

DIGITAL BANKING TRANSFORMATION THROUGH COOPERATION WITH FINTECH STARTUPS IN UKRAINE

Sophia Lobozyńska* Ulyana Vladychyn** Iryna Skomorovych***



<https://doi.org/10.18778/2391-6478.1.37.05>

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Abstract

The purpose of the article/hypothesis: Is to identify the peculiarities of Fintech startups activities, to track trends and perspectives of interaction between classic banks and Fintech companies, as well as to research the activities of neobanks and formulate proposals for improving the Fintech ecosystem in Ukraine with the aim of providing quality digital financial services to various categories of consumers.

Methodology: Methods of statistical analysis, analogy, synthesis and theoretical generalization were used when researching the materials of specialized analytical agencies, official websites of foreign and domestic banks, state financial strategies and scientific literature.

Results of the research: The active growth of a number of Fintech startups in the world and in Ukraine forms a positive dynamic of the digital transformation of the banking sector. The cooperation between banks and Fintechs allows the use new innovative products in banking, such as artificial intelligence, robo-consultation, blockchain, cryptocurrencies, the Internet of Things, virtual and augmented reality. For the further digital transformation of banking in Ukraine the financial market participants must implement international open banking standards and tools for remote identification and verification of clients, actively introduce artificial intelligence and machine learning tools into finance, and develop a Fintech ecosystem.

Keywords: digital transformation of banking, Fintech startups, digital financial products, neobanks, regulatory sandbox.

JEL Class: G21, G24, N24, O32.

* Doctor of Economic Sciences, Professor, Professor of Department of Banking and Insurance Business, Ivan Franko National University of Lviv, Ukraine, e-mail: sofiya.lobozynska@lnu.edu.ua, <http://orcid.org/0000-0001-5483-6864>

** Doctor of Economic Sciences, Professor, Professor of Department of Banking and Insurance Business, Ivan Franko National University of Lviv, Ukraine, e-mail: ulyana.vladychyn@lnu.edu.ua, <https://orcid.org/0000-0002-6916-6688>

*** Doctor of Economic Sciences, Professor, Professor of Department of Banking and Insurance Business, Ivan Franko National University of Lviv, Ukraine, e-mail: iryna.skomorovych@lnu.edu.ua, <https://orcid.org/0000-0002-8574-6770>

INTRODUCTION

The development of technologies creates new rules of the game for banks, stimulating them to digital transformation processes. New customer needs, mobile Internet, cloud technologies, and blockchain technology require banks to actively implement digital innovations and build modernized business processes. New providers of innovative financial services began to appear on the domestic financial market. The interaction of banks and financial technology companies has become a new reality that requires in-depth research and delineation of prospects for the development of banking.

The main purpose of research is to identify the peculiarities of the activity of Fintech startups, to track the trends and perspectives of the interaction of classic banks with Fintech companies, as well as to study the activities of neobanks and formulate proposals for improving of the Fintech ecosystem in Ukraine with the aim to provide high-quality digital financial services to various categories of consumers.

The conducted research is aimed at improving the theoretical foundations of the "Fintech startup" phenomenon, outlining global trends in financial transformation, finding ways to create a favorable environment for the development of financial and technological innovations in banking by improving the state policy of supporting this segment.

The study of the modernization of banking through interaction with financial and technological startups was carried out with the help of a systematic scientific analysis of existing scientific and applied research in this area. The method of statistical analysis, analogy, synthesis and theoretical generalization was used in the study of analytical materials of the McKinsey company, the Ukrainian Association of Fintech and Innovative Companies, the state strategy for the development of the financial market and Fintech in Ukraine, informational materials of the official websites of foreign and domestic neobanks.

1. THEORETICAL STUDY OF FINTECH DEFINITION

With the rapid development of digital technologies, which have already become an integral part of human everyday life, the financial and banking sector of the economy also needs digitization. The integration of digital technologies into financial and banking activities significantly strengthens the competitiveness of the national economic system on the world stage.

Digital transformation of financial and banking services is a dynamic process of introducing innovations into existing financial and banking offers to clients or in the form of new products, which consists in restructuring the organizational

structure, the process of providing services to clients and the transformation of information support through the integration of digital technologies in all stages of the financial banking sector activities.

Financial technologies or Fintech is the modern way of interaction of financial activities and digital innovative products and services with the use of information technologies, in particular mobile applications and Internet resources, which have now become an integral part of any person's life. For the most part, Fintech includes startups created based on previously unknown, breakthrough inventions and technologies in the field of financial services.

At the same time, financial technologies are being modernized and transformed against the background of changes in consumer needs with incredible speed, resulting in uncertainty and an ambiguous interpretation of the concept of "Fintech". This can be seen in the approaches to defining its essence by different experts in this field of knowledge and targeted external consumers.

The analysis of a large number of scientific works and publications at external resources proves the existence of multiple interpretations of the concept of "financial technologies". The vast majority of scientists consider them as a separate type of technology that has its own specific features. In general, this approach is logical, but its use does not allow to fully reflect all the features of the development of this category.

In the scientific research there are four approaches for determining the definition of Fintech:

- the institutional approach that defines Fintech as an economic industry consisting of companies that use technologies to improve the efficiency of financial systems (www1);
- the industry approach considers Fintech as technologies used in the financial industry to optimize costs, increase added value in its products, speed up the passage of various processes, security (www2);
- the functional approach that reveals Fintech as a financial service that includes innovative technologies to meet future needs (Zavolokina et al., 2016);
- the operational approach, characterizes Fintech as technological projects in the field of financial services (Mazaraki and Volosovych, 2018).

The Basel Committee on Banking Supervision (BCBS) has opted to use the Financial Stability Board (FSB)'s working definition for Fintech as "technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services" (The Basel Committee..., 2017).

Thereby, the essence of Fintech involves the relationship of two components

innovations, based on the technologies of the traditional financial and banking sector, and new business models for providing financial services.

Fintech startups operate in different verticals such as banking, finance, payments, corporate finance, crowdfunding, investment, big data, personal finance management, insurance, asset management, hubs, blockchain and crypto coins (Figure 1).

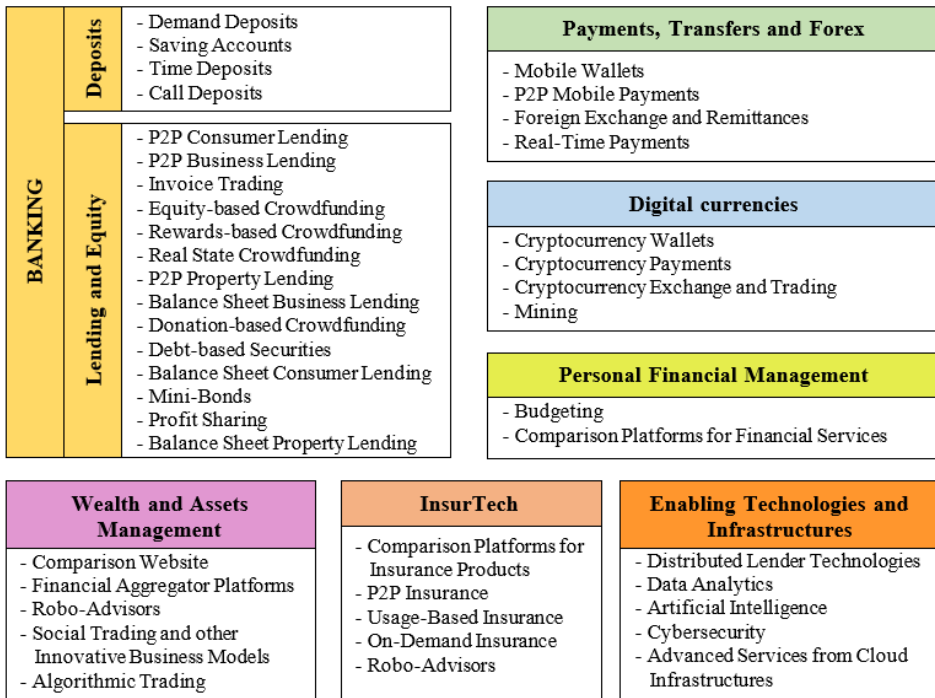


Figure 1. Fintech services classification

Source: grouped by authors based on generalized research sources.

The researcher of financial markets, Chris Skinner, considers Fintech to be a new hybrid market that integrates finance and technology (Skinner, 2018). The era of Fintech is the beginning of an industrial revolution marked by new and disruptive financial and technological advances, such as artificial intelligence, roboconsulting, blockchain, cryptocurrencies, the Internet of Things, virtual and augmented reality. This era is characterized by the rapid pace of introduction of Fintech products into the financial sector, an increase in the number of users of the Fintech industry and the volume of financing. This era creates a new organizational structure, which is primarily based on customer expectations and reducing the cost part of financial institutions' activities.

2. FINTECH COMPANIES ON THE GLOBAL MARKET OF BANKING SERVICES

Due to the high demand for digital transformation of financial services, the number of Fintech startups in the world is increasing every year. As of November 2021, there were 26.346 Fintech (financial technology) startups in the world. There were 10.755 Fintech startups in the Americas, making it the region with the most Fintech startups globally. In comparison, there were 9.323 such startups in the EMEA region (Europe, the Middle East, and Africa) and 6.268 in the Asia Pacific region (Number of Fintech startups...,2023).

Financial and technological startups are maximally focused on the retail segment. In particular, the share of their presence in terms of consumer segments is as follows: retailing – 62%; the commercial segment – 28%, the segment of large corporations – 11% (Fintechnicolor...,2023). The implementation of financial products by financial technology companies according to the given segments is shown in Figure 2.

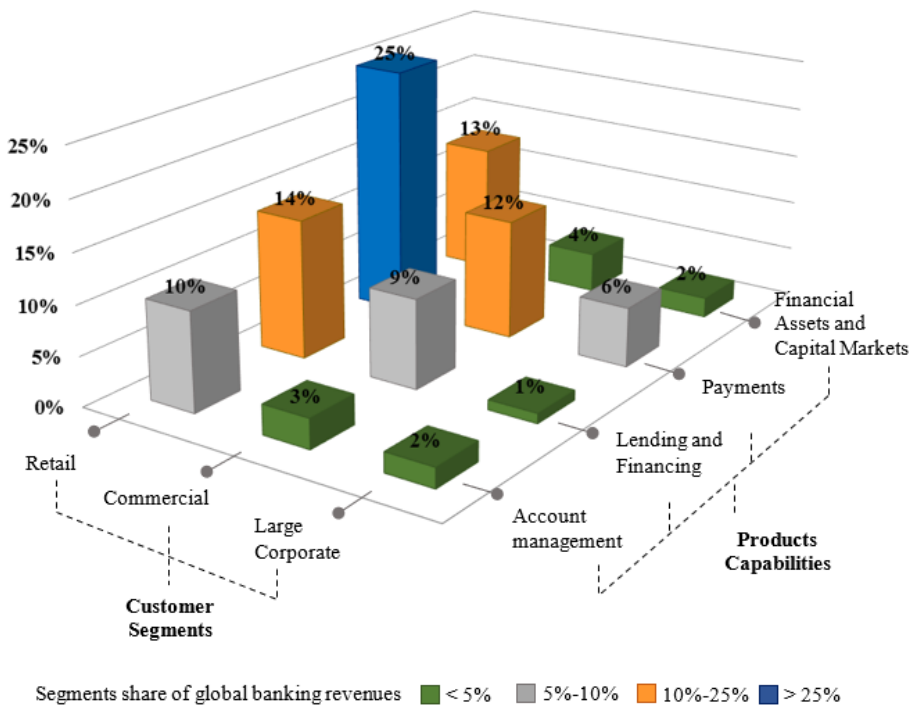


Figure 2. Product and Customer Focus for a Sample of 350 Fintech Startups

Source: built by the authors based on McKinsey&Company research (Fintechnicolor...,2023).

The total value of investments into Fintech companies worldwide increased dramatically between 2010 and 2019, when it reached 215.1 billion U.S. dollars. In 2020, however, Fintech companies saw investments drop by more than one third, reaching a value of 127.7 billion U.S. dollars. Falling volumes of investments in innovations in the Fintech market occurred due to the Covid-19 lockdown. Investors prioritized investing in low-risk assets, but the investment value increased again in 2021 up to 226.5 billion U.S. dollars. Investors once again believed in the potential of technological financial innovations and in their ability to bring adequate returns on invested resources (Investments into Fintech..., 2023).

Banks are one of the most powerful investors in Fintech startups. Only US banks alone have invested 3.6 billion U.S. dollars in 56 different Fintech startups. Conversely, only 7% of banks have done the hardest job of setting up their own Fintech R&D offshoot to create proprietary solutions (Table 1).

Table 1. Fintech Startup Investments by Sector for US Banks

	Blockchain	Data Analytics	Insurance	Personal Finance	Wealth Management	Financial Services Software	Lending	Payment and Settlement	Real Estate	Regulatory Tech	TOTAL
Citi	5	5		2	1	5	3	2		2	25
Goldman Sachs	2	3	1	1	1	2	2	6	2	2	22
JPMorgan Chase & Co	2	1			1	4	1	2		1	12
Morgan Stanley		2	1			3	1			1	8
Wells Fargo	2	2		1		1	1	1		1	9
Bank of America Merrill Lynch	1	2				1		1		1	6
TD Bank	1							1		1	3
Capital One	1							1			2
US Bancorp	1							1			2
PNC	1							1			2
TOTAL	16	15	2	4	3	16	8	16		9	91

Source: built by the authors based on www12.

The cooperation between classic institutions and Fintech companies is important for the development of the Fintech industry in the banking sector. Indeed,

banks have a wide client base, which is strongly needed by Fintech companies. They are legally protected and have experience in carrying out credit operations, but on the plus side Fintech companies are available to a wider range of people. Additionally, they are able to adapt to market fluctuations and produce new technological solutions, which maximally satisfy the needs of consumers. A few years ago banks and innovative companies were competing in the field of finance, but today we can observe the establishment of cooperation between these players of the financial market.

3. FINTECH IN UKRAINE

Fintech in Ukraine has been developing dynamically since 2017. COVID-19 has given Fintech startups new impetus to gain a foothold in the banking services market. In general, in 2021, the number of Fintech companies in Ukraine was 203. Their total valuation is about USD 1 billion. IT specialists (33%) and financiers (17%) predominate among the founders of Fintech companies, as well as founders from the legal and insurance spheres. Founders mostly fund the creation of Fintech companies with their own funds (65%), private investors' money attracted 18% of Fintech startups, while angel investment attracted only 2% of Fintechs (Ukrainian Fintech Catalog, 2021).

More than half of Ukrainian Fintechs work on the domestic market, of which 81% of companies focus exclusively on the Ukrainian market. Among foreign markets the largest number of Ukrainian Fintechs can be found in European countries – 15% and in USA – 7%. 79% of the companies operating exclusively in Ukraine plan to develop operation in foreign markets, 45% plan to enter the EU market. Poland and Germany are considered the most attractive among European countries (Ukrainian Fintech Catalog, 2021).

The largest segment of the Ukrainian Fintech market was technology and infrastructure – 22%. Payments and money transfers accounted for 19%, consumer lending – 14% (Ukrainian Fintech Catalog, 2021). Crowdfunding and services for comparing financial services remain the least developed. Business lending and blockchain have worsened their positions, while law and insurance have improved (Figure 3).

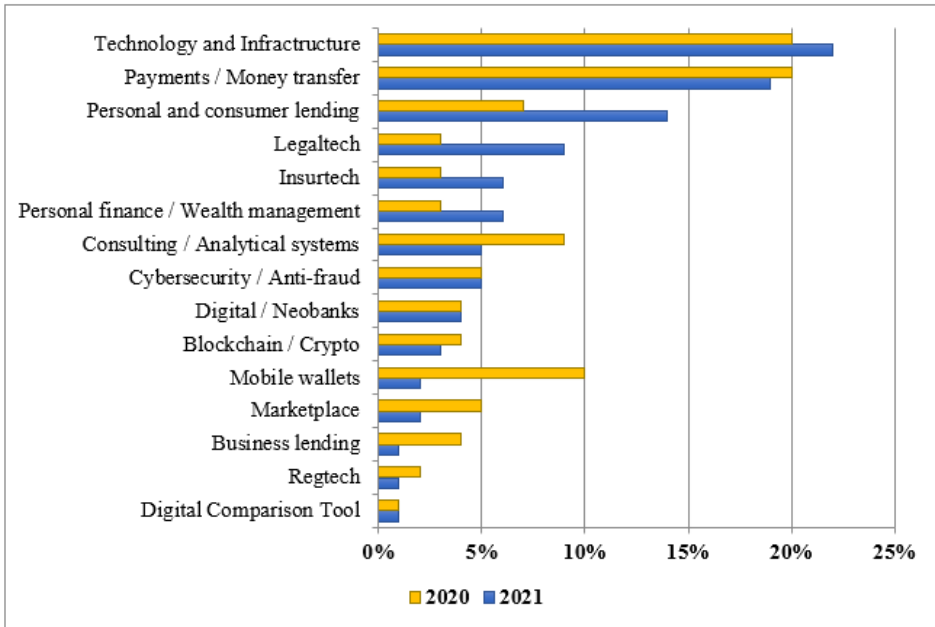


Figure 3. Distribution of Ukrainian Fintech-companies according to their spheres of activity

Source: built by the authors based on Ukrainian Fintech Catalog, 2021.

The partnership of Fintech startups with banks will allow to expand the list of digital banking services, especially digital SMBs lending, digital consumer lending, which are determined as priority verticals. Such cooperation allows to get “win-win” results for banks and Fintech companies. Taking into account the current trends in the development of the banking business it is possible to predict the close cooperation of banks and technology companies to accelerate the digital transformation of banking services.

4. INTERACTION BETWEEN BANKS AND FINTECH STARTUPS

Studying the global experience of cooperation between traditional banks and Fintech companies, the following ways of their interaction are distinguished: the banks’ development and implementation of acceleration and incubation programs (43%), investing in promising Fintech startups with the help of internal venture capital funds (20%), concluding bilateral agreements on partnership (20%), acquisition of Fintech companies by banks (10%), opening of their own Fintech companies by the banks (7%).

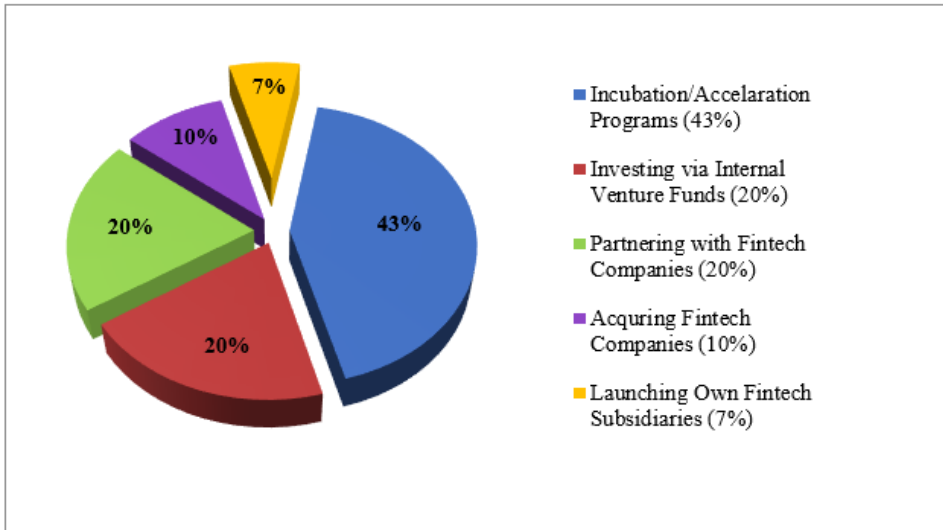


Figure 4. How banks are currently responding to the Fintech movement

Source: built by the authors based on [www12](#).

Since 2017, similar transformational and technological processes have been taking place in the banking sector in Ukraine. Banks actively cooperate with Fintech startups, widely use technological solutions in the creation and promotion of banking products, a favorable ecosystem is being formed for the emergence and operation of neobanks in Ukraine.

According to the results of the study, all the largest banks of Ukraine have, or plan to have joint projects with Fintech companies, except PrivatBank, which independently develops innovative products and services (Ukrainian Fintech Catalog, 2021). The banks prefer joint projects with innovative companies, because it is easier and much cheaper than maintaining their own teams of IT specialists. However, in-house "innovation centers" and in-house incubation/acceleration centers are also popular. As for investing in Fintech startups, it is generally absent due to limited investment resources. The results of the study are shown in the Table 2.

Table 2. Participation of banks in the innovative and technological transformation of the financial sector

Banks	Joint projects			Own development of innovative projects			Own incubation/acceleration			Investments in startups		
	Yes	Plan	No	Yes	Plan	No	Yes	Plan	No	Yes	Plan	No
PrivatBank			✓	✓				✓				✓
Oschadbank	✓				✓				✓			✓
UKRGAS-BANK	✓			✓					✓			✓
Raiffeisen Bank	✓			✓				✓				✓
SENSE BANK	✓			✓					✓			✓
UKRSIBBANK	✓					✓		✓				✓
FUIB	✓			✓					✓			✓
CREDIT AGRICOLE BANK		✓		✓				✓				✓
OTP Bank	✓					✓	✓					✓
TASKOMBANK		✓		✓					✓			✓
MEGABANK	✓			✓					✓			✓

Source: compiled by the authors based on Ukrainian Fintech Catalog, 2021.

The result of the interaction of banks with financial and technical startups is the provision of opportunities for Ukrainian consumers to use electronic wallets, quickly receive information from chatbots, use online banking and mobile banking (Table 3).

Table 3. Fintech-products of Ukrainian banks

Bank	International fintech-products			Acceleration programs	Projects of acceleration finalists	Banking fintech-products
	Google Pay	Apple Pay	Garmin Pay			
Oschadbank	+	+	+			Chat-bot «Online assistant» Oschad Pay, Oschad 24/7
UKRSIB-BANK	+			POPCORP	UKRSIB CHAT-BOT	UKRSIB online
OTP Bank	+		+	Open Banking Lab	YouScore, bNesis, CoinyPay, Future Agro Finance	OTP Smart

SENSE BANK	+		+	Alfa Digital		Alfa-mobile
PrivatBank	+	+	+			Airpay, IPay, LigPay, QR-payments, Privat24
Raiffeisen Bank	+			Raiffeisen Digital Hab		Raiffeisen Pay, Raiffeisen Online
FUIB	+		+			FUIB online, FUIB mobile

Source: compiled by the authors based on the official websites of banks: www5–11.

The Ukrainian research of banking digital transformation grouped all domestic banks according to the degree of digital transformation into four groups: Front-end only; Active integration; Own R&D; Digital native (Bank Roadmap ..., 2020).

At the first stage "Front-end only" there are 41 domestic banks. In their activities, these banks use only the simplest digital tools in interaction with customers: website, self-service points, electronic administration, mobile application.

At the second stage of the development the "Active integration" banks are actively working with ARI, establishing cooperation with technological startups. This group of banks is characterized by the use of omnichannel access (website, application, chatbot), providing opportunities for customers to make contactless payments, use electronic wallets, receive cashback, discounts. There are 34 such banks in Ukraine, they have automated back-office services and cooperate with Apple or Google Pay systems.

Being at the "Own R&D" stage, banks have their own staff for the development and implementation of technical solutions, actively work in various segments with APIs, cooperate with third-party providers of Fintech services (payments, accounts, etc.), use remote authentication in the BankID system of the NBU. There are 22 such banks in Ukraine.

At the "Digital native" stage, the bank is completely digitized: from interaction with the client to the execution of internal processes. These banks perform customer analytics based on large databases, fully digitize interaction with customers, and use cloud solutions. There are only two such banks in Ukraine and one neobank (PrivatBank, UNIVERSAL BANK and financial technology company Monobank).

It is appropriate to note that, taking into account the financial and technological functionality, the researchers of the digital transformation of the banking sector for the first time classified a Fintech company that implements financial products based on the license of UNIVERSAL BANK, the first neobank in Ukraine in the "Digital native" category. In total, six neobanks operate in Ukraine as of January 1, 2023.

5. DIGITAL SERVICES OF NEOBANKS IN UKRAINE

It should be noted that in many cases the emergence of neobanks is the result of the interaction of Fintech startups and classic banks. In general, neobanks are modern financial and technological startups that provide financial products through technological channels, taking into account the maximum convenience for consumers.

Thanks to the dynamic digital transformation, banks are actively involved in the process of the emergence of neo-banks in Ukraine.

Monobank was created in November 2017 by the Fintech Band team and immediately took a leading position in the banking market of Ukraine, because since its opening it has issued more cards than all other banks combined. As of January 2023, the number of Monobank clients is 6.798.763 (www3). In the first quarter of 2023, Monobank plans to launch a startup called Stereo.

A new wave of creation of neobanks in Ukraine took place in 2019. Two new virtual banks appeared this year – todobank and Sportbank. In 2020, three neobanks entered the market with their financial products: O.Bank – a project of Idea Bank, NEOBANK – a startup from CONKORD, and Izibank, which operates on the platform of TASKOMBANK. If O.Bank and Izibank offer simple classic banking products for individual customers, then NEOBANK is an Internet bank that is primarily focused on serving business entities, although a set of services is also provided for individuals. In 2021, "Bank Vlasnyi Rakhunok", which was created on the basis of BANK VOSTOK and Fozzy Group, began its activities. One of the features of this bank's activity is the accrual of bonuses to cardholders when making payments in the "Fozzy" retail chain (Budina, 2021). The characteristics of domestic neobanks are given in Table 4.

Table 4. Neobanks in Ukraine, 2017–2021

Neobank name	The year of foundation	Banking license	Number of clients	Banking products	Consumer segment
Monobank	2017	UNIVERSAL BANK	3.1 million	Online payments, transfers, deposits, loans, cashback, issuance of cards in bitcoins, purchase of shares on the American stock market (at the stage of implementation)	Individuals individual entrepreneurs

Sportbank	2019	TASCOM-BANK, OXI BANK	240 thousand	Online payments, transfers, deposits, loans, 10% cash-back when buying sportswear and subscriptions to fitness clubs	Individuals
todobank	2019-2022	MEGABANK	-	Online payments, transfers, deposits, loans, payment of utility services without fees, the possibility to use a payment card issued by another bank in the mobile application	Individuals
izibank	2020	TASKOMBANK	100 thousand	Online payments, transfers, deposits, loans, 1% cash-back on all categories of payments	Individuals
O.Bank	2020	Idea Bank	120 thousand	Online payments, deposits, loans, contactless P2P transfers, cash withdrawals from ATMs without fees in the first 4 months of card use.	Individuals
NEOBANK	2020	CONCORD	-	Online payments, transfers, deposits, loans, cash register in the phone, own acquiring, reminders about the payment of interest on the loan and taxes	Individual entrepreneurs, legal entities and individuals
Bank Vlasnyi Rahunok	2021	BANK VOSTOK	-	Online payments, transfers, deposits, loans, crediting of bonuses to a payment card when purchasing in the Fozzy retail chain	Individuals

Source: compiled by the authors based on: Barabash, 2021; Zhumatyi, 2019; Budina, 2021; Hrynkov, 2021; Tartasiuk, 2021, Loshakova, 2020, www3 and www4.

In general, all domestic neobanks provide classic banking services, focusing on the retail segment. However, aware of significant competition from traditional banks and among themselves, neobanks are looking for specific niches for the implementation of banking services: Monobank is starting brokerage activities, Sportbank is targeting at physically active people, NEOBANK is positioning itself as a bank for business and serving individual entrepreneurs, "Bank Vlasnyi Rahunok" serves customers of the Fozzy retail chain, etc. This makes it possible to provide users with high-quality financial services and stimulate digital banking transformation.

CONCLUSIONS

The active growth of the number of Fintech startups in the world and in Ukraine forms a positive dynamic of the digital transformation of the banking sector. The further development of banking is connected with the introduction of open banking standards and remote identification and verification tools by financial market participants. This becomes possible thanks to the adoption by the Parliament of Ukraine of the Law of Ukraine "On Payment Services", which implements EU directives (in particular, PSD 2) and creates conditions for the development of innovative products and services.

The organization of the process of creating a regulatory sandbox in Ukraine, in which 16–20 innovative products per year could be tested, requires special attention of state managers. The functioning of the regulatory sandbox should become an integral element of the stimulating regulation of the financial market, which would be strengthened by state funding programs for the creation of new structural elements of the Fintech ecosystem, namely accelerators and incubators. The appearance of such structural elements will allow for the active development of cooperation between banks and innovative participants, therefore it is worth stimulating joint projects of traditional players of the financial market with Fintech companies. The successful global examples of such collaboration are the English bank, Barclays and its accelerator Rise.

The development of digital banking transformation will also be facilitated by the implementation of the strategic direction "Innovative development" of the Strategy for the Development of the Financial Sector of Ukraine until 2025, which involves performing the following tasks (Strategy of Ukrainian..., 2021):

- implementation and dissemination of artificial intelligence and machine learning tools in finance (AML, cyber security, personalized financial products);
- development of the possibility of customer identification based on biometric data;
- legal regulation of the market of digital assets;
- implementation of international standards in the field of financial services.

In addition, in accordance with the Strategy for the development of Fintech in Ukraine until 2025, the efforts of all branches of government should be focused on creating favorable opportunities for financial market participants (Develop strategy Fintech..., 2020):

- adopt and implement progressive policy and regulation;
- attract investments and invest transparently, with legal protection of investors' rights;

- form demand for transformed financial services and products;
- have access to talents and highly qualified specialists.

Since the demand for digital financial services from users side is constantly growing, it is necessary to detail the described above strategic directions from the point of view of protecting the rights of consumers of financial services and increasing the digital and financial literacy of the population.

In addition, the success of the digital transformation of the banking sector and neobanking will be facilitated by the establishment of a loyal attitude of the state financial regulator to the latest digital technological processes in banking and the introduction of a preferential taxation system for innovative companies in the field of Fintech.

BIBLIOGRAPHY

- Bank Roadmap – research on the digital transformation of Ukrainian banks (2020), The Ukrainian Association of Fintech and Innovation Companies, <https://fintechua.org/en/news/bankroadmap> [Accessed 28.01.2023]
- Barabash Yu (2021), *Ukrainian neobanks: key players and potential niches for development*, NV Business, <https://biz.nv.ua/ukr/experts/monobank-izibank-abo-sportbank-ukogo-keshbek-bilshe-novini-ukrajini-50138385.html> [Accessed 15.01.2023]
- Budina L. (2021), Fozzy Group together with Bank Vostok launch the neobank «Bank Own account», <https://retailers.ua/news/menedjment/12038-fozzy-group-sovmestnos-bankom-vostok-zapuskayut-onlayn-bank-vlasniy-rahunok> [Accessed 15.01.2023]
- Develop strategy Fintech 2025 (2020), National Bank of Ukraine, <https://bank.gov.ua/ua/files/DDWIAwXTdqjDClp> [Accessed 29.01.2023]
- Fintechicolor: The New Picture in Finance (2023), McKinsey&Company. [fintechicolor-the-new-picture-in-finance.ashx \(mckinsey.com\)](https://www.mckinsey.com/industries/fintech/color-the-new-picture-in-finance) [Accessed 21.01.2023]
- Hrynkov D. (2021), How many neo-banks does Ukraine need? <https://minfin.com.ua/ua/> [Accessed 15.01.2023]
- Investments into Fintech companies globally 2010-2022 (2023), <https://www.statista.com/statistics/719385/investments-into-fintech-companies-globally/> [Accessed 29.01.2023]
- Loshakova N. (2020), *The market is large enough to have several neobanks in Ukraine – Anna Tigipko, Izibank*, News portal of Ukraine Delo.ua, <https://delo.ua/business/rinok-dostatno-velikij-i-vilnij-schob-v-ukrajini-376810/> [Accessed 17.01.2023]
- Mazaraki A., Volosovych S. (2018), *Fintech in the system of social transformations*, Herald of Kyiv National University of Trade and Economics, no 2, pp. 5-18, <http://journals.knute.edu.ua/scientia-fructuosa/article/view/676/607> [Accessed 29.01.2023]
- Number of Fintech startups worldwide from 2018 to 2021, by region (2023), <https://www.statista.com/statistics/893954/number-fintech-startups-by-region/> [Accessed 21.01.2023]
- Skinner Chris (2018), *Digital Human: The Fourth Revolution of Humanity Includes Everyone*, Marshall Cavendish International (Asia) Private Limited.

- Strategy of Ukrainian Financial Sector Development until 2025 (2021), National Bank of Ukraine, https://bank.gov.ua/admin_uploads/article/Strategy_FS_2025.pdf?v=4 [Accessed 29.01.2023]
- Tartasiuk S. (2021), Can financial companies turn into neobanks? <https://min-fin.com.ua/ua/2021/07/16/68068914/> [Accessed 17.01.2023]
- The Basel Committee on Banking Supervision (2017), Consultative Document: Sound Practices: Implications of Fintech Developments for Banks and Bank Supervisors, Bank for International Settlements, <https://www.bis.org/bcbs/publ/d415.pdf> [Accessed 29.01.2023]
- Ukrainian Fintech Catalog (2021), *The Ukrainian Association of Fintech and Innovation Companies*, <https://fintechua.org/market-map> [Accessed 25.01.2023]
- Zavolokina L., Dolata M. and Schwabe G. (2016), *The Fintech phenomenon: antecedents of financial innovation perceived by the popular press*, <https://jfin-swufe.springeropen.com/articles/10.1186/s40854-016-0036-7> [Accessed 12.01.2023]
- Zhumatyi A. (2019), *Sportbank is another mobile bank*, <https://finance.ua/ua/cards/sport-bank> [Accessed 15.01.2023]
- (www1) *What is Fintech?* <https://www.whartonfintech.org> [Accessed 25.01.2023]
- (www2) *Financial technologies in the world and Ukraine*, <http://groshi-v-kredit.org.ua/fi-nansovi-tehnolohiji-v-sviti-ta-ukrajini.html> [Accessed 25.01.2023]
- (www3) Monobank, *Official website*: <https://www.monobank.com.ua> [Accessed 10.01.2023]
- (www4) Todobank, *Official website*: <https://todobank.ua> [Accessed 23.01.2023]
- (www5) Oschadbank, *Official website*: <https://www.oschadbank.ua/mob-oschad> [Accessed 15.01.2023]
- (www6) UKRSIBBANK, *Official website*: <https://ukrsibbank.com/private-individuals/online-services/> [Accessed 17.01.2023]
- (www7) OTP Bank, *Official website*: <https://www.otpbank.com.ua/privateclients/online-service/> [Accessed 22.01.2023]
- (www8) SENSE BANK, *Official website*: <https://sensebank.com.ua/> [Accessed 21.01.2023]
- (www9) PrivatBank, *Official website*: <https://privatbank.ua/> [Accessed 13.01.2023]
- (www10) Raiffeisen Bank, *Official website*: <https://raiffeisen.ua/privatnim-oseb-am/online-servisi> [Accessed 24.01.2023]
- (www11) FUIB, *Official website*: <https://www.digital.pumb.ua/internet-banking> [Accessed 19.01.2023]
- (www12) *Fintech and Banks: How Can the Banking Industry Respond to the Threat of Disruption?* <https://www.toptal.com/finance/investment-banking-freelancer/Fintech-and-banks> [Accessed 25.01.2023]

CYFROWA TRANSFORMACJA BANKOWOŚCI POPRZEZ WSPÓŁPRACĘ ZE STARTUPAMI FINTECH W UKRAINIE

Streszczenie

Cel artykułu/hipoteza: Identyfikowanie specyfiki startupów Fintech, śledzenie trendów i perspektyw współpracy między klasycznymi bankami a firmami Fintech, a także badanie działalności neobanków i formułowanie propozycji poprawy ekosystemu Fintech w Ukrainie w celu świadczenia wysokiej jakości cyfrowych usług finansowych dla różnych rodzajów konsumentów.

Metodyka: Dla badania materiałów wyspecjalizowanych agencji analitycznych, oficjalnych stron internetowych banków zagranicznych i krajowych, strategii finansowych państwa oraz literatury naukowej zastosowano metody analizy statystycznej, analogii, syntezy i uogólnienia.

Wyniki/Rezultaty badania: Aktywny wzrost liczby *startupów* Fintech na świecie i w Ukrainie tworzy pozytywną dynamikę cyfrowej transformacji sektora bankowego. Współpraca banków i Fintechów pozwala na wykorzystanie nowych, innowacyjnych produktów w bankowości, takich jak sztuczna inteligencja, robo-konsultacje, blockchain, kryptowaluty, Internet rzeczy, wirtualna i rozszerzona rzeczywistość. W celu dalszej cyfrowej transformacji bankowości w Ukrainie uczestnicy rynku finansowego muszą wdrożyć międzynarodowe standardy otwartej bankowości oraz narzędzia do zdalnej identyfikacji i weryfikacji klientów, aktywnie wprowadzać narzędzia sztucznej inteligencji i uczenia maszynowego do finansów oraz budować ekosystem Fintech.

Słowa kluczowe: cyfrowa transformacja bankowości, startupy Fintech, cyfrowe produkty finansowe, neobanki, piaskownica regulacyjna.

JEL Class: G21, G24, N24, O32.

Zakończenie recenzji/ End of review: 15.03.2023

Przyjęto/Accepted: 20.03.2023

Opublikowano/Published: 27.03.2023