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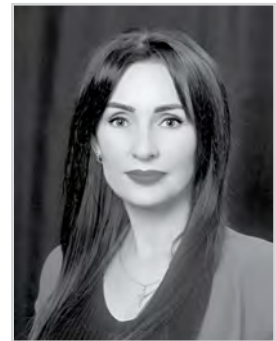
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FinTech sector and banking business: competition or symbiosis?

Abstract

Introduction. The rapid development of the digital economy at the national and worldwide levels in recent decades has accelerated processes of transformation of financial systems and led to financialisation of the global economy.

FinTech companies operating in the financial market represent a new, quite special category of parabank institutions. They are characterised by the implementation of modern technologies to develop and provide traditional financial services. It would not be possible to provide such services without the Internet and digitalisation, compatibility of electronic devices, including hardware and software, nor would it become possible without new experiences, skills and consumer confidence. This is a kind of analogy with search engines that have changed the architecture of the market and mediation and led to the transformation of business models of financial market entities, in particular banks.

Purpose. This paper presents the results of the possibility of providing financial services without banks. It determines the main aspects of competition and directions of combining FinTech and banking.

Methods. In evaluation the FinTech and banking sectors, the authors have used statistical monitoring, as well as dynamic, comparative and structural analysis.

Results. The results of the study show that FinTech allows creating new services that are not provided by traditional financial intermediaries. It has been proven that the limits for FinTech companies to avoid banking rules and regulations are expanding, and it is becoming increasingly difficult to prove that this is happening beyond the law or outside the law. An analysis of the global trends in the development of the FinTech industry has shown that the volume of investments in this area in 2018 was USD 111.8 billion, which is almost 6 times more than in 2013. The authors examine the main forms of interaction between banks and FinTech companies. Basic models of banks' participation in the creation of FinTech companies are substantiated. The authors of the article have analysed characteristics of the largest FinTech accelerators, identified and characterised the main risks and opportunities relating to FinTech for the banking and consumer sectors.

Conclusions. The presented paper reveals the modern trends in FinTech development. They should be taken into account in defining the key determinants of the transformation of the banking sector in relation to the formation of new business models of banks with regard to the challenges of digitalisation.

Keywords: Bank; Banking; FinTech Company; FinTech Accelerators; Financial Market; Financial Services; Innovative Financial Technologies

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Сектор фінансових технологій і банківський бізнес: конкуренція або симбіоз?

Анотація. У статті представлено результати дослідження впливу FinTech-індустрії на розвиток банківського бізнесу. Авторами розглянуто основні форми взаємодії банків і FinTech-компаній. Обґрунтовано основні моделі участі банків у створенні FinTech-компаній. Проаналізовано характерні риси найбільших банківських FinTech-акселераторів. Визначено та охарактеризовано основні ризики й можливості для банківського та споживчого секторів, які несе FinTech. Доведено, що тенденції розвитку FinTech слід враховувати при визначенні ключових детермінант трансформації банківського сектору щодо формування нових бізнес-моделей банків з урахуванням викликів цифровізації.

Ключові слова: банки; банківський бізнес; FinTech-компанії; банківські FinTech-акселератори; фінансовий ринок; фінансові послуги; інноваційні фінансові технології.

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Сектор финансовых технологий и банковский бизнес: конкуренция или симбиоз?

Аннотация. В статье представлены результаты исследования влияния FinTech-индустрии на развитие банковского бизнеса. Авторами рассмотрены основные формы взаимодействия банков и FinTech-компаний. Обоснованы основные модели участия банков в создании FinTech-компаний. Проанализированы характерные черты крупнейших банковских FinTech-акселераторов. Определены и охарактеризованы основные риски и возможности для банковского и потребительского секторов, которые несет FinTech. Доказана необходимость учета тенденций развития FinTech при определении ключевых детерминант трансформации банковского сектора относительно формирования новых бизнес-моделей банков с учетом вызовов цифровизации.

Ключевые слова: банки; банковский бизнес; FinTech-компании; банковские FinTech-акселераторы; финансовый рынок; финансовые услуги; инновационные финансовые технологии.

1. Introduction

Services offered by FinTech companies do not simply duplicate existing banking, insurance, investment or payment services. FinTech creates new services which are not provided by traditional financial intermediaries. At the same time, such services are very often identical to those provided by classical credit institutions (primarily banks), so they can be considered as substitutes because of fulfilling the same economic function. The borders for FinTech companies aimed at avoiding banking rules and regulations are expanding, and it is becoming increasingly difficult to prove that they exist beyond the law or outside the law. Therefore, the possibilities of legal arbitration and regulation of competitors are expanding.

FinTech plays an increasingly important role in shaping the financial and banking landscape. Both banks and FinTech companies that serve non-financial corporations and households without additional financial investments can afford the use of financial technologies (Julapa & Lemieux, 2018) [1].

Understanding the features of the functioning of FinTech companies and identifying the benefits and threats to banks in the development of FinTech allows to identify key factors relating to successful implementation of active strategies and determines the relevance of the study.

2. Brief Literature Review

The emergence of FinTech is primarily connected with the rapid development of the digital economy in the world. Issues of the development of digital economy and its impact on the global financial market's transformation began to be thoroughly considered at the scientific level in early 1960's, along with the formation of the theories of D. Bell (Bell, 1978) on the «information economy» and M. Castells (Castells, 2010), on «network society» or «network economy» [2-3]. The most accurate definition of the digital economy was provided by D. Tapscott (Tapscott, 1996), who is one of the world's leading business strategy authority. He defined the digital economy as an economy based on the dominant application of digital technology [4]. The American programmer Nicholas Negroponte (founder of the Massachusetts Institute of Technology's Media Laboratory) formulated this concept as «a transition from atomic processing to bits processing» [5]. Th. Messenbourg (Messenbourg, 2001) highlighted three main components of

this concept, in particular: supporting infrastructure, e-business and e-commerce [6].

Modern studies on the FinTech development are analysed in the paper by Aferdita Berisha-Shaqiri and Mihane Berisha-Namani (Berisha-Shaqiri & Berisha-Namani, 2015) who have identified the impact of information technology on the development of the digital economy [7]. A group of authors, namely V. Ghotgalkar, J. Baltora, M. Kollo, A. Rosenberg, T. Riley and V. Framlington (Ghotgalkar, Baltora, Kollo, Rosenberg, Riley & Framlington, 2017) note that digitalization increases consumer surpluses at the expense of lower prices. It helps manufacturers to maximise profits by reducing costs and increasing incomes [8].

Challenges of FinTech development and its impact on the banking sector of the economy is studied in articles by J. Lerner and P. Tufano (Lerner & Tufano, 2011) [9], R. Levine (2002) [10], D. T. Llewellyn (2018) [11].

Important trends in current researches on financial innovations development are related to the establishment of interdependencies and partnerships between FinTech companies and banks (Navaretti, Calzolari & Pozzolo, 2017; Mocetti, Pagnini & Sette, 2017) [12-13], while business models arise due to technological financial platforms and create new forms of non-hierarchical community between stakeholders (Tasca, Aste, & Pelizzon, 2016; Gulamhuseinwala, Bull & Lewis, 2016) [14-15], and risk management for banks links to the development of FinTech (Thiemann, Aldegwy, 2016) [16].

Despite the sufficient theoretical base of research on the financial technologies development, empirical works are presented fragmentarily and do not allow to determine the range of stimulators or dissimulators of banks' development in terms of digitalisation.

3. The purpose of the article is to highlight the features of functioning of FinTech companies and to identify the advantages and threats that banks face in the development of the FinTech industry. To achieve this goal, the following tasks are to be implemented: to define the issues the determine the advantages and threats of the FinTech industry for the banking, to determine characteristics of the organisation of cooperation between banks and FinTech companies and to characterise main directions for the development of financial technologies.

4. Results

FinTech provide a new opportunity to change the financial sector, casting doubt on existing business models, services and rules. FinTech is a combination of financial and digital services and more individualized technologies with widely used databases (Big Data). FinTech includes new forms of mobile payments, virtual currencies (Bitcoin), advanced transactions, B2C and B2B banking, as well as innovations in investment funds and database management [17]. The feature of FinTech is that products are developed by companies from the shadow or half-shadow banking, e-companies which are not banks, insurance and investment companies or payment organisations. These companies offer many alternative ways to access a variety of services, from online transfers to comprehensive financial planning [15].

There arise interesting research problems, namely: Is it possible to lend and borrow without banks? How can new and old forms of money compete to better meet the various needs of society? How exactly new technologies in the financial services market can reduce isolation and promote social integration? Can businesses rely on crowd sourcing, and then finance also crowd funding without the need of using bank's services? As so in the digital age, can we interact with new self-organising and autonomous companies that work without human intervention based on software? [14]. What new risks arise in this case and can them destabilise the financial system? Obviously, all these questions require a qualitative, holistic and integral analysis of the micro and macro environment [16].

In 2018, 39 FinTech «unicorns» (similar to «dragons» and «tigers») were estimated at USD 147.37 billion. The most prominent representatives of FinTech companies in the year were TransferWise (USD 1.6 billion, United Kingdom), Revolut (USD 1.7 billion, United Kingdom), MONZO (USD 1.27 billion, United Kingdom), No.26 (USD 2.7 billion, Germany), Klarna (USD 2.5 billion, Sweden), Stripe (USD 20.3 billion, USA), NUBank (USD 4 billion, Brazil), LUX.com (USD 38 billion, China), Toss (USD 1.2 billion, South Korea), PAYTM One97 (USD 10 billion, India) and others [17].

Attention should be paid to the growth of investments in the development of FinTech (Figure 1). The focus of the discussion is on the replacement of legislation with computer software.

However, this problem was described earlier as «Order despite Law», where the law was replaced by other norms, for example social norms or norms related to certain industries or communities. While the law may impose sanctions on improper ex-post behaviour, the software programs desired ex-ante actions or do not allow violating the standards or values that were laid down in its design by the programmer.

This problem has been described in the literature as a contrast of regulations and software: «law as a rule vs. law as a code». An example is Digital Rights Management (DRM) software that regulates an access to content. Another example, which is often mentioned recently, is Sharing Economy, where software not only replaces the law, but also means critical innovations that affect business models and the elimination of related organizational structures [19-20].

Another example is the Bitcoin and its associated Blockchain technology, which could be a substitute for the financial market infrastructure and has already been officially recognised by ESMA and the Bank of England experts. However, this requires proofs for new «smart contracts» developed, for example, on the basis of the current derivative trading method, are in accordance to MiFID 2 or EMIR security standards [21]. Experts believe that at the present time we are dealing with a dilemma: regulations or its absence (restriction) - so, it is a matter of changing the nature (character) of regulation as it is.

The characteristic feature of FinTech companies is their participation in the sector of small and medium-sized enterprises. Like in other sectors of the economy, FinTech industry consists of companies with the appropriate capital and employees with the necessary

basic knowledge and project management skills, as well as startups with barriers that significantly limit the opportunities for doing business. The first group is represented, for example, by affiliated companies of global corporations that have sufficient financial resources from the outset, access to the parent company's infrastructure, and products or services they create should meet the needs of the organisation that created them first. Subsequently, the result of the completed project or part of it can be realised by other enterprises and units, which makes it possible to receive the rate of return on investment.

The situation with FinTech startups is slightly different: creators have only a business concept - yet they lack appropriate capital, skills in managing business and, finally, a client base. Such persons may co-operate with organisations that support newly created entrepreneurs, including venture funds, business angels, loan guarantee funds, training centers, production and technology clusters, technology transfer centers, technology parks, business incubators and so on [21].

It should be noted that the described forms of assistance are used by newly created enterprises from different industries, and not only from the FinTech sector.

Competition between banks and FinTech-companies regarding their cooperation is not new. Nevertheless, new technologies and technological progressive instruments are currently regulating demo-shifts towards the alliance of these competitors. The competition between banks and FinTech companies has already changed into cooperation in the FinTech / RegTech ecosystem. Banks with an open and flexible digital architectural system can take advantage of such cooperation. In terms of FinTech, the tension is based on differences in culture and operational processes. Banks have experience in financial expertise, infrastructure and «stable customers» bases; FinTech firms are flexible, and they have an innovative focus on building a future client base [22].

Yet, own banks' systems cannot fully utilize the digital ecosystem. Banks are expedient to reorganise their operations and benefit from reviewing their own positions regarding consideration of FinTech companies as partners, not competitors.

An alternative to previously presented forms of cooperation may be an assistance of banks. At present, the business accelerators, which are increasingly being created by banks, are becoming a very popular form of support. There are four distinctions that are extremely important for the organisation of cooperation between banks and FinTech companies. These accelerators are distinguished from other forms of business support by extremely strict selection criteria, a group of support for business partners, cooperation with initiators of startups (usually only within 3-4 months) and the need to transfer part of the shares in exchange for financial support.

Such cooperation can benefit both banks and organisations implementing innovative technologies in the process of providing financial services. From banks' point of view, it is



Fig. 1: Total investment activity (VC, PE and M&A) in Fintech 2013-2018
Source: Compiled by the authors based on [16]

important to be able to test and implement the latest technological solutions that can significantly improve the competitive position in the future. It is notable that by virtue of the provisions contained in the FinTech and banks' agreements, the final product or service can become the property of the bank at no extra cost, or it can be a purchase, for example, with a high margin license for a fixed percentage of its value.

It should be remembered that the cooperation between banks accelerators and FinTech companies is risky. Individuals who create business structures should be aware of the fact that they are likely to lose the independence, especially when the bank becomes a shareholder. In this case, the risk involves key decisions - the people who control the accelerator can have a different vision of the business than its creators, which will result in the exclusion of business partners from the decision-making process.

The risk is also borne by a bank, which, having created an accelerator, marks investment projects with own brand. Thus, his reputation, public trust and credibility may be affected if the supported organization creates a product, found to be defective or does not meet the expectations of either a bank or a customer. Equally important is the financial aspect - bank managers predict a certain rate of return on investments in selected startups, and then they correlate with the financial effect of the stakeholders (especially shareholders).

Credits can be a safe alternative to creating accelerators by banks, but it should be remembered that accelerators of business ideas give access to managing bank governors, they give bank employees access to cutting-edge technologies and the ability to create an image as one of competitive advantages.

It is important to count on the features of accelerators as objects for FinTech branch support. The form of such cooperation is not standardised. Therefore, various financial institutions can form it individually, as presented in Table 1.

An element of the joint proposal for the reviewed institutions is an access to a wide range of training, seminars and mentoring. Each of them emphasizes the individual nature of the assistance, in addition to providing general subject knowledge, as well as project management skills based on the analysis of the needs of each team representing a patented business idea for those who form FinTech companies.

It should be noted that FinTech companies offer their customers much cheaper products than traditional banking services. In addition, FinTech companies apply innovative risk assessment methods: from analysing their clients' behaviour based on social networks and up to machine-learning algorithms [24]. The use of new business models allows parabanks to operate without the obligation to comply with regulatory requirements imposed on classic banks.

Representatives of the banking and capital markets sectors perceive the high rates of technological change as a threat to growth prospects. Thus, 83% of traditional financial service providers believe that they are threatened by a loss of business that can go to competitors - companies in the financial technology segment. The greatest pressure from the financial and technological companies will be subjected to segments of banking operations and payments. Traditional financial institutions are afraid that FinTech companies can absorb up to 28% of the market by 2021. Banks themselves estimate the loss of business in favour of FinTech at 24%, asset management company at about 22%, and insurers at 21% [25]. Table 2 shows the risks for banks related to FinTech operations.

While FinTech is still developing, it is expected that it will determine the future of the financial services market, while attracting people, who have not yet been clients of such services or have used them insignificantly. The success of FinTech is determined by a low margin, the need to invest in expensive assets, innovation, easy scalability and optimization of compliance [28].

In the cases of further FinTech development, key steps for banking business-models may consider applications that allow other companies to participate in the value chain for a client. This will facilitate the adaptation of banks to market conditions in which the legislator itself encourages competition from other actors, for example, in the payment services market.

Banks can benefit greatly from opening application programming interfaces (API), as it becomes possible to integrate third-party services within their own platform. Banks can become a source of innovations, the so called FinTech enablers, and take on some of the innovative services previously provided by other companies - links in the value chain. Thus, the strategy of cooperation, and not just competition, may bring many benefits to banks. Such types of system platforms for innovative customer service «one-stop-shop» already exist in some banks. FinTech companies can also expand their market share through collaboration with banks, the development of a new customer approach, the innovative use of infrastructure (Cloud Computing) and databases (Big Data).

The main condition for banks to succeed is the cooperation of old and new market players, which ultimately benefits both parties. While in previous years banks perceived FinTech startups as a threat, they currently support a strategy of cooperation within the framework of innovative business models.

Tab. 1: Features of the world's biggest banks' FinTech accelerators

Accelerator	Bank	Call for applications	Financing	Terms of cooperation	Area
Barclays Accelerator	Barclays	Once a quarter	up to USD 120,000 for a minority share	13 weeks	global
Wells Fargo Startup Accelerator	Wells Fargo	Twice a year	up to USD 500,000 for a minority share	6 months	
DBS Accelerator	DBS		individual	12 weeks	
Nordea Startup Accelerator	Nordea	Once a quarter	up to EUR 150,000 for a minority share		
Catalyst	Société Générale		without financing	13 weeks	India

Source: Compiled by the authors based on [23]

Tab. 2: Threats and opportunities for banking sector arising from FinTech

Areas of influence	Threats	Opportunities
Consumer sector	<ul style="list-style-type: none"> confidentiality and data security; lack of continuity in banking processes; unacceptable marketing practices. 	<ul style="list-style-type: none"> provision of highly specialised banking services; reduction of transaction costs; acceleration of banking processes.
Banks and banking system	<ul style="list-style-type: none"> strategic risks and profitability risks; increasing the relationship between financial parties; high operational risk; third parties management risk; compliance risk includes the failure of consumer protection and data protection regulation; terrorism financing risk, money laundering risk; liquidity risk and banks' financing sources volatility risk. 	<ul style="list-style-type: none"> improvement and more effective realisation of banking processes; innovative use of data for marketing and risk management purposes; potential positive impact on financial stability due to increased competition; RegTech.

Source: Compiled by the authors based on [26-27]

5. Conclusions

The transformation of banking in the context of the rapid development of the FinTech sector involves the creation of new business models by banks. During 2018, contactless payments, biometric technologies and artificial intelligence were among the main trends in the development of FinTech. In 2019, the following trends based on FinTech are envisaged: spread of Blockchain, mobile payments, artificial intelligence, voice technologies, regulatory technologies (RegTech), personal robotic assistance (PRA), cloud techno-

logies, payment services directive 2.0 (PSD2) and initial public offering (IPO).

Recent trends are already changing the economy, especially phenomena such as cognitive economy, sectoral convergence, mobile solutions, crypto-currencies and decentralised virtual settlements (Blockchain-based). The most successful in the future will be banks that have changed their business models, using the opportunities provided by financial technologies. Banks will either accept digitalisation or lose their own customer base.

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