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FINANCIAL TECHNOLOGY (FINTECH) AND ITS IMPLEMENTATION ON THE ROMANIAN NON-BANKING CAPITAL MARKET

Case
study

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JEL Classification

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Abstract

This paper presents the particularities of the financial technology industry, how is FinTech defined and how can the financial technology solutions implemented by companies be categorised. Also it approaches FinTech's appeal to the consumer and the effects, both disruptive and positive, that it had on the financial industry, as well as the growth this industry has seen in recent years.

It will also analyse the implementation of FinTech solutions by the financial service providers active on the Bucharest Stock Exchange (BVB), which were determined by the market institutions or by the regulatory framework set by Romanian Financial Supervisory Authority as well as solutions aimed to provide better services to their customers, in the form on online trading platforms.

Introduction

Financial Technology, also known as FinTech, is a new sector in the finance industry that incorporates the whole plethora of technology that is used in finance to facilitate trades, corporate business or interaction and services provided to the retail consumer.

Although the term has come to envelop all the innovation and technology that is now used in the finance industry, from double-entry bookkeeping and ATMs to mobile apps designed for stock trading on the go, it has come in to its own in recent years through the development of proprietary computer and programming technology in the finance sector.

The increasing need for clients to access their financial accounts and to manage their investments from their tablets or phones has led to the development of new apps and also to an increased need of security for the online transactions. Also in the last decade there has been a lot of innovation in the finance industry, like the introduction of digital currency, but also an increase in the supervision and compliance demands by the supervisory authorities in the finance sector which led to the development of more accurate and complete back-office systems of the financial services providers.

This advancement in the financial technology industry has also been implemented by the financial services providers on the Romanian stock market and they also have been developing their back-office systems to meet the demands by the new European regulations. Now there are a number of investment firms that offer online trading for their clients and all the companies that are providing financial services registered on the Bucharest Stock Exchange are using back-office systems that represent the backbone of their activity, be it stock trading or asset management.

1. What is FinTech

Financial technology represents a sector of services in the financial industry that is dedicated to the innovation of the services provided to the financial companies themselves in their activity or to their customers. This sector has been defined in recent time by the word FinTech, which represents the combination of the words *financial* and *technology*. Investopedia, the website dedicated to financial education, defines the term as “*a portmanteau of financial technology that describes an emerging financial services sector in the 21st century*” FinTech (Investopedia, 2016). This publication provides a wider definition for this sector, including *innovation in the field of financial literacy and education*, which would make this website itself a product of FinTech.

At the same time, the student-led organization from the University of Pennsylvania, Wharton FinTech, which is dedicated to the development of this

industry, defines FinTech as “*an economic industry composed of companies that use technology to make financial systems more efficient*” (McAuley, D., 2015). As such this definition doesn't focus on the product, the innovation that has been made, but on the companies that have made these advancements their specialty.

In conclusion there isn't a general accepted definition of the term FinTech, but the general consensus is that it represents a new industry which incorporates all the new innovation in the financial services field that have been implemented through new developments in the technology dedicated to the financial services sector and is evolving to engulf the whole technology used in the financial services industry and not just the new innovation.

Another important part about FinTech which has not been properly established is represented by the categorisation of the FinTech solutions which can be implemented. In this regard, according to Alt, R. And Puschmann, T. (2012), they can be divided by the financial sector (banking, investment, insurances etc.), the business process which it addresses (payments, investing, trading, infrastructure etc.), customer segment (retail or corporate) or by the interaction form (B2B, B2C or C2C). (Alt, R., & Puschmann, T., 2012). While FinTech in itself is a new concept which is still in the process of being fully developed, a broader approach would be best and as such it could be classified into two major categories:

- FinTech solutions dedicated to the operations of the financial services providers;
- FinTech solutions dedicated to the interactions of the financial services providers with their clients.

The financial technology solutions dedicated to the operations of the financial services provider represents the whole of the processes and technology that is used in the activity of the investment banks, insurance companies etc. These would include all the systems that are dedicated to be used only by the financial services provider and would include, for example, the facilitating of investment trading by brokers, managing client databases, reporting systems to the supervisory authorities or to compliance, data security, market analysis etc.

The financial technology solutions dedicated to the interactions of the financial services providers with their clients represents the whole of the processes that implements the financial technology dedicated to the operations of the financial services providers with the services provided directly to their clients. These would include, for example, mobile apps dedicated to trading, new methods for the clients to manage their accounts, the use and implementation of new payment methods, the ease of using the financial services (for example new secure ways of

client identification or personal account management) etc.

Although this is a very basic classification of FinTech, it is one that applies to the wider industry, but there are FinTech companies that specialize in just one service, for example PayPal. This was one of the first companies that introduced an alternative payment method for online purchases with the objective to provide secure online transactions for consumer-to-consumer sales. It specializes only in the alternative payment technology and its implementation and ease of use in relation to its consumers (buyers and sellers).

2. FinTech appeal and innovations

The global management consulting company Accenture has found in its research (Skan, J., Dickerson, J., & Masood, S., 2015) that the investments in FinTech have grown exponentially and tripled in 2014, reaching 12.2 billion dollars. This demonstrates the global interest that has been generated by this new industry, as in 2008 the global investments in FinTech was under 1 billion dollars and it grew steadily to approximately 4 billion dollars in 2013, after which it tripled.

This increase is mirrored by the new influx of start-ups dedicated to this new industry. These new companies have developed to provide only a specific service to the consumer (for example to intermediate a payment or a specific type of transaction) and are sometimes dedicated to niche markets. Apart from the new companies there is also a keen interest by the consumers, which are established financial service providers and their clients. This interest has manifested itself in a number of conferences dedicated to FinTech, some of which are well established now.

According to Gulamhuseinwala, I., Bull, T., & Lewis, S. (2015), based on 1,485 respondents, more than 25% of people aged 25 to 34 years are using two or more FinTech products and more than 47% will use it in the foreseeable future (as seen in Figure 1). There is also a high percentage among users aged 35 to 44 years old, 21.3% stating that are currently using two or more FinTech products and 40.1% will do so in the foreseeable future. (Gulamhuseinwala, I., Bull, T., & Lewis, S. 2015)

A lot of innovation in Fintech has come from the implementation of new payment methods and the appearance of cryptocurrencies. These have led to the development of new technology like blockchain technology, which is the backbone of this type of virtual currency and represents a distributed database which insures a decentralized ledger of all the transactions that have occurred, being protected by powerful cryptography that makes it very safe against attacks (Mainelli, M., & Smith, M. 2015). This technology could have a big impact on a lot of financial services like security exchange (trade

settlements or financial instruments) or insurance claims. (Kharpal, A. 2015)

Financial technology is also considered disruptive in some financial sectors. This disruptive nature has mainly manifested itself in three areas: payments, banking and funding. There is a lot of competition that has developed in the payments industry as companies like PayPal, ApplePay or GoogleWallet have started to become a real problem to the established Visa and MasterCard through their implementation in ecommerce. Also the new cryptocurrencies that have appeared since 2009 (Bitcoin, Litecoin, Ethereum etc.) are becoming an alternative to the financial services provided by banks and are also a supervisory nightmare for the central national banks thru their decentralized nature. (D. L. K. Chuen, 2015 & Allison, I. 2015)

The third disruptive financial technology mentioned is the one that is dedicated to funding. In the last few years there are a number of online platforms (for example Kickstarter or Indiegogo) that are dedicated to crowdfunding which basically means funding given to start-ups by individuals. This concept has proven very lucrative and is developing into more specialized platforms for funding a specific type of start-up or project or by allowing certain investors to ensure funding. These systems are circumventing the established funding options represented by banks and/or the stock market.

3. Implementation of FinTech on the Romanian non-banking capital market

The financial service providers on the non-banking capital markets have been slower to implement the new FinTech innovations. This is due in part to the strict regulatory frame which is custom to this sector of finance. However also due to increasing reporting and supervision needs as well as new regulations, investment firms in particular have been obliged to implement financial technology for their back-office operations.

In Romania, for the investment firms, these changes have been implemented through the trading systems of the Bucharest Stock Exchange, which allows access to its systems only through its own trading platform *Arena*, and through the settlement and clearing systems of the Romanian central depository, Depozitarul Central, and clearing houses, Casa Română de Compensare and Casa de Compensare București. These systems require investment firms to have adequate financial technology to ensure adequate client databases and operations registries.

The requirements for financial technology for investment firms in Romania have also been regulated through the regulations issued by the Romanian Financial Supervisory Authority (ASF) and its predecessor, The National Securities Commission of Romania (CNVM). As such, there

are now certain requirements as to what specific records they have to keep and provide to the supervisory authority, as well as regulations regarding the security of their information systems and their digital archiving solutions.

There are also regulations regarding the functioning of online trading platforms developed for their clients, more specific the security they have and what information and confirmations they provide to their clients as well as systems to permit real time supervision and action from the compliance officer of the firm.

2016 will be the first year when an IT audit will be mandatory for all the financial services providers on the Romanian non-banking capital markets. This measure was first implemented by the Romanian supervisory authority in 2011 but it was suspended because the high costs and implementation problems that the financial service providers were facing.

As stated previously, all the Romanian financial service providers have financial technology solutions dedicated to their operations or back-office solutions. Due to this need and also to ensure a synergetic operation of all the systems, most investment firms have developed integrated back-office platforms for all their operations, from customer databases, to trading, settlement, accounting and reporting. However, due to the fact that these comprehensive systems are usually custom made to each investment firm, based on their needs and business model, they are very expensive and represent a trade secret. Also, because of the constantly evolving regulatory demands, they firms need a lot of support from the system developer to ensure that they meet the compliance requirements.

Apart from meeting the legal requirements, the financial technology systems of the investment firms have the role to ease the work of the brokers in identifying their clients and executing their trading orders as well as automating the issuing of trade confirmations and portfolio reports or necessary trading reports (for example insider trades reports towards the market operator).

The financial technology is also needed by capital asset managers which are obligated to have at least three systems. They must have a system to record all the trades made in the name of the funds they manage, a system to insure the asset valuation of the portfolio for each fund they manage and also to ensure compliance with the investment limits and they are also required to have a database of all the investors in the funds they manage and all their operations.

Apart from these systems, a number of investment firms on the Bucharest Stock Exchange have started to offer online trading systems to their clients which represent the second category of FinTech solutions, dedicated to the interactions of

the financial services providers with their clients. As stated earlier, these systems are also heavily regulated by the Romanian Financial Supervisory Authority to ensure the investors protection, but also provide a way for investment firms to cut down on costs and to offer better and easier to use services to their clients.

To provide these platforms the investment firms have three options:

a) They can develop one themselves, which is costly and can't guarantee the best product and end-user experience for their clients, but ensures a better integration with their systems;

b) To buy or lease one that is already developed by a FinTech company, which can sometimes prove difficult to integrate with all the back-office systems already in place and also, in some instances, can prove more expensive than developing their own on-line trading platform, but they are usually thoroughly tested and provide the best services and experience for the clients;

c) to sign a white label contract for an online trading platform which means that part of the financial services provided through that platform if not all the services will be provided by a third party but under the name of the investing firm, which will only receive a commission based on the volume of trade of their clients. While this option means that the investment firm will only receive a small commission, it usually provides more financial services to their clients (for example access to international capital markets or derivatives trading) and are very well developed.

The Bucharest Stock Exchange (BVB) is also in the process of implementing another option for the investment firms by providing access to a retail oriented version of their trading platform *Arena*. This retail version is called *ArenaXT* and will be available to investors through sponsored access from the investment firms. This method ensures a cheap implementation of a FinTech solution by the investment firms, which will have access to their clients trades and will be responsible with the clients identification (*know your client* – KYC) and granting them access to this platform.

A study of all the 38 investment firms (including national and foreign investment firms and also investment banks) registered on the Bucharest Stock Exchange (BVB) shows that more than 68% of them have implemented FinTech solutions regarding online trading platforms offered to their clients (as seen in Figure 2).

Conclusions

Financial technology or FinTech as it's called defines the whole of the technologies that are used in the financial sector. Although this new industry is new and is not yet fully defined by economists it is clearly a rapidly growing one as the investments in these technologies are growing exponentially.

Also it has found a great appreciation from the clients of the financial services providers as more of them are starting to use these technologies and we can already see as much as a 25% use in some age categories and a predicted 47% use in the near future.

FinTech has started to make itself known by trying to respond to the increasing demand from the consumers of easier access to their financial needs through mobile apps and online platforms. This has also led to the development of innovations in the financial sector but also to some disruptive FinTech like alternate payment methods, cryptocurrencies and crowdfunding, which are proving to be a problem to the established financial service providers like banks.

The implementations of FinTech solutions can be divided into two main categories as solutions dedicated to the operations of the financial services providers and solutions dedicated to the interactions of the financial services providers with their clients.

On the Romanian non-banking capital market, especially in regard to financial services providers on the Bucharest Stock Exchange, the implementation of FinTech has come mainly through the requirements of the market operator, central depository and clearing houses for adequate systems to ensure operations and also thru the regulatory framework set by the Romanian Financial Supervisory Authority and its predecessor, regarding reporting and compliance requirements.

As far as FinTech solutions dedicated to the interactions of the financial services providers with their clients that can be implemented by investment firms, one of the most common is online trading platforms. This represents a mix of FinTech solutions regarding the financial services offered by the investment firms and it can be quite expensive to be implemented. Even so, from an analysis of the investment firms registered on the Bucharest Stock Exchange (BVB) it was revealed that more 68% of them are offering this technology to their clients.

As such we can see that FinTech as an industry is rapidly growing into its own and can prove quite disruptive to some of the established financial services providers on the market by creating new

competition. Regardless, on some financial sectors, like securities exchange, which are heavily regulated, the implementation of FinTech can be mandatory and it is certain that this industry will become an important part of finance.

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References list

- [1] Alt, R., & Puschmann, T. (2012). The Rise of Customer-Oriented Banking – Electronic Markets are Paving the Way. *Electronic Markets* 22(2012)4, pp. 203-215.
- [2] Gulamhuseinwala, I., Bull, T., & Lewis, S. (2015). FinTech is gaining traction and young, high-income users are the early adopters. *The Journal of Financial Perspectives*. EY. Winter 2015, p. 16-23.
- [3] Allison, I. (2015). Bank of England: Central banks looking at 'hybrid systems' using Bitcoin's blockchain technology, *International Business Times*, July 16.
- [4] Kharpal, A. (2015). Why bitcoin's tech could 'change everything' for banks. *CNBC*. 31.12.2015.
- [5] D. L. K. Chuen, (2015). Handbook of digital currency: bitcoin, innovation, financial instruments, and big data. *1st Edition*, Academic Press.
- [6] Mainelli, M., & Smith, M. (2015). Sharing ledgers for sharing economies: an exploration of mutual distributed ledgers (aka blockchain technology). *The Journal of Financial Perspectives*. EY. Winter 2015, p. 38-58.
- [7] McAuley, D. (2015). What is FinTech?. *Wharton FinTech*, 22.10.2015.
- [8] Skan, J., Dickerson, J., & Masood, S. (2015). The Future of Fintech and Banking: Digitally disrupted or reimaged?. *Accenture* 2015.
- [9] Fintech (2016). *Investopedia*.

Figures

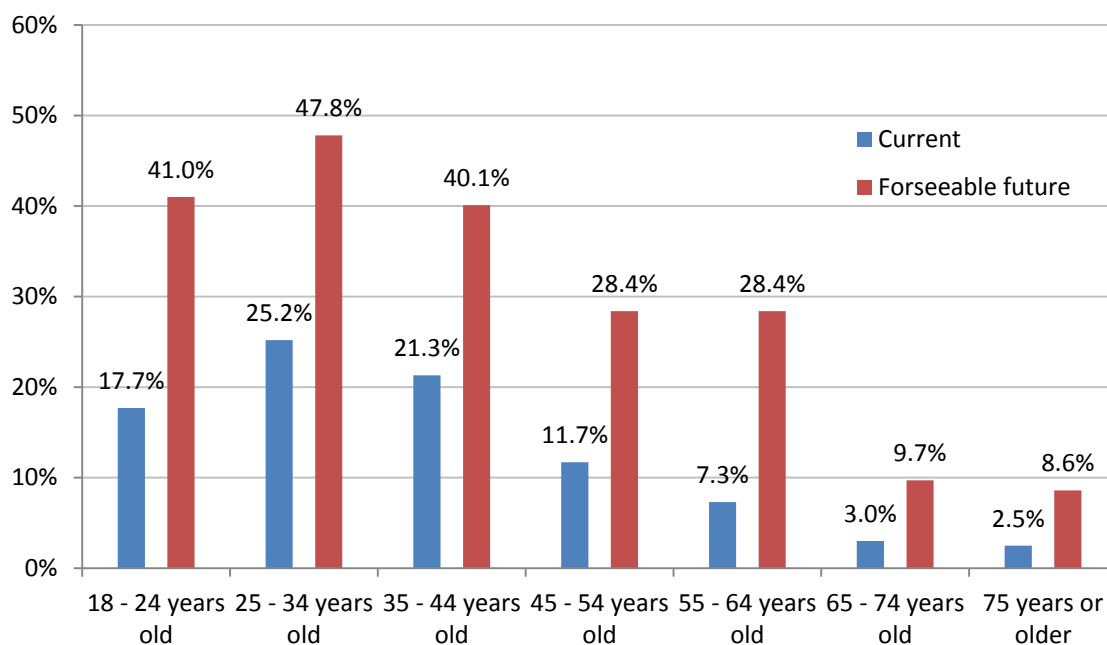


Figure 1 - Use of FinTech (two or more products) users by age group - source: Gulamhuseinwala, I., Bull, T., & Lewis, S. (2015). FinTech is gaining traction and young, high-income users are the early adopters.

Online trading platforms on B.V.B.

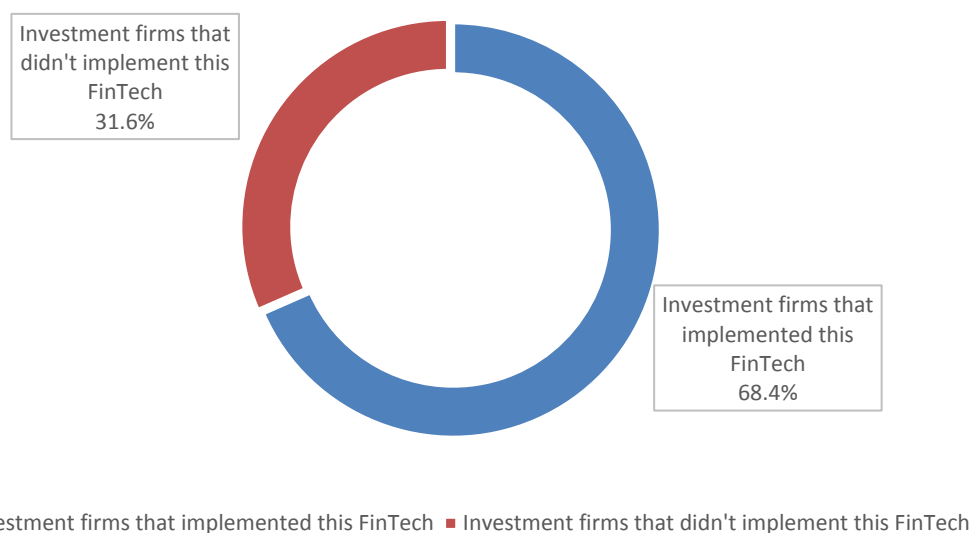


Figure 2 - Online trading platforms implementation on B.V.B.