliged EU to reconsider the old PSD and widen its scope, adjusting it for the new paradigm of Finance.

PSD2 (or EU Directive 2015/2366) was born with the aim of:

- promoting innovation and competition;
- ensuring the same possibilities to all players in the market, both incumbents and new entrants;
- enhancing consumer protection and system security[20].

The "Funding" situation in Italy was static: until 2012, in fact, because of Consob[21] regulation No. 18592/2013, just very innovative start-ups could access the budgeting channels (other than traditional banks).

Only subsequently, on Dec 11, 2016 the so-called Budget law allowed SMEs to access the funding too.

This regulation had the effect to extend the number of entities accessing the benefit, permitting to both entrepreneurs and investors to be more protected and to increase the controlling power of Consob.

Anyway in Italy Fintech is still less developed with respect to leading countries, nevertheless, through legislative Decree no.218 of Dec 15, 2017, trading shares issued by crowdfunding platform could enter and be allowed to Italian stock market, a great turning point for Fintech development in Italy that culminated with the Budget law 2019 on Dec 30, 2018 in which SMEs could finally raise more capital through bonds and liability instruments.

The current Italian regulation of Financial technology innovation follows approaches used at international level: innovation hubs, regulatory sandboxes and technology incubators.

In particular, the use of innovation hubs has been adopted by the Bank of Italy and Consob consisting in a constant interaction among financial players and authority at every stage.

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[20] *PSD2,* www.CBIGlobe.com

[21] Litteraly, Commissione Nazionale per le Società e la Borsa, a national institute of vigilance and control of financial market

In 2017 a first Hub was created: a website where financial operators could propose their innovative solutions to financial projects creating dialogue and discussion with authority.
But establishing this kind of debate thus giving more control to authorities triggered the creation of an internal coordination committee (March 17, 2018) that ensured coordination among supervisors aimed at having major levels of consumer protection, investigating regulatory aspects and identifying the areas of likelier risk[22].
Moreover, recently, thanks to some information given by Italian press, the Bill presented in March to the Italian Parliament also concerns the legal basis for the birth of the first regulatory sandbox for Fintech operators, already expected in late March 2020 thanks to a June 2019 government decree 58/2019 so-called 'Decreto crescita' but postponed due to the unexpected world health emergency in early 2020[23].
In addition to that, also Regulators had to keep pace with the new technology paradigm.
The Italian Banking association set a task force to study possible solutions that could ease compliance monitoring by digitalization, use of AI and robo-advisory in order to augment control and reduce costs.
By the way, this is an ongoing process and we will appreciate its effects in the following months[24].

[22] *Fintech in Italy*, www.globalinsight.com, 2019
[23] *Perché un sandbox può dar la spinta al made in Italy*, www.wired.it, 2019
[24] *Fintech in Italy*, www.globalinsight.com, 2019

1.4 How the current sanitary emergency influenced Fintechs

In December 2019 a new event was about to shock the entire world. First appeared in China, a new unknown disease spread all around the world, bringing fear and hitting global population, obliging governments of many nations to lock down people in their houses. That was the beginning of a sanitary emergency we are still into and the initial point of a deep recession that none knows when and if it can stop.

Worldwide economy has been wounded in its core and neither economists nor politicians have any clues about how it could start over.

From an economic point of view, this critical situation can be compared with the 2008 financial crisis, which was actually the one which gave birth to Fintech.

As previously analysed, Fintech phenomenon was born as a consequence of the financial recession started with Lehman's Brothers bankruptcy. In fact, it is very common that in moments of deep crisis and lack of certainties, new entities able to catch opportunities emerge. This trend well fits the economic environment: when traditional banking system fails (as in the case of the Lehman crisis) new start-ups and innovative financial solutions come out. This is exactly how Fintech was born: as an alternative financial instrument, capable of providing fast, safe and user-friendly opportunities.

Analogously, Coronavirus crisis is directly enhancing digital services, such as e-commerce[25].

In fact, since it is not possible in this quarantine situation to physically go to the bank, online services are the optimal alternative to fulfil customers' basic financial needs.

Even the most stubborn people have been forced by this alienating situation to consider the possibility of using non-canonical financial channels.

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[25] *Quali effetti sul Fintech dal Coronavirus?*, www.blog.osservatori.net, 30/03/2020

A survey conducted by the Innovative Payments Observatory of the Polytechnic of Milan[26] highlighted that during the lockdown the amount of digital payments has risen more than 350%.
In particular this analysis states that Coronavirus crisis tripled online consumers in Italy: in addition to the average increase of 700,000 users per quarter foreseen, in the first quarter of 2020 an additional peak of 1.3 million new customers took place, leading to a total of 2 million people converted to e-commerce.
Furthermore, e-commerce has been pointed out as the sector that will have the greatest global growth after Covid-19 pandemic.
Promising data on the sector of mobile payment point out Satispay as the leading enterprise: considering total 2019 NFC[27] Italian volume of revenues, equal to 380 million euros, Satispay is responsible for half of it, throughout 12,5 million payments registered on the platform. In fact, in the first quarter of 2020, the use of Satispay increased by 30%.
Moreover, as Marc-Alexander Chirst, SumUp's[28] chief financial officer highlighted in a press interview, avoiding physical contacts and physical money exchange, customers respect EBA's[29] security measures, since EBA recommends the adoption of contactless and mobile payments as stated in 'Statement on consumer and payment issues in light of Covid-19'.
Along with all the positive aspects above analysed for the Fintech Sector in this sanitary critical emergency, some negative aspects and fears must be taken into account as well.
A crucial risk for innovative financial start-ups is the risk of disruption in the supply chain side: a great awe for Italian (but also worldwide) enterprises is represented by the possible stop in all kinds of procurement.
Professor Sheffi of the MIT clearly stated that «The initial impact of the outbreak on businesses seemed to be limited to the supply side: factories

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[26] *Col Coronavirus crescono i pagamenti digitali e triplica il numero dei consumatori online in Italia*, La Stampa, 06/05/2020
[27]NFC, short for Near Field Communication: a technology that grants short distance communication between two electronical devices.
[28] SumUp is the famous Fintech company specialized in mobile payments, headquartered in London, UK.
[29] European Banking Authority.

shut down, manufacturers couldn't get parts, there weren't enough boats and planes to move products around the globe. Now, it is also a demand problem. Because more people staying in and working from home — or being quarantined — means fewer people out in the world buying stuff[30]».

In fact, the danger is also bounded to financial flows of enterprises that nowadays have not got liquid cash enough.

This applies to greater extent to SMEs and start-ups that are struggling more than others to access capital to maintain their regular activities; this is due to the fact that start-ups typically are in continuous energetic growth and thus they need a constant in-flow of funds.

Fortunately, in the last weeks, some European central banks (included the bank of Italy) launched an initiative to lessen interest rates for all kinds of SMEs trying to help them to sort it out and everyone hopes that, doing so, the engine of Italian economy will not stop.

Another phenomenon that is worth noticing is that so many funding campaigns using a crowdfunding website are rising in order to collect money for hospitals and sanitary structures aimed at fighting Covid-19 but also for firms and workers hit by the lock-down.

Analysing GoFundMe, a well known platform for crowdundings, since pandemic took place, 13,000 campaigns for Coronavirus opened all over the world[31].

According to a study performed by EY, currently in Italy there are 72 Crowdfunding platforms totally.

As for regulations, recently Europe provided the "European Crowdfunding Service Providers for Business" which substantially standardizes the pool of rules allowing Crowdfundings platforms to provide their service easily all over Europe instead of facing new rules for each country.

[30] *Coronavirus: anche le supply chain necessitano di una cura,* www.blog.osservatori.net, 27/03/2020

[31] *Il boom del Crowdfunding e l'aiuto delle Fintech contro il Coronavirus,* www.fintastico.com, 27/03/2020

In this period of uncertainty and fear, because of its good intention, Crowdfunding is spreading worldwide and it is helping in the fighting against the current disease making Fintech useful both at an economic and a social level.

1.5 Fintech Takeaways

The 21st century is the era of innovation in every field. Technology has completely changed every aspect of our everyday life and turned out being the means through which innovation happens. The revolution carried out by Fintech in the financial sector is not the only relevant one; among the others, a significant revolution is the one which regards the spread of information and knowledge. New channels of communication appeared and, in particular, in recent years young people found a new source of innovative knowledge, TED talks. TED (Technology Entertainment Design) talks come out from the idea of the American non-profit private organization, the Sapling Foundation, whose aim was to spread innovative ideas around the world, as embodied in their own motto 'Ideas worth spreading'.

Thanks to the great accessibility of TED talks, due to the fact that there is a free online platform where everyone can watch those videos, and to the effectiveness and simplicity of their speaking, they could reach a great number of minds.

Of course many TED talks on Fintech were performed and a great part of Fintech's spread and success has derived by many famous speeches. Henri Arslanian, Asia Fintech Leader and Professor of the first Fintech university course in Asia at the university of Honk Kong, gave a very inspiring speech on the argument in a TED talk in December 2016 in WanChai (Hong Kong). Arslanian in his talk, 'How Fintech is shaping the future of banking'[32], highlights the fact 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 a convenience perspective, and that gap is what Fintech is tackling»[33].

In fact, following his thoughts, what probably worries banks the most is that Fintechs have the ability to pick and choose the parts of banking

[32] *How Fintech is shaping the future of banking*, Ted Talk by Henri Arslanian, www.YouTube.com

[33] Ibidem

they want to get involved in (of course, they coincide with the most profitable ones). They are very happy to control the front-end part and leave the boring back-end part to the traditional bank system.
Furthermore, by controlling the front-end part, Fintechs have made access and manage financial information easier. Consequently, AI[34] chatbots have been tested to replace call-centres and biometric data and voice recognition tools have been created to replace passwords and bank tokens, considered as very annoying by the great majority of consumers.
One of the most important positive developments brought about by Fintech revolution is Financial Inclusion. Until 2010, 2 billion people were unbanked but according to the World Bank Group in the following five years 700 million people became banked.
Obviously, banks have realized the landscape has changed and, in order to survive, they needed to evolve. Citibank[35] estimated that in over 10 years from then 50% of bank jobs would disappear but this would have serious consequences not only in the direct job losses but also in all the related economy around (law firms, accounting firms, hotels and restaurants etc).
As Arslanian properly stated in 2016, «Some new jobs will be created in the Fintech industry but in substantially smaller number, and these are very different jobs with very different skill sets […]. Many of us in the Fintech community are working not only with governments to formulate new policies or regulators to enact reforms but also with the broader community in shaping this new ecosystem and ensure we can all adapt to this new reality. But that is not enough. We need a fundamental change and mindset where parents are more comfortable with the idea of their kids joining start-ups or launching start-ups rather than taking stable jobs […]. But the most important change is probably the way we train the next generation of talents.

[34] Artificial Intelligence
[35] Consumer division of financial services multinational Citigroup

We need to embed design thinking, coding and product development in the curriculum of every finance program or

Business School course. And this is very important, because the bankers of the future and those who will shape the future of this industry are not going to be your traditional bankers but rather designers, programmers and creative thinkers»[36].

[36] *How Fintech is shaping the future of banking*, Ted Talk by Henri Arslanian, www.YouTube.com

CHAPTER 2

A case study: Satispay

The coming of Industry 4.0 and Big Data led to an incredible boosting pace in ICT (Information and Communication Technology) and brought about disruption in every industrial environment. Moreover the advent of Fintech highlights new areas of interest and, above all, Payments turns out to be the most disrupted one, thanks to disintermediation.

In particular, the concept of disintermediation will be further discussed in the chapter, treating *inter alia* the famous case of Bitcoin, which implies full disintermediation but turns out not to be successful since it does not include uniform regulation among different nations. Furthermore, among the eight subsegments of payments, the one which will be deepened is the P2P payment, the most used one. In Italy, the ambassador of the P2P payment is Satispay. Born as a start-up, thanks to the favourable EU regulations, Satispay works through SEPA transactions (only IBAN needed) and is convenient for both businesses and customers, thanks to some innovative features, such as the cashback one.

Moreover, after a more theoretical analysis of funding methods, Satispay's funding history will be treated, showing how Business Angels, who believed in the vision first and Venture Capitals then, financed the ambitious start-up.

Finally, the chapter gives a photography of Satispay today, lingering over the impact of the Covid crisis: the enterprise was positively impacted by the global pandemic, due to the fact that human contact was forbidden and thus digital transaction was made necessary.

2.1. Fintech in everyday life: theoretical hints

Although Fintech and its tools can sound complicated to understand, it is certain that they are very easy to use.
As already stated in the previous chapter, everyday life is covered by plenty of services and comforts that are powered by Fintech and they could not exist without it.
Just think about programs or apps that allow you to order a good meal from your favourite restaurant, like Just Eat or Foodora, or Smart Banking, that allows you to enter your bank without moving from home and without queuing for hours; just consider technologies that let you pay almost for every service without pulling out your wallet or that can raise funds for the idea you have always believed in, but you did not have the economical means to develop.
Those are only few examples of what Fintech can do for the XXI century modern life and understanding how it works is not so hard as you can expect.
If it is possible nowadays to perform actions that only few years ago were impossible to imagine, we have to thank Big Data and the fourth industrial revolution.
In fact, the boosting pace in change of ICT has brought about a phenomenal disruption in every industrial environment.
The development of innovative technologies led to the transition in manufacturing processes that not only transformed the obsolete hand production methods into machine driven ones, but also radically changed the way information, knowledge, products and services are provided.
These cutting-edge technologies result in industrial revolution. With the evolution of social web, the massive amount of data (the so-called Big Data) has been generated and its fine tuned and tailored use has contributed in shaping up the fourth industrial revolution, the industry 4.0.

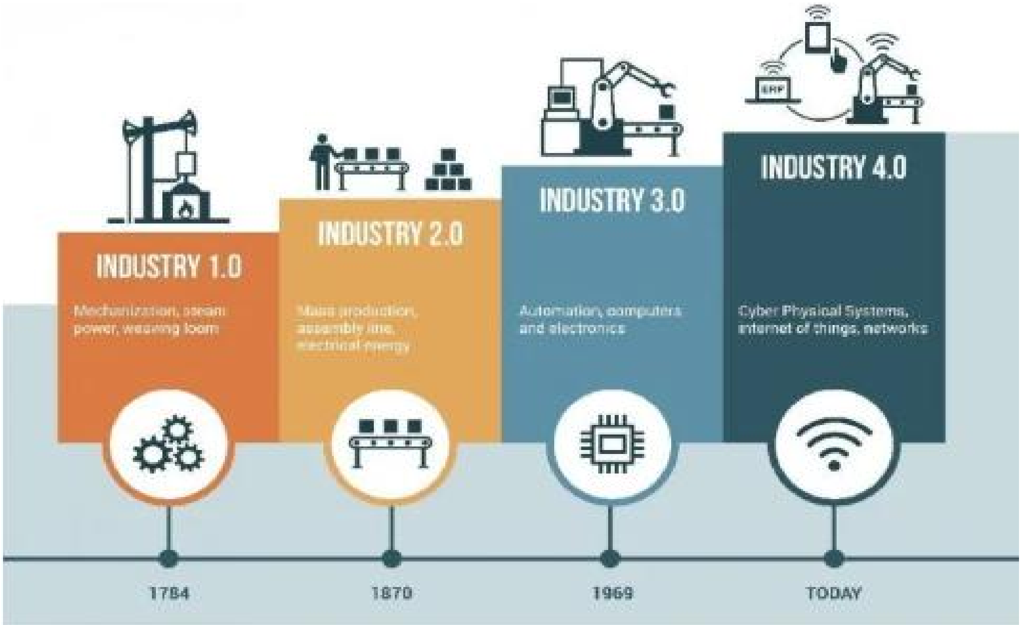

Figure 6: timeline of industrial revolutions[37]

People heard that neologism for the first time in 2011 during the fair of Hannover, in Germany. Actually the term referred to a project presented by a work group with the aim of implementing the national industrial plan that had to be presented to government the following year.

In our country, that term appeared five years later, in 2016, into the "Documento Piano Nazionale Industria 4.0 2017-2020"[38]

As a step towards the development of smart and sustainable industry, Big Data analytics is playing a crucial role.

Just to name a few examples, let us take into account the Insurance industry.

Until Fintech and Big Data came to power, in order to better understand and assess credit risk and decide whether to extend credit, bankers and insurers used the well-known FICO score[39].

It gathers much information of the creditee, such as age, sex, nationality etc. and it scores a range between 300 and 850.

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[37] *Industria 4.0: origine e sviluppi della quarta rivoluzione industriale*, www.lospiegone.com, 04/07/2019

[38] *Industria 4.0: cos'è e quali sono i suoi vantaggi*, www.tecnologia.libero.it, 2017

[39] FICO, short for Fair Isaac Corporation is a major analytics software company that provides products and services to both businesses and consumers located in San Jose, CA.
It was born in 1956 and invented FICO score which is a measure of consumer credit risk.
FICO score has become established in all the US as the most relevant way to asses credit risk.

FICO Score	Rating	What the Score Means
< 580	Poor	• Well below average • Demonstrates to lenders that you're a risky borrower
580 – 669	Fair	• Below average • Many lenders will approve loans
670 – 739	Good	• Near or slightly above average • Most lenders consider this a good score
740 – 799	Very Good	• Above average • Demonstrates to lenders you're a very dependable borrower
800+	Exceptional	• Well above average • Demonstrates to lenders you're an exceptional borrower

Figure 7: FICO score: how it works[40]

As you can see in Figure 7, in general, scores above 650 indicate a very good credit history. On the other hand, individuals with scores below 620 often find it difficult to obtain financing at favourable rates. To determine credit worthiness, lenders take a borrower's FICO score into account but they do also consider other details such as income, how long the borrower has been at his job, and the type of credit requested.

But this kind of information is insufficient and not rich enough to actually assess if people may repay the loan; thus, when years went by and the world of industry 4.0 took place, other kinds of methods to assess credit risk appeared.

The best way to acquire information for a today-firm is investing in R&D that means, in a nutshell, spending money to gather data and create a better model with richer information that can tell the firms how they can be more accurate and how they can expand their business.

AI and Big Data, in fact, are used to predict if people will repay the loan gathering plenty of data, filtering the interested information and creating a better model than FICO's.

An example of "better" information which can be used in the new Fintech environment is, for instance, location tracking data.

[40] *FICO score*, www.investopedia.org, 02/05/2020

Indeed many firms like Facebook, Amazon or Netflix use algorithm programs based on location data to create customized adds for people.
This kind of information is frighteningly useful when it deals with estimating the level of wealth of customers.
Just think about the fact that an insurance company can know where you live (not only in which city but also the neighbourhood, a richer or a poorer one, for example), to which places you go and how many times you go there and it is able to know everything in real-time as long as it does not violate regulations and restrictions imposed by the government.
All this information is much more accurate in assessing the credit risk than the customers' gender and nationality and even if it has become significant to cherry-picking valuable data, because most of them are considered useless or not correlated, the coming of Fintech and Big Data radically has changed the lending industry.
This is only one of the many examples of how Industry 4.0 revolution has transformed Fintech and the way people perform their jobs.
The most disrupted Fintech area is the sector of Payments without the shadow of a doubt.
Indeed, people who believe the innovation lies in the evolution of payments from cash-payments into non-physical ones, are making a mistake. Credit cards and digital payments already existed and therefore they do not represent a disruptive innovation but rather an incremental one.

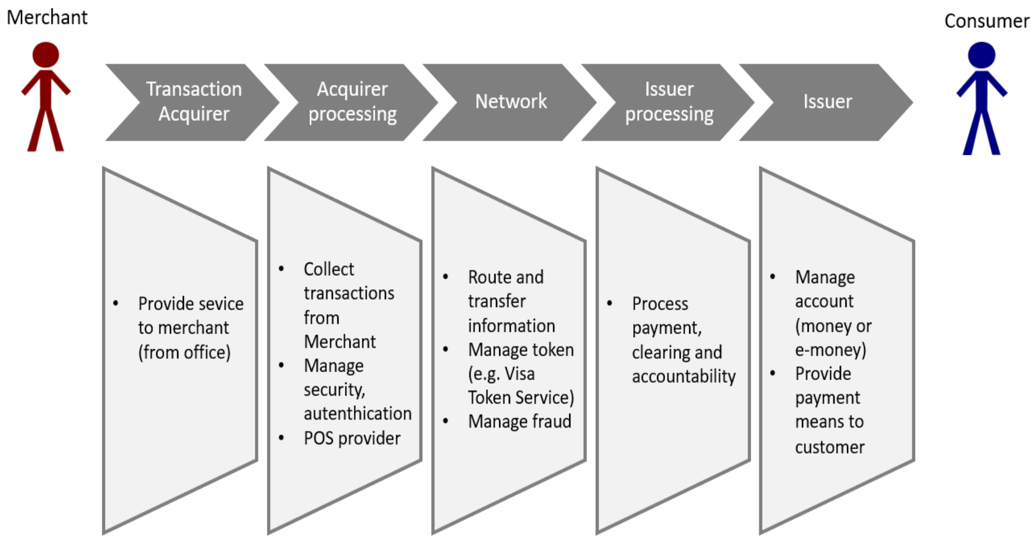

Figure 8: Non-physical payment pipe steps: Traditional model [41]

Figure 8 represents the traditional transaction model of payment without cash.
This process is obliged to be followed and represents all the steps money must cover when a non-physical payment occurs.
When a payment occurs a cardholder presents his or her card to a merchant as a payment for goods or services, the "transaction acquirer" phase takes place when the merchant uses his/her credit card machine (the so-called POS) software or gateway to transmit the customers' information and the details of the transaction to his/her acquiring bank.
People usually refer to merchant banks as acquiring banks, since they make contracts with merchants in order to create and maintain bank accounts (the so called merchant accounts) which allow the business to accept credit and debit cards. The role of the acquiring bank is to provide equipment and necessary softwares that merchants need to accept cards and manage their clients. Moreover the acquiring bank also acts as fund deposit from credit card sales into a merchant's account.
When the information transferred by POS arrives to the acquire bank, "the acquirer process" phase takes place.

[41] Scheme created on the basis of *The Fintech Revolution*, Berkeley Haas university lecture, www.youtube.com, 2018

Subsequently the acquiring bank gathers the transaction information and sends it via the specific card network to the cardholder's issuing bank which has to approve it or reject it (the "network" step).
As regards the "issuer processing" step, cardholder's issuing bank receives the above mentioned transaction information from the acquiring bank and approves or refuses the transaction.
Before making the decision whether to accept or reject it, the credit card issuer checks if the transaction information is valid, if the cardholder has sufficient balance to make the purchase and if the account is in good standing.
Finally "Issuer" step occurs when the information about the validity of the transaction reaches the merchant's POS letting the customer be able to pay thus ending the transaction[42].
The above process is not disruptive at all. Disruption occurs when you "disintermediate" that payment system.
In fact, firms like Paypal or Satispay can be considered as "closed" system in which money cannot be transferred through all the actors as mentioned above.
Indeed, if people did not need to transfer money from their Paypal account to their bank account and vice versa, the only step which is not covered by Paypal service would be the acquirer process phase.
In all other cases the actors of the network phase would be Card Associations (Visa, Mastercard, etc.).
The most disruptive *potential* technology for Payment is Bitcoin[43].
The well-known cryptocurrency based on Blockchain technology is indeed a pure Peer-to-Peer fund transfer and it does not have to pass through any kind of intermediary.
In fact all the steps in the "money transfer path" are covered by Bitcoin and it represents just two entities exchanging value.
That makes Bitcoin and all the cryptocurrencies very easy to use and above all very cheap.

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[42] Credit card processing, www.cardfellow.com, 06/04/2020
[43] Bitcoin (₿) is a cryptocurrency. It is a decentralized digital currency without a central bank or single administrator that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries. Bitcoin was invented in 2008 by an unknown person or group of people using the name Satoshi Nakamoto and started in 2009 when its source code was released as open-source software, www.wikipedia.org

In fact a bigger opportunity might be represented by the international exchange of value.

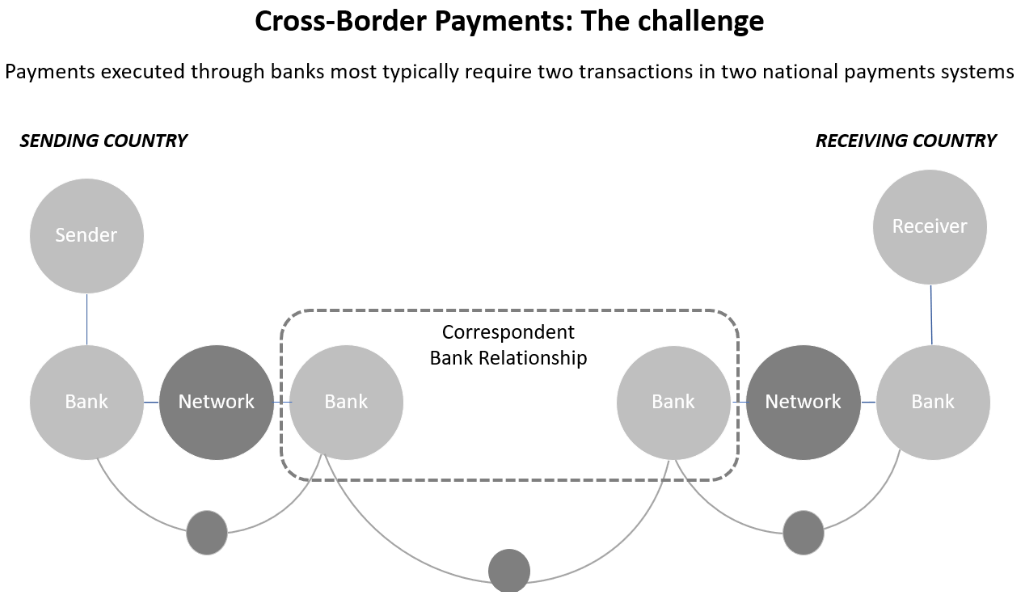

Figure 9: The Cross-Border payment path[44]

The traditional banking system becomes very expensive when dealing with cross-border transactions of money.

Merchants should work with a Payment Service Provider (PSP) that offers a secure, global payment gateway. A payment gateway acts as the switch between the various players in the payment network, allowing funds to be securely passed among merchant, customer and the issuing and acquiring banks. It validates the payment and encrypts the sensitive financial data. Then data and money are transferred among the parties.

But that is not enough since before the money transfer and data validation, the acquiring and issuing banks must have a bank account with one another. If they do not, they have to find another bank which has accounts on both the acquiring and issuing bank and if the latter bank does not meet the requirements there must be another level and so on thus creating even more fees to be paid and more time needed to process the transfer.

[44] Scheme created on the basis of *The Fintech Revolution*, Berkeley Haas university lecture, www.youtube.com, 2018

Moreover cross-border payments also require more work from the involved credit card networks and acquiring banks as they need to convert two different currencies. This additional workload results in increased fees that are passed down the payment chain[45].
Cryptocurrencies are tax-free and the transfer acts in real-time and that is why they probably could be considered as victorious currencies.
But actually they are not. They will never be successful currencies.
Just take into account the Bitcoin example again for the sake of simplicity.
In the modern world there are three fundamental characteristics that a currency has to possess in order to be considered a good currency:

- Transferability
- Recognisability
- Stability of Value[46]

Unfortunately Bitcoin lacks of the third main feature because it is a too volatile currency.
In fact, apart from speculators, nobody would be fully confident in letting his/her money set in Bitcoin for even a few days and no retailer would like to be paid in Bitcoin since it could be very costly to convert it into currencies.
Anyway all the humankind is experimenting an era of great innovation since the coming of the internet.
Indeed the world wide web has created a new world which broke the borders so that any person can communicate and transfer information with and, in the same way, Bitcoin and cryptocurrencies has created a new world in which it is possible to transfer value without any limitation, without any bank, without any government, without any intermediary.
It is interesting how Bill Gates in the 1997 predicted this new trend of world technology with his famous quotation «We need banking. We don't need banks anymore».
This is an ongoing revolution in fact, the value transfer revolution brought about by Bitcoin is only the cherry on top of many other "Disintermidiate Revolutions" that are taking place in the last years.

[45] *Everything you need to know about cross-border payments*,www.emerchantpay.com, 2020
[46] *Caratteristiche della moneta*, www.e-investimenti.com, 12/09/2013

As you can see in figure 9 before Bitcoin took place, other innovative companies already started that revolution in their area of expertise and it is very intriguing to think that Facebook, the world's biggest media owner creates actually no media content, Uber, the world largest taxi company does not own any vehicles, Alibaba, the world's most valuable retailer has no inventory and AirBnB, which is the largest accommodation provider actually has no real estate.

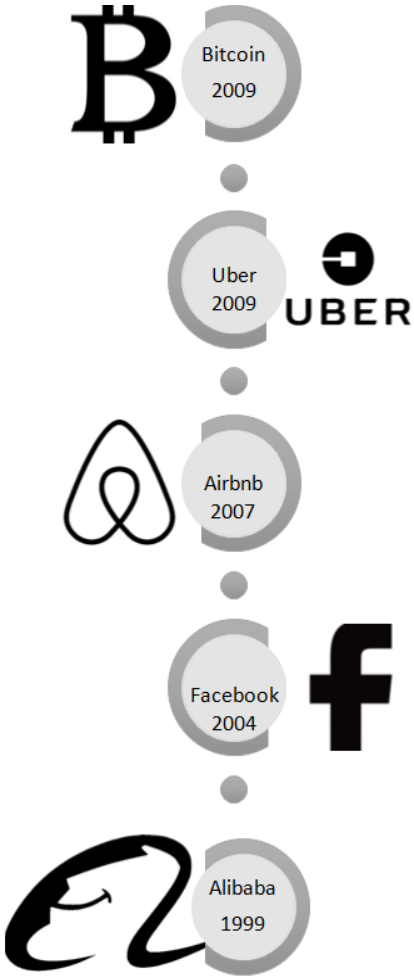

Figure 10: "Disintermidiate Revolution" [47]

What the above cutting-edge firms have in common is that all of them use a system structured by Blockchain.
The technique was born in 1991 when two researchers Stuart Haber and W. Scott Stornetta introduced Blockchain in order to time stamp digital documents with the aim of making impossible the act of backdating them[48].

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[47] Scheme created on the basis of *The Fintech Revolution*, Berkeley Haas university lecture, www.youtube.com, 2018
[48] *Storia della Blockchain*, www.binancevision.it

However the technology reached very little fame and its patent expired in 2004. It remained unused until 2009 when Satoshi Nakamoto (see previous *footnote 43*) decided to create an electronic monetary system based on blockchain, completely decentralized, Peer-to-Peer and without any kind of jurisdiction: Bitcoin.
A blockchain is a completely open distributed ledger and the most peculiar characteristic is that once some data are recorded inside it, it becomes almost impossible to change.
To understand how it works, let us analyse one single block.
Each block is characterized by three main features:

- some data contained in it
- the Hash[49] of that block
- the Hash of the previous block

A Hash identifies a block and all its contents and it is always unique so it is not completely wrong to compare it to a fingerprint.
Once a block is created its hash is calculated and once a change is made on a block, it will cause its hash to change.
The fact that a block is featured by the hash of the previous block (except the first block or genesis block that only has its own hash) creates a fully-fledged chain of blocks and that is why this technique makes blockchain so secure, in fact tapering with a block will cause its hash to change and so it will make all the following blocks invalid.
However the use of hash is insufficient to prevent tampering and hacking. Computers nowadays have the computational power to modify a block and recalculate all the hashes of the following blocks to make blockchain valid again.

[49] "A hash function is any function that can be used to map data of arbitrary size to fixed-size values. The values returned by a hash function are called hash values, hash codes, digests, or simply hashes. The values are used to index a fixed-size table called a hash table. Use of a hash function to index a hash table is called hashing or scatter storage addressing.
Hash functions and their associated hash tables are used in data storage and retrieval applications to access data in a small and nearly constant time per retrieval, and storage space only fractionally greater than the total space required for the data or records themselves. Hashing is a computationally and storage space efficient form of data access which avoids the non-linear access time of ordered and unordered lists and structured trees, and the often exponential storage requirements of direct access of state spaces of large or variable-length keys".
Hash Function, www.wikipedia.org

Thus, in order to mitigate this problem, there is also a mechanism called Proof-of-work (PoW)[50]. It slows down the creation of new blocks (in the case of Bitcoin 10 minutes are required to calculate the required proof-of-work and add a new block to the chain) and makes it very hard to tamper with the blockchain because, in order to modify one block, it is necessary to recalculate the proof of work for all the following blocks.
But there is one more way in which blockchain secures itself and that is by being distributed.
Indeed Blockchain uses a Peer-to-Peer network in which anyone is allowed to join in order to manage the chain instead of using a central entity.
When all the people (called Nodes of the network) join the network they receive a full copy of all the chain.
When a new block is created, a copy is sent to each node that verifies it is valid and if each copy-block has not been tampered with, all the nodes in the network create approval and automatically add that block to their own blockchain.
Eventually, to successfully hack a blockchain you will need to tamper with all blocks on the chain, recalculate the proof of work of each block and take control of more than 50% of the Peer-to-Peer network and only after this procedure your tampered block will be accepted by everyone else[51].

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[50] "A proof of work is a piece of data which is difficult (costly, time-consuming) to produce but easy for others to verify and which satisfies certain requirements. Producing a proof of work can be a random process with low probability so that a lot of trial and error is required on average before a valid proof of work is generated. Bitcoin uses the Hashcash proof of work system. Hashcash proofs of work are used in Bitcoin for block generation. In order for a block to be accepted by network participants, a proof of work which covers all of the data in the block must be completed. The difficulty of this work is adjusted so as to limit the rate at which new blocks can be generated by the network to one every 10 minutes. Due to the very low probability of successful generation, this makes it unpredictable which worker computer in the network will be able to generate the next block.
For a block to be valid it must hash to a value less than the current target; this means that each block indicates that work has been done generating it. Each block contains the hash of the preceding block, thus each block has a chain of blocks that together contain a large amount of work. Changing a block (which can only be done by making a new block containing the same predecessor) requires regenerating all successors and redoing the work they contain. This protects the block chain from tampering".
Proof of work, www.bitcoinwiki.en

[51] *What is Blockchain*, Lecture by Shai Rubin, CTO of Citi innovation Lab, www.youtube.com, 09/06/2016

The negative aspect in using blockchain is that regulation is not uniform and unique: it varies from country to country and many governments do not allow the blockchain to be deployed with its full potential[52] (digital signature, smart contracts, to name a few) thus letting the creation of a uniform base for all the world users which is a very hard task to perform. But the use of this technology is without the shadow of a doubt fundamental for the new Fintechs approaching the world of finance today and the same is for the old incumbents that have to struggle to come up with a new winning idea and re-catch their market share.

[52] *Blockchain in Fintech*, Lecture by Roberto Capodieci, CEO of Blockchain zoo, www.youtube.com, 20/01/2020

2.2. Satispay: a Fintech insight in the Italian environment

The Fintech sector of digital Payment, as already explained in the previous chapter is the most widely spread. It is easy to understand why: many activities such as loans, insurances and investments rely on the Payment sector and thanks to PSD1[53] and the consequent establishment and strengthening of project SEPA, many european innovators found breeding ground to develop their ideas.

The Payment area is made up of eight subsegments:

- **Next generation POS solutions**: companies that offer mobile applications or virtual POS solutions based on NFC (see footnote 27), QR code or Bluetooth technologies. This business segment also includes solutions that allow an integrated Point of Sales management, such as order management, sales analysis and statistics. This is a historical segment of Payment area;
- **VAS for merchants**[54]: it includes providers of technological and marketing platforms that enable merchants to offer value added services to their customers with the aim of enhancing client loyalty and engagement;
- **Online Checkout**: (above all) start-ups that offer solutions to implement and improve UX[55] during payment checkout in e-commerce and online shopping, letting for instance clients split their online payments among different cards and bank accounts;

[53] "The payment services directive [promulgated in 2007] established the same set of rules on payments across the whole European Economic Area (European Union, Iceland, Norway and Liechtenstein), covering all types of electronic and non-cash payments, such as credit transfers, direct debits, card payments, mobile and online payments.
The directive laid down rules about the information that payment services providers have to give to consumers and about the rights and obligations linked to the use of payment services.
The directive introduced a new category of payment service providers other than banks – the so-called 'payment services'. This has increased competition and choice for consumers.
The directive also laid the groundwork for the SEPA (see footnote 19), which allows consumers and businesses to make payments under the same conditions across the euro area."
From *Payment service Directive*, www.ec.europa.eu

[54] short for Value Added Services

[55] short for User eXperience

- **Mobility and Vending machines**: companies that offer two kinds of solutions: smart mobility solutions or mobile ticketing and mobile payment solutions for vending machines. This is an almost new sub-segment in the Payment area;
- **P2P Payment & digital wallet**: this cluster includes enterprises that offer mobile applications or web platforms allowing Peer-to-Peer payments or collection of money among peers. This sub-segment gathers Fintechs with the most established offering in the market;
- **Cryptocurrency**: this cluster includes cryptocurrencies, cryptocurrency exchange platforms and solutions that allow companies to receive payments in virtual currencies;
- **Payment Solutions Development**: companies that develop solutions to manage electronic payments for third companies. Together with Mobility and Vending machines, this cluster is almost a newbie of the Payment area;
- **Others**: this last sub-segment includes Fintechs with an offer related to the Payment: a couple of examples are K-Linx, a firm aimed at making reconciliation payment easier and Stamp, a company whose objective is to offer merchants a tax free online shopping experience for their foreign customers.

Figure 11: Main enterprises for the eight sub-segment of Payment landscape in Italy[56]

At the end of 2019, in the Italian environment, mobile applications are the principal technology used in enterprises of the Payment area (36%). This cluster, in fact, is characterized by solutions that optimize the UX.
Mobile app is followed by web platform companies (33%) that enable electronic payments and also include Fintechs that support merchants to reinforce loyalty of customers[57].
Payment companies amount to 46 and the Payment area represents a share of 17% in the total Fintech environment.
Other positive numbers come from revenues.
In fact, the percentage of revenue growth of the Italian Payment area is +62% with respect to 2018 and it is the highest in all Fintech panorama.
On the other hand the increase in investments are only 14,7 Million € (10% on total of the Fintech environment) which is a bit low considering the fact that the sector is approaching the maturity phase.
The worst datum is about margins: at the end of 2019 the total EBITDA of Payment area was -9%. That is due to the presence of business models that benefit from network externalities and that need a significant

[56] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020
[57] Ibidem

customer base in order to generate high profits but unfortunately in Italy digital payments are struggling to take off[58].

However, positive results are foreseen in terms of revenues and customer base for the close future; that also thanks to the revolution driven by PSD2.

Also the demand for digital payment services is maturing: smartphones have a very high level of market share in Italy (79.1%[59]) and they are considered as the main device for web browsing.

These findings, together with the growing use of web-banking and digital payment services, underline an evolution process focused on customer perspective and predict a more consistent use of digital Payment services.

One of the first Italian early adopter is a mobile Payment entity called Satispay.

The idea was born in 2013 thanks to the entrepreneur, Alberto Dalmasso and the computer scientist, Dario Brignone in an Italian city located in Piedmont, Cuneo[60].

The two innovators began to wonder whether Italian people could use their smartphones to perform plenty of tasks with extreme comfort and convenience apart from paying[61].

In an interview by "Banca Finanza" Dalmasso said: «It was not unusual to have our [Dalmasso's and Brignone's] credit cards rejected for small payments and we believed that withdrawing money from ATMs each time we had to split the check for a pizza or for a football pitch was a literally a waste of time. We started from a clear point: we should think something working independently and without making agreements with third parties and other operators[62] [...]».

Successively, months later, Samuele Pinta joined the two entrepreneurs helping them to design the web platform[63].

In the meanwhile, EU was changing the regulation about digital payments and, thanks to this lucky set of factors, the trio decided to leave their own jobs and commit to the idea[64].

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[58] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020

[59] from www.gs.statcounter.com

[60] *Satispay - pagare in un batter d'occhio*, www.marketingtorino.it, 23/04/2018

[61] *Satispay - #doitsmart, una rivoluzione tutta cuneese*, www.targatocn.it, 09/07/2017

[62] *Satispay, una silicon valley a due passi dal "Dòmm"*, Banca Finanza, 01/03/2017

[63] *Satispay - pagare in un batter d'occhio*, www.marketingtorino.it, 23/04/2018

At the end of 2013 Satispay was founded and in 2015 the mobile app was launched[65].

Satispay allows people to pay with their own smartphones in thousands of affiliated stores. It is a cashless and digital payment service that enables customers to send money without using credit cards or topping up at ATMs.

It is very easy to use and that is the reason why it gained significant fame in Italy, in fact, it does not need neither NFC nor RFID[66] connectivity to send or receive money.

In order to pay with the app all that is needed is an internet connection to which you can connect your account and identify the firm or person to whom the payment has to be sent[67].

Instead of being linked to a bank account through a credit or a debit card, Satispay takes the money directly from the user's current account.

When people sign-up they set the maximum amount of money they can spend throughout the week that starts from 25€ to 200€ and after some weeks the threshold can be risen until 500€ per week[68].

At the end of the week, the system verifies the residual money, if any, and if it is lower than the amount set, it withdraws directly from the bank account linked to the profile and replenishes the funds.

Registering with Satispay is also very easy. It can be done from the mobile app or from the web platform.

People are asked to enter personal data, the IBAN of the bank account associated from which money for payments has to be withdrawn, the scanning of an identity document and a photo taken with the computer webcam or the smartphone front camera.

Once obtained, the information is processed by Satispay which checks that everything is compliant and, after three to five working days, if positive check occurs, the account is activated otherwise additional information is asked to be provided.

Furthermore the customer has to choose a PIN made up of five digits to enter the app whenever it is opened.

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64 *Samuele Pinta: vi racconto Satispay*, www.bancadicherasco.it, 25/07/2018

65 *Satispay*, www.wikipedia.org

66 short for Radio Frequency IDentification

67 *What it is and how Satispay works*, www.indianhandloomscluster-dchl.net, 21/05/2019

68 *Satispay, una silicon valley a due passi dal "Dòmm"*, Banca Finanza, 01/03/2017

Once the account has been created, users can start to benefit from features and services offered by the Italian company.
In addition to sending money to friends and relatives and making payments to the contracted commercial activities, users can make payments to the public administration with the PagoPA system[69], pay the car tax, pay postal bills, top up their phone, use the app as a digital wallet and also create special gift bags for important events.
Moreover, recently the "Consegna e Ritiro" function has been implemented: it allows customers to find affiliated takeaway shops, to keep in touch with them telephonically to book and finally pay with the app[70].
When the user is making a payment, he/she has to launch Satispay app and, after having inserted the PIN correctly, it opens immediately on the shops tab where a list of affiliated commercial companies nearby appears.
Thanks to the geolocation system, Satispay finds out the user's position and shows him/her the data sheet of the business.
Once you find the name of the retailer you want to pay, just insert the amount of money to send, it is a done deal.
The Merchant will receive the payment notification within a few seconds and he/she can accept or reject it. Once accepted, Satispay transfers the amount of money from the user's account to the merchant's, thus ending the transaction.
As for merchants, the app works in the same way: a commercial enterprise which decides to activate Satispay Business can accept cashless payments.
As already mentioned above, it works throughout smartphone, tablet, PC or POS and all the transactions are performed without the need for credit or debit card.
This system, of course, helps to prevent the risk of suffering thefts or be paid with fake notes.
With Satispay, business merchants can be paid throughout many ways: shops, professional studios or ateliers, moving entrepreneurs (e.g. taxies),

[69] Sole digital payment system for public administration that allows users to pay for public services (such as taxes, fines, sanitary tickets)
[70] *Satispay, un' app gratuita che offre cashback e sconti sugli acquisti*, www.mobiletransaction.org, 14/08/2019

e-commerce web platforms, vending machines. And to be paid, it is necessary for customers only to press "send" on their smartphones[71].

A lock-in functionality is offered to clients (except sporadic discounts): the "Cashback".

It can be activated by merchants and it deals with a little percentage of reimburse on the amount spent (on average, 15%).

Users can distinguish on the shop tab the retailers with Cashback feature activated and then, after having performed the whole payment, Satispay reimburses the agreed percentage to the customer.

Merchants can set this feature paying 20€ thus accessing three types of option they can activate in their shop:

- Classic Cashback: where a percentage of reimburse is granted on each purchase;
- First purchase promotion: where the Cashback is activated only for the first purchase (this kind of option can be activated in order to attract new clients);
- Incremental Cashback: where the Cashback rises proportionally to the number of purchases in that shop (this kind of option can be activated in order to enhance loyalty of customers)[72].

As for costs, Satispay grants almost a free service for both customers and merchants.

As you can see in Figure 12 (next page) the only cost for a customer is associated with the payment of services by Public Administration, whereas for merchants, a free service is granted only for micro-payments (payments up to 10€) and there is a small fee of 0.5% for e-commerce platform owners until 10€ and 0.5% plus 0.20 € cents for payments if the amount goes beyond the threshold of 10€.

[71] *Satispay, un' app gratuita che offre cashback e sconti sugli acquisti*, www.mobiletransaction.org, 14/08/2019

[72] *Satispay Business*, www.transferwise.com, 21/02/2020

Costi per **privati**

Iscrizione / recesso al servizio	gratuito
Ricarica del Budget	Nessun costo applicato da Satispay
Deposito su conto corrente	gratuito
Inviare / ricevere denaro dai tuoi contatti	gratuito
Pagare in negozio	gratuito
Acquistare ricariche telefoniche	gratuito
Creare e inviare buste regalo digitali	gratuito
Aggiungere e spostare denaro dai salvadanai digitali	gratuito
Donazioni verso associazioni non profit	gratuito
Pagamento di bollettini, avvisi pagoPA (pubblica amministrazione), bollo auto e moto	1,00€

Costi per **Business**

Iscrizione / recesso al servizio	gratuito
Deposito dei tuoi incassi su C/C	gratuito

Punto vendita

Transazioni inferiori o pari a 10€	gratuito
Transazioni superiori a 10€	0,20€

E-commerce web

Transazioni inferiori o pari a 10€	0,5%
Transazioni superiori a 10€	0,5% + 0,20€

Figure 12: Satispay cost scheme[73]

As the CEO and co-founder Dalmasso said in an interview by Banca Finanza «Of course, the fact that merchants do not have transaction fees for payments below 10€ is a great step forward for those retailers who live thanks to small transactions. However, beyond that amount the transaction fee is 20 cents.

Moreover, this payment system offers a value added to shop services as it cuts queues and allows customers to comfortably pay from their table in the restaurant or clients to enjoy exclusive offers like the Cashback[74]».

[73] Scheme created on the basis of the cost structure in www.support.satispay.it

[74] *Satispay, una silicon valley a due passi dal "Dòmm"*, Banca Finanza, 01/03/2017

As for profits, it could be slightly unclear how Satispay can make margins and where the gains come from.
As already said at the beginning of the chapter, profits do not come from the 20 cent fees the firm applies on merchants' revenue, but they come from data, the big amount of data the start-up has to manage.
Indeed, since Satispay disintermediates approximately all the steps in the transaction model of non-physical payments (see Figure 8) it does not only transfers money between two entities but also has much information about consumers and merchants.
In an interview by Technoretail, the CEO said «[information] used carefully can allow to create value for both customers and sellers. [...] Beyond the complex chain of actors of international [bank] circuit, nobody can say to have a fully-fledged complete information about the payment. Instead, for us, that directly manage the payment and know both the merchant and the customer, the situation is different.
We are able to know preferences, the time of purchase, the customer target and many things that embody a great value for merchant but also for the consumer.
When used [the information] in the right way as we do (we never thought to transfer a datum unless it is anonymous in order to safeguard our clients' privacy) on one hand, we grant protection to the customer who does not get annoyed, on the other hand we allow the merchant to be aware of what surrounds him/her.
This has an enormous value and it gives him/her the possibility to make ultra-focused marketing operations, using for example the powerful tool of the cashback.
[...] For instance, I can allow him/her [the merchant] to show a discount to the users of a specific city, with a specific age range, with a specific sex that maybe, throughout purchases, showed particular attention and interest for a particular category of products.
So, since every marketing initiative is aimed at generating sales that are completed only with a payment, if the payment tool itself can be a relational channel for merchants, we are turned full circle[75]».
During its path to success, the innovative start-up has to face (and it is still facing) many competitors.

[75] Alberto Dalmasso e i progetti di Satispay, www.technoretail.it, 2017

The market of mobile payments is heterogeneous and there are many technological solutions that try to consolidate POS, the acquiring business and the network into one entity.
One of the most widespread and important provider of that kind of solution on the market is PayPal without the shadow of a doubt.
There are slight differences between the two payment systems but the clearest dissimilarity is their business vision.
Indeed, PayPal is born to dominate the market of e-commerce and its aggressive strategy consists in spreading like wildfire in as many online shop platforms as possible. Satispay, on the other hand, wants to be spread as the most powerful tool for micro-payment trying to reduce transaction fees as much as possible.
In Satispay, the user can only insert the IBAN and link his/her bank account to the app throughout a SEPA standardised charge whereas PayPal is much more flexible since the user can link his/her bank account but also his/her credit and debit cards[76].
This limitation allows Satispay to substantially diminish costs; in fact, Paypal charges the user a transaction fee (1%) every time he/she wants to transfer money from the bank account to the PayPal account and for each transaction and purchase (from an online shopping platform, for instance) there is a fee of 3.4% plus 0.35 € if the PayPal account is linked to an external credit card
Of course both systems are free when they work among users in the same network but Satispay, even with its limitations, tried harder in avoiding contact with banks as much as possible disintermediating the non-physical payment transaction model with the aim of becoming a completely independent entity.

[76] *I pagamenti smart si stanno diffondendo a macchia d'olio ma Satispay e Paypal sembrano avere una marcia in più,* www.howtechismade.com, 28/11/2019

2.3. A wide angle on Satispay Funding

Before analysing the funding steps that brought about Satispay to be one of the most promising companies in the Italian panorama, some necessary theoretical information about the financing system and methods must be provided.
First of all, the main sources of finance for firms are:

- Savings (social capital, money from family and friends);
- Crowdfunding;
- Business Angels;
- Venture Capital;
- granting loans from banks;
- Equity, throughout issuing of stocks;
- Bonds.

It is very likely that a start-up uses, in different period of its lifecyle, most or even all of them.

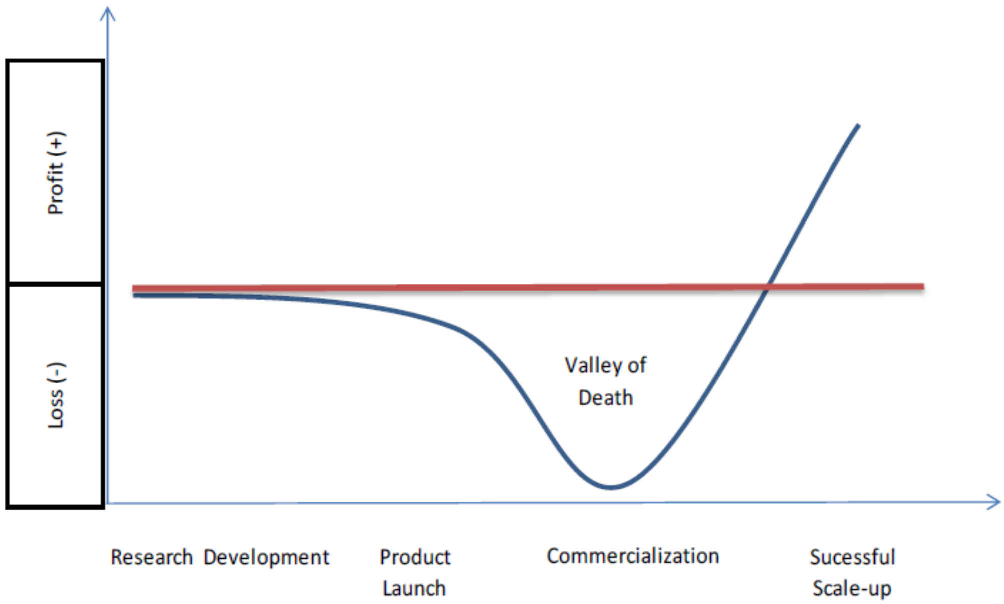

Figure 13: The Valley of Death[77]

[77] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019

When a new firm is born, it has to face a lot of difficulties in order to survive. Many risks in fact must be taken if a firm wants to have the possibility to rise and be economically flourishing.
As for technological and innovative start-ups, entrepreneurs must find much money to invest in R&D, they have to spent time and effort in making a prototype and then commercialize the final product.
Many firms cannot survive since they are not able to repay debts with banks and many conflicts can arise between people working in the company, between shareholders and debt holders and also the government.
It is obvious that all the new firms in their early stages of life need money inflows necessarily.
One of the most efficient sources of financing can be Bootstrapping.
Start-ups which cannot rely on their profit can bootstrap in almost two ways: by acquiring resources with low cost (or zero cost, luckily) or by organising their business in order to minimise the need for money and financing.
The Bootstrapping categories can be clustered in five groups:

- **Delaying bootstrappers**: when the firm tries to minimise stock and delay payments to suppliers;
- **Private owner-financed bootsrtapper**: when the firm relies on private owner financing;
- **Minimising bootstrapper**: when the firm tries to minimise account receivable and stock;
- **Relationship-oriented bootsrapper**: when a firm pairs up with another one in order to use their resources together, splitting costs and risks;
- **Subsidy-oriented bootstrapper**: when the firm receives financial help from government[78].

In particular, all the clusters but the "relationship-oriented bootstrapper" grant low profit margins and all the clusters except for "relationship-oriented bootstrapper" and "minimising bootstrapper" need an additional strategy to grant additional finance.

[78] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019

It can be inferred that the best strategy in term of profitability is represented by the fourth cluster but it is unlikely that an established firm would create an alliance with a start-up, so it can be easily deduced that this kind of strategy is suitable for mature companies.
Finally, operating via bootstrapping can be very positive for a firm since it gains more control of decisions, it gains more strategic flexibility and operating under resource economical constraints can make the company more efficient and creative.
On the other hand, bootstrapping denies the possibility to make mistakes (no trial and error), it produces high opportunity costs since allocates more time of entrepreneurs on implementing margins and, above all, it really slows down the possibility of leveraging the firm since fundraising via other channels can transform quickly a start-up in a scale-up[79].
It is now obvious that start-ups deserve other ways of financing. The most common funding channels are:

- **Crowdfunding** (see page 4), that is able to raise a remarkable amount of money in a short time by collecting a small amount of donations by a large number of people via the internet.
  Crowdfunding can bring both positive and negative aspects since it considerably reduces search for investors and transaction costs but it also creates information asymmetry among investors and entrepreneurs;
- **Private investors**, that is usually part of the family of entrepreneurs or a friend. He/She might become part owner of the company and usually need to see only a simple business plan of the new-founded company;
- **Angel Investors**, that can be both individuals or groups of organised people. They usually invest in promising firms during their early stages also having non-monetary motivations and ask for a board seat or a percentage (generally 15% - 20%).
  Angel investors are significantly useful for a start-up since they provide not only money to it but also expertise and connections with a deep and established network in the industry.
  BAs are frequently characterised by geographical proximity to the firm they fund (unlike VCs). This factor creates advantage in

[79] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019

dealing with asymmetric information, agency problem and monitoring.
Crucial is the complementary strategy BAs adopt with VCs.
In fact, «Angel investment runs the critical first leg of the relay race, passing the baton to Venture Capital only after a company has begun to fund its stride. Venture Capitalists focus on expansion and later stages[80] [...]».
BAs add value to the start-up with high risk and small investment whereas VCs contribute to enable the firm to become a scale-up.
The complementarity strategy grants many advantages to both BAs and VCs: Angel investors provide less value added services with respect to Venture capitalists for the start-up; moreover VCs lessen agency problems throughout a formal contract and screening mechanisms. On the other hand, Venture capitalists benefit from the entrepreneurial experience of Angel investors that help them to better identify growth opportunity and to better assist the due diligence process, from the post-investment relationship between BA and the firm and they finally benefit from the relational and friendly governance adopted by BA that diminishes agency problems.
Monitoring is the last strategy associated to BAs investment.
It is a powerful tool that reduces agency problems and lets the investors learn about the economic trends of the firm over time.
Nevertheless, monitoring is a costly performance and could imply problems of underinvestment and moreover can induce entrepreneurs to deceive investors making a showy display;

- **Venture capitalists**, that are usually professional investors that provide a large amount of money to only early-stage high potential start-ups. VC funding is essential in the lifecycle of a start-up: it provides a significant inflow of financial resources associated with an enlargement of firm's capabilities due to continuous coaching and connections in the business sector. There probably will be several rounds of investments and these are likely to be associated with other VCs.
  They can be divided into four macro-categories:

[80] Benjamin and Margulis, 1996

- Independent VC;
- Corporate VC, which is affiliated to a non-financial company;
- Bank-controlled VC, which is affiliated to a financial intermediary,
- Governmental VC, which is government-owned

The aim, of course, is very different for each type of Venture Capital.

	IVC	CVC	BVC	GVC
Financial Goal	High	Low	Low	Low
Strategic Goal	Raising additional capital from institutional investors	Access Start-ups' advanced technology	Generate demand for bank services	Social and political objectives (job generation or local development)
Coaching	Capabilities and business contact of IVC investor	Resources, Capabilities and business contacts with parent company	Resources, capabilities and business contacts of the parent bank	Limited access to resources and capabilities

Figure 14: Strategic Goals of different VCs[81]

The independent VC is the only kind of VC that aspires to a high financial development for the start-up it finances by raising additional funds from other institutional investors; the objective of Corporate VC's is to seize the firm's technology; the aim of Bank-controlled VC's is to generate a demand for that bank whereas Government VC's is to impact society by creating new jobs or implementing the local economic situation.

[81] Scheme created on the basis of the course material of Corporate Governance and Finance, Elisa Ughetto, 2019

VC investors generate funds for the start-up in its early stage of development but it is not unusual that the funding rounds continue afterwards, also during the expansion phase.
They usually expect a capital return higher than the one expected by BAs (usually between 25% - 35% per year) with an ownership stake that can touch the threshold of 75% that is the company has to accept to lose most of managerial control and decisions.
Dedicating more time and money with respect to other institutions and providing managerial support and a business network to the firm they help, VCs tend to cherry-pick the start-ups they decide to invest in[82].

The Financing lifecycle of a start-up is characterised by many stages.

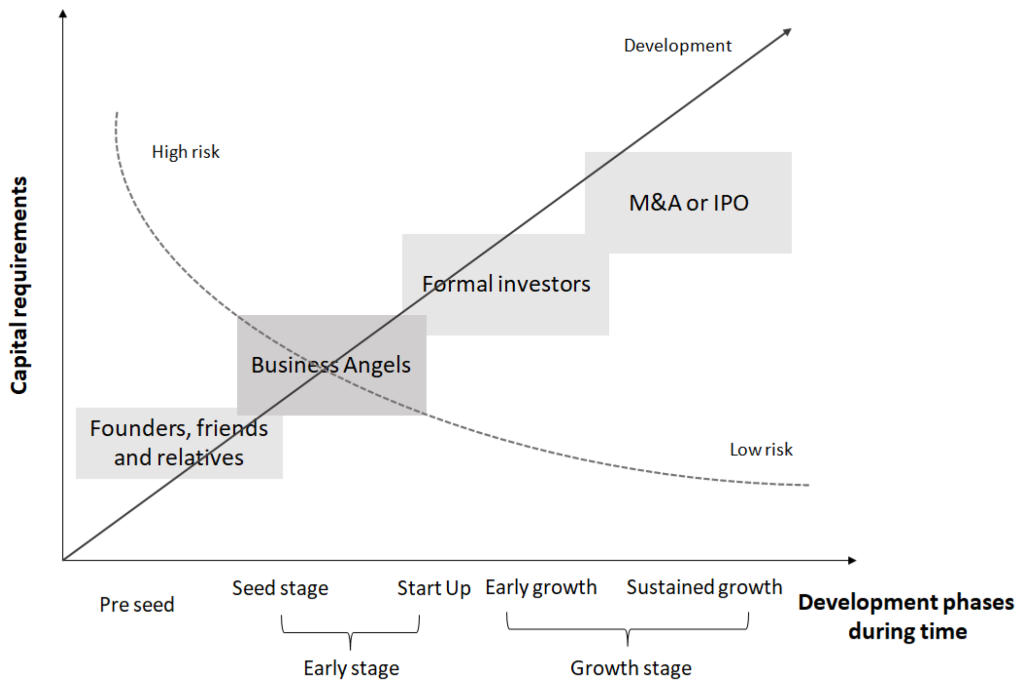

Figure 15: Growth steps of a start-up and financers typologies[83]

[82] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019
[83] Scheme created on the basis of course material of Corporate Governance and Finance, Elisa Ughetto, 2019

As long as the development of the product/service advances and the need for capital rises, the growth steps of a start-up can be classified as following:

- **Pre-seed stage**: the firm has not been founded yet. The entrepreneur has only the idea of the project clear in mind and can have a draft of the business plan.
  He can raise money by granting loans or by his/her own sources (from family or friends, for instance);
- **Early stage,** divided into **Seed stage** and **Start-up stage**: during the former stage, the firm has just been founded. The entrepreneur has now the business plan and begins the initial studies in order to create the product. He/She can also begin to keep in touch with some future customers.
  He/She can usually raise money thanks to BA investors;
  In the latter stage, the product development continues and the funding received allows to create a first team that can work on the firm's beta product. Moreover, a first market evaluation can be performed.
  From a financing transaction point of view, these two stages can also be called as **Series A** (about 1 to 5 Million € risen);
- Growth stages, that can be divided into **Early Growth** and **Sustained Growth**: during the former stage the firm is two or three years old. The entrepreneur has the product and a revenue model and BAs make way for VC investors which grant a sustained inflow of capital.
  From a financing transaction point of view, this stage can also be called as **Series B** (about 3 to 10 Million € risen).
  In the latter stage, the firm is more than four years old. The entrepreneur has now the proof of the model and its scalability, a full team working on the product, a board of directors, a full set of documentation including due diligence items and a clear exit path.
  Usually, in the Sustained growth stage the firm reaches breakeven point and begins to make profit.

From a financing transaction point of view, this stage can also be called as **Expansion round** (more than 10 Million € risen)[84].

The innovative idea brought to light by the trio of Italian entrepreneurs sparked interest of many investors in the earliest phases of Satispay lifecycle.

DATE	INVESTORS	AMOUNT	ROUND
Jun 2013	N/A	600 k€	ANGEL
Jun 2014	3LB Seed Capital	800 k€	DEBT
Jan 2015	N/A	6.5 M€	Series A
Sep 2015	U-start, Ray Iglesias III, Nicolas Carbonari, Giuseppe Donagemma, Iccrea Bank, Jonathan Weiner	3 M€	Series A
Apr 2017	Iccrea Banca, Banca Etica, Shark Bites	21.9 M€	Series B
Sep 2017	Ray Iglesias III, Nicolas Carbonari, Giuseppe Donagemma, Jonathan Weiner, Iccrea Banca, Boost Heroes	18.3 M€	Series B
Sep 2018	Gruppo Bertoldi, Endeavor Catalyst, Greyhound Capital, Iccrea Banca, Copper street Capital	15 M€	Series B
		Total funding: 62.2 M€	

Figure 16: Satispay - Funding rounds[85]

After having raised few hundred thousands euros from friends and relatives, in 2013 Giuseppe Donagemma[86] joined the cutting-edge idea of Satispay and, in the pre-seed stage, helped the three founders to raise almost 600,000 €.

In spite of the efforts, the capital raised was not sufficient to launch the platform yet.

[84] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019
[85] Scheme created on the basis on *Satispay*, www.dealroom.com
[86] Donagemma is a well-known Business Angel and entrepreneur coming from Italy. He is the chairman of Nokia - Europe and the vice-president of Samsung electronics. He is also the chairman of Innogest Capital, the largest Venture Capital firm in Italy and invested his money in many innovative and technological start-ups.
From www.uk.linkedin.com/giuseppedonagemma

In June 2014, the firm got a loan of 800,000 € from 3LB Seed Capital ltd.[87] but only in 2015 there was the first Series A funding round of 6.5 Million €.
The principal funder was Banca Iccrea with 2.5 Million €[88], an Italian bank that became later an industrial partner, but many other single investors participated such as Nicola Carbonari, founder of *Autoscout24* and Jonathan Weiner and Ray Iglesias, funders of the projects *Google Wallet* and *Money2020*[89] .
Therefore, the trio of entrepreneurs together with NTT DATA[90] created the first beta version of the app[91].
In September 2015 Satispay received another inflow of about 3 Million € whose principal author was U-Start[92] Investor Club but Carbonari, Donagemma, Weiner and Iglesias participated as well.
Satispay sparked interest of many companies after having noticed, in the previous funding rounds, the names of successful managers and entrepreneurs.
In 2016, Banca Etica[93] and Banca Iccrea[94] made an alliance with Satispay in order to let the service of the start-up available for the banks' clients.
Afterwards many other banks joined the vision of Satispay and from 2017 to 2018 the three entrepreneurs made an alliance with Banca Sella[95], Banca Valsabbina[96], Bolzano Savings Bank[97], Banca di Piacenza[98] and Banca Popolare di Bari[99].

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[87] a well-known private investment firm dedicated to seed investments in innovative companies and ideas located in Turin, from www.3lbseed.com
[88] *Satispay - pagare in un batter d'occhio*, www.marketingtorino.it, 23/04/2018
[89] *Satispay, una silicon valley a due passi dal "Dòmm"*, Banca Finanza, 01/03/2017
[90]A system integration, professional services and strategic consulting company located in Tokyo. It principally serves the market of telecommunication, multi-utility services, financial services and manufacturing.
From www.wikipedia.org
[91] *Satispay - pagare in un batter d'occhio*, www.marketingtorino.it, 23/04/2018
[92] An Italian elite group of Venture Capitalists.
From www.u-start.biz
[93] *Con Satispay Banca Etica apre ai suoi clienti il mondo dei pagamenti più smart e convenienti,* www.bancaetica.it, 12/05/2016
[94] *Nuova sinergia tra Iccrea Banca e Satispay,* www.gruppoicrea.it, 22/06/2016
[95] *Satispay, Banca Sella entra nel capitale della società*, www.sellanew.it, 18/09/2017
[96] *Banca Valsabbina sceglie Satispay,* www.lavalsabbina.it, 27/04/2018
[97] *Sparkasse sceglie Satispay, la nuova alternativa ai sistemi di incasso/pagamento,* www.sparkasse.it, 15/03/2018
[98] *Satispay- Banca di Piacenza,* www.bancadipiacenza.it, 2018
[99] *Banca PPB adotta il sistema di pagamento Satispay,* www.puglia014.it, 15/01/2018

In 2017 there was the first Series B funding round and Satispay received almost 22 Million € from Iccrea Banca, Banca Etica and the Italian VC Shark Bites[100]and in September of the same year, a second Series B funding round took place raising other 18 Million €.
Main protagonists were Iccrea Banca, Carbonari, Donagemma, Weiner and Iglesias and Boost Heroes, inc.[101].
At the end of 2017 Satispay made agreements with many important Italian firms so that they could use the Fintech's services.
The most important ones are agreements with Trenord, Esselunga, Coop[102], Benetton, Caffè Vergnano, Grom, Moleskine, MyChef, Old Wild West, Total Erg, Kasanova and Repsol[103], just to name a few.
Finally, in September 2018, the Italian Fintech raised 15 from a Series B funding round by Gruppo Bertoldi VC, Endeavor Catalyst, an entrepreneurial network Satispay is associated with, Greyhound Capital, VC specialised in high-tech start-ups, Iccrea Banca and Copper Street Capital, the English VC which was the major investor[104].
At the end of 2019 Satispay confirmed a further funding round of 50 Million € to fund the expansion abroad[105] but still there are no information about it so it can be inferred that the operation slowed down because of the current sanitary crisis that hit Italy more than many other countries.

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[100] *Shark Bites, il veicolo d'investimento degli shark,* www. startupbusiness.it, 3/06/2015
[101] An Italian Venture Capital located in Milan.
From www.boostheroes.com
[102] *Satispay, la veloce crescita della start-up italiana fintech,* www.startupbusiness.it, 28/11/2017
[103] *Finanziamento record per Satispay. Ora la start-up italiana dei pagamenti su smartphone sogna in grande,* www.it.businessinsider.com, 7/09/2017
[104] *Satispay,* www.dealroom.co
[105] *Case study Satispay: the incredible success of a digital start-up,* www.alessiolasagni.com, 10/07/2019

2.4. Satispay in numbers

Putting together a winning system like that was not easy.
The Italian Fintech had to face some crucial challenges while struggling for finding its way to the top.
Satispay's founders never gave up and managed to overcome every challenge they faced during their path.
The most important of which were:

- Finding a suitable infrastructure;
- Reducing cost by economies of scale and overcoming many management complexities;
- Developing an app user friendlier as possible.

The most difficult task to accomplish was the first one without the shadow of a doubt.
The three entrepreneurs focused all their efforts on finding the right and most suitable supplier to fulfil their desires. They needed a high-performing infrastructure that would allow them to reduce cost and to fit the large amount of users they could have.
At the beginning of their journey, the infrastructure that was available to Satispay was not appropriate to manage such a large amount of data.
The start-up did not have direct control over its technical processes. In addition, the entrepreneurs were obliged to ask their hosting partner the necessary updates every day, with at least one day in advance[106].
What they needed was a scalable infrastructure that could support the fast growth of that business.
Therefore they teamed up with Amazon Web Services, the world's largest and most used cloud platform.
In an interview, the CTO, Dario Brignone said « I had already tested AWS in my earlier works, so I knew it was the right choice to make. They would have given us the flexibility we were looking for ».

[106] *Case study Satispay: the incredible success of a digital start-up,* www.alessiolasagni.com, 10/07/2019

The new infrastructure allowed the Fintech to increase its customer base from 3,000 to 200,000 users in less than two years[107] with a percentage growth of 6,500%.
A result that would be impossible to achieve unless adopting the right tools.
They found a cloud platform supplier that offered more flexibility at a lower cost and they teamed up also with the AWS partner network (APN) Advanced Consulting Partner beSharp to pass to AWS and improve it.
Satispay worked together with beSharp to re-design its app passing from a monolithic architecture to a stateless architecture based on micro-services in order to ease the horizontal scalability.
Many services were used, "Amazon Elastic Computer Cloud", 2Amazon Simple Storage Service", "AWS CodeDeploy", "Elastic Load Balancing" and "AutoScaling" just to name a few, in order to create an IT environment that could scale when needed without wasting resources, time and money[108].
«Thanks to AWS, we accelerated the innovation pace, passing from realising one update per week to over fifty» said the CTO[109].
That was great since spending less time in focusing on the IT infrastructure of Satispay let the Italian trio concentrate on creating new features for their customers.
Thanks to AWS the Italian Fintech could sustain its transformation from start-up into scale-up.
Its cost structure, in fact, is favourable for its growth since there are not any kinds of variable costs.
The advantage of the disintermediation that Satispay performs is not only in favour of its users but also for itself: the Italian entrepreneurs do not depend on any external entity and all they need is produced internally.
The only disadvantage is the huge cost of the IT infrastructure supplied by Amazon but with positive trends each year it will be repaid soon.
The high fixed cost generated by the scalable infrastructure impacted significantly the income statement of 2018.

[107] Ibidem
[108] *Caso studio di AWS: Satispay,* www.aws.amazon.com
[109] *Ibidem*

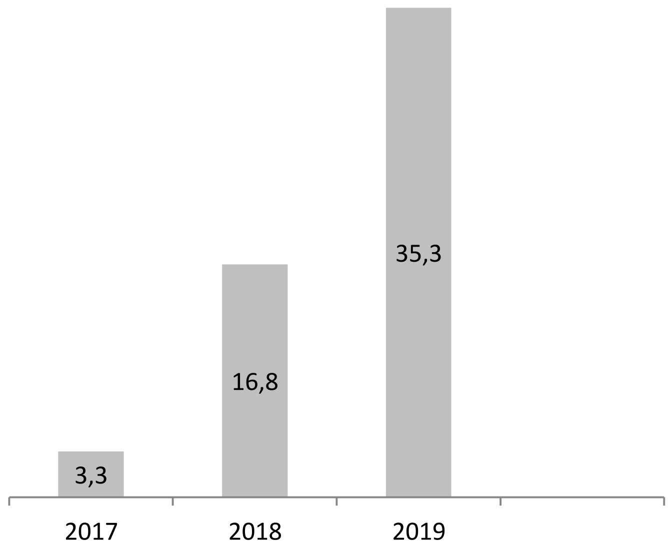

Figure 17: Satispay's Revenues (Million €)

In 2017 in fact Satispay succeeded in gaining almost 600,000 €[110] in profits but the following year, because of the purchase of the AWS platform, it fell down to -9.58 Million €[111]. Satispay's revenues, instead, seem unstoppable as all the industry sector does.

In 2017, Satispay earned 3.3 Million €[112], a good revenue stream for a two years old start-up (usually revenues are much lower with an average of 500,000 € to 1,000,000 €[113]).

The following years Satispay took flight with 16.8 Million € in 2018[114] and more than double of that amount, about 35 Million €, in 2019[115]. With 1.83 Billion € of transaction until the end of 2019 and an further growth of 110% only during the first semester of 2020[116], the Italian Fintech seems it will achieve its value proposition to change the population mentality and transform the Italian sector of Payments leading it towards the future.

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110 *Satispay punta ad un milione di utenti,* www.adnkronos.com, 07/03/2018
111 *Satispay,* www.wikipedia.org
112 *Satispay punta ad un milione di utenti,* www.adnkronos.com, 07/03/2018
113 Course material of Corporate Governance and Finance, Elisa Ughetto, 2019
114 *Satispay,* www.wikipedia.org
115 *Innovative payments nel 2019:l'anno di carte di credito e mobile payment,* www.iumob.it, 16/04/2020
116 *Satispay: un euro su due, tre pagamenti su quattro,* www.punto-informatico.it, 15/04/2020

2.5. How the sanitary emergency impacted the role of Satispay

These times of deep health crisis will leave in the Italian population deep wounds that will be very hard to heal over.
Many people died and the sanitary emergency stopped our country economically and emotionally.
But if «on one hand there are people who will deal with serious consequences, on the other hand [the sanitary emergency] saved many firms from a slow death» said Dalmasso, CEO of Satispay in an interview by La Stampa. «This crisis found itself as a booster towards digitalisation, obliging many merchants to transform their business and, in normal conditions, this transformation would take maybe five or six years»[117].
During this unusual and dangerous period it is becoming fundamental to follow a path of digital transformation and what is needed the most is providing solutions that can help consumers to purchase their needs staying safe at home can help merchants to reach a greater variety of clients.
The brand-new service "Consegna e Ritiro"[118] developed by Satispay can be a good example of how merchants are supported in their businesses in spite of the economic slowing down.
«That was a feature that had to be implemented in two or three years horizon; the pandemic accelerated the process.
From now on, we will work on improving the feature; we want it to become a communication channel among buyers and sellers.
We are working to create an hybrid between the on line shopping experience and the physical shopping experience» [119].

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[117] *Col coronavirus crescono i pagamenti digitali e triplica il numero dei consumatori online in Italia,* www.lastampa.it, 27/05/2020
[118] A feature that allow merchants to show customers via app if they are available for takeaways or home delivery.
From www.satispay.com
[119] *Col coronavirus crescono i pagamenti digitali e triplica il numero dei consumatori online in Italia,* www.lastampa.it, 27/05/2020

The pandemic, in fact, may represent an opportunity not to leave all the e-commerce in the hands of large-scale distribution companies.
A new model is making inroad in Italy: the so-called Proximity Commerce that allows to integrate electronic commerce and little retail shops.
In this sense, the Italian Fintech wants to act as a "shop window" for the retailers.
Once you found what you are interested in, it will be possible to directly keep in touch with the merchant and book your product.[120]
In fact, if on one hand Satispay has always represented a service that could break costs for merchants and, as time went by, has become a powerful tool for loyalty that also enhanced the number of buyers, on the other hand the app can now represent for both consumers and merchants a tool that helps to prevent infections thanks to the fact that money can be exchanged without the need of touching banknotes[121].
It is also interesting to notice that during the lockdown, the use of the different functionalities Satispay offers has risen.
With the reduction in all kinds of physical payments in shops, the P2P exchange of money rose and so did the payments towards public administration[122].
In this first semester of 2020 Satispay went beyond its limit and reached, also thanks to the critical sanitary situation, 1,000,000 of active users.
Moreover it enlarged its customer base with more than 100,000 businesses that benefit from its service with a 30% increment of the total use of the app[123].
Dalmasso said «This is an achievement we worked a lot to achieve. It would be great to celebrate it all together but unfortunately we cannot.
But what it is important is that this result came in this crisis situation and this means that all the efforts were not useless. [...] What we want now is to focus on the next objective, 10 million users, but we do not think only

[120] *Col coronavirus crescono i pagamenti digitali e triplica il numero dei consumatori online in Italia,* www.lastampa.it, 27/05/2020
[121] *Satispay arriva ad un milione di utenti,* www.fortuneita.com, 20/03/2020
[122] *Col coronavirus crescono i pagamenti digitali e triplica il numero dei consumatori online in Italia,* www.lastampa.it, 27/05/2020
[123] *Satispay:un milione di utenti e boom di adozione dei servizi,* www.corrierecomunicazioni.it, 20/032020

to numbers. We have to think to how the world is evolving and wonder how Satispay can simplify our lives[124]».
Recently, as it was probably incentivized by the boost in revenues and subscriptions Satispay invited its community to support Italian Civil Protection through the donation service called "1 caffè onlus".
The amount collected, about 550,000€, went entirely in favour of those hospital medical devices aimed at containing the infection and the spread of the virus[125].

[124] *Satispay:un milione di utenti e boom di adozione dei servizi,* www.corrierecomunicazioni.it, 20/032020
[125] *FinTech Calls for Fuel: to exploit a great, maturing and increasing potential*, www.pwc.com/it, 2020

CHAPTER 3

Future perspectives, social and environmental implications of Fintech

As Fintech broke in the everyday life of people, Finance transformed, becoming increasingly more horizontal and embracing many industrial sectors.
After having analysed what impact Fintech can make on some industries and what effects can emanate to people, a different model of the economic system, the so called doughnut economics, will be deepened.
According to its creator, the new framework states that the global economic system must be embedded with environmental and social issues and the old neoclassical models are not efficient since they are based on a concept of economic growth whose hypothesis cannot be considered valid anymore.
Afterwards, the concept of Impact Investing will be analysed pointing out how it can be integrated into the doughnut economy and how it can contribute to the wellbeing of people and of the environment.
The chapter will also focus on the Italian landscape, in particular, on the Italian Fintech Satispay, which was previously studied in the chapter before, analysing what impact it had on the wealth of the country, how it contributed to financial inclusion and its perspectives and strategies for the future.
Eventually, the Impact of Fintech to the global economy during the sanitary emergency will be examined, focusing on how Fintech can act as a catalyst for the recovery during the post-pandemic. In particular, with a practical example of a European city which was the first to implement the doughnut framework, with an appropriate support by governments, Fintech start-ups can prove their value and respond quickly to uncertainty acting in the interest of the society and also pushing the economic system into the "green zone".

3.1 Shaping modern Finance

In early 2000's, people used to think that technology was a separate entity and discipline having its own industry sector. There were Google, Microsoft and Apple that in the common beliefs of people they represented the technology side, a pool of innovative minded people dedicating themselves to research.
Today everything has changed. Technology is not considered as a distinct and clear branch anymore; today every enterprise is a technology enterprise.
Finance is experiencing a similar phenomenon.
It has always been seen as a distinct vertical area with many domains, Bank sector and Insurance sector above all. Thanks to innovation brought about by Fintech, finance today changed tune, transforming itself from vertical to horizontal as well, permeating across the fractures left by economy after the Lehman's crisis and filling them, giving new life.
As a direct result of this phenomenon, many non-financial companies started offering financial products.
In fact nowadays many firms, from ecommerce distributors to multimedia contents providers to healthcare providers, have a large customer base, trusted relationship and a lot of unique assets. Just making profits from these, non-financial companies could be able to offer financial services to their clients.
This is particularly true for Marketplaces in fact, as the venture capital NFX[126] argued in an interview by Forbes: «By adding innovative financial services, marketplace start-ups can reduce the friction involved in high-value transactions for purchasers and can improve incentive alignment amongst all parties with the removal of financial intermediaries among buyers and sellers».
In China, for examples, Alibaba grew its lending book through its payment affiliate (Ant Financial) whether in U.S. Amazon became the main lender to its supply chain.

[126] A venture capital firm located in California and founded in 2015. It mostly concentrate on early stage start-ups.

This experience is not the only one to marketplaces for sure.
For instance, real estate firms started to offer end users mortgages (that is the case of Homelight) and fitness trackers can be used by customers to access a lower cost health insurance.
Moreover, sometimes, a financial product or service can be seen as a key feature that unlocks the product or service instead of a single and separated offering.
In the beginning of car sharing marketplaces, insurance was a key feature unlocking the availability of the service. In the same way, Airbnb's host liability coverage is used as a driver for many hosts to use the platform.
This also applies to other sectors. As for the education industry, in the case of Lambda, a well-known American coding school, there is the income sharing financing agreement that allows students to be educated for free repaying the school fees when they get hired. The same process is performed by African Leadership University in order to increase subscriptions.
Another aspect that has to be analysed is the financial inclusion.
Globally, about 2-3 billion people are financially excluded meaning that one third of the planet is underbanked or unbanked[127]. This happens mostly in undercapitalized areas.
Fintech is involving people into the financial system, often for the first time thanks above all to Microfinance and mobile banking.
Today, there are more than 250 mobile money firms across the emerging countries[128] and these models are creating a new bundle of products and services in fact, for example, in the renewable energy sector, firms like Zola Electric offers solar panels system to Sub-Saharan families that are actually offgrid.
Of course solar panels purchase cannot be affordable for most of their clients but they usually spend more for kerosene to light their houses if the cost is compared weekly or monthly.
The solution found by these kinds of companies is to bundle credit into the product itself.

[127] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019
[128] *How Fintech is eating the world,* www.forbes.com, 31/07/2019

By Microfinance, families are allowed to access microloans collateralized by the solar system itself and everything is possible thanks to digital banking, through which providers can collect small weekly amount of money digitally.
This way Fintech triggered and catalysed a new industry. In this sense, it is crucial the contribution Fintech gives to Social Finance and Impact Investing.
Impact investing can be defined as the intentional and purposeful allocation of financial resources in order to create initiatives that can deliver measurable societal/environmental impact alongside financial returns in an undercapitalised area.
They were born because people began trusting less the traditional financial institutions after the crisis and because the globalization as well as a total access to most information in the world through the internet, made them aware of many social and environmental issues creating a fully-fledged shift in the mass culture.
The means, instead, were Fintech and all the disruptive disintermediation-enabling technologies available.
The diagram in the figure 18 was created by Oxford economist Kate Raworth in the Oxfam paper *A Safe and Just Space for Humanity* and elaborated upon in her book entitled "Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist".
This framework was developed to assess the performance of global economy so that it must be possible fulfil the need of the people without overstepping the Earth's environmental ceiling (the crust of the doughnut).
The main neoclassical economical models, in fact, do not take into account the context in which they lie and are embedded: society, human culture and environment. they were based on assumptions on rational human behaviour but this lack of context was acceptable while the population did not collectively harm the Earth's sustainability, which is no longer the case.
So the principal objective of this model is to re-frame economic issues setting new goals.

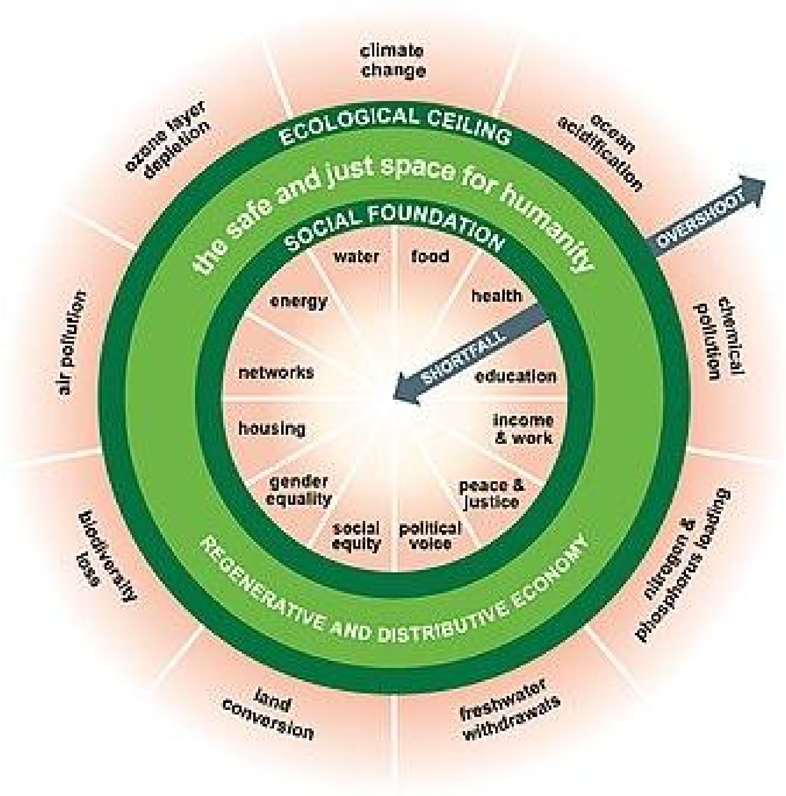

Figure 18: Doughnut economics[129]

The environmental ceiling is made up of nine planetary boundaries: climate change, ocean acidification, chemical pollution, nitrogen and phosphorus loading, freshwater withdrawals, land conversion, biodiversity loss, air pollution and ozone layer depletion, beyond which there is an unacceptable environmental degradation and potential peak points in Earth's ecological system. The twelve dimensions of the social foundation are: food security, health, education, income and work, peace and justice, political voice, social equity, gender equality, housing, networks, energy and water and they are derived from internationally agreed minimum social standards, as identified by the world's governments in the Sustainable Development Goals in 2015. Between social and ecological boundaries lies the doughnut: an environmentally safe and socially fair space in which people can grow and live.

[129] Scheme created on the basis of *Doughnut economics,* www.wikipedia.org

If trying to stay into the doughnut's boundaries can be considered as the main goal of the XXI century humanity, then it is not surprising that there is a big job to be performed. Many people in the world still have no access to life's essentials, coexisting with hunger and illiteracy.
At the same time we have to be careful not to put pressure on the Earth's ecological system creating climate change, land conversion and biodiversity loss that are maybe the big issue of this century.
The message Kate Raworth wants to spread is clear: nowadays global economy is deeply divisive and degenerative and it is slowing putting down the living world in which everyone of us lives and on which everyone depends on.
So, inequality seems to have become the issue of these recent years but until 10-20 years ago it was not a problem that could be considered a concern for many governments.
In the 1955, Simon Kuznets, Nobel prize winner for economy in the 1971, hypothesised that in order to grow, a country had to reduce income inequalities but inequalities themselves were embedded in the growth of a nation.
So, difference among people is meant to grow as the country grows at first before it eventually falls.
Gathering data from income distribution in US, UK and Germany, Kuznets, plotted the Kuznets curve (figure 19).

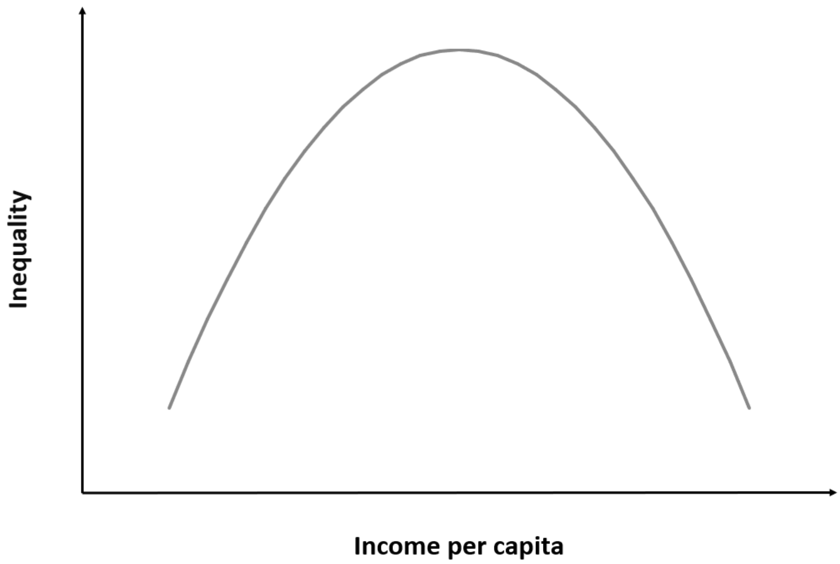

Figure 19: The Kuznets curve[130]

[130] Scheme created on the basis of *Kuznet Curve,* www.wikipedia.org

On abscissa there is the income per capita whereas on the ordinate there is the Gini coefficient which, bonded between 0 and 1, represents a measure for the inequality of a distribution function, often used to measure income inequality where 0 indicates the limit of a pure equal distribution and 1 indicates the threshold of pure inequalities[131].
But the economist himself years later was the first to acknowledge that some factors in his analysis were not considered. He, in fact, claimed that differences between quality and quantity of growth, costs and benefits and short and long period had to be taken into account.
However his large caveats were ignored and the message that suggested that if a country wants to progress, it must take into account inequality was inevitable and the Kuznets curve was taught in school for decades[132].
In order to tackle the goal of bringing society into the doughnut, thus diminishing social inequality and ecological overshoot, Kate Raworth created and promoted an economic design that is distributive and regenerative.
More importantly, she called for debunking the old twentieth century message let by Kuznets' studies that inequality must be present before a real growth and redistribution and that people have to wait to solve those kinds of problems.
According to her, achieving this objective means going beyond the redistribution of income; it also means creating new measures for redistributing wealth from many sources such as knowledge, technology, enterprises, ownership of lands.
She supported the design of a circular economy as substitutive for the linear one: a distributed network of flows in which economy can more equitably distribute income and wealth amongst all those who help to generate it.
In this new design of economy, industrial product are recycled, repaired and reused and biological nutrients are used in many ways, such as deploying used coffee ground as a breeding ground for mushrooms.

[131] *Coefficiente di Gini,* www.wikipedia.org
[132] *Meet the doughnut: the new economic model that could help end inequality*, www.weforum.org, 04/2017

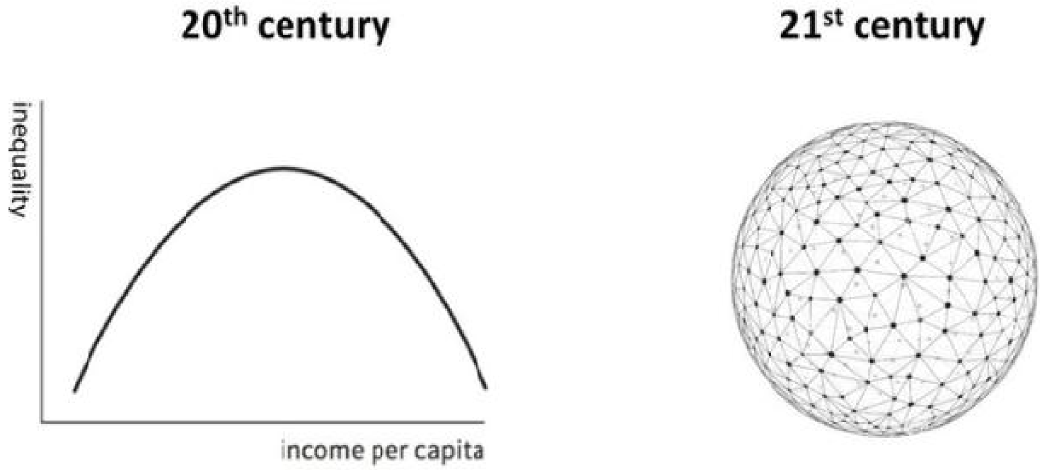

Figure 20: How to tackle inequality[133]

The Oxford economist replaced the mainstream economics' long-term objective of endless growth, represented by the continuous increase of GDP, with her doughnut view.
According to her perspective we must overcome what she calls "our addiction to growth", in fact, so far «we have created economies that need to grow, whether or not they make us thrive: what we need are economies that make us thrive, whether or not they grow».
In order to be capable of growing without the need of GDP growth, Raworth suggests that it is necessary to redesign the financial, social and political lock-ins to growth by, for instance, enhancing well-being and wealth without the dominance of the culture of consumerism both in public and in private areas.
To find new measures and ways for a growing and thriving economy in which everyone's social needs are met, and ecological degradation is stopped or, at least slowed, economics needs to widen the view for alternative approaches and turn the outdated mindset of growth upside down operating a fully-fledged change of mindset in the mass culture[134].
This must be the role of Fintech and this must be the role of the "social" entrepreneur.

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[133] Scheme created on the basis of *Meet the doughnut: the new economic model that could help end inequality*, www.weforum.org, 04/2017

[134] *Doughnut Economics – Solving Inequality & Ecological Degradation with a New Economic Model,* www. ged-project.de, 20/03/2020

Financial market agents have always had powerful instruments to push society in the green zone, inside the doughnut, but they did not have the right incentives. Large companies have different business models and they care much about risks and potential losses.

Actually, an entrepreneur that wants to dedicate his/her time to Impact Investing has to face a plethora of risks and dangers:

- Legal and regulatory risk because there is no regulatory framework for Impact Investing;
- Reputational risk because entrepreneurs may consider only to invest in those areas that hold wide appeal and that can enhance the impact of the firm's brand;
- Impact washing which is when a company makes impact-focused claims in bad faith in order to reach some purposes (first of all, new funds) without truly having any demonstrable social or ecological impact.

  Impact washing can be considered as the result of one of the hardest challenges of the Impact Investing: assessing and measuring impact.

  Measurement efforts can be clustered into five main measurement objectives:

  - estimating impact, so conducting the due diligence ex-ante investment;
  - planning impact where data are collected and metrics are derived;
  - monitoring impact where impact is measured and analysed in order to understand and comprehend whether objective and performance are aligned;
  - evaluating impact that means understanding the social or ecological impact only after the investment has been performed;
  - reporting impact that means making a report of the social or environmental impact in order to communicate and spread it with different kinds of audiences.

  The above classification can be very useful but there are still not enough metrics to measure Impact itself and the lack of an appropriate way of assessment may bring about the Impact washing;

- Return risk because there is a high probability of making zero profits;
- Transparency risk;
- Risk of cherry picking that means to carefully choose which area has to be impacted because of monetary and/or reputational drivers;
- Company risk that can be divided into different risks according to two different points of view:
    - Company perspective: the company risk can drive organization off mission;
    - Investors perspective: the company risk may bring about higher due diligence cost.

In addition to those dangerous risks, there is also another issue brought about by government: in fact, many governments may be inert and do not actually act to solve social and ecological problems of their countries but prefer to rely on Impact investors[135].

Nevertheless, Impact investors do not give up and everyday there are many new Fintech companies helping people to have their first digital bank account, to use Microfinance to support them to make a new and ecological solar panel system affordable and to meet all of their primary needs.

A positive trend can be appreciated in the figure 21 below: the Global Impact Investing Network (GIIN) highlighted how Impact Investing firms have averagely risen since 2000 to 2019 touching a peak of 21 new companies dedicating to Impoact investment in 2016.

However there has been a little decrease in the past few years but the drop in the number of corporations that entered the market might be a reflection of this survey's eligibility criteria, which requires that firms have a minimum volume of impact investing activity[136].

[135] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019
[136] *Annual impact investor survey*, www.theGIIN.org, 06/2020

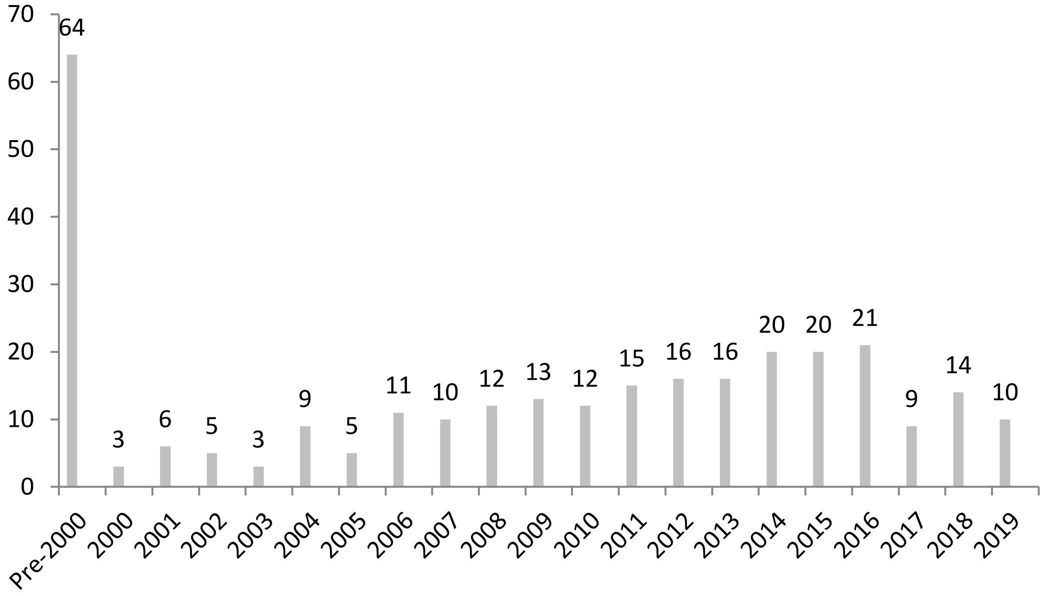

Figure 21:Number of corporation making first Impact Investment[137]

The total capital invested in Impact investing has more than doubled over the past 6 years and, moreover, the GIIN survey shows that more than half of Impact investors have enlarged their capital invested by more than 5% and even the number of investments has increased by more than 5% (figure 22-23).

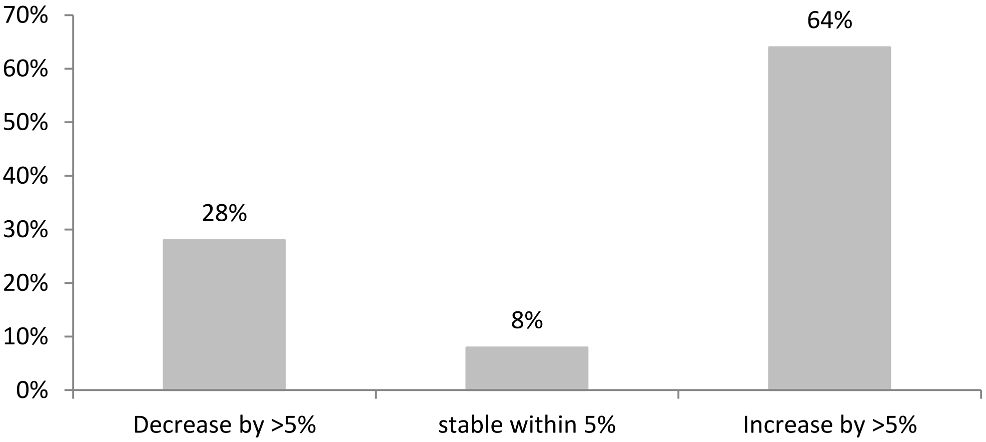

Figure 22: Expected change in 2020 investment: capital invested[138]

[137] Scheme created by *Annual impact investor survey*, www.theGIIN.org, 06/2020
[138] Ibidem

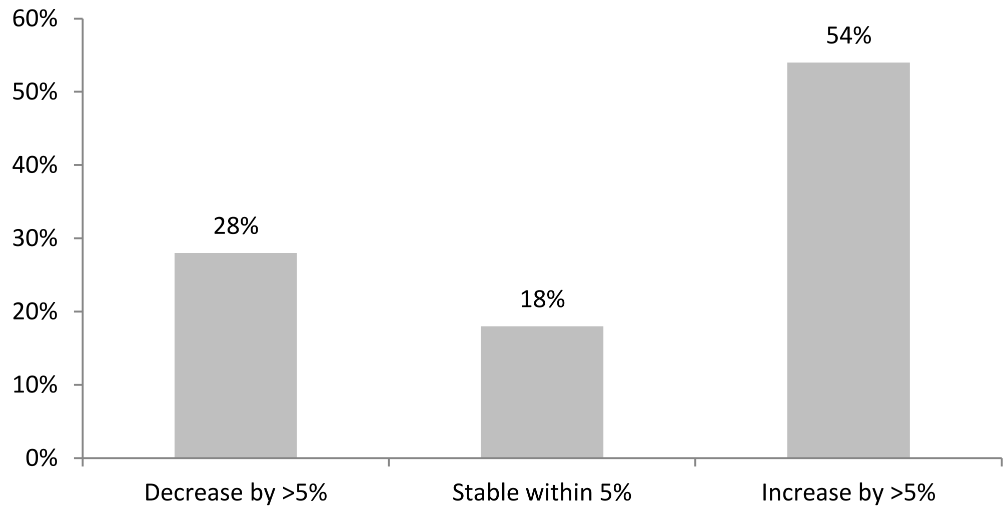

Figure 23:Expected change in investment: number of investments[139]

Moreover, the total amount of money invested reported in 2019 is almost 22.6 Billion $ with 7014 new deals compared to 5 years ago with 14.2 Billion invested and 4885 deals reported.
The last trend that has to be analyzed is the investment performance related to risk.
The pursuit of financial returns is a characteristic of Impact Investing. This year two thirds of respondents targeted risk-adjusted market-rate returns, while the remaining third is split closely between below-market-rate: closer to market-rate (18%), and below-market-rate: closer to capital preservation (15%).
This is good news since in 2018, the risk-adjusted market rate return firms were 64%, the below market rate corporations closer to market rate were 20% and the below market rate firms closer to capital preservation were 16% showing a little but still valuable improvement (Figure 24-25).

[139] Scheme created by *Annual impact investor survey*, www.theGIIN.org, 06/2020

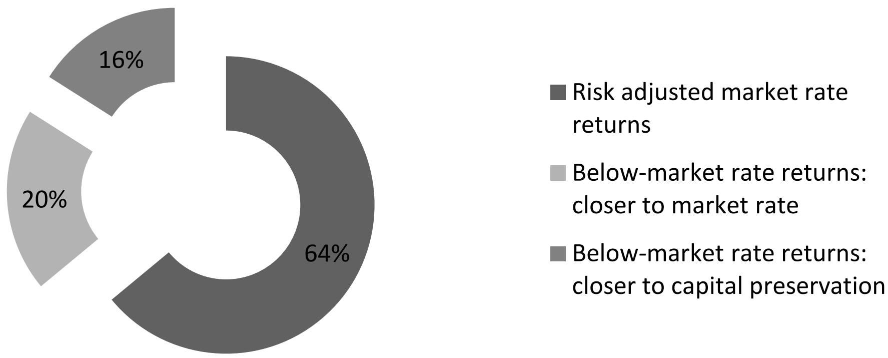

Figure 24: Target financial returns for Impact Investing, 2018[140]

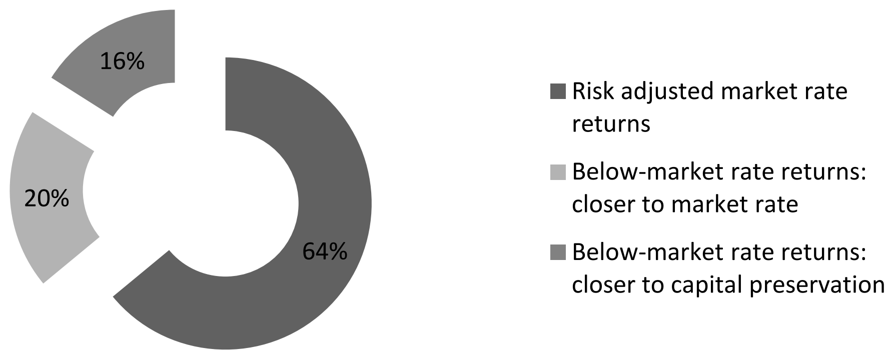

Figure 25:Target financial returns for Impact Investing, 2019[141]

So, the digital revolution brought about by Fintech can actually shift the centre of interest of the financial system towards people.
Enhancing quality of information available and facilitating its fruition, Financial Technology and all its tools causes a larger awareness in all the financial services users.
For instance, any group of people, supported by a digital platform can take decision at a higher level obtaining more relevance from a financial point of view. This is the case of equity Crowdfunding and peer-to-peer lending.

[140] Scheme created by *Annual impact investor survey*, www.theGIIN.org, 06/2020
[141] Ibidem

Citizens are fully-fledged the main funders of global market, because they contribute collectively with taxes and purchase decisions and this kind of awareness is not enough embedded in the mass culture.
The new opportunities offered by the new alternative finance are re-shaping people's relationships, firms and all the territory allowing citizens to actively cooperate for the world economical development.
Fintech can pursue social inclusion and sustainability in many ways.
It is capable of moving international money and capital in an easier way and this is shaping all the global financial sector in a disruptive way, changing business models of many retailers and facilitating the management of money for customers.
Eventually it fosters new ways of measuring and managing the risk with new innovative evaluation models.
Crowdfunding and ICO, for example, can be considered as concrete and pragmatic instruments of financial inclusion of those enterprises, often SMEs, that have been disappointed by the traditional models of credit institution.
Of course, as already said, there are many risks bounded digital funding in order to pursuit ecological and social objectives.
The "digital gap" may exclude those people who do not have access to infrastructure and competences thus reinforcing discrimination and social inequality.
So it is crucial that entrepreneurs who dedicate to Fintech in a social and ecological perspective can operate within a regulatory framework that is capable to protect the interests of every actor involved.
Indeed, democratizing the access to the financial system means to foster an economical development that is responsible and sustainable.

3.2 The role of Satispay as a Fintech reality in Italy

According to the innovative payment observatory of polytechnic of Milan, in Italy, cashless transactions have risen by 11% in 2019, in comparison with the year before.
In particular, the price of the average Italian contactless check shows a decrease of 3€ (from 45€ in 2018 to 42€ in 2019) proofing that the spread of cashless payments cannot be considered only a cannibalization of traditional payment system but also a real substitution of little payments, usually performed with cash.
Italian people paying with Smartphone tripled: 3 million people in 2019 for a total of 1.83 Billion € spent.
In this sector Satispay leads the game managing three operations out of four[142].
In 2019 the three Italian entrepreneurs left their office located in London because of uncertainty caused by "Brexit" and opened a new headquarter in Luxemburg.«We looked around and we chose Luxemburg as our new office because the country is the ideal location for a financial intermediary» said the CEO in an interview for *Il sole 24 ore.*
Indeed the idea is right since Luxemburg is the country with the largest venture capital investment as percentage of GDP[143].
Satispay maybe made the right choice and a year later it made its first contract abroad: the Italian start-up linked to the Luxembourgian supermarket franchise Auchan in order to manage payments via Smartphone.
The long-term plans of the Italian firm forecasted moving abroad since 2017 but it did not have the right "numbers" and had to consolidate its domestic market before expanding out of Italy.
Today Satispay went beyond the ceiling of 1 Million active users and this made expansion possible.

[142] *Satispay sbarca all'estero, grazie ad un accordo con Auchan in Lussemburgo,* www. wired.it, 22/04/2020
[143] Course material of Corporate Governance and Finance, Elisa Ughetto, 2019

Auchan has ten stores around the little country and it covers for the great distribution of essential products for Luxembourgian people.
On 20th of April 2020 people could pre-order online default product packages to realize specific recipes and could take them home by takeaway.
Luxembourg, in fact, is performing a slowly re-opening of activities since there are still many infections by Coronavirus.
This way a digital payment system that does not need the contact between Smartphone and POS is a better solution for the grand duchy's sanitary authorities.
On the 16th of June Satispay signed another partnership with Bus Company, one of the most important Piedmont transport firms aimed at foster a re-start in the Italian public transport system.
The project is divided into two phases. Phase one is already active and supplies the service which is available on buses and in specialised ticket shop. Via the app, the payment for bus tickets is contactless and the passenger will receive the physical check.
The second phase will delete the physical check and this is the objective of the partnership that not only will guarantee less physical contact as possible among people enhancing safety but also will pursue toward a complete dematerialisation, creating a digital check, impacting positively the environment[144].
Satispay helped and improved the Italian society avoiding contact among people during these hard times. Moreover the Italian company developed its own takeaway feature ("Consegna e Ritiro", already mentioned in the previous chapter) with which little shops and merchants could access and manage on-line purchases without having their own platform. Supporting little shops and businesses can be considered a good example of financial inclusion and this will move Italy closer to the green zone of the doughnut.
After having opened another office in Germany, Satispay wants to conquer France, Belgium and Spain. In particular, the CEO Dalmasso defined the partnership with Luxembourg as a «gym for France».

[144] *Satispay con Bus Company per ripartire in sicurezza con la digitalizzazione,* www.tuttotech.net, 16/06/2020

The other future objective is to go public. The Italian entrepreneurs predicted an IPO for 2022 but the sanitary conditions of the world in the last months might delay forecast the date.
With theses good premises Satispay now is considered as a powerful and influential Fintech all over Europe.
Since the sanitary emergency pushed for digitalisation of many financial firms, the regulation must be adjusted and must fit all the needs for the future of finance. So to let Fintech needs be heard around the EU, the European Fintech Association (EFA) is born.
It groups about twenty European Fintech realities and Satispay is one of the main founders. The main objective is to remove obstacles to cross border activities destroying the main barrier to digital finance: a non-homogeneous regulation from a country to another[145].
Creating, in fact, a single market for finance in Europe can be a strategic factor for EU recovery and moreover, with minimum identification standard, moving money all over Europe and digitalising the European financial market will also decrease money laundering and frauds.

[145] *Il fintech a Bruxelles con una voce unica per un mercato unico dell' innovazione,* www.ilsole24ore.com, 24/06/2020

3.3 Fintech: helping society during the sanitary emergency

The sanitary emergency has driven the worldwide economy to a paralysis. As many investors and venture capital fund liquidate their asset, Fintech firms need to tighten their finances and cut as many costs as possible in order to survive the drop. Whereas large and profitable enterprises and those backed by VCs and BAs will survive, many early-stage companies might suffer from competition.

Before the current crisis, very few Fintech companies were profitable or at least breaking even and that was a serious problem for the entire sector.

Globally, the number of Fintech deals decreased intensively during the first quarter of 2020 and the reduction may probably intensify in this second quarter[146].

Unfortunately, while Fintech system has proved to be very flexible and transformative for finance, the demand for its services is strictly dependent on all the economic activities across the world. Many start-ups, which rely on scaling up their customer base and making little margins will be affected by that and, if everything is combined with the lack of funding, it is clear that many enterprises will fail or at least diminish in their evaluations.

But, as the Fintech revolution was born from the previous financial crisis, these kinds of start-ups are able to be quickly responsive to uncertainty.

There are many ways the innovative approach brought about by Fintech can be a stimulus to the economic ecosystem's recovery.

First, the circulation of money can help and the technological start-ups can ease the process by facilitating credit request from businesses and funding to individuals. Moreover machine learning and algorithms can create an advantage for those Fintechs which are called to assess credit worthiness increasing and facilitating loans also by making due diligence an automatic process. Last but not least, they can serve customers that

[146] *How is covid-19 impacting fintech startups?,* www.fintechmagazine.com, 04/05/2020

today are financially excluded due to lack of collaterals of insufficient credit worthiness assessed by traditional banks.

So it is very important to be aware of the ways that Fintech can impact positively the society in which we all live.

What is needed is to enhance investments, acknowledging that these services are vital for economy, and bring Financial Technology to the fore of financial sector.

The challenge for the Fintech market has always been the pursue of growth in customer base due to the cultural lack of trust in this "data-sensitive" industry but if these innovative solutions are embedded into governmental protocols, the psychological obstacle and the path dependency of citizens will be overcome more quickly and this will accelerate the digitalisation of all the financial sector.

In the current crisis scenario, Fintech firms can cover the role of catalysts of the change and, at the same time, can prove their value with their responsiveness to the needs of the market.

This means that right now it is time for many firms to use their solutions to benefit the customer who needs better access to credit, money management, quick fund transfers and all the digital services and moreover, although the hard times for economy that will be inevitably caused by the post-pandemic period, it is time for investors to support those firms that can increase financial wellbeing.

For instance, even if it brought about a great decrease in prices and consumes of the energy utilities, the current sanitary emergency has altered the equilibrium among the big oil and petroleum producers, accelerating the sunset of fossil hydrocarbons pushing the economy toward a greener usage of energy.

Thus it will be necessary for governments to implement a plan for sustainable funding. In order to attract more private capital in the long term and in order to make flexible investments that will present less risks with a better measurable impact, services of Fintech will be needed.

Nowadays Financial technology will enable a more efficient management and monitoring of financial risks, letting Social Finance (in particular, in this case, ESG) be more effective and easier.

This will concretely contribute to the economic recovery of many countries pushing them closer to the green zone of the "Raworth's doughnut.

A recent example of the application of the Raworth's model is the new policy promulgated in Amsterdam.
The Dutch capital has been deeply impacted by Coronavirus crisis and the lockdown destroyed the city's economy. It has been predicted that all the Dutch economy could decrease by 8% and unemployment could rise by 9% in the next year[147].
Trying to overcome the economic issue, Amsterdam promulgated a recovery plan entitled "Amsterdam Circular Strategy 2020-2025".
That plan differs from what people expect during a post-crisis recovery, in fact, its main objective is about making the city better from an ecological and social point of view and not about increasing the gross domestic product.
The plan of the Dutch capital is aimed at ensuring affordable houses and jobs, requalifying recycling programs and cutting all kinds of waste, foreseeing a big cut of all the raw materials in half by 2030 with the final objective to get rid of them completely by 2050.
So it is obvious that Amsterdam seems to be the first city in the world to turn to the doughnut economics described by Kate Raworth changing perspective and priorities for citizens and focusing on people's well being and not just on economic growth.
In Amsterdam, about one fifth of people cannot afford to pay a rent but, under the doughnut framework, the city can figure out a way to build more housing stock without going beyond the ecological ceiling and its pollution targets.
«For Amsterdam , that means considering the poor treatment of workers on cocoa plantations in west Africa and it also means examining labour right violations in garment factories in Bangladesh and coltan mines in Democratic Republic of Congo» said Marieke van Doorninck, the deputy major of Amsterdam[148].
Many economists criticized the doughnut framework also because it has never been put into practice before, saying that this framework is too ambitious and, for this reason, meeting the social and ecological need would be impossible without a huge economic growth.

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[147] *Amsterdam's Coronavirus recovery plan embraces doughnut economy for people and the planet,* www.pri.org, 11/05/2020
[148] Ibidem

But Raworth's program can be a powerful tool to consider in a different way how economy is conceived and the Coronavirus crisis is a perfect time to reorganise the global economic system and explore new alternatives to GDP-oriented economic policies.
What is crucial is getting rid of the neoclassical mindset that growth is necessary for thriving economy.

CONCLUSION

«The difficulty lies not so much in developing new ideas as in escaping from old ones».

The John Keynes' famous quotation perfectly summarises the core question of the paper, debunking the path dependency of many people and institutions in accepting and adapting to Fintech. Unfortunately, although the disruptive technology seems to be established in a plethora of countries, many governments still do not promulgate the proper regulations and policies to let Financial Technology be deployed at its full potential.

However all the statistical trends and data analysed play into its hands and, in spite of the current period of deep global recession, the sanitary emergency boosted the financial revolution even more, thus creating more awareness among end users.

The future is yet to be shaped.

China is the first economy in the world on the verge of releasing its own digital money. Chinese government will make use of the blockchain technology as Bitcoin did but, unlike the currency of Satoshi Nakamoto, the distributed ledger will not be completely public.

The objective is to overcome the drawbacks of Bitcoin, that failed in its attempt to perform the "disintermediate revolution" in order to create a world in which the transfer of value takes place without any kinds of transaction cost. By emitting a currency that is referred to a central authority, the lack of a regulatory framework and the lack of trust, that brings about inevitably to a more volatile and less used currency, can be easily overcome by creating a micro-cosmos in which, even if the concept of privacy is slowly fading away, all the transactions can be considered more secure.

This is only an example of what Fintech is capable to create and, despite the initial disadvantages that have been examined in the paper, it is a fact that Fintech can considerably improve the wealth of people. The future worldwide adoption of the solutions of the innovative technology and the fact that they become a common practice is just a matter of evolution.

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