A.I. AND FINANCIAL SERVICE. POSITIVE AND NEGATIVE CRITICISMS OF ITS USE.

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Abstract

The author focuses on the use of A.I., within Fintech, brings an innovation in the financial field and today it is impossible not to talk about Tecnofinanza, to indicate the application of digital tools in the financial field. The change that is affecting the world of banking, financial and insurance services in recent years. Digital technologies invade the finance world in an impact as inevitable, so much so that it is impossible not to talk about Fintech. Fintech is a world that is not limited to the banking sector, but is composed of different actors and protagonists. Extended competition, open banking, APIs, startups, roboadvisor, process automation, all pieces of a rich and varied mosaic that will be analyzed during the guide. Therefore, questions arise about the legal mediation necessary for the problems of artificial intelligence applied to FinTech.

Keywords: relationship of the economy with other disciplines; Artificial Intelligence and law; financial services; IT management

Introduction

In recent years, digital tools and new technologies have changed substantially and across all sectors of the economy, especially in the world of financial services. In fact, think of the new applications that allow you to meet the needs in terms of payment services, financing, asset management, insurance and advice. The improvements resulting from artificial intelligence, allowed to manage data and the to store more information regarding individuals and companies. Among the technological innovations, must be included the c.d. "fintech", which aims to analyze the phenomenon from different points of view in its different declinations, proposing potential opportunities and risks associated, to give a critical view of the topic and to understand what will be the impacts on the current financial system. Financial technology is an evolutionary phenomenon of the banking, financial and insurance industry. The definition of the fintech phenomenon, and the factors of the rapid evolution of the fintech phenomenon are different, especially for the evolutionary aspects of technology. The greatest potential of information technology has had the ability to change the financial industry. In particular, technological innovations have not only changed the supply side, but have changed the demand side, namely consumers of financial services. With the financial technology, therefore, the financial industry turns towards the integration of a series of subjects banking and not, for the implementation of a wider net of services.

We must then analyze the most important tools underlying the development of financial technology and the operational risk that in terms of probability and potential impact could have a greater relevance, cyber-risk.

The evolution of historical notion of FinTech

First of all, the theme of Big Data and the exponential growth of the mass of data, often more detailed and granular, available to financial and non financial companies, thanks to the rapid growth of available data caused by increased digitization and adoption of web-based services. In addition, the theme of artificial intelligence and machine learning is in depth, which are the basis of the development of different applications in the field of finance and the opportunities and risks associated with them. The financial industry has experienced a continuous evolution in the provision of services with the advent of new technologies and digitization. The term "fintech" is a neologism that derives from the words financial and technology and describes in general the connection of modern technologies and, above all, connected to the internet (think of cloud computing) with traditional activities of the financial services industry, Moreover, there is no unambiguous and timely definition based on its use in regulatory or legal documents. Fintech has been defined by the Financial Stability Board (FSB) as: "technology-enabled innovation in financial services" (Financial Stability Board, June 2017). A further definition is proposed by Philippon

(2017), who describes financial technology as: "an industry that covers digital innovations and technology, enabled business model innovations in the financial sector". The term fintech is not limited to specific segments (for example, funding) or business models (for example, peer-topeer loans), but covers the entire range of services and products traditionally provided by the financial services industry.

The new use of Internet of things

In recent years, change in the financial world has been driven by a considerable increase in automation, specialization and decentralization. The IoT (Internet of Things) has an impact at every level both in the operation of financial intermediaries and in the relationship between the latter and customers. In fact, today the activity of a bank or any other financial institution cannot ignore the increased use of technological tools by customers (current and potential). The accessibility of the internet and the resulting technology, including smartphones, big data, social media and cloud computing, have changed consumer demand, which require greater ease of use, transparency and efficiency in the management of its finances. Many of the new services and activities are, also, provided by multi-level platforms known as the Application Programming Interface (API), a set of tools that allow different components or software systems to communicate effectively with each other. First, Fintechs offer products and solutions that meet the needs of customers who have not previously been sufficiently addressed and innovated by traditional financial services providers.

As a result, fintechs now allow many consumers to access payment, investment, consulting and financing services at competitive prices. Fintechs generally aim to attract customers with more user-friendly, efficient, transparent and automated products and services. In any case, traditional banks have not yet exhausted the possibilities for improvement on these lines, in fact the new entrants have substantially changed the basis of competition in financial services, but have not yet changed the competitive landscape. Historically, the financial services industry has been a major buyer of computer products and services globally. Banks were responsible for most of the innovations in the financial industry, just think of the introduction of credit cards in the 1950s or ATMs (Automated Teller Machines) during the 1970s, the advent of real-time trading on markets and home banking. Therefore, traditional financial services have been a driving force in the IT industry. Financial institutions, in fact, have long implemented internal technological solutions to support the provision of services to their customers and to ensure compliance with regulatory obligations. The interconnection between finance and technology has a long history, which, taking its cue from Arner et al. (2015), can be broken down into three main epochs: from the nineteenth century until the second half of the following century identified as fintech 1.0, the period of digitization defined as fintech 2.0 and from the advent of the internet network onwards, fintech 3.0.

The actually rule of A.I. in financial system

The competitive pressure, described in the previous paragraph, can be problematic from the point of view of financial stability. In any case, digitization in the age of fintech 2.0 assumes that the providers of e-banking solutions are controlled financial institutions. This aspect is fundamental to understand the turning point between fintech 2.0 and fintech 3.0, In fact, we move from the provision of financial services operated only by regulated financial institutions to the entry into the financial world of various entities outside the regulatory perimeter. In the case of fintech 3.0, the development of the internet has made possible a high degree of connection between economic operators and has allowed it to be used, becoming an invaluable support tool for the continuous development of fintech. It is likely that the spread and use of internet-enabled connectivity were the first elements that created the need to change the business models of financial institutions. Indeed, it is the consumer who has demanded greater ease of interaction with the intermediary and this change in customer needs has in fact changed the way financial institutions can interface with customers. Therefore, the key aspects of fintech 3.0 refer on the one hand to the change of mentality that has occurred on the part of the retail customer, which can be found in: "finance everywhere and anytime", on the other hand, new business models within the financial landscape that push traditional intermediaries in the search for continuous structural innovation.

Some criticisms of use A.I. in the financial services

Looking at the problems of using fintech with A.I., they are as colourful as the connections that have been made. First, potential drivers where the development of a wide range of technological innovations in terms of data management, transmission and security have changed the financial world. These developments have allowed the origin and implementation of new applications in all areas of finance: payments, risk management, capital raising, asset management and financial advice. The factors of the rapid evolution of the fintech phenomenon are different and interrelated, including the evolutionary aspects of technology.

For example: consumers means the change on the demand side that concerns the preferences of financial services customers, who have higher expectations of the speed of execution of their operations, the reduction of costs, the convenience and ease of use of the facilities that allow the conduct of activities.

Accessibility is all that concerns the use of the Internet as a backbone in the development of business, operations and distribution channels of financial intermediaries and not.

In particular, think of the Internet of Things (IoT), cloud computing, API (Application Programming Interface) and mobile technology. Increased IT potential, huge data availability (big data) can be analyzed via machine learning (ML) and have a foundation on which to build artificial intelligence (AI). Regulation: refers to the increased

requirements of regulators which, together with the low margins of different financial institutions such as banks, have led to a reconfiguration by incumbents of business models, since, moreover, other companies (Fintechs), have entered the financial world. Finally, in the field of fintech regulation and regulation, new regulatory and supervisory requirements are the basis for changes in the business models of financial institutions and the consequent entry into the sector by new entrants Fintechs. Think, for example, of the actions taken since the 2008 financial crisis by policymakers and regulators to make regulation in the financial world more stringent, giving a upward push to the expenses in the various center of costs of the financial institutions and in particular of those banks. In seeking to reduce the risk of future crises, regulators have opted for actions such as: an increase in regulatory capital requirements, the implementation of as resilient resolution regimes as possible and new stress tests for credit institutions. In addition, operations have been carried out to address the phenomenon and the risks associated with shadow banking and for greater transparency in financial transactions in payment systems and securities market infrastructures and in general greater disclosure to the support of entities outside the financial institution (Financial Stability Board, June 2017).

The impact of the Directive MiFid II on the use A.I. in financial services

Also the changes, in terms of cost transparency made by European Directive MiFID II, which makes it easier to compare all consultancy costs through a detailed explanation of expenditure items. Moreover, the change will be accentuated by the possibility provided to new operators outside the banking sector, the so-called Payment Initiation Service Providers (PISP)in providing services themselves, occupying an intermediate position between the payer and his online payment account. This regulatory framework, coupled with low interest rates, has led several financial institutions to have to rethink not only the company's internal procedures, but a reconfiguration of the business model. Low margins and strong regulation make several financial institutions less responsive to change and force them to make changes to the supply of certain financial services, leading incumbents to rationalize expenses and use capital more efficiently. These aspects have opened the competitive environment to new entrants able to use technology to offer potentially cheaper financial services (Financial Stability Board, June 2017). The need for the incumbents to reconfigure the ownership and financial structure is therefore accentuated, pushing the latter to make investments aimed at technological advancement and the consequent search for personnel with the necessary skills to face such changes. To confirm this, credit institutions have carried out several operations in recent years such as demobilising or dismantling entire segments and/or strategic areas of business.

The use of A.I. in financial services and the protection of sensitive data

It is evident that in the face of the technologies of A.I. combined with FinTech, the focus should be channeled about the treatment of Big Data, algorithms and robo-advisory within the fintech. They rise, therefore, serious doubts on how to manage the outsourcing of some activities of the financial institutions and that regulatory perimeter to implement in this regard. In addition, with financial technology, customer data can be used to provide products or personalized advice to the customer, process in which it is essential to identify the actual owner of the data and the entity that must safeguard the customer information at each stage.

The aim is to bring to unity the still fragmentary discipline at the national level, the regulation of the use of fintech and A.I., also in consideration of its European and international dimension. Indeed, the European regulatory framework on data processing is currently complicated and, in some cases, parts of different legislation overlap. In fact, already the Italian banking supervisory authority suggests creating ad hoc legislation to be able to properly authenticate customers and give a boost in the use of tools for the conclusion of contracts and distance transactions. Finally, the Bank of Italy identifies as problematic aspects at this juncture a certain legal uncertainty with regard to digital signatures and a failure to take an international position in harmonizing the regulation regarding the use of technology in identification of the customer.

One of the main risks in processing personal information refers to the fact that personal data of consumers could be used without their clear consent or a clear understanding of information management. One of the main objectives of the GDPR (General Data Protection Regulation), is to address this specific issue by enabling the development of standardised privacy statements that effectively and efficiently help consumers better understand the implications of the use of their data. In this regard, the European Parliament (European Parliament, 2017) noted the need to create greater awareness among consumers regarding the value of their personal data, which could lead to greater confidence in the innovative services offered by the various financial operators.

Conclusions

In defining, an interpretative hypothesis of the phenomenon in terms of cause-effects, the advent of new technologies in the fintech field could lead to a specific hypothesis of an ability to supervise the algorithms underlying the analyses: Because of its innovative features, Big Data analysis still has few standards or best practices, particularly when it comes to the algorithms behind such analyses. Some have advanced a possible approach through the creation of a "black list", that is a list containing explicit and detailed information on the wrong practices in the coding of algorithms. On the other hand, a black list may prove to be too demanding an approach given the large amount of resources required by supervisors, as blacklists could be extremely long and complex, with continuous adjustments needed. Moreover, similar practices

are likely to be too invasive, given that the "algocentric" nature of several fintechs could make business models directly affected by a black list, with the risk that the regulatory system becomes "business setter". In particular, the CEPS (2017) considers that an approach of possible application requires intervention by supervisory authorities rather than simply indicating some undesirable inputs or outputs in the algorithms and, in this context, the algorithm itself should not be modified at the base. Both approaches, on the other hand, imply that supervisory staff have the necessary skills to identify actions considered incorrect. In identifying the variables relevant for the operational performance, the transmigration of principles and practices already developed in other countries such as the USA must be applied and adapted to the legal characteristics and the necessary technological progress which is hoped in Italy.

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