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FINAL QUALIFYING PAPER

on the topic:

« Financial technologies in the banking sector»

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Content

INTRODUCTION

Relevance. The extent to which the payment industry has changed in just ten years is unlimited. We have witnessed the emergence of new currencies, technologies, business models and forms of transactions.

The most significant change was the formation of new players - non-banking financial institutions, which bring a lot of innovation and have changed the structure of the market. In the wake of these developments, innovative and savvy new players have emerged - FinTech and digital ecosystems. They create more competition for existing banks. However, without access to a customer base, financial industry experience, customer trust, and a robust global infrastructure, these entities can only operate in isolation so far.

Investigating the world market of both banking services and financial technologies, as well as our domestic Ukrainian market, we will try to give a qualitative assessment of what is happening in these areas now, what are their prospects, advantages and disadvantages. We will see the opinions of recognized professionals and their attitude to the development of FinTech.

We have faced radical changes in recent years, both in terms of banking and in that technology is being implemented and deployed to bring closer to customers, to improve process efficiency and more robust regulatory compliance. Ordinary working models are quickly giving way to new technologies. Some of the traditionally successful financial structures face existential problems now.

One of the problems to be studied is the possibility of partnerships between these entities and banks. The ability to do business together without affecting everyone's work.

This topic is of particular relevance in the current development of the banking industry and the simultaneous growth of the virtual market.

Many well-known scholars of economic science have made suggestions for the development of financial technologies: Vasyurenko O, Goshal S., Dranove D., Emery D., Merton R., Mintzberg G., Solovyov V., Tees D., White L., Fedulova L. , Finnerty J., and other equally well-known scientists. Their research has made a significant impact on the comprehension of the essence of the problems in developing a strategy for the development of financial innovative technologies.

The purpose of graduation work. The main purpose of this work is to identify the main threats and opportunities of banking business under the influence of rapid development of financial technologies, research of the world market, both banking and financial, as well as opportunities for cooperation and outlining the main trends of partnership development. Recognizing the potential impact of the digital revolution, we will focus on the opportunities that will emerge in the banking sector as a result of the digital wave.

Tasks of work:

- Consider the theoretical and methodological foundations of the use of financial technologies in the banking sector
- Analyze the development of financial technologies in the banking sector in Ukraine
- Investigate foreign experience of using financial technologies in the banking sector
- Find out the future of financial technology in the banking sector
- To offer possible directions of cooperation between banks and FinTech companies
- Generate a bank digital strategy

The subject of research is the processes of formation and development of banking activities under the influence of financial technologies.

The subject of research is financial technology as a tool to support financial services.

Research information base: used data from the official site of the NBU, monographs and scientific articles of domestic and foreign scientists, Internet sources

PART 1.
THEORETICAL AND METHODOLOGICAL BASIS OF THE USE OF FINANCIAL TECHNOLOGIES IN THE BANKING SECTOR

Banking Innovative Information Technologies are technologies associated with the transformation of research and development, other scientific and technological developments into new or improved banking products and services, into an updated or improved banking technology process used in practice, or a new approach to implementation products and services, their adaptation to the actual requirements of customers.

The use of modern information technology gives banks the opportunity not only to accelerate customer service, but also to achieve a fundamentally new quality of doing business. Innovative information technologies allow banking institutions to increase their competitiveness and influence the desire of customers to use new products and services.

Today, the banking sector is one of the most favorable areas for the implementation of modern information technology. Almost all tasks that occur in the process of the bank's work are subject to automation. Rapid processing of information flows is one of the main factors influencing management decisions and the efficiency of banking activities in general. Banks have sufficient financial capacity to implement state-of-the-art equipment. In addition, information technology has allowed to increase the number and mobility of services through the emergence of new products - electronic means of payment [33].

Banking information technology is divided into two blocks: bank management technology and customer service technology [37].

At present, the following main types of innovative information technologies are the most widespread in the banking sector of Ukraine:

1) **Mobile banking** - allows most transactions with own accounts, it opens a wide range of services, in particular, account balances, payments, transfers of funds, loans from one individual to another, etc. According to experts, the mobile phone will

replace the plastic card as a payment method in a few years. It is with the help of NFC chips that are built into the phone that the customer will be identified.

2) **Internet banking** is a key innovation that is offered to clients by most banks today. This opens up great opportunities for banks, which is why experts place a major emphasis on the development of remote banking;

3) **"zone 24"** - with the help of this technology the client can independently manage their accounts, get the advice of a call center specialist, leave a request for a service, sign up for servicing in any branch of the bank. Almost every "zone 24" is equipped with an ATM, cash replenishment module CashIn, telephone access to the information service. This area of information technology continues to improve;

4) **POS-terminals in trading networks**. They have not yet led to a global revolution in the Ukrainian cashless space, but bankers believe in the development of this technology in the next five years [20]. The new direction of acquiring is mobile acquiring.

The use of innovative information technologies by banks is aimed at profiting from the commercialization of modern knowledge, technologies and equipment. The result of the introduction of innovative information technology is new products and services or products and services with new qualities. Modern information technologies help banks to create innovative programs and projects; new intellectual products; modern new technological equipment and processes; innovative mechanisms of market formation of modern banking products and services.

The emergence of banking innovations were due to the continuous movement of entrepreneurial thought, the desire to bypass competitors, information coming in, about banking innovations from foreign countries, as well as periodically emerging crises in the banking sector (general or private), which is an incentive to react aimed at improving the financial stability of the bank [19]. Innovation in the banking sector is the end result of a bank's innovation activity, which has been implemented as a new or improved banking product or service that is implemented in practice [7; 8]. Thus, under current conditions, innovation is one of the most effective tools in competition.

The concept of "innovation" can be applied to all innovations in all spheres of the bank's operation, which has a certain positive economic or strategic effect, such as the increase of the client base of the bank, increase of market share, reduction of expenses for carrying out of any type of operations, etc., or create the conditions for the above.

A number of reasons should be identified that necessitate the introduction of financial technology in banking, including:

- the need to ensure profitable activities of the bank, not only in the short but also in the long run;

- the ability of a banking institution to generate new revenue streams through the introduction of innovative products, high quality customer service, which is ensured by the implementation of innovative solutions that distinguishes the bank from its competitors;

- Improving operational efficiency, which in modern conditions can no longer be the result of only savings on resources, but requires the introduction of process innovations, which helps to reduce the costs of performing certain operations while improving the quality of service;

- compliance by banks with the requirements of state regulation of banking activities aimed at ensuring the stable and reliable functioning of the banking system by controlling the risks taken by commercial banks as financial intermediaries;

- the desire of banking institutions to create and maintain the image of a modern dynamic institute, which is sensitive to changing needs of clients, interested in solving their financial problems, provides comfortable and affordable service;

- cardinal shifts in the structure and nature of the needs of consumers of financial services, which occur in recent decades [6,7,8].

The evolution of the banking system towards a remote banking model is driven by a number of objective features of the economic and social environment in which banks exist, and, first of all, by changes in people's lifestyles, automation of banking operations, increased competition, penetration of new information and communication technologies, that fundamentally change the face of modern financial institutions, the ways they communicate with customers, the channels of sale of banking services. All this is a reflection of the innovative process that is constantly taking place in banks and allows them to differentiate themselves in the financial market in the conditions of fierce competition and dynamic macroeconomic situation in order to ensure business value growth.

Therefore, the analysis of various factors influencing the innovation process in banking institutions is quite relevant from both theoretical and practical points of view, as it allows to increase the validity of the choice and effectiveness of financial institutions' innovation implementation.

The analysis of foreign experience of banking institutions revealed that the following innovative changes are taking place:

- "multichannel activity" in combination of new and traditional technologies and tools: self-service, remote service, Internet usage, individual consultations, telephone centers;

- virtual banking and financial technologies: bank account management, cash payments, electronic signature, conclusion of contracts, financial organizations (exchanges, banks);

- branching and organizational division of the bank into three elements: distribution of services, production part and portfolio bank, optimization of the banking network: segmentation, changes in branches and branch network;

- comprehensive use of new information and communication technologies for electronic and mixed (traditional and new) marketing (the client selects the form of service);

- new banking products (services) based on new technologies, new self-service machines (mono- and multifunctional, information) [21, 26].

Taking into account the above, among the innovations we have to pay particular attention on financial instruments that are rotating in the money market. They differ from the usual innovative products by the specific process of creation and the features of the life cycle. According to the Classification of the Bank of International Settlements, proposed in 1986, financial innovations are subdivided into price or credit risk transfer, with increased liquidity, aimed at increasing borrowing opportunities and increasing equity.

To ensure a more accurate positioning of the bank in the financial market in accordance with the chosen development strategy, product innovation itself should be divided into those related to the traditional activities of banks as financial intermediaries (deposit, credit, settlement), and those that reflect their penetration into new areas of financial activity.

Among market innovations, in addition to the introduction of goods into new markets, there is certainly a need to distinguish innovations in the sales channels and marketing communications of a commercial bank, the value and dynamics of changes of which have increased significantly in recent years.

The name of the last group of innovations - insurance - reflects their role in the process of banking production: to improve the conditions and mechanisms of banks to fulfill their main function in society, which is to meet the needs of economic entities in various financial services [1]. This group of innovations also needs to be specified, as it brings together rather heterogeneous processes in content. It is advisable to highlight:

- technological innovations related to the development of the technical capabilities of the bank;

- Process innovations that reflect improvements in banking business processes within the framework of Total Quality Management (TQM) programs;

- service innovations, which are to develop new approaches to customer service;

- managerial innovations concerning changes in the organizational structure of the bank, mechanisms of planning, control, incentives, etc .;

- conceptual innovations that consist in changing the model and strategy of doing business [6,32].

Very often, domestic banks are faced with the problem of choosing between two options for obtaining information technology: to produce independently or use already existing ones (for example, developed by banks operating in foreign markets) as a means of increasing competitiveness in the banking services market.

Internet acquiring, as a component of e-commerce, is the activity of a credit institution (bank of the acquirer), which involves settling with e-commerce organizations on transactions performed using bank cards on the Internet. Today, only a few commercial banks in Ukraine can offer elements of this service.

There is no shortage of IT specialists in Ukrainian banks capable of developing relevant software, but in Ukraine there is no widespread demand for such a service, as the target audience is not yet ready to actively use Internet technologies in carrying out their billing operations, and the accounting system of enterprises is still unable to adapt to the new requirements.

Internet Banking is a system of client-bank relationships characterized by a personal approach to the client, the complexity of the services provided, and high-quality service. The ideology of Internet Banking is based on the principles of guaranteeing the client maximum confidentiality of all services provided to him (from the point of view of the current legislation of the country), the possibility of access to the top management of the bank, individual approach, the highest quality and level of service, orientation to long-term business cooperation, financial planning, ability to take into account possible client requests.

In accordance with the principles of Internet Banking, in addition to classic services, banks also offer a range of additional services.

Additionally, banks can provide a range of non-financial services to clients.

Mostly these are services that provide the customer with additional service, additional privileges (discount programs, access to VIP-halls, private business clubs, etc.). In addition, these services may offer various programs for investing in non-financial assets: real estate, art, precious metals.

Therefore, the introduction of innovative financial technologies is the highest priority for the further development of banking institutions and gaining competitive advantages in the market of financial and credit services of Ukraine. The reasons for the need for innovations are: increase of the bank's profitability; generating new revenue streams through the introduction of high quality innovative products;

improving operational efficiency; formation of a modern image of a banking institution.

PART 2.
ANALYSIS OF FINANCIAL TECHNOLOGIES IN THE BANKING SECTOR
2.1 The state of the financial technology market in Ukraine

The contamination of digital technologies and financial services has led to the emergence of a new phenomenon, known as financial technology or FinTech. The activities of FinTech companies are related to the development of innovative solutions or additions to products, processes and business models of providing and promoting financial services, the creation of new generation technologies in the field of payments, P2P transactions, alternative credits and cryptocurrencies. The active penetration of financial technologies in various areas of banking and parabank business has led to a change in the trajectory of financial services market development, opening up new opportunities and, at the same time, provoking challenges for retrograde business concepts.

In recent years, the FinTech industry has demonstrated a galloping pace of development. According to Forbes, global investments in financial technology more than tripled from $ 930 million to $ 12 billion between 2008 and 2014, and doubled from 2014 to 2018, reaching $ 27.4 billion [61, 59]. Pricewaterhouse Coopers studies have found that by the end of 2020, FinTech can acquire 28% of the banking and payment services markets and up to 22% of the insurance, asset and capital markets [54]. However, in the course of further polls, British financial institutions expressed concern that these trends could lead to a loss of 40% of their profits. Citigroup estimates that due to the development of FinTech by 2025, banks will have to cut staff by about 30% compared to 2015 [25].

Interest in FinTech companies is determined by their features and advantages. By identifying the weaknesses of banks and other classic financial institutions, FinTech companies offer customers improved services and original solutions, focusing on their simplicity, high speed, transparency and accessibility. In addition, FinTech companies' products help reduce fraud risks and help to improve consumer financial behavior.

The dynamic development of the FinTech industry affects the financial services market of Ukraine. According to a report by FinTech in Ukraine, prepared by

UNIT.City Innovation Park with the support of the USAID Financial Sector Transformation Project, there are more than 80 FinTech companies in Ukraine, of which 84% are already operating and 16% remain in the formation stage. . The active creation of new startups in the FinTech industry in Ukraine has taken place since the beginning of 2015, in particular, 60% of the existing companies were established in the last three years [36].

Among the features of the domestic FinTech market you should pay attention to the following:

- The founders of FinTech startups are mainly individuals with experience in the IT sphere (65%) and finance (30%), with 70% of top executives being former employees of banks, including Privatbank, FUIB, Raiffeisen Bank Aval, AlfaBank;

- the overwhelming majority of FinTech providers (56%) are engaged in the market segment of payments between legal entities (B2B), of which 37.5% are aimed at servicing small and medium-sized enterprises and 62.5% are focused on large corporate clients;

- FinTech companies' main source of income is various types of commissions (71.5%);

- FinTech companies have limited access to capital and alternative sources of finance - 45% of them are funded by founders, 49% by external investors, and only 5% by capitalization of profits.

Despite the fact that the FinTech domestic industry is in its infancy, it already has a significant impact on the financial ecosystem of Ukraine. As FinTech products help to improve the efficiency of financial services, they provide financial services consumers with the necessary information and analytical materials and contribute to financial inclusivity, in the face of growing distrust of the banking system, which is fundamental to the Ukrainian financial market, and intensify the processes of deintermediation. Deintermediation involves the exclusion of financial intermediaries from agreements between borrowers and creditors or buyers and sellers of financial instruments, which leads to a reduction in the income of financial institutions from the provision of basic intermediation as well as additional (information, advisory, analytical) services. Foreign experience shows that such changes in the economy lead to a reorientation of financial institutions from customer service to investment activities in the stock market. Given the current problems of the Ukrainian securities market and the need for expanded financing of FinTech startups, a promising direction for the development of the financial services market is the promotion of projects based on the collaboration of banks and parabank financial institutions with FinTech providers.

Since September 2019, FacePay24 biometric payment technology for retail retailers has been operating in Ukraine, which was implemented by Privatbank with the support of Visa.

Currently, there are only four points where it is possible to pay for purchases with this innovation.

The launch of the service was made possible by the integration of Visa payment methods, t Amazon Web Services Technologies with the updated Privat24 mobile banking platform. Privatbank states that participation in the projects of the most innovative retail networks has allowed Ukraine to launch FacePay one of the first in Europe.

In order to use this technology at payment, it is necessary to make certain manipulations, namely:

- you need to install the Privat24 app on your smartphone;
- activate FacePay24 payment;
- make three selfies from different angles;
- Attach a Visa bank card to your face image.

You can then pay for your purchases by looking at the tablet's dedicated camera near the cash desk. FacePay24 uses Amazon Rekognition's automated facial recognition system and allows you to scale this service to just about any outlet. However, it should be noted that the full implementation of this technology involves the adoption of innovation at all points of sale, which, of course, requires significant financial costs. That is why you should not expect the opportunity to make full use of technology.

Another innovation is mobile acquiring technology, which allows you to accept payment for a product or service by bank card using your smartphone or tablet and an M-POS terminal connected to them.

Mobile POS terminals can be connected to a smartphone or tablet based on Apple iOS or Android, as well as to a personal computer. There are no specific restrictions on accepting bank cards with mobile POS terminals. Types and types of payment cards may be limited by both the acquiring bank (availability of PS certifications) and the possibilities of the mobile POS-terminal (receiving magnetic stripe and / or chip cards, contactless cards).

Currently, a very limited number of banks are offered this technology, one of which is Alfa Bank Ukraine. It is worth noting that this technology, along with trading and online acquiring, has its pros and cons (Table 2.1.)

Table 2.1

Comparative analysis of the benefits of merchant acquiring and mobile acquiring

Criteria	Merchant acquiring	mobile acquiring
It does not require pre-installation at the point of sale	-	+
No binding to the place of operation	-	+
Does not require the device to be rented with the bank	-	+
You can pay without PayPass PayWave technology	+	-
Does not require additional manipulation from the client	+	-

Source: created and compiled by the author

Notwithstanding the positives of using this technology, it should be noted that the use of this technology by the client involves certain manipulations, namely: installing an application for a bank providing this mobile acquiring, if the client does not have a card of this bank, then it is possible to install app store "Auchan"; tie the map. If the client does not have an nfc system on his / her phone, then he / she in principle is not able to pay without contact. Therefore, these disadvantages override the usability of the enterprise and can not be used in full and large scale.

To illustrate importance of financial technologies we chose correlation regression analysis. We analyzed dependence between net profit and two dependable factors – user's number of mobile app for internet banking and banking capital (Table 2.2)

Table 2.2

Net Profit, number of users and total capital of Privatbank 2017-2019

	прибуток	Кількість користувачів моб додатком	Всього капіталу
2017	-23000000,00	5000,00	-27768,00
2018	11600000,00	8100,00	23291,00
2019	25819610,00	9800,00	31012,00

The results of the calculations of the regression coefficients show that the multivariate linear regression model has the form

$$y = -52987719 + 7299x1 + 234{,}4x2$$

Correlation between net profit and two variable (number of app users and capital) is shown on chart 2.1 and chart 2.2

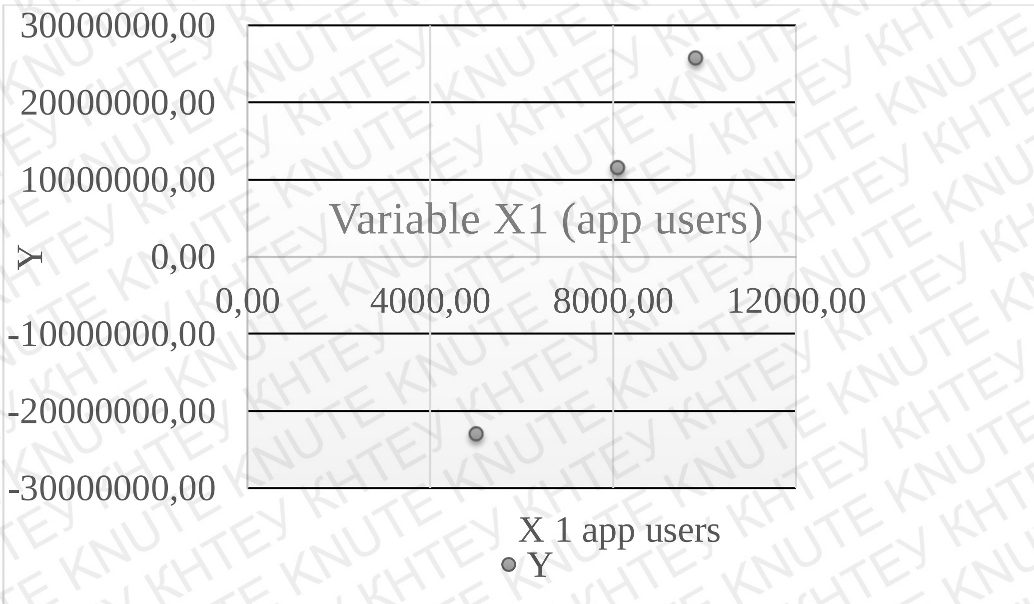

Chart 2.1 Impact of user number on profit

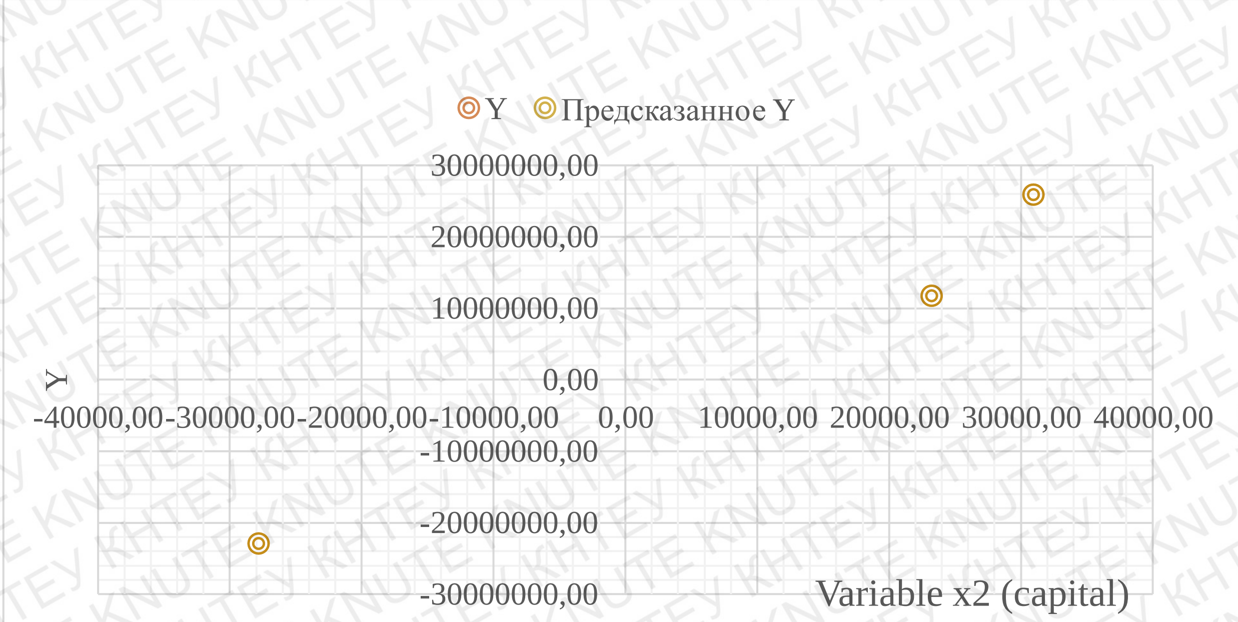

Chart 2.2 Impact of capital on net profit

The coefficient R=1 showed that we have strong correlation between factors

The results revealed that the second factor (capital) is considered the most important factor to banks' performance. The first factor (number of users) is considered less important factor that influences commercial banks' performance. Our results suggest that Privatbank should concentrate on the second factor mostly, but also pay attention on the attraction of new app ussers in order to improve their performance and compete efficiently with other commercial banks

So, nowadays, a lot of financial technologies are being started and developed in Ukraine. The banking sector, in the face of not only commercial banks but also state-owned ones, is actively following the trends of international financial technologies, but the implementation of technologies does not guarantee the successful use and distribution between enterprises that use banking services. For example, the introduction of Facepay technology does not predict the spread and active use of technology in the near future. The same goes for mobile acquiring. That is why the future of financial technology in the banking sector is ambiguous and requires a "listening" to international experience.

2.2. Foreign experience in the use of financial technologies in the banking sector

One of the promising areas of financial market development in the world today is the emergence of a segment of financial technologies, products and service solutions, called Fintech. Within this segment, traditional and emerging financial market players are offered new solutions and technologies that optimize business processes, products and services in the banking industry.

Not surprisingly, the main trends in the development of financial and technological direction are such positions as customer focus, optimization of costs for implementation and maintenance, lack of templates in the creation of the latest financial technologies, availability of round-the-clock access to segment services, improvement of financial services, coverage of the audience , which may not be available under traditional terms and conditions, under traditional financial and credit structures.

The study of individual Fintech markets of specific countries is only grounded in the preliminary consideration of a holistic picture of global properties in the specified segment.

According to a study conducted and published by Ernst & Young in 2016, based on an analysis of factors that affect the development of the Fintech segment, such as technical and entrepreneurial capabilities, availability of capital, favorable government, and demand for products and services segment, the following rating was formed (Table 2.2).

Table 2.2.

Ranking of the leading countries by the factors influencing the development of financial technologies

Region	Technical and business tools	Capital	Governmental policy	Demand	Total
UK	2	3	1	3	9
California	1	1	6	2	10
New York	3	2	7	1	13

Continuation of Table 2.2

Singapore	4	7	2	6	19
Germany	6	4	5	5	20
Australia	5	5	3	7	20
Hong Kong	7	6	4	4	21

Source: created and compiled by the author

New York and California function as separate Centers of the Fintech segment, with some cooperation between them. Thus, if you perform the US assessment on a consolidated basis, the change in points will be significant. The analysis also highlights a significant gap between the first three regions and the rest of the group.

Focusing on the development of the Fintech segment in the US, we can distinguish the following features:

In the US, there are 14 of the 31 major unicorn fintechs in the world. Unicorns include those companies whose capitalization in a relatively short time span amounted to more than $ 1 billion. USA.

Centers for financial technology development in the US are California and New York. The benefits of these regions include a huge intellectual resource in financial technology. California has the largest number of Fintech employees. The main platform for the development of the financial technology industry in California is Silicon Valley, which has a favorable climate for the development of startups and their investment through tax benefits for businesses in the United States since 2014.

In New York, there is an accelerator for innovative business - Startupbootcamp, which gives startups the opportunity to develop innovative financial technologies. There is also an online FinTech Studios platform to assist businesses in promoting their innovative cloud-based Fintech products and services.

The Canadian Fintech segment has its own peculiarities. Various companies in this segment are already operating in the market, despite the dominant position of the five largest banks in the country. Using new technologies, startups can compete in the areas of payment, investment and lending. Such competition gives consumers more choice, which has a positive effect on the overall financial climate. Given that financial services accounted for about 11.5% of Canada's GDP in 2018 [18], this is an important segment that requires special attention.

Easy to create and operate startups; developed financial services infrastructure; susceptibility to blockchain technologies and other latest Fintech solutions; flexible cooperation between the Fintech segment and Canadian financial institutions; the presence of a favorable regulatory regime in relation to bitcoin and blockchain technologies.

In addition, international venture capital and investment firms view the country as an excellent base for investing in financial and technology start-ups. Investments in Fintech companies in the US in 2016 amounted to $ 4.27 billion, down 30% from 2015 [4]. In the first half of 2019, investments in US Fintech companies grew to $ 14.2 billion. Investors have been investing in startups in emerging Fintech segments such as regtech and blockchain. In the first half of 2019, the payments and credit sector holds the lead, remaining one of Fintech's most mature subsectors, with most of the investment focused on late-stage companies.

Another trend today is the investment of traditional banks in digital banking. JP Morgan has announced the successful implementation of a digital bank pilot project and intends to launch a digital bank version nationally. Citibank also announced the introduction of a digital bank. More than 20 new start-ups have been created that do not have a specific business plan or purpose, more than 25% of these companies intend to use their capabilities in the fintech segment [64].

The use of the latest financial and technological services to consumers is one of the most important indicators of the possible development of this segment in the future. The analysis of the data obtained from Ernst & Young's research reveals the following positive trends in the development of the Fintech segment based on the 2015-2019 comparative analysis (Table 2.3).

Table 2.3

Segment Sectors of fintech that are developing *[46]*

Financial technology sector segment	Consumption of the sector by consumers in 2015,%	Consumption of the sector by consumers in 2019,%	Changes, %
Money transfers	18	52	34
Investment and Saving	17	20	3
Financial planning	8	10	2
Loans	6	12	6

Loan sectors show the highest growth. The study was conducted from 20 countries: Australia, Belgium, Luxembourg, Brazil, Canada, China, France, Germany, Hong Kong, India, Ireland, Japan, Mexico, Netherlands, Singapore, South Africa, South Korea, Spain, Switzerland, United Kingdom, United Kingdom . We present a comparison of financial technology implementation indicators in 2015 and 2019 with the leading countries (Table 2.4).

Table 2.4

Implementation of Financial Technologies in Leadership Countries, 2015 and 2019 *[46]*

Country	2015 p.,%	2019 p.,%	Increase, %
UK	14	40	+26
USA	17	33	+16
Hong Kong	29	32	+3
Singapore	15	23	+8
Australia	13	17	+4
Canada	8	18	+10

As we can see from the table, the UK, US and Canada are in the top three countries with the highest growth, namely indicators of the introduction of financial technologies in these countries in three years showed an increase of 26 units, 16 units. and 10 units, which once again confirms the success of the fintech segment in the markets of these countries.

The future of the fintech segment is determined by the following trends in 2019: the growth of investments in this segment in all regions of the world compared to the same previous period; expanding the range of innovative technologies; increasing the diversity of investors beyond the big banks.

To sum up, it can be noted that both the global financial market and the financial markets of individual countries are undergoing a global transformation, which is a fundamental change in the regulation, provision and consumption of financial services, which undoubtedly affects the amount of services consumed by the bank's customers

PART 3.

financial technology development in the banking sector

3.1. The future of financial technology in the banking sector

The Big Four Audit Company KPMG has released the findings of its Digital Future of Digital banking study. Company experts have tried to predict how in the next 10 years the relationship between banks and consumers will change under the influence of the latest technologies.

The main conclusion of the study is that banks will try to personalize their services as much as possible for each client. To this end, financial institutions will collect more and more data about each person's life and analyze it using artificial intelligence.

The banking industry in 2030 will look very different, the researchers believe. For example, thanks to pre-existing technologies, banks are often aware of the customer's wishes even more than he or she is. This makes it possible to advertise and provide the services that the client needs right now. This allows banks to adapt more flexibly to customer needs. Consumers who lack the time, knowledge, competencies, will choose an autonomous banking experience, that is, transfer more power to the bank in the field of personal finance management. At the same time, the bank is adapting its services to customers who want greater involvement in managing their finances.

Given the rapid breakthrough in financial technology in the banking sector, we can assume that there will be more changes in the banking industry over the next decade than in the last 100 years. This is due not only to technological progress, but also to demographic, socio-economic, regulatory and environmental changes.

Therefore, the efforts of the banks of the future will be focused on improving the financial well-being of customers and will be based on key aspects in achieving this goal.

1. Data. The amount of data generated by consumers will continue to increase as we go about everyday objects and even ourselves will connect to the Internet. The weight of data will grow exponentially as different datasets merge to provide a comprehensive 360-degree history of our lives. Business models. The widespread availability of consumer data will facilitate the emergence of new members of the banking system, such as neo-banking and top-level banking platforms. At the same time, leading banks are exploring opportunities related to their core offerings, expanding their business models.

2. Regulation. These major changes will require governments and regulators to develop completely new ways of identifying and managing risks in order to regulate the activities of a wider range of actors.

3. Technology. Already, technologies that will have the greatest impact on the financial services industry over the next 10-15 years can be anticipated. These are artificial intelligence, blockchain, biometrics, 5G, cloud computing, Internet of Things, AR / VR and quantum computing.

Technologies make banking more personalized and ubiquitous for all devices and applications. This is made possible by a number of innovations that are gaining ground and will change the entire banking industry after they emerge. They will dramatically change banks' channels of communication with customers, the range of services, and the role of banks in everyday life in general.

The technology of payment by means of holding a plastic card at POS-terminal or even making mobile payments will be replaced by payment technology by a protected voice team or even the whole expression of a person (as we know from the autumn of 2019 this technology was launched by PrivatBank)

Big data, machine learning, and AI will allow banks to move from a conventional financial services tool to a more proactive role in helping them. These optimization services will be able to extend to all aspects of customer life if they wish.

3. The further development of artificial intelligence.

It will have a significant impact on the financial experience of consumers over the next decade. This will be most noticeable in the area of mass personalization of financial services and assistance to clients who overcome low levels of financial literacy. Algorithms and data models will be built around optimizing clients' financial decisions and will often stimulate positive people behavior by "pushing" them to certain actions that will have a positive financial result.

4. Increased trust

The banks of the future are already questioning their position as a provider of financial services only. Banks go far beyond money and integrate with the wider ecosystem of alternative services. For example, the ability to buy train tickets, pay utility bills, buy a lottery ticket, and more.

After spreading trust in banks, customers will be confident that the automated decisions made on their behalf can be traced, compatible and transparent to them. This will help consumers more easily manage their increasingly complex and fragmented lives.

5. "Super Application"

Creating a "super-application" or virtual service that can combine digital proximity, privacy, access control and access to products and services already allows authors to keep clients in their ecosystems for almost the entire duration of their business while keeping away from their competitors.

6. Payments

Rewards, partnerships, and loyalty points can be key differences between payment products. Special payment solutions will automatically tell customers which payment method to choose - points, bonuses, cash - to get the most out of your purchase.

You can simply go to your local coffee shop or supermarket, order goods and leave - all without discussing payment or cost options. This can be done because payment terminals will be replaced by integrated real-time payment transfer solutions.

Financial technology will help make customer credit scores much more holistic and will be updated in real time, including information such as lifestyle habits, shopping history and forecast analytics.

7. Cybersecurity.

In the coming years, cyber security can be built on the basis of predicted enterprise-wide analytics, security vulnerabilities and threat recognition, and the center of the cyber security system. The introduction of financial technologies will allow us to rethink the security system vulnerability assessment on the Internet and configure it in real time without letting hackers exploit the vulnerabilities.

In addition, to store digital personal and biometric data, people may stop using tokens, mobile phones or smart watches for the benefit of a wide variety of personal items, such as interactive glasses, rings, earrings or cufflinks.

Blockchain will be able to address the issue of customer data privacy through distributed data warehouses, allowing people to fully control their private data and share it with third parties only when they have agreed.

8. Digital currencies

The rise of digital currencies and tokens, which will be released by central banks and corporate players, will further accelerate the transformation of products and services. This digitization of money will bring greater financial inclusion for the planet's population as a whole, greater transparency, and better processing and settlement of transactions in real time.

We will also see that the next generation of digital currencies is eliminating a number of intermediaries involved in cross-border payments and currency exchange, providing consumers with value and innovation.

This amount of financial technology will cause technologically outdated banks to lose customers. Banks that will take the lead in the market of the future are already creating digital strategies, developing platforms and ecosystems for partnering, mastering artificial intelligence technologies to personalize banking services, and introducing new business-IT interaction models.

Consequently, the availability of financial technologies, advanced digital channels, their integration and the convenience of user experience, which now provide significant competitive advantages, will quickly become the basic standard of service. Banks that do not meet these challenges will not be able to compete successfully and face an outflow of customers.

3.2. Areas of cooperation between banks and FinTech companies

It has become very important now to understand how the traditional banking system has been disrupted and has given rise to a new era of alternative finance. The traditional banks had the following issues that led to the FinTech revolution:

- Highly regulated and bound to many rules and compliance norms

- High operating costs due to a large network of branches across the globe
- Poor visualization beyond the traditional business lines as they are mostly publicly held companies averting risk propositions
- Low involvement of customers in the center of operations
- Low investment in value creation from ideas, innovations, and technology
- Low collaboration with progressive minds to build capabilities and competencies
- Lack of focus on individual profit-making products / services due to the neutral approach applied
- Difficulties in deciding changes for upgrading or replacing legacy core banking infrastructure built over a long period.

Banks should start realizing that, in the present scenario, simply being facilitators of commerce will not be enough to get them through. They need to revamp their business models in order to remain relevant to their fast-evolving and tech-savvy customer base. Areas of traditional banking system modification is given in Table 3.2

Table 3.2

Areas of traditional banking system modification

Areas	Characteristics
Investment	The banking industry, when compared to any other industry, has a large portion of their annual budget allocated to investments in technology and innovation. However, the investment objectives are mostly to resolve any pending proposals and are not targeted at digital transformation. Investments in digital transformation would bring in a fresh perspective to target customers ensuring agile operations and allowing reinvention at every stage to live with the competition.
Innovation	Traditional banks did not ignore innovation in banking, but they were less focused on inculcating the practice of innovation and implementing it in real-time scenarios on a regular basis. Banks should start learning and practicing innovation in every area of banking and gradually change the existing mindset. This is possible through recruitment of the right talent with innovative minds who could help in cutting the operating and resource costs through such constant innovation strategies.

Continuation of Table 3.2

Customer experience	Traditional banking customers are not fully satisfied with the existing line of products and services provided to them. They are expecting more upgraded and high- technology products and services for a good experience. Although traditional banks are leaders in providing most of the products and services, they should target the customer demand area with the help of advanced customer relationship management (CRM) tools and customize their offerings to constantly delight the customer.
Integrate FinTech ideas	Banks and FinTechs have their own unique selling propositions, i.e., FinTech sector offers innovation and disruptive technology, while banks can drive customer demand. Banks should leverage on the large customer base and loyalty built over the years. They are also financially strong, which allows them to invest in upcoming trends and ideas that FinTechs and start- ups cannot imagine. Therefore, banks should make good use of these concepts and disruptive ideas from FinTech and attempt to adopt them in their mode of banking. As one of the strategies, banks could integrate various FinTech ideas without collaborating with FinTech companies for their advantage.
Collaboration	Banks should work on all the focus areas for having an edge above FinTechs. However, they should collaborate with FinTechs in areas where they cannot benefit by being alone. They should continue such collaboration until the time they are well equipped to manage alone. Banks should identify the areas with growth prospects and low customer value proposition areas and accordingly select the right FinTech partner to fill this service gap and be market-compatible. As another strategy, banks should analyze their core strengths and weaknesses and then decide to collaborate with FinTech start-ups for a win-win situation for both.

* Note: compiled by the author

Over the last few years, hundreds of startups have been established in different countries, including Ukraine, for mobile payments, instant transfers, and online credit, combining it with the term “fintech”. The term "FinTech" ("FinTech") is actively used in finance and IT to refer to activities in which modern technology is used to provide financial services. Fintech, an abbreviation for financial technology, is the introduction of innovative technology in the creation and delivery of financial services and products.

FinTech is an industry that brings together companies that use the latest developments to provide better financial services. Fintech is called a company belonging to this field. Today, Fintech is tens of billions of dollars in investment every year.

Companies in this industry can be roughly divided into two groups:

- Startups that provide technical solutions for existing finance companies.
- startups that work directly with consumers of financial services.

Fintech companies utilize the latest technology and offer online services across the globe. Thus, not only do they immediately provide better customer service, make banking products more accessible to different segments of the population and small and medium-sized businesses, they also reduce transaction costs. That is, they are already doing what banks are just getting started. For example, while classic financial institutions are releasing new plastic cards, Fintech teaches users to do without them.

The first Fintech Sector Survey in Ukraine was recently presented by the USAID Financial Sector Transformation Project and UNIT.City. As it turned out, there are more than 100 Fintech providers in Ukraine. They work in the following areas: payments and money transfers - 31.6%; technology and infrastructure -19.3%; lending 14%; marketplaces - 7%; insurrections - 5.3%; digit and neobank - 5.3%; financial management - 5.3%; mobile wallets - 5.3%; blockchain - 3.4%; cryptocurrency - 1.75% [24]. Such data are provided in the Ukrainian Fintech-Catalog-2019, the presentation of which took place on July 15, 2019 at the National Bank of Ukraine. The edition was prepared by the Ukrainian Association of Fintech and Innovation Companies together with the Visa Technology Payment Company and the National Bank of Ukraine.

Thus, according to the information contained in the Ukrainian Fintech-2019, 63% of Ukrainian fintech companies are financed solely at their own expense and the same number have passed the break-even point. At the same time, 14% of companies have more than 75 employees. The international market is conquered by 43% of Ukrainian fintech companies. And of those who work exclusively in Ukraine, 73% are going to start business abroad.

Ukrainian fintech-catalog-2019 is not only a study of the Ukrainian market of financial technologies, but also an analysis of trends in the development of this market. In addition, it is a kind of map of the domestic fintech ecosystem and a directory of companies (with questionnaires) operating in this market in Ukraine.

In order to maintain the competitiveness of any business, it is necessary to constantly develop. This is also true of the banking sector, whose customers are increasingly demanding from banks about the reliability and transparency of their operations, as well as the ease of obtaining services. The modern bank is also impossible to imagine without automated management systems. But prior to the active development of "fintech", banks were developing the IT direction, mainly to improve security of operations and minimize transaction costs. And "fintech" is focused, first of all, on the convenience of clients.

Today, Fintech companies are actively developing applications for mobile phone transactions, creating payment arrays and platforms for alternative currency transactions, as well as attracting financing without the involvement of banks, and more. A large number of Ukrainian banks and financial companies are working together to gain some of the benefits and opportunities that are gradually being opened up as new segments develop to leverage experience in the widespread use of financial technology.

Some researchers believe that Fintech startups pose a certain threat to banks. But most scientists and bankers are convinced that the competitive direction of improving the banking business in Ukraine depends to a large extent on the cooperation and partnership of banks with Fintech firms, which are intensively working on the development of financial technologies. That is why one of the determining factors for the development of modern banking is the introduction of modern financial technologies and active cooperation with Fintech-firms.

The threat to the competitiveness of modern banks is not directly financial technologies (FinTech), but so-called FinTech firms (or FinTech start-ups), which use a combination of technology, service and flexible business structures to reduce costs, expand customer base and increase market share. That is why, in order to maintain competitiveness and market share, banks should build partnerships with FinTech firms. This partnership will create a number of benefits for both traditional banks and FinTech firms. First, banks will be free to experiment, as FinTech operates in an environment free of infrastructure and cultural constraints. Second, traditional banks can help FinTech firms grow their business by providing financial infrastructure, capital and access to their huge customer base. Third, FinTech firms can offer banks innovative technologies to improve customer relationships, reduce costs and enhance cybersecurity [12].

In Ukraine, over the past few years, there has been a stepping up of activities in the field of financial services development and research on this topic. In particular, during 2018-2020, the National Bank of Ukraine plans to finally implement the policy concept of a gradual decline in the share of cash circulation in favor of the widespread use of cashless payments, which foresees a reduction in the volume of cash in circulation from the current 18% to 12% by 2020 (relative to GDP), and the level of non-cash payments in the local national payment system, which is now 1.2%, should rise to at least 30%.

Relevant measures were also envisaged by the Comprehensive Program for the Development of the Financial Sector of Ukraine until 2020, which was approved by the National Council of Reforms of May 15, 2015, as well as by the IMF Cooperation Program [34].

The emergence of innovative financial technologies has led to the importance of using them for the purpose of intensive development of the banking sector of Ukraine. The results of the analysis of recent publications have revealed mutual interest of banks and Fintech companies in cooperation in the field of information technology and finance. Especially important for banks are new opportunities in the field of financial resources management, use of new financial services and transformation of the basis of functioning of the banking system. In view of this, further research by the scientists on the results of development and implementation of new financial technologies in Ukraine and assessment of the probable consequences of their use are quite promising.

The possibilities of cooperation between financial institutions and Fintech companies can be varied - from simple use of services of fintech companies to a full-fledged technological partnership, investing in the implementation of new systems or the purchase of projects already implemented.

As an example of cooperation, one can cite the development of P2P and P2B lending. By early 2016, this trend was developing fairly quickly and, according to Morgan Stanley, was projected to grow to $ 300 billion by 2020. fell in price, and confidence in this market has shaken. As a result, many sites have reoriented their strategy of partnering with banks.

Now the big banks are trying to find their niche in P2P business, teaming with existing projects (JPMorgan and OnDeck), or creating their own platforms (Goldman Sachs). And the involvement of banks in such projects increases their credibility. For banks, this type of service is quite interesting, because there is no risk of liquidity and non-repayment of loans and, accordingly, there is no need to form reserves. And you can earn on commission for transactions. In addition, through cooperation with fintech companies, banks are expanding their range of potential clients to classic banking services.

Interested in financial institutions and the development of a service consulting robots. Own robotic services have been produced by such large financial companies as Vanguard and Fidelity. Morgan Stanley and the UK's largest banks, Barclays, Royal Bank of Scotland, Lloyds and Santander UK, have been involved in the development of Robo-Advisory services. For example, Alfa-Bank Ukraine uses Alla's work to help distinguish between the customer's hotline and redirect to a department that can address a specific issue.

One example of a technology partnership between banks and Fintech companies may also be the so-called "open API". The abbreviation "API" means "Application Program Interface" - the interface of application programming. With access to the banking API, developers at Fintech companies can build applications based on bank data. For the bank, this is beneficial in terms of obtaining new ideas, as well as minimizing the time and time spent by employees to innovate. And fintech companies receive funding for their projects.

At the end of September 2017, the NBU, OTP Bank and the non-profit incubator 1991 Open Data Incubator launched an incubation program for open banking lab fintech startups in Ukraine. Under the program, banks provide third-party developers with access to open (non-confidential) data and their own APIs. A test environment is being created in which third-party developers can test and implement their copyright decisions. In addition, the Bank allocates manpower and financial resources to support the program and reward for the winners.

Fintech in Ukraine and the world is developing very fast and unpredictably. Technological breakthroughs sometimes occur where no one expected, dramatically changing the landscape of financial services. That is why it is difficult to predict this industry, not to mention the formation of any guaranteed predictions for three years or more. However, it is now possible to identify certain trends in the industry.

Including:

Advanced use of smartphones. Mobile phones have already completely changed our lives. However, their functionality is not yet fully understood. Examples of major Chinese companies show that a smartphone can be the only center that connects all consumer finances and their vital needs. The full introduction of technologies such as Mobile ID will in the future allow us to opt out of any other documentary identification of a person other than his smartphone. For example, starting in 2018, Chinese WeChat, together with government agencies, has been introducing mobile identity testing not only for financial orders but also for business registration and other government services.

Strengthening the role of social networks. In 2015, Facebook launched a micropayment service using Facebook Messenger. Social network users can connect their card accounts and transfer small amounts to their online contacts. This underscores the seriousness of the role that social networks play in our lives. In the future, this role will only be strengthened, including in the area of financial services. Some banks are already introducing the practice of exploring a customer profile on the social network for the purpose of setting credit limits. After some time, the social network account will already be able to be a complete database of the person.

Data decentralization and peer-to-peer networks. Blockchain protocol has shown us all the features and benefits of a decentralized registry, and is even gradually pushing for a whole new model of the Internet. The abandonment of central processing servers and datacenters and the transition to capacity sharing among all network participants significantly changes, including the financial services market. Reducing the value and speeding up of cash transactions, p2p lending (without banking), distributed storage and securities trading, smart trading finance contracts are just a small list of the capabilities of a distributed registry platform.

Crypto assets. Today, it is difficult to predict what place cryptocurrencies and other types of cryptocurrencies in our society will eventually occupy. But it is clear that it is time to review the attitude of public authorities to such concepts as "electronic money" and "private money". National currencies, of course, play the first role in the world of finance today, but the cryptocurrency boom has clearly shown the desire of people to have alternative ways of calculating among themselves.

Artificial Intelligence. The use of chatbots in customer service, the purchase of goods through the voice assistants of mobile phones or other devices is used now. The technology of artificial neural networks, of course, has not yet acquired the features of full-fledged artificial intelligence. However, such solutions reduce for financial institutions one of the biggest cost items - personnel costs. Therefore, they will probably occupy a dominant position in the front-office structures in the near future.

Integration API and the Internet of Things. One of the biggest challenges for developing fintech startups is comfortable integration with banking institutions. And of course, banks want to secure access to their customer resources. Instead, the “open world” paradigm implies the possibility of any technical development to connect to existing infrastructure, including bank accounts. It is in this paradigm that any refrigeration unit will be able to order the food itself that is missing, the refueled car will pay for the fuel itself, and the consumed utilities will be automatically paid based on the sensors of the consumed heat and water carriers in the apartment. There is reason to believe that the "open world" will become a reality in the coming years.

According to experts, there are several reasons for the positive dynamics in this segment. First, it is influenced by global trends, as financial technology has remained a topical issue in the world over the past few years. Second, the imperfection of the legislation makes it difficult to enter the Ukrainian market of global players. In addition, the fall in purchasing power due to the economic crisis of 2014-2015 made them unattractive to the Ukrainian market. Thus, local players do not have to compete with global companies.

Third, many banking professionals lost their jobs as a result of the clearing of the banking system. But some of them got jobs at fintech companies or even founded their own, which became a catalyst for market development. And, as research has shown, the founders of fintech companies are mostly financiers and IT professionals. Finally, traditional players in the financial market have become increasingly inclined to partner with fintech companies.

State support played a significant role in the development of the market. In particular, the Cabinet of Ministers set up a UAH 345 million Ukrainian National Startup Fund, which will be operational in the near future, and the National Bank of Ukraine in April 2019 organized an Expert Council on Communication with Innovative Companies that will enable the NBU to understand the needs and directions of innovative development financial market.

For effective cooperation of banks with Fintech companies it is important to properly regulate such cooperation. Since the success of this cooperation, and the development of financial technologies in general, depend largely on the quality of regulation in this area.

For example, in the UK there is a so-called "sandbox" - the ability to launch and test new products without their mandatory compliance with current legislation.
The regulator, in conjunction with the banks, can also create a consortium around an institution or common service that is important to many players. After that there is a

competition for techn implementation of the project, and the idea begins to come to life.

The National Bank of Ukraine demonstrates interest in the development of financial technologies and cooperation between banks and fintech companies. Recently, the launch of the project “Promoting FinTech Development in Ukraine” was announced. The following are the priorities for development:

• digital banking

• electronic payments

• insurance (car insurance, travel insurance)

• Digital lending (P2P, B2P and lending to financial companies).

So, we can conclude that there are currently several areas for potentially successful collaboration between banks and Fintech companies, including digital banking, electronic payments, and digital lending. They found that for the successful cooperation of banks and Fintech companies, the main thing is to successfully realize the potential and translate, among other things, into the approval of a quality regulatory framework that regulates and really supports the development of this area. This will definitely improve the quality of banking services, and will allow Fintech companies to be able to sell, and bank customers to use financial services to the full. At present, NBU specialists are actively engaged in evaluating the state of the Fintech market and developing activities that support fintech initiatives. Which indicates the prospect of developing the direction of this activity.

3.3. Formation of bank digital strategy

Digital bank strategy is a plan to achieve the goals of the bank using digital tools and technologies. In today's world, companies are competing not with products but with ideas. This is why the digital strategy is designed to help the company shape its customer experience first.

Based on the goal the bank wants to achieve, it is necessary to decide what technology or new technology can help a customer to use banking services. For example, with contactless payPass and payWave technology, the customer can use the card more often, given the convenience and speed of the transaction, and moreover, when possible to attach the card to GooglePay or AppePay, customers began to use contactless payments more often.

Therefore, the formation of the bank's digital strategy is paramount in the interests of achieving a certain goal.

An important step in forming a digital strategy is to analyze both the competitors' market they are currently offering and the customer response to the technology already implemented. While analyzing the market in Ukraine, it is somewhat surprising to surprise clients by exploring the international financial technology market, but it is also worth considering the willingness of clients to use such technologies.

As practice shows, the consumer experience is more important than the unique properties of the product. Therefore, at the stage of forming the bank's digital strategy, an important step is conscious and systematic work on improving the quality of service and customer relationship management. Product development began to take shape based on an analysis of customer behavior, their needs and expectations. Only with a deep understanding of customer needs, should you begin working on the latest technology, such as chatbot, messenger banking, and more.

It is worth noting that customers who use messengers and the mobile application are different audiences, as shown by a study by FUIB [17]. On the way of attracting the users of the messengers, the specialists of FUIB JSC tried to make banking service in the messenger, which soon became the reason for the launch of the new service on the market. Thanks to new technological solutions, FUIB quickly launched dozens of banking services in Viber, and adding functionality to Telegram took only one day. In addition, FUIB has introduced digital banking for entrepreneurs, chatbots, contactless payment systems Google Pay, Garmin Pay Apple Pay, etc.

This demonstrates the need for priority analysis and awareness of customers' attitude towards the implementation of specific technologies.

Thus, we see that one of the leading banks in Ukraine, FUIB uses the following strategy on the path of financial technology implementation: launches technology, analyzes reaction, changes - this approach allows to more quickly evaluate customer perceptions, experiment and feel the audience response. And it should be done as long as there is an unmet need for a new service, not with a delay of one and a half years, when the innovation becomes obsolete even before the service is launched.

It is also worth noting that the following features are inherent in the formation of the bank's digital strategy:

1) variability - development of alternative scenarios of commercial bank development;

2) long-term - strategic management should be implemented over a period of 5 years or more;

3) the creative component - a comprehensive approach to the issues under study and allows a new use of available information and opportunities to generate innovative strategies.

Therefore, the formation of the bank's digital strategy must be based on the goal, which is to simplify and facilitate the client in the way of obtaining banking services. Product development began to take shape based on an analysis of customer behavior, their needs and expectations. Only with a deep understanding of customer needs should we begin work on implementing the latest technologies. Financial technologies are quick enough to handle new challenges from clients, or even to take a step forward, which is why it is advisable to continue to analyze the existing implementations of financial technologies in Ukraine and abroad. After launching the technology, reaction analysis is equally important - this approach allows you to more quickly evaluate customer perceptions, experiment and feel the audience response. All this will help formulate the most appropriate strategy for the development of the bank and flexible changes on the way to achieving the goal.

CONCLUSIONS

Implementation of innovative financial technologies is the most important direction of further development of banking institutions and gaining competitive advantages in the market of financial and credit services of Ukraine. The use of modern information technologies enables banks not only to accelerate the provision of services to clients, but also to achieve a fundamentally new quality of doing business.

Innovative information technologies allow banking institutions to increase their competitiveness and influence the desire of customers to use new products and services. The reasons for the need for innovations are: increase of the bank's profitability; generating new revenue streams through the introduction of high quality innovative products; improving operational efficiency; formation of a modern image of a banking institution.

The banks and financial services market across the globe is going through a process of revolutionary change in technology by reducing the role of today's banks and giving institutions and individuals an opportunity to create better, faster, and cheaper services that make them an even more essential part of everyday life. The need for open innovation, collaboration, and investment in the right direction will lead traditional banks to the path of digital banking.

Banks should challenge this technological change positively by not being complacent and not just waiting for interest changes from regulators; rather they should work on the key strategies that can redefine banking in this new digital and competitive era. They should find ways and means to collaborate with fintech firms / start-ups / other market players considering all the financial and regulatory implications that will keep them ahead in the race.

Analyzing the development of financial technologies in the banking sector in Ukraine, we can say that a sufficient number of financial technologies are starting up and developing in Ukraine. The banking sector, in the face of not only commercial banks but also state-owned ones, is actively following the trends of international financial technologies, but the implementation of technologies does not guarantee the successful use and distribution between enterprises that use banking services. For example, the introduction of Facepay technology does not predict the spread and active use of technology in the near future. The same goes for mobile acquiring. That is why the future of financial technology in the banking sector is ambiguous and requires a "listening" to international experience.

Having studied the foreign experience of using financial technologies in the banking sector, it should be noted that both the global financial market and the financial markets of individual countries are undergoing a global transformation, which has fundamental changes in the regulation, provision and consumption of financial services, which undoubtedly affects the amount of services consumed. bank customers. The important role is played by investments and the use of the latest technologies by consumers.

Considering the speed of the development of financial technologies, we can say that the availability of financial technologies, modern digital channels, their integration and convenience of user experience, which now provide significant competitive advantages, will quickly become the basic standard of service. Banks that do not meet these challenges will not be able to compete successfully and face an outflow of customers.

There are currently several areas for potentially successful collaboration between banks and Fintech companies, including digital banking, electronic payments, and digital lending. Ideal cooperation between banks and fintech companies will take the following form: Fintech should be a platform for banks to find and test new ideas.

Classical financial institutions now need more current solutions than ever before. But because of their conservatism, they find it very difficult to innovate. Fintech companies, on the contrary, are able to quickly generate interesting solutions, but most of them are not able to scale them. Therefore, we can talk about the scheme of interaction, when Fintech creates new services in the current areas of development, which he then transfers to the banks. By and large, this scheme is already working.

The formation of a bank's digital strategy plays an important role in the development of the bank and should be built on the goal, which is precisely to simplify and facilitate the client in the way of obtaining banking services. Product development began to take shape based on an analysis of customer behavior, their needs and expectations.

Financial technologies are quick enough to handle new challenges from clients, or even to take a step forward, which is why it is advisable to continue to analyze the existing implementations of financial technologies in Ukraine and abroad. After launching the technology, reaction analysis is equally important - this approach allows you to more quickly evaluate customer perceptions, experiment and feel the audience response. Such a set of actions will help to form the most appropriate strategy for the development of the bank and flexible changes on the way to achieving the goal.

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