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Specialty: **072 Finance, Banking, Insurance and Stock Market**
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QUALIFYING MASTER'S THESIS

on the topic:

**THE CURRENT STATE AND PROSPECTS FOR THE
DEVELOPMENT OF BANKING INNOVATIONS**

higher education student **Yang Jian**

The qualifying master's thesis was accepted for
defense by the decision of the Department of
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**TASK
FOR THE QUALIFYING MASTER'S THESIS**

of Yang Jian

1. Topic of the work "THE CURRENT STATE AND PROSPECTS FOR THE DEVELOPMENT OF BANKING INNOVATIONS".

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(surname, first name, patronymic, academic degree, academic title)

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2. Deadline for the student to submit the work November 18, 2024

3. List of issues to be developed:

In Chapter 1: to explore theoretical approaches to banking innovations; to consider the latest approaches to the classification of banking innovations; to analyze theoretical foundations of the organization of the innovation process in banks;

In Chapter 2: to characterize innovation as a factor in the development of banking activity; to provide an estimate modern technologies as the basis of an innovative model of development of bank account business; to analyze the issue of activating the processes of development of innovations in bank institutions in modern conditions in Ukraine.

In Chapter 3: to provide suggestions for usedigital innovations in banking; to consider the possibilities of using the trends in the development of innovations in the world, and avoiding threats for banking business in the conditions of the

digital economy.

4. Work plan

No.	Name of work stages
1	The choice of the topic of the qualifying master's thesis
2	Approval of the plan and tasks of the qualifying master's thesis
3	Completion of a qualifying master's thesis
4	Submission of a qualifying master's thesis to the department to check for borrowings from other documents
5	Admission by the head of the department to the defense of a qualifying master's thesis
6	Defense of a qualifying master's thesis

5. Date of the task issue September 25, 2024

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ABSTRACT
ON THE QUALIFYING MASTER'S THESIS
"THE CURRENT STATE AND PROSPECTS FOR THE DEVELOPMENT OF
BANKING INNOVATIONS"
of Yang Jian

The qualifying master's thesis comprises 79 pages, 10 tables, and a list of 54 references.

The **object of research** is the processes of innovative activity in the banking sector.

The **subject of research** is the theoretical and methodological aspects of innovations in the field of banking services.

The **purpose of the qualifying master's thesis** is to research the theoretical foundations and study the practical properties of the process of managing the innovative activity of banking institutions.

The **tasks of the qualifying master's thesis** are as follows:

- to investigate theoretical approaches to banking innovations;
- to consider the latest approaches to the classification of banking innovations;
- to analyze the theoretical foundations of the organization of the innovation process in banks;
- to characterize innovation as a factor in the development of banking activity;
- to provide an estimate of modern technologies as the basis for an innovative model of banking development;
- to analyze the issue of activating the processes of innovation development in banks under modern conditions in Ukraine;
- to provide suggestions for the use of digital innovations in banking;
- to consider the possibilities of applying global trends in the development of innovations while avoiding threats to the banking business in the digital economy.

Based on **the results of the research**, theoretical and practical provisions are formulated, including specific proposals regarding the prospects for the development of banking innovations.

The obtained results can be used to intensify the participation of banks in

investing funds in innovation. In addition, the recommendations developed based on the analysis of the problems of venture investing in Ukraine may find application in the development of regulatory and methodological support for the participation of banks in investment activities.

KEYWORDS: BANKING INSTITUTION, BANKING INNOVATIONS, INVESTMENTS, DEVELOPMENT OF BANKING INNOVATIONS

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INTRODUCTION

All over the world, in recent decades, banking activity has been in continuous development, which is caused by many factors, including the processes of globalization, the liberalization of financial markets, changes in the regulation of banking business, and, of course, the demands of consumers, which are constantly transforming and diversifying, the demand that is growing, customers of consumers of banking services for high-quality banking services. The latest information and telecommunication technologies are fundamentally changing the appearance of modern financial and banking institutions, their means of communication with consumers, channels for the sale of banking products and services. The modern unstable economic environment puts forward high demands on the quality of organization and management of all branches of banking activity, in particular, innovation processes, which are actively implemented in banks.

Banking innovations affect all branches of their operation and are implemented in the latest products and services, improvement of business models and business processes, organizational transformations and improvement of marketing methods. Innovative thinking, aimed at the search for and successful implementation of creative ideas, begins to permeate the entire bank's activities.

Taking into account the diversity and scale of innovative changes, the significant influence of the degree of effectiveness of their impact on financial results, competitive position, and the reputation of banks, strategic management of innovation processes is objectively indispensable, which makes it possible to use innovations as a tool for adapting financial and banking institutions to external conditions environments that change unpredictably.

Therefore, in modern conditions, the successful functioning of banking institutions is ensured by the development and implementation of innovative strategies that focus on the formation of the greatest consumer value for consumers,

provide the prospect of guaranteeing and maintaining competitive advantages for a long time. In the conditions of the global financial and economic crisis, innovations become even more necessary, as historical experience shows that after economic crises the perspective of competition changes significantly, modern outsiders and leaders appear, but leaders become those who put innovation at the center of their activities.

The issue of innovative development, the development of types and mechanisms of guaranteeing a continuous effective process of formation and introduction of innovations is extremely relevant for Ukrainian banks as well, the low compliance of their activities with foreign practices inhibits the effective development of the banking sector, reduces its international competitiveness and importance in the functioning of the real sphere of the economy.

The analysis of issues of innovative practice of banking institutions every year occupies an increasing share in the general structure of the research of topical issues of economic development. Considerable attention is paid to the study of the content and methods of implementation of innovations of banking institutions, in particular, in the works of S. B. Yehoricheva, O. IN. Zolotaryova. The periods and scheme of the innovation process in banks are reflected in the work of Z. Shmigelska. The economic effect of the innovative practice of banking institutions was studied in the work of I. I. Karcheva. However, the analysis of some issues of innovative practice of banking institutions does not provide an opportunity to understand the technological type of the current banking institution and the innovative model of business work. A detailed study of the available scientific literature shows the need for further systematic understanding of the patterns of the emergence and implementation of banking innovations, ways of creating mechanisms for managing innovative processes in the detail of tools, means and levers of influence.

The purpose of writing the graduation thesis is to study the theoretical foundations and study the practical properties of the process of managing the innovative activity of banking institutions.

To achieve the goal, the following tasks were formulated and solved:

- to investigate theoretical approaches to banking innovations;
- to consider the latest approaches to the classification of banking innovations;
- to analyze theoretical foundations of the organization of the innovation process in banks;
- characterize innovation as a factor in the development of banking activity;
- provide an estimate of modern technologies as the basis of an innovative model of development of banking business;
- to analyze the issue of activating the processes of development of innovations in banks which institutions in modern conditions in Ukraine;
- provide suggestions for using digital innovations in banking;
- consider the possibilities of using trends in the development of innovations in the world, and avoiding threats to banking business in the conditions of the digital economy.

The object of the research is the processes of innovative activity of the bank.

The subject of the research is the theoretical and methodological aspects of innovations in the field of banking services.

The methodological basis of the qualification work is made up of the fundamental provisions of economic theory, the concept of innovation development, the theory of finance, money and credit, scientific works of scientists from all over the world who studied the problems of innovation in the field of banking services.

In the course of the research, such general scientific and special methods were applied as: scientific abstraction (to clarify the economic category "banking innovation"); logical generalization, comparison and systematization (for detailing banking innovations); logical historical analysis (to study the evolution of innovations in the field of banking services); systematic methodological approach, synergy, analysis and synthesis (for research on the development of banking innovations); systemic and structural, induction and deduction (for the purpose of forming theoretical approaches and when developing scientific methodical approaches to establishing the consequences

of financial interaction between banks and subjects of the innovation process); statistical analysis, method of analogies (when assessing the impact of the banking sector on increasing the innovative activity of economic entities); logical generalization (for formulating conclusions based on the results of the research).

The information base of the research is: the Constitution of Ukraine, laws and other legal acts of Ukraine, resolutions, reporting and statistical data of the National Bank of Ukraine, scientific publications devoted to the problems of innovations in the field of banking services, Internet sources.

The scientific novelty of the graduation thesis consists in the theoretical substantiation and practical solution of a complex of issues related to innovations

Practical significance of the obtained results consists in the development of scientific recommendations aimed at increasing innovations in the field of banking services.

The scientific conclusions contained in the qualification work are brought to the level of specific proposals and recommendations regarding innovations in the field of banking services and justification of the measures of banking institutions to intensify the introduction of the latest products, services and technologies.

The approaches, theoretical generalizations, conclusions and recommendations developed during the research can be used to intensify the participation of banks in investing funds in innovation.

In addition, the recommendations developed on the basis of the analysis of the problems of venture investing in Ukraine can find application in the development of regulatory and methodological support for the participation of banks in investing.

CHAPTER 1

BANKING INNOVATIONS AS AN ECONOMIC CATEGORY

1.1. Theoretical approaches to banking innovations

Since the beginning of the 2000s, banking institutions that had the idea to remain on the money market began to define strategies that became a tool for adapting to changes in the macroeconomic environment, which was exceptionally affected by the financial and economic crisis of 1998. For many of the banks, innovation has become one of the essential factors of growth, strengthening of competitive positions, attraction and retention of customers. These trends could not remain unnoticed by researchers and scientists.

In the Law of Ukraine "On Innovative Activity", the definition of "innovation" is comprehensive and attention to its competitiveness is emphasized. Yes, innovation is considered as "applied (newly created) and (or) improved competitive technologies, products or services, as well as organizational and technical solutions of a production, administrative, commercial or other nature, which significantly improve the structure and quality of production and (or) the social sector" [28]. At the same time, it is worth noting that innovations in the financial industry, for example, in banking sphere, already enough long time in various planes are researched by scientists from countries with a developed market economy. Their scientific contribution, creatively worked out taking into account the features of the economy, which is available in Ukraine, can and should become a starting point for further research.

One of the first in the states of the former USSR to research innovations in the banking business was scientist E. I. Utkin, who in 1996 published independently and co-authored two works in which the definition of "banking innovations" was used and the main regularities of managing innovation processes in banking institutions were studied [28]. The most important thing is that E. I. Utkin immediately formulated a "broad" approach to the view of banking innovations, which, in the scientist's opinion, "include

not only technical or technological developments, but also all kinds of changes for the better in all areas of work of a banking institution" [100, p. 76]. The above-mentioned terminology has become established in economic science, and in the future, scientists, in order to characterize innovations in various areas of work of banking institutions, mostly use the definition "banking innovations".

Scientists, when analyzing the innovative work of banking institutions, use the concept of "banking innovations", as well as the synonyms "bank innovations" and "innovations in the banking industry" [32, p. 63].

Along with this, in foreign economic literature, the innovation process in the banking system is mostly determined by the definition of "financial innovations", in particular in the works of F. S. Myshkina, J. Sinki Jr., T. Koch et al. As rightly noted by G. M. Azarenkova, "in this sense, it is appropriate to proceed from the objective sources of the emergence of financial innovations, which are determined by the financial sector of economic relations" [3, p. 29], within which banking institutions also operate. Therefore, banking innovations can be considered financial innovations at a certain stage of research of this range of issues.

The conducted study of the works of scientists proved that the definitions of "banking" and "financial" innovations are quite close, but not identical in essence.

In particular, Nobel Prize laureate M. Miller (Merton H. Miller) says about financial innovations as changes in financial instruments and institutions [45, p. 461]. American scientists U. S. Frame (W. Scott Frame) and L. J. White (Lawrence J. White) characterize innovation as "something modern that reduces costs, minimizes risks or forms an improved product, service or tool that better meets the requirements of money market subjects" [39, p. 3]. Harvard Business School professor P. Tufano (P. Tufano), suggests that financial innovation is the formation and spread of modern financial instruments, as well as financial technologies, institutions and markets; the scientist considers modern derivative agreements, modern corporate financial instruments or modern types of investment products and services to be examples of product innovations, and process innovations – modern methods of distributing financial assets, processing transactions, etc. [54, p. 311].

Important material for the purpose of research is provided by the American scientist J. Finnerty created in 1988. Finnerty (JD Finnerty) list of successful financial innovations that have gained the widest distribution ("JD Finnerty's list"). This list includes 4 elements, namely: 1) financial instruments; 2) financial processes; 3) securities; 4) financial strategies and decisions of companies.

Ukrainian scientists characterize financial innovations as "modern financial instruments and financial technologies" [7, p. 19]. Financial innovations represent the processes of designing and introducing into circulation modern financial technologies, financial investment tools, etc., increasing the flexibility of the money market's response to cyclical actions. In the "Financial and Economic Dictionary", the definition of "financial innovations" in general refers only to the methods used by legal entities for the purpose of performing modern operations with existing assets or operations with modern types of financial instruments [12, 32].

Regarding the term "banking innovation", it is worth noting that there is no clear common formulation of it in the current literature, so it is worth considering the most common approaches [16].

The understanding of innovation concerns such an innovation in any field of activity of a banking institution, which has a clear positive strategic or economic effect, in particular, an increase in the number of banking clients, an increase in the specific weight of the market, a decrease in the costs of performing any type of operations, etc. [55, p. 302]. Here, the banking innovation industry is growing a lot, but they stand out because of the word "innovation", which, in principle, is synonymous with the term "innovation".

In addition, banking innovation is understood as the final consequence of an innovative component of a banking institution implemented in the form of a modern banking product or service [7, p. 206].

Banking innovation is understood as a set of fundamentally modern banking products and services - it is a synthetic understanding of the purpose and consequence of the functioning of a banking institution in the field of modern technologies, which are aimed at obtaining additional profits [19, p. 14].

At the same time, it should be noted that quite often banking innovations are actually analyzed mostly from the point of view of the introduction of the consequences of scientific and technical progress, telecommunications and information and computer technologies into the banking sector [1; 2; 23].

The study of scientific developments in this direction of analysis provides an opportunity to recognize the expediency of the formulation of banking innovations in a broad and narrow sense. Banking innovations in a broad sense should include all acceptable aspects of innovative practice of financial and credit institutions. A narrow understanding will reflect the innovative qualities of banking products and services as a final consequence of the functioning of the banking institution. The importance of highlighting this concept is explained by the fact that it is product innovations that form the basis of the current innovative work of a banking institution [32, p. 68].

However, in order to define banking innovations in the narrow sense, it is necessary, first of all, to characterize what is meant by a banking product and service. In the economic literature, this problem remains debatable, there are different views regarding the essence and relationship of these terms.

A banking product is a materially designed element of a banking service, for example, a bank payment card, traveler's check, jubilee coin, etc., that is, it really equates it with an object [7, p. 206], which is, of course, a narrow understanding.

Banking service is characterized as different types of functioning of a banking institution, which conduct and optimize the implementation of banking operations [43, p. 19].

Some economists approach the distinction between banking products and services from a more practical point of view. In particular, R. Truman and I. Smith defines as products those offers of a banking institution that are connected with the payment or receipt of interest, and as services - with the receipt of commission income [53, p. 3-4].

S. Frame and L. White defines services as, first of all, providing clients with access to personal accounts and making calculations [39].

Based on the modern functions of banks in a market economy, it can be noted that

the consequence of their functioning is the provision of services for the redistribution of risks, funds, information and the execution of payments to the subjects of the economy. Service is characterized as an act, activity, help with the benefit of another. Therefore, banking service is proposed to be understood as a process and a useful consequence of the directed work of bank employees, which consists in satisfying the client's existing requirements related to cash, in particular deposit operations, settlement and cash, credit, factoring, consulting, wealth management, etc. .

The term "banking product" entered banking terminology together with the introduction of marketing philosophy and practice, when banking institutions began to create "a range of products", carry out "product sales", develop "product sales channels". The growing "industrialization" of the banking business also caused signs, which was also reflected in the term "banking services industry" and means increased unification, mass, technology of service. From this point of view, a banking product can be characterized as a defined form, one of the most options for meeting a specific financial requirement of the consumer, which differs according to the characteristics of the client and based on the indicators that are important for the consumer's choice - terms, cost, conditions, mechanism, etc.

Thus, a banking product is an organized, internally agreed and documented procedure of actions of employees of a banking institution (complex), which forms a perfect technology of customer service [20].

Signs of the process of formation of modern banking products, in contrast to the goods of enterprises, are the peculiarity of the mechanism of their development and the need to take into account the requirements of legislation in the banking sphere.

The formation of innovative products under the conditions of material production is carried out as a result of the implementation of research and development and research works, the implementation of which is not typical for banking institutions. However, in the literature there is already a concept that can be used to determine the course of the appearance of modern banking products and services, in particular, banking engineering.

In general, the term "engineering" comes from the Latin ingenium, which means ingenuity. A similar type of work, covering various planned engineering consulting

services, which arose in developed countries in the 1960s.

Banking product engineering is a set of techniques and methods used to develop a banking product [12, p. 56].

Sometimes the concept is given a more extended wording: banking engineering as an economic category reflects, on the one hand, the course of design, development and practical implementation of competitive innovative banking techniques, tools, methods and business processes, and on the other hand, mastery of the method of an integrated approach to economic processes in the area of creative search and solving of urgent issues of banking activity" [14, p. 55].

It should be noted that a similar, but not identical, concept - "financial engineering" - is used in educational and scientific literature, for the most part, in order to mark some service of a banking institution for corporate clients [11, p. 499-502], or as the course of formation of technologies and financial instruments for the purpose of solving issues in the field of corporate finance [1, p. 125-127].

The functioning of banking institutions as specific financial institutions is an object tough regulation state. It connected with essential socio-economic significance of banking work for the purpose of stability and development of the economy.

Therefore, expertise is an inseparable element of banking engineering products, which is predicted implement on conformity, first of all, banking legislative and instructional acts [36; 37].

However, the banking innovation practice is not limited to the formation of product innovations. Banking institutions are trying to improve and optimize their work, using innovations in the fields of marketing, strategic management, organization of business processes, technologies, etc.

On this issue M. Porter noted: "innovations in the broad sense include both the improvement of technology and the improvement of methods and ways of doing business. Real renewal can be manifested in changes in the course of production or products, modern approaches to marketing, modern means of product distribution and modern concepts of the field of competition" [80, p. 64].

As a set of means of transformation of resources into a given result, the product is

modern technologies that change the procedure for performing banking operations. If product innovations characterize the essence of the "bank-client" relationship, then technological innovations determine the quality of these relationships.

The main features that create the specified quality are the speed of service provision, cost-effectiveness, consumer understanding, profitability of the product creation process for the client and the banking institution itself. Banking technological innovations are closely related to product innovations, because, on the one hand, they form the prerequisites for the emergence of modern banking products, in particular, mobile communication - mobile banking - utility payments via mobile phone, and on the other hand, they improve, provide modern features of products that are already available, for example, opening a deposit online using the Internet.

Organizational innovations are a specific feature of activities under the conditions of the information society. Organizational innovations are aimed at identifying, accumulating and activating the main resources and competencies of a banking institution, which cannot be easily reproduced by competitors. Marketing and organizational innovations play a specific role for banking institutions as business structures, because the main consequence of their functioning is rather monotonous products, and the innovations that arise are quickly spread to typification, therefore, in order to attract the attention of customers, banking institutions need to be different in some other views [32, p. 73].

Organizational innovations are designed to resolve the contradiction between the need for strict regulation and the maximum formalization of banking business processes in order to reduce operational and legal risks, reputational risk and the requirement to adapt banking institutions to changes in the market environment to strengthen competitive advantages.

However, it is worth noting that the above-mentioned innovations are sometimes specific to banking institutions, recently they have been promptly borrowed by banks from other branches of public production and masterfully adapted to the conditions of banking practice, in particular, the creation of an organic structure of the bank,

reengineering of business processes, a system of managing mutual customer relations, budgeting, controlling, modern methods of advertising, etc. Incentives regarding the introduction of technological innovations are also most often offered from other areas, in particular communications, the information industry, and electronics. Therefore, in these cases, banking institutions generally act as imitators, not leaders, so the primacy of any specific innovation is distinguished not by development, but by leadership in its application.

Therefore, banking innovations in a broad sense can be defined as the process of creating additional value for consumers, employees and shareholders of a banking institution by introducing qualitative changes in all areas of its functioning, in particular products, services, business processes, models and strategies, which were the result of real implementation of modern thoughts, knowledge and external practice. The theoretical formulation of the essence of innovation creates conditions for the purpose of developing specific actions regarding the organization and management of the implementation of innovative work in banking institutions [32, p. 74].

The conducted theoretical analysis of the essence of banking innovations provides an opportunity to draw conclusions that innovation is a consequence of innovative work, which is associated with advanced qualitative changes and products, services, management, processes, technologies that are implemented or introduced into the practice of a banking institution, which support the improvement performance of the banking institution, its competitiveness and development. Funds received from the implementation of innovations should cover the costs of formation, implementation and adaptation of the innovation in the financial market, and also provide income. In addition, the money received from the introduction of already developed innovations are resources for the purpose of developing and implementing the latest innovations. Thus, banking innovations should be considered as certain elements of financial innovations introduced in the banking industry.

Banking innovations can be considered both separate introductions and general systems of economic, organizational, administrative, institutional innovations in the field of banking institution functioning, which guarantee a positive strategic, social and

economic effect, which is manifested both in external environment, in particular, in increasing the bank's customer base and its network of representative offices, strengthening its position in the market, and in the internal environment, namely, reducing the costs of carrying out banking operations and increasing the efficiency of the bank's functioning, in guaranteeing effective activity and sustainable development. It should be noted that banking innovations should be considered not only from the point of view of obtaining income during their implementation, but also from the point of view of social efficiency, which is evaluated using qualitative characteristics.

1.2. The latest approaches to the classification of banking innovations

The effectiveness of the innovative practice of a banking institution depends on the success of the financial and organizational system, its implementation, which was created on the basis of the appropriate theoretical and methodological basis. One of the foundations of its creation is the orientation of the bank to the development and implementation of certain types of innovations, which are formed on the basis of their classification [39, p. 32].

At the same time, such a classification will help to determine the methodological basis of conducting proper statistical studies of the state regarding the state of implementation of innovations in the banking sector of the economy. In the table 1.1 presents the classification of innovative products of banks [16].

Table 1.1

Types of innovative bank products

Classification parameters	Types of banking innovations
For the purpose of development of the banking institution	Strategic; reactive
By functional component	Auxiliary, main
By the level of novelty	Modifiers, combinatorial, basic or radical
By the level of influence on the bank work	Systemic, point
Regarding the developer	Innovations that are developed by our own forces; innovations that were bought from another developer
By distribution on the financial market	Unlimited, limited
By economic essence	Product, technological

The typology of innovations of banking institutions provides an opportunity not only to select a specific innovation strategy and a method of creating an economic and organizational system for managing the innovation of banks, but also to establish the types of introduction and implementation of banking products and services [16, p. 10].

According to the provisions of world standards, banking innovations are divided into organizational, marketing, process and product innovations. However, taking into account the practice of innovative work of banks of developed countries, among product innovations it is appropriate to single out bank products in the form of various financial instruments of money markets. Unlike traditional innovations of banking institutions, financial instruments have special reasons for their appearance.

There is the following classification of innovative financial instruments of money markets [47, p. 171–173]:

- related to the transfer of credit or interest risk, in particular, securities, derivatives that appeared as a result of securitization, etc.);
- help to increase liquidity, namely various negotiable instruments of the financial market;
- directed to the growth of borrowing prospects, such as swaps, bonds;
- aimed at increasing share capital (debt obligations with mandatory exchange).

The main functional vocation of banks should also be reflected in the classification of innovations of banking institutions. Thus, innovative products and services should be divided into those related to the traditional practice of banking institutions, in particular deposit, credit, settlement and cash operations, and those that reflect their implementation in other areas of financial activity, in particular trust management, custodial, investment, insurance, etc. In turn, such a division will ensure a more accurate positioning of the banking institution on the money market in accordance with the chosen development strategy [39, p. 33].

H.-U. Diorig, highlighting the importance of process innovations in the practice of banking institutions, noted that the reliability and efficiency of the current banking institution are characterized, first of all, by process innovations, even if it is less attractive

for the media and difficult for non-professionals to understand [26, p. 247]. The specified group of innovations requires the following details:

- innovations in technological processes, which are related to the development of technical prospects of banks, primarily through the use of more efficient hardware and computer equipment, the introduction of modern improved software, etc.;

- business process innovation, which means the improvement of business processes in particular, within the framework of quality system management programs or on the basis of reengineering;

- service innovations, which consist in the introduction of modern approaches to customer service processes. For banking, as a branch of banking services, service innovations play a specific role, because here the banking product is formed in close mutual cooperation with the consumer.

Among the marketing innovations for banking practice, the following types are the most relevant:

- market innovations, which are associated with the introduction of already existing products to current markets or the use of processes that are known, in order to serve other groups of customers;

- innovations in marketing communications, including public relations, rebranding, rebranding, loyalty programs, mass media advertising;

- innovations in the channels of implementation of banking products, which include the development of modern organizational forms and the modern philosophy of work of branches of banking institutions, the implementation of online methods, as well as the introduction of the idea of multi-channel service.

Detailing innovations in the sales channels of banking products are innovations in the field of design of offices of banking institutions, the study of which until recently was practically not paid attention to, while the premises of banking institutions, primarily in foreign countries, are increasingly taking on non-traditional forms in order to create the greatest possible benefit for consumers .

Therefore, within the framework of organizational innovations, it is necessary to single out [39, p. 33-34]:

- administrative innovations affecting changes in the organizational structure of the banking institution, methods of forecasting, checking team management, incentives, etc.;
- conceptual innovations, which are implemented in changes in strategies and models of functioning of banking institutions.

A further classification feature of innovations of banking institutions is, of course, their distribution according to the internal innovation stock. Banking innovations by their very nature, first of all, can be radical.

Radical innovations in the banking business may require significant investment and be long in development, and their commercialization is the most risky. However, it is radical innovations that have the maximum value, because their possible consequences are the provision of long-term competitive advantages and significant strengthening of the financial and credit institution's position on the financial market. In the following, radical innovations become the source of all improvements, improvements, adaptations to the interests of certain classes of customers and other modernizations.

Transformative innovations are not large, but important and significant improvements in processes or products. Incremental innovations prevail in such stages of the life cycle of innovations of banking institutions as diffusion and sustainable development, and are designed to improve the features of radical innovations without changing the rules that lie in their foundations. The consequences of any significant improvement are virtually risk-free increases in the consumer value of the product or reductions in operating or administrative costs.

Combinatorial innovations in banking quite often become the basis for the development of modern products that satisfy the personal requirements of consumers. Combinatorial innovations are used exceptionally actively in individual banking business (private banking).

A review of information regarding innovative practices, primarily of foreign

banking institutions, shows that the emergence of radical innovations is most often not the result of market demand, the reason for their emergence is development computer and information technologies, in particular Internet banking, ATMs, the intention of banking institutions to reduce the effect of regulation of the activities of banking institutions on their own financial consequences, in particular NOW-accounts, sweep-accounts, or their solutions to their other tasks from the point of view of ensuring liquidity, reducing risks etc., including credit derivatives, securitization, It should be noted that the effectiveness of the financial market's acceptance of fundamentally modern banking products, services or processes largely depends on consumers' knowledge of their benefits, and therefore, on the financial, technical, and computer awareness of clients.

After all, pseudo-innovations can occur in banking, which actually neither reduce the operational losses of the banking institution, nor increase the quality and profitability of the service for customers. Pseudo-innovations include, in particular, deposit programs dedicated to specific holidays.

Innovations that are specific to the market of an individual state or a certain banking institution are of particular importance in the banking sector, because world-scale innovations are quite rare. Foreign banking product, which is implemented on the Ukrainian market is also an innovation [39, p. 34].

According to the size of the input, innovations are divided into systemic and local (point). Revealing the interrelationship of systemic and local (point) innovations, the American scientist F. Jansen noted that innovation can also be considered as a fact, which arose in the business world of something modern, and as a process in which one new input gives rise to another. Changes in technology lead to the emergence of a new product, which, if it is used effectively, requires changes in the organization of business processes [37, p. 4].

Point innovations can be evaluated as autonomous, which are not related to other new introductions that take place in a separate market, in a certain banking institution or simply in a certain business process and solve a rather narrow problem.

Local innovations make up the bulk of banking innovations. Local innovations are available to all banks. The difference between system innovations is the inability of their

autonomous implementation without reconstruction of the entire value development system, as well as the dependence of their appearance and effectiveness of implementation on the situation and technologies of various spheres.

According to the market situation and the chosen strategy, a banking institution can implement strategic or reactive innovations. Reactive innovations are a response to new introductions implemented by competitors, in reality they are forced and carried out to maintain market positions [39, p. 35].

Two types of reactive innovations are distinguished. First of all, the banking institution following the bank institution, which is the initiator, can introduce a similar service, process or administrative change, and it is precisely in these cases that the process of diffusion of innovations takes place. On the other hand, the bank has the prospect of applying only an innovative idea and developing an innovation based on it, which will be significantly different from the existing innovation.

The implementation of strategic innovations has an anticipatory nature for the formation of a modern competitive space, obtaining advantages in competition, although competitive advantages in the financial market as a result of its high transparency, for the most part, do not last for a long time.

For the purpose of strategic management of innovative practices of banks, the classification of innovations from the point of view of the nature of the requirements that are satisfied is very relevant, because it characterizes the type and prerequisites for the effective implementation of innovative strategies. Innovations can be interconnected with the satisfaction of already existing requirements, or they can be directed to the creation of modern ones [31, p. 11]. First of all, this division belongs to product innovations, as well as to technological and process innovations. As for the marketing and organizational ones, it should be noted that their implementation is constantly the result of the bank's administration realizing the need for innovations in order to solve existing issues or achieve the goals that have been set.

Realization innovations, which are directed to the formation of modern requirements, require from the banking institution the presence of significant innovative and creative potential, large sums of money. These innovations carry high risks in case wrong

strategic decision. However, the number of such innovations in the financial markets of developed countries and emerging markets is different, in developing markets there are more of them. In developing markets, as a result of the historical underdevelopment of the financial requirements of legal entities and individuals, banking institutions, developing modern products, mostly using foreign practice, objectively shape modern requirements, while at the same time increasing the financial literacy of citizens in various directions.

According to the nature of the idea that underlies the development of banking innovations, it is appropriate to single out innovations that are imitative and inventive. At the root of the emergence of "inventive" innovations is a completely modern, revolutionary idea, which radically changes the imagination of the population regarding possible methods of meeting their financial requirements. With an internal margin, imitative innovations can be radical at the same time, based on the use of an idea that already exists, before development Solving other issues in the practice of banking institutions or applying perspectives that have just appeared for the formation of modern value for buyers [39, p. 35].

In particular, the introduction in the early 80s. In the 20th century, telephone banking in foreign countries was undoubtedly an inventive innovation, because it was based on a completely new idea of using common available communication channels for the purpose of serving consumers. In the early 2000s, the development of mobile banking technology became an imitative, at the same time, systemic and radical innovation. The second example of inventive innovation can be considered the development in the late 70s. In the 20th century, a similar instrument of the financial market, in particular currency and interest rate swaps, and an imitative one - construction on the basis of an already existing system of a similar special form of credit derivatives, such as credit default swaps.

Banking innovations are also classified according to the method of their development, in particular by personal forces or within the framework of the idea of "open innovation". Traditional innovation practice model involves the implementation of all stages of the innovation process within the enterprise, in particular from the

conception of an idea to marketing support for the implementation of a new introduction, therefore, the bank develops innovations completely independently.

According to the method of using the protection of intellectual property rights, banking innovations can be divided into those that are patented, those that are registered trademarks, those that are trade secrets, those that are the object of copyright and, ultimately, no form of protection is applied.

1.3. Theoretical foundations of the organization of the innovation process in banking institutions

Innovative processes in the economic literature are considered primarily at the macroeconomic level and are characterized by scientists as "a set of qualitatively modern, progressive from a technical point of view phenomena that constantly appear, ensure the change of generations of technology and equipment, increase the competitiveness of economic entities" [5, p. 26].

The elements of the innovation process are mostly considered as its stages. Among the stages, according to the logic of the appearance of basic innovations, the following are distinguished: thorough analyses; practical analyses; design and construction activities; mastering; production; implementation; operation; spread (diffusion). Therefore, the opinion of Ukrainian scientists is correct, that in the broadest, generalized sense, the innovation process can be interpreted as a practice related to the formation, development and dissemination of innovations [46; 31].

At the level of specific economic entities, the innovation process includes certain stages that can be schematically combined into three total steps, each of them requires exceptional approaches from the point of view of organization and management [11, p. 53-54]: awareness of the requirement in innovations and generation of innovation ideas; selection, consideration and strategic assessment projects, which proposed; implementation of innovative projects.

It is worth noting that the mechanism of introducing innovations in banking institutions has some features that are characterized by common details of innovative activity in the service industry, including financial as a special branch of social production:

- intangible nature of the consequence of functioning;
- closer relationship with customers;
- a somewhat instinctive process of the emergence of innovative ideas, which are not the consequences of scientific analysis;
- the importance of independent training of the organization;
- tendency to form existing innovative networks, etc.

The following types of combinations of implementation of the innovation process in banking institutions are offered in scientific studies:

- goal setting - forecasting - formulation of conditions and organization - implementation - management [20, p. 80];
- definition of the plan, formulas for the perspective of its implementation - concretization of the plan - approval of the plan within the framework of the institution - implementation of the plan from the outside: service development strategy - operational and logistical management: rationalization - internal verification, external regulation [55, p. 303].

These combinations represent more common approaches to the management system of innovation processes, without characterizing all the elements of the sequence of formation of innovations of banking institutions and the set of necessary actions of bank employees.

Successful innovation practice is possible only under the condition of rational organization of the innovation process, which must be adequately documented, for example, in regulations, schemes, maps, formal, obvious and in a similar form proved to the employees of the banking institution.

Therefore, even in the largest Ukrainian banking institutions, the institutionalization of innovative practice, in particular, formation, is just beginning structures that

purposefully deal with these issues, proper principles, instructions, interaction schemes, assessment and monitoring systems. In modern conditions, this is a mandatory condition for guaranteeing the efficiency and success of the innovation process, because it provides an opportunity [11, p. 54]:

- describe in detail all subjects of the innovation process and the level of their responsibility;
- prepare parallel-serial implementation stages innovative of the process with the determination of backward connections and the perspective of corrective actions;
- save time and spending on the development and implementation of innovations;
- to create a balanced, strategically tested portfolio of innovations;
- perform stable control over the implementation of innovations.

The first stage of the innovation process is the generation of ideas for the next innovation or the systematization of ideas that are already present and manifested in various directions. This stage is difficult for the purpose of introduction in banking institutions. This is related to the signs of the usual corporate culture of banks, which does not encourage the employee to be creative, does not develop in a person independence, flexibility, as well as qualities that should be characteristic of an innovative person, that is, some adventurousness. Therefore, one of the priority tasks of the management of banking institutions, the strategic goal of which is the sustainable development and improvement of their own work, should be the creation of a convenient innovative environment for the staff.

However, sometimes the ability to find an idea and use it to achieve competitive advantage is important. M. Porter notes: "In the process of updating, information is of great importance: information that opponents are not looking for; information that is not available to competitors; information that is available to everyone, but processed anew. Sometimes information is obtained by investing money in the analysis of the financial market or in research activities" [27, p. 67].

Investigating the first stage of the innovation process, P. Drucker suggested paying attention to seven standard sources of innovation [9, p. 63]. The first four of them are within the framework of a specific sphere and are internal, visible employees of it (examples in relation to the banking industry) [11, p. 54-55]:

- an accidental phenomenon - an accidental achievement, an unexpected failure, in particular, the lack of desire of many consumers to switch to exclusively online services supported the emergence and development of the idea of an updated, newest branch of a banking institution based on the multi-channel provision of banking services;
- the inconsistency (incongruence) between reality and our visions of it, in particular, obstacles with assessing the creditworthiness of small and medium-sized enterprises prompted the development of appropriate scoring methods);
- process requirements arising from the investigation of flaws and weaknesses that must be addressed, including innovations in methods of ensuring the protection of online transactions);
- changes in the structure of the financial market or industry, in particular the low profitability of deposits as investment objects led to the emergence of mutual investment funds as banking products on the money market of Ukraine.

The other three sources of innovation are formed outside the institution, so they are external [11, p. 55]:

- demographic changes, in particular individualization of personal accounts of bank clients, introduction of accounts for pensioners;
- changes in society's desires and perceptions, in particular, the introduction of banking products that are related to solving environmental issues;
- modern scientific and non-scientific knowledge, in particular the implementation of administrative innovations, modern methods of conducting activities and conducting research.

Banks are also recommended to borrow practices from other sectors of the economy, improving according to the peculiarities of their functioning, and to organize cooperation with scientific institutions. However, it should be noted that the innovation must have a

commercial value, that is, a price.

The activity of connecting banking institutions with their own clients to determine the ideas of modern products and services is also actively developing. This happens with the help of online channels, in particular, websites of banking institutions and social networks on the Internet [34, p. 239], as well as during the work of banks every day, when managers are required to write down all comments and recommendations of customers and report them to the appropriate divisions of the banking institution.

In this process, the top management of the banking institution is also of great importance, the role of which was thus presented by one of the managers of the US investment banking institution Ch. Schwab (Charles Schwab): "I like asking consumers to try on. Clients outline their own question and the perfect world where this question is solved. Our task is to listen and develop something that would help to cope with despair, dissatisfaction and condemnation" [91, p. 144]. A similar view is expressed in a slightly different way by G. Mintzberg: "A single communication with a consumer who is irritated can cost more than many market research reports, simply because market research reports at best record the existing problem and the consumer is able to propose a successful solution" [65, p. 91].

It should be noted that the prospects for using the mentioned sources of innovation have not yet been used, as shown by the data of a survey of 300 heads of financial institutions conducted by the McKinsey consulting company in 2007. One of the main current issues of innovative activity in banking institutions was noted by top managers to be the insignificant application of innovations, the sources of which are consumers, as well as innovative ideas of external organizations [49].

The selection (screening) of ideas is another stage of the banking innovation process. The selection is made taking into account the correspondence of the ideas to the strategic goals of the banking institution based on the study of its actual prospects. Yes, US scientists S. Wheelwright (S. Wheelwright) and K. Clark (K. Clark) proposed a model "funnel" [55], which outlines the process of movement from a large number of imperfect ideas, between which there is competition for insignificant funds, to a small number of highly reliable varieties of innovation.

In order to successfully manage the watering can model, the banking institution needs, firstly, to stimulate the flow of innovative ideas from all sources, and, secondly, to apply effective methods of selecting ideas, in particular, to use expert assessments, ratings, economic and mathematical modeling, etc. [40, p. 35].

Specialists, for the most part, investigate the connection of innovation, which is potential, with the development strategy of the banking institution, analyze the prospects of implementing the idea in the activity, the compatibility of the idea with the technological and regulatory environment of the banking institution, the level of compliance with the requirements of customers (consumers or the bank itself). When an innovation is developed at the request of one or more customers, a problem immediately arises regarding the prospect of its distribution. B. Gates in his book gives examples of effective solutions to this issue from the experience of "Banco Bradesco" (Banco Bradesco) of Brazil [24, p. 157]. When developing modern banking products, their impact on the state is taken into account and structure accounting balance bank institutions, valueindicators of bank liquidity.

The types and degree of risks accompanying the implementation of this innovative project or arising during its implementation are also clarified innovative ideas is conducted rating prospects and price their reduction. The influence of innovations on the activities of various departments of a banking institution is studied, taking into account the possible loss of positions of other products (cannibalization). To determine the economic effect of innovative banking products and services, a detailed marketing analysis of demand and possible frameworks for determining tariffs is required. The result of the research and selection of innovative projects is a business proposal, in particular a document that clearly presents all the information that is needed in order to make a final conclusion regarding the introduction of innovations.

The management of a banking institution must solve two interrelated tasks, namely: 1) evaluation issues, that is, decide which of the proposed ideas are the best; 2) the question of balancing, that is, to form a certain portfolio of profitable projects, which will optimally correspond to the general purpose of the banking institution. After choosing the most reliable ideas and forming a model of a modern banking service, the business

process of its implementation is worked out. First of all, you need to display constant business process, which includes everyone departments bank institutions participating in the provision of the service, to describe in detail their functions and responsibilities. It should be taken into account that often during the introduction of a modern product it is enough to improve one of the existing business processes, and not to plan business process with beginning. This work ends with development of a technological map of the business process. In addition, it is necessary to develop instructions, regulations for executors, document flow schemes, accounting methods, types of required documents and internal verification mechanisms.

Technical support of the innovation process, and if necessary, the development of software are also important points. In order to increase the effectiveness of the modern business process, it is necessary to automate all its main mechanisms as much as possible. Therefore, at this stage, the problem of providing or purchasing the necessary equipment is solved, in particular computers, bank machines, scanners, identification devices, etc., and technical tasks related to the development or improvement of software are also fed [11, p. 56].

The implementation of a modern product is not possible without the training of the staff of the banking institution, who must familiarize themselves with the regulations and instructions, master modern software products, and work out the rules and methods of working with consumers. An effective innovative idea and an excellent business process may not give any consequences if they are implemented by non-professionals, because the provision of banking products and services is carried out in the course of customer service.

In order to avoid possible errors and control the effectiveness of the internal verification system, it is appropriate to test the innovative banking product as much as possible. All structural departments of the banking institution, which carry out operations to create a service, should participate in the testing [27].

Finally, another part of the process of developing an innovative banking product and service is conducting marketing research. At this stage, high-quality advertising of the

innovation is carried out, which should show potential consumers with its main competitive advantages, arouse their interest and willingness to use the innovation. In addition, it should be taken into account that after the implementation of a modern service on the market, the life cycle of a new product begins, according to the provisions of marketing theory.

Thus, the consistent typification of innovation is accompanied by the following actions of the bank's marketing department:

- decline stage – according to the popularity of the innovation, the banking institution makes decisions aimed at increasing consumers, improving the innovation, taking into account the specifics of the relevant types of consumers (growth stage);
- stage of maturity – the innovation is actively implemented, that is, it is popular among consumers, while the presence of the product corresponds to the interests of the banking institution itself;
- the decline stage occurs under the influence of certain objective market (external) and internal factors. At this stage, they use an increase in the provision or curtailment of the provision of the service.

The speed at which bank innovations pass certain stages of the life cycle depends on the type of innovation and the prospect of their protection as objects of intellectual property. The most rapidly spreading modifying innovations of products, services, individual areas of marketing. Enhancing innovations in areas such as management and technology are rather more difficult to reproduce. Finally, all kinds of radical innovations

CHAPTER 2

STUDY OF THE CURRENT STATE OF INNOVATIONS IN THE SPHERE OF BANKING SERVICES IN UKRAINE

2.1. Innovation as a factor in the development of banking activity

The innovativeness of processes and products plays an extremely important role for each individual banking institution, so the success of their implementation directs the further development of the entire banking system in general. The strategic development of banks is predicted on the basis of already known and implemented innovations, taking into account the latest requirements and wishes of consumers regarding the subsequent use of banking products and services. Taking into account the rapid development of the latest information technologies, it is likely to plan the unification of individual banks into one space for the implementation of banking products and services. Current studies of fundamental transformations in the banking industry, which are based on innovations in products, services, procedures, services, mechanisms, business processes, technologies and legislative regulation, allow us to make the following prediction. Innovations significantly affect the performance of some banking institutions and the banking system as a whole, so it is worth investigating the latest banking innovations and the effectiveness of their implementation in the activities of banking institutions.

The problems of the development of theoretical and applied elements of the development and implementation of innovations in the banking sector are given great attention in the works of such scientists as T. M. Bashkyrtseva [18], L. P. Bondarenko [4], O.V. Dzyublyuk [7], M. I. Diby [9], L. V. Kuznetsova [16], I. V. Litoshenko [17], V. V. Loiko [18], N. M. Panteleev [25], T. S. Smovzhenko [31], V. G. Fedorenko [32] and others. By conditions rapid changes in the economic situation in the state and taking into account external destabilizing factors, it is necessary to pay attention to the factors that affect the implementation of innovative banking products and services. The development of innovations is carried out both by the banking institutions themselves and by 7

professional specialized banking laboratories in the world [6]:

1. Standard Bank in South Africa is the PlayRoom Innovation Center, which has been operating since 2015 and develops the latest banking technologies.
2. The laboratories of the Capital One banking institution in the USA include three professional laboratories located in San Francisco, New York and Washington. The main work of these laboratories is directed to the development of test banking products and acceleration of all digital ways of functioning of the banking institution.
3. Commonwealth Bank's innovative professional laboratory in Australia develops modern products, services, services and solutions together with customers, partners, startups and industry experts.
4. Citi's US-based Innovation Professional Lab has established a global network of innovation centers located in Dublin, New York, San Francisco, Singapore and Tel Aviv that provide innovation learning perspectives for all employees at all levels.
5. The Visa Innovation Center in the United States works on innovations in the field of software for banking institutions.
6. Chase Bank's Center for Development and Innovation in the USA focuses on the development of branches and technologies of automated teller machines (ATMs), as well as modern areas of interaction with consumers.
7. The BBVA Innovation Center in Spain develops and implements a whole set of technological solutions.

As soon as a banking product or service becomes mass, used by virtually all banking institutions and generally available to most of its customers, it ceases to be modern and becomes familiar. In contrast to banking innovation, the operation of banking institutions has a significantly longer period of activity. It is the mass application of a modern product or service that makes it non-innovative. Banks' innovation is time-limited. Banking innovation works only within the defined term, which is calculated by the beginning and end of the life cycle of the corresponding banking innovation, but not the banking service. This means that operations that are generally recognized and widely used cannot be banking innovations. A banking product or service that is new only for a

particular banking institution, but which has already been used in other banking institutions, cannot be considered a banking innovation either. Minor changes that do not change the essence and content of a banking product or service, in particular, changes in interest rates on deposits, loans, terms of bank deposit and loan agreements, etc., cannot also be considered banking innovations [18, p. 69]

Innovations in modern banking, which has transformed into a share of financial services, is very necessary for the purpose of economic growth. Banking institutions quickly began to use customer relationship management systems

– Customer Relationship Management (CRM), which are increasingly enriching their own range, with the help of the availability of the most modern technologies. The problem of whether banking innovations have approached all classes of citizens is important and not so simple. Important innovations in the banking sector include financial inclusion, in particular the provision of banking products to citizens, services outside of banking institutions through the use of communication and information technologies, non-banking institutions in order to attract that part of citizens that was not covered by banks. The latest banking innovations in the form of Internet services and special applications in mobile phones provide the prospect of receiving banking products and services at post offices, retail establishments, etc. places that are convenient. Such innovations attract all classes of citizens to the field of banking services. The effectiveness of banking innovations is not only the ability to save a certain amount of work, time, sources and money, but also to obtain additional profit through the increase in the number of consumers, sources in the calculation not only per unit of costs, but also per one buyer, a unit of capital and assets that supports the formation of conditions for the purpose of sustainable development and strengthening the position in competition.

According to the analysis of foreign researchers, the most important global trends in banking innovations in the last five years were the following [40]:

1. Modern Internet banking services are whole financial systems in which specific attention is paid to mobile applications, because the mobile phone is becoming the main financial tool for the purpose of providing banking and services. In order to minimize the dangers and optimize the disadvantages of Internet banking, it is advisable

to observe the appropriate security measures when using the Internet banking service:

- it is necessary to check whether the connection is established with the server of the banking institution;
- it is appropriate to use licensed versions of anti-virus protection systems, protection against unauthorized access, and against fraudulent programs;
- the computer cannot be left unattended;
- after completing work in the Internet banking system, you need to log out, then you must close the browser window with the interface of the banking institution;
- there is no need to save information about logins and passwords on a computer or any other medium that is available;
- not to share the login and password with anyone;
- it is necessary to constantly change the password for entering the Internet banking system.

2. Services without the use of payment cards and non-cash payments.

The tendency to make cardless payments only through a mobile phone application is becoming more and more widespread. Some scientists predict a complete abandonment of payment cards in the near future. With the spread of Internet trade, the execution of banking operations is massively moving online, which is associated with non-cash payments.

3. Social significance and client-oriented activity of a banking institution. Among the newest banking institutions, those that use a personal approach to clients in their own activities, and are not satisfied with the solutions of standardized package offers, benefit significantly. Customers have the prospect of choosing any of the banks, so banking institutions have a need for more convenient and better customer service. It is necessary to take into account changes in the preferences of consumers and the habits of young people, who are used to easily using many types of the latest gadgets and expect from the system of banking products and services online mode, with free selection of the communication channel that is most convenient for them.

4. Application of robots. The prospect of using robotics in some business processes, in particular servicing calls with clients of a banking institution by phone, provides an opportunity to significantly reduce the costs of a banking institution, increase and speed up customer service.

5. Permanent access to the services of banking institutions (24 hours a day, 7 days a week). Banking institutions offer to communicate with their clients using any online media, including Facebook Messenger, Google Hangouts, WeChat, etc.

6. Monetization of information data. In today's world, information is the main resource of effective activity. Analytical banking information can significantly increase and help both the banking institution itself and its clients gain advantages in competition on the financial market.

7. Partnership strategy. A promising way is the implementation of banking products and services without the direct participation of the banks themselves in this process. On financial

FinTech companies are entering the market, replacing banking institutions in the implementation of traditional banking operations. FinTech companies develop exceptional innovative proposals and offer more flexible and often more favorable conditions for using their own services. A visit to branches of banking institutions and even an independent search for the most profitable options for investing savings is no longer necessary, because a virtual financial consultant will provide such services quickly and even independently debit the required amount of money from the client's account every month for the purpose of savings. JSC "OTP Bank", JSC CB "Privatbank", JSC "Rife Faizen Bank" are active subjects of the Ukrainian FinTech market [25] .

Taking into account the impact of innovations on the performance of banking institutions, it is worth analyzing the changes in the main indicators of the functioning of the Ukrainian banking system (Table 2.1) [18, p. 70].

Table 2.1

The main indicators of the functioning of the Ukrainian banking system of Ukraine
(million hryvnias)

Indicator	2016	2017	2018	2019	2020
Profits	190691	178054	204554	233102	250171
Interest income	135807	124009	140803	152954	147743
Commission income	31362	37138	50969	62057	79640
Consequences of revaluation and of purchase and sale operations	8243	7224	1853	16225	21507
Other operating income	9605	7264	8589	8147	6813
Other profits	3946	1349	1809	2809	2705
Return of written off assets	1728	1070	532	9009	763
Costs	350078	204545	182215	184746	210445
Interest costs	91638	70971	67760	74062	62895
Commission costs	7182	9650	13159	18096	24132
Other operating expenses	10920	11719	16800	11790	16405
General management costs	39356	44202	53670	62936	69437
Other costs	3089	15116	2011	2379	2728
Deduction to reserves	198310	49206	23758	10714	31037
Income tax	-418	3681	5057	4769	3811
Net profit (loss)	-159388	-26491	22339	58356	39727

Consideration of changes in the main indicators of the functioning of the Ukrainian banking system for the period 01.01.2016 - 01.01.2021. makes it possible to draw the following conclusions. Income had a tendency to increase, so interest income increased by 8.8%, commission income - by 125.24%, as a result of revaluation and from buying and selling operations - by 160.9%. Other operating income decreased by 29.1%, other income - by 31.5%. Interest expenses decreased by 31.4%, other expenses - by 11.7%, deductions to reserves - by 84.4%. Commission expenses increased by 236.0%, other operating expenses by 50.2%, general management expenses by 76.4%. The financial impact was negative during the two years under study, 2016 and 2017.

Thus, it is appropriate to introduce innovative services in Ukrainian banking

institutions that provide an opportunity to reduce management costs.

In the world and in Ukraine, the most important changes that are taking place in the current period of development, and which undoubtedly affect the future of banking institutions and the implementation of Internet banking technology, are shown in the table. 2.2 [4, 18, 63].

Table 2.2

Significant changes in the external and internal environment of banks

Internal environment	External environment
The modern generation of customers and their modern expectations	Digitization of society and economy
Growing competition from FinTech financial technology companies	Modern legislative regulations, requirements and expectations
The use of robotics in the implementation of banking operations	Modern security standard of mobile banking services in order to implement instant and reliable access to services
Implementation of "Home banking" services	"Online and multi-functional maintenance service that gives customers the ability to fully manage and check their accounts

The main ways of Ukrainian banking innovations in recent years are:

- Internet banking and mobile banking and a significant increase in banking operations that are available through these systems.
- Cardless payments using a mobile phone.
- Activation of presence in social networks.
- Availability of self-service terminals.
- "24/7" mode of operation.
- Electronic transfer is a service when transfer in pennies is transferred to the account or top up the client's mobile phone).
- Personalization of customer requirements (used mostly for VIP customers of a banking institution) [4; 18].

Most researchers agree that, regardless of technological innovations, social innovations will have a leading role in the next one. Therefore, Ukrainian banking

institutions also need to put their own clients first in the order of priorities of their own goals and organize closer relations. It is worth paying attention to the process of digitalization of society and economy. Experts emphasize that digitalization is becoming the main accelerator for innovations and changes in most sectors of the economy [25]. The joint processes of digitization of the Ukrainian economy require acceleration, otherwise they may become dangerous in the future.

As a singular of the largest Ukrainian banking institutions JSC CB "Privatbank", which is among the ten leading banking institutions in Eastern and Central Europe, is also one of the most innovative banking institutions in the world. The progressive innovations of JSC CB "Privatbank", which have received worldwide recognition, include the following services, namely: digitized payment cards, online collection, entering Internet banking via a QR code, payment mini-terminal, many different mobile applications [23].

The series of Ukrainian banking institutions JSC "First Ukrainian International Bank" also prioritizes customer requirements and is customer-centric. JSC "PUMB" continuously introduces innovative technologies and products, namely: Prepaid sticker card, social banking technologies, PUMB online mobile application, Internet banking "PUMB Online 2.0", and the number of software and technical self-service complexes (PCTS) is continuously increasing. The use of these products has a positive effect on the performance of the banking institution, because it helps to attract modern customers and maintain the level of adequacy to the needs of existing ones. Now all these products have analogues in other Ukrainian banking institutions. Application of the Internet banking system is one of the positive examples. In the table 2.3 provides a comparative analysis of services provided by Ukrainian banks using Internet banking technology.

Table 2.3.

Comparative characteristics of Internet banking services between banking institutions

The name of the service	JSC CB "Privatbank" Privat24	JSC "PUMB" "PUMB" Online 2.0	JSC "Oschadbank" Oschad 24/7
The price of connection and maintenance	there is no	there is no	there is no
The existence of a mobile application	Yes	Yes	Yes
Fingerprint recognition	Yes	there is no	there is no
Account opening	-	Yes	-
Loan repayment	Yes	Yes	-
Utility payments	Yes	Yes	Yes
Regular payments	Yes	Yes	Yes
Buying tickets	Yes	-	Yes
Currency transfers	Yes	-	-
Statements according to calculations	Yes	Yes	Yes
Replenishment/Withdrawal of WebMoney	Yes	Yes	-

Based on the analysis, it can be stated that almost all services of the Internet banking system are already implemented by the main modern Ukrainian banking institutions. The advantage of "PUMB" Online 2.0 is the prospect of opening current account online, which is an exceptional service among the main Ukrainian banking institutions.

In the time of information technology, Apple Pay. Apple Pay can completely transform the field of mobile payments, because its advantages are speed and convenience in application, reliability of storing customer data in. When connecting a payment card to the application, the payment card number is not saved. A unique device account number is assigned, which is encrypted and securely stored on the user's gadget. A separate operation is authorized using a rare one-time secret code.

Apple Pay makes it quite easy to make purchases in various applications and websites through touch - Touch ID, or look - Face ID to iPhone X users. From now on, owners of such a wallet do not need to fill out registration forms with contact data manually. Therefore, the introduction of this technology will enable users to make purchases more quickly and conveniently.

At the end of 2017, JSC "PUMB" was in the top two banking institutions in social networks. In order to improve communication with clients, JSC "PUMB" maintains pages in the most popular modern social networks, namely: Viber, Instagram, Twitter, Facebook, YouTube, etc.

At the current stage, social networks are implemented to explain to consumers the problems of using banking products, services and technologies. In addition to the implementation of informative services, the banking institution improves and increases its own client base, because modern subscribers with successful agency activity become the next clients of the banking institution.

Under the conditions of financial crises and the instability of money markets, the guarantee of maintaining the position of a banking institution on the financial market is, first of all, a reduction in costs, an increase in the speed of operations and a reduction in credit risks. Therefore, for banking institutions, the search for modern innovative technology that would meet the needs of modern times remains relevant. In this regard, a number of Ukrainian banking institutions are switching to the "blockchain" technology, which can be used for the purpose of management in all directions, for example, management of the center of the banking institution (core banking system), activities with clients [92, c. 33].

Blockchain is an appropriate database for the purpose of recording and controlling transactions. Users will be divided into simple ones, which fund modern records of the execution of individual operations, and miners, who accumulate and control records, form and forward blocks over the network. Transaction information cannot be cut or corrected, which protects against risks. In addition, the use of blockchain technology provides an opportunity to apply progressive caching and encryption, when all data resides in many subjects of network participants. Approximately every computer in this network has a copy of all blocks, which makes the technology of many one of the most secure in the world [17].

The increase in cashless money circulation due to blockchain technology increases the transparency of a single transaction. With the emergence of bank payment cards, it is clear where the money was debited, but it is not clear for what purposes. When using

blockchain technology, the protocol lists the exact purpose for which the client spent money. In addition, all records regarding, in particular, customer purchases in all stores will be stored and accumulated. Such an approach provides an opportunity to move to the digital technology of "Big data", in particular, the collection, accumulation, processing and application of a significant amount of information.

According to the calculations of the experts of the Goldman Sachs (USA) banking institution, the introduction of blockchain technology, on the basis of which the cryptocurrency bitcoin functions) in mutual netting and payment transactions on the stock market will save banking institutions in the world almost 6 billion. US dollars annually [5]. The implementation of blockchain technology will help remove elements of duplication, reduce the settlement cycle and risks, and reduce operational costs.

Since 2015, JSC CB "Privatbank", applying the blockchain technology with the encryption of traffic in the Privat 24 and sender applications and the electronic signature of transactions, has opened 1.5 million for customers. bitcoin wallets. In addition, JSC CB "Privatbank" is testing the modern ad generation service [14].

Several Ukrainian banking institutions are also forecasting to join Ripple technology. Ripple technology is aimed at banks and is already actively used by three foreign banks. Ripple technology is both a payment system and a currency exchange. The use of Ripple technology will enable banking institutions to transfer money in the world quickly and virtually free of charge. Payment innovations can significantly facilitate payments for goods and money transfers, which has a positive effect on the image of the bank and users [13].

An attractive point is the combination of blockchain technology with an innovative technology in the banking industry - biometrics. These modern technologies function in one direction - the security of banking operations in cyberspace. The introduction of biometrics technology will provide an opportunity to increase the level of information protection on the part of the client [18, p. 72-73].

Yes, with the help of a fingerprint, you can transfer funds for purchases in a non-cash way. This makes the actual presence of a payment card unnecessary when using ATMs, simplifies access to software and technical self-service complexes, deposit

centers.

Electronic money transfers, bank payment cards, virtual cards, gift cards belong to technological innovations.

Modern banking products, which can be related both to modern products and services, and to basic banking operations at the stage of their development or changes in regulatory conditions, refer to product innovations.

Banking activity, which is based on innovations, guarantees a significant reduction in costs and an increase in efficiency.

2.2. Modern technologies as a basis for innovative models of banking business development

In today's conditions, the implementation of innovations is not only the most important factor of structural transformations in the economy, but also the driving force of changes in the money market, in particular, progressive banking institutions acquire important competitive advantages, have a chance to monopolize more effective technologies, and in a similar way create and appropriate intellectual income (resource of high incomes). The formation and implementation of innovative models becomes the basis for the transition to a constant process of innovation in the experience of bank management.

The course of introducing innovations in banking includes not only technical or technological developments, the emergence of modern banking products and services, the use of the latest financial instruments, but also modern types of activities and the latest ways of functioning in the financial market. In particular, any innovation in all areas of banking functioning that supports the achievement of a positive strategic or economic effect, for example, an increase in the customer base, an increase in the specific weight of a banking institution on the financial market, and a reduction in costs [12].

The indicated signs show both positive and risky sides of the implementation of innovative development models, however, in general, they provide an opportunity to create modern foundations for conducting banking activities, form modern consumer

values for customers and guarantee the growth of the banking institution's competitiveness on the money market. It is also necessary to note that innovation becomes innovation only after conquering the financial market, therefore, the market environment can be considered a condition and standard for the fact that innovation is transformed into innovation [27, p. 28].

The basis of the development of an innovative model of banking is the innovative strategy of the banking institution. The bank's strategy is always exceptional, because each banking institution has its own, unlike the others

of banking institutions, the resource base and intellectual reserve, their methods, rules and measures for achieving development goals, which are defined [36].

The development and implementation of the innovation strategy are inextricably linked with the formulation of the conditions for its implementation, compliance with the perspectives of the regulatory and technological environment of the banking institution, and the interests of clients. Particular attention is paid to determining the degree and types of risks that may accompany the implementation of an innovative project or appear during the implementation of innovation, their price and the prospect of reduction are calculated. In addition, the effect of modern banking products and services on the state and structure of the bank balance sheet, indicators of bank liquidity and on the activities of other departments of the banking institution is taken into account [11].

The consequences of such an assessment provide an opportunity to establish economic efficiency from innovations that are introduced, which can be characterized during the optimization of processes by means of a reduction in time, work, materials, or through marketing research of the size of supply and demand for a modern banking product or service in comparison with the increase of tariffs for those that are installed.

The prepared innovation strategy is the basis for creating innovative models of banking. The most common among them are: "Socially oriented banking institution", "Smart multi-channel banking institution" and banking institution in the form of "Financial or non-financial digitalized ecological system" [30].

The majority of banking institutions adhere to the innovative model of

implementation of banking business "Smart multi-channel banking institution". Such a model is based on multi-channel integration, focusing on digital channels and a unified structure.

The following main parts of the "Smart Multichannel Bank" banking business implementation model [42] can be distinguished:

- more recent multi-channel association, which is focused on digital channels and unified structure.
- comprehensive analytical work based on highly effective collection of information on customers, micro-segmentation and planned modeling with the aim of forming a balanced portfolio of banking products and services.
- online management designed to increase the conversion rate of incoming calls.
- innovative consulting services related to the use of digital channels and individual analytical work.
- product offerings and value propositions that are based on micro-segments and optimized for the digitized channel.

The innovative model of "Smart multi-channel banking" in Ukraine is implemented by leading banking institutions, namely, JSC "State Savings Bank of Ukraine", JSC CB "Privatbank", JSC "UkrSybbank" and other banking institutions that guarantee consumers many service channels in the 24/7 mode 7. In particular, the publicly available innovative services of the State Savings Bank of Ukraine JSC are now Oschad 24/7 web banking and Oschad 24/7 mobile banking. "Oschad 24/7" mobile banking provides users with the opportunity to manage personal accounts, perform calculations and transfer funds via a mobile phone, and "Oschad 24/7" web banking provides the opportunity to check the status of their accounts and perform bank transactions without visiting a bank continuously from anywhere in the world where there is access to the Internet [21].

Today, the use of smartphones has significantly increased the prospects of mobile banking. The mobile phone is starting to replace the payment card as a payment tool. In particular, clients of JSC CB "Privatbank" have the opportunity to pay for purchases at

the cash register via mobile phones. At the same time, the latest payment technologies, including GPS, QR codes and NFC, are publicly available to customers. Thus, the technology without the use of high-frequency communication cables with a small radius of influence NFC provides the opportunity to download payment details to a smartphone and pay for the purchase of goods by swiping the mobile phone over the POS terminal. In particular, consumer recognition is implemented through NFC chips embedded in a mobile phone.

In order to protect against risks and secure data storage regarding operations using mobile phones, banking institutions offer customers to use the following latest innovations, such as services and applications. Such a service as the LiqPay application from JSC CB "Privatbank" stores all information about payments in cloud (HCE technology). In addition, Privat24 and the LiqPay application of JSC CB "Privatbank" provide an opportunity to pay for goods by scanning the QR codes of the purchased goods through the buyer's smartphone, and also independently create a QR code for the purpose of paying for purchases at the cash register. A mobile phone number linked to an electronic wallet is encrypted in a similar QR code, which makes it possible to also know cash in an ATM [71].

It remains ripe for Ukrainian banking institutions to implement such an innovative model of banking business implementation as "Socially Oriented Banking Institution", which provides an opportunity to establish close relationships between the banking institution and the client using social media to establish the interests of existing consumers, attract modern clients and instantly respond to changes in the financial sphere.

It is appropriate to use social media in the functioning of banking institutions in several ways [15]:

- formation of a marketing channel that provides an opportunity to advertise and implement a modern product in social media, as well as monitor and support the image of the banking institution;
- making social payments through special services and applications for social media developed by a bank or a non-banking financial and credit institution provides an

opportunity to conduct online micro-payments across the borders of social network users;

- the use of a social CRM system, which will provide an opportunity to receive data that determine the preferences of the Internet community in order to evaluate the interests of users;

- the introduction of scoring systems that are based on data from social networks, in particular the analysis of creditworthiness, which is based on profile data in social networks, the image of the client, the degree of trust of consumers in each other;

- the prospect of savings and social lending.

Therefore, if a larger number of banking institutions classify the financial market according to unified characteristics, in particular, the degree of cross-selling, average profit, etc., then a banking institution that is socially oriented works out the personal conditions of relations with consumers of banking services, takes into account the preferences and opinions of customers, analyzes their communication and activity in social networks. This provides the prospect of dividing consumers into groups based on common interests, maintaining continuous communication with them, advising banking products and services that clients really need, and at the time when it is needed.

Studying the requirements of consumers, Privatbank JSC produces flexible Pay Pass sticker cards, which can be pasted on the back panel of mobile phones of previous generations and carry out mobile payments, together with ordinary bank payment cards. The innovative Pay Pass product is a quick payment using contactless technology. It is enough to present the Pay Pass payment card to the reading device at the checkout, and the product will be paid for [23]. Two innovative services operate on the principle of traditional bank payment cards with a microchip, which are now issued by many Ukrainian banking institutions.

Applying the innovative model of implementation of the banking business "Financial and non-financial digital ecological system", in accordance with the existing technological platform and payment solution, the banking institution becomes an element of the digitized ecological system. Model of implementation of banking business "Financial and non-financial digital ecosystem" uses mobile technologies to implement services that are not limited by the boundaries of ordinary banking operations.

The main elements of such an innovative bank model are [29]:

- Mobile payments, which are based on mobile wallet technology or NFC, which increases the competitiveness of the banking institution in the field of payments and helps in increasing the customer base.
- Innovative products enhanced by mobile commerce tools and focused on mobile analytics, mobile loyalty, mobile marketing and non-financial and financial offers.
- Cooperation with non-bank financial and credit institutions and formation of general content.

The ecological system of innovative functioning is a dynamic system with the aim of active and open relations with clients for the general search for ideas and prospects for the implementation of banking innovations and their advertising on the financial market. Thus, under the conditions of the ecological system, the structural innovation department works in close cooperation with investors, developers of innovations, users, end users of modern services, service providers, analytical workers, marketers both at the design stage and during implementation on the financial market [42].

An innovation that provides an opportunity to meet the latest needs is the AirPay application, using which depositors of JSC CB "Privatbank" have the opportunity to pay for purchases in any type of payment terminal from any smartphone. For this purpose, the client only needs to indicate the trading organization where the buyer is, open the card in the mobile wallet and indicate the payment amount. The cash register mechanically carries out the transfer, or the application can generate a quantitative code with payment information, which is called to the employee at the cash register in order for the cashier to enter it into the system and perform the calculation.

Today, with the help of the application of mobile wallet technology, having formed the general meaning of non-financial financial and credit institutions, the banking institution becomes a "single window" for depositors through which clients satisfy their own non-financial and financial requirements. In particular, JSC depositors "UkrSybbank", who have Mastercard payment cards, receive privileges to use contactless payments based on the Android Pay service from Google. JSC "UkrSibbank" was one of

the first Ukrainian banking institutions to implement a fairly secure one-touch smartphone payment tool based on Google's Android Pay service [24].

Ukrainian banking institutions offer to use smartphones not only for the purpose of payments for purchases, but also for the purpose of accepting transfers. Thus, two banks of Ukraine, JSC CB "Privatbank" and JSC "Raiffeisen Bank" offer mobile acquiring for business, iPay and PayMeUkraine, respectively [13]. The most recent way to improve the management of banking institutions' services was the decision at the state level to make the OschadBankID platform, at the initiative of JSC State Savings Bank of Ukraine. This platform is a method of verification and identification of the holder of a bank payment card by state authorities, which provides an opportunity to receive management services in real time. By using a digital electronic signature, the user has the opportunity to complete authorization documents, in particular, to open and carry out his own business. Such an innovation will improve the investment atmosphere in the state, reduce the element of corruption in the relationships between the population and legal entities with state authorities.

2.3. The question of activation of innovation development processes of banking institutions in modern conditions in Ukraine

The current 21st century has been characterized as the century of the information revolution, the basis of which is the unprecedented speed and scale of information transmission, the development of modern technologies. In recent times, communication and information technologies have experienced accelerated development, evolutionary changes have also taken place in the field of information technologies of banking institutions. Innovative ways of electronic banking, including video banking, PC banking, mobile banking, Internet banking, telebanking, etc., have been developed and improved.

Banking institutions of Ukraine, which operate under conditions of martial law, negative effects of economic and political crisis events, structural imbalances of balance sheets in the economic sphere, processes of inflation and devaluation of the national monetary unit, should adopt strategic conclusions in order to implement capitalization

tasks, increase financial stability and income. One of the strategic means of solving the mentioned problems is the activation of work in the field of innovation and on the basis of innovative activity - increasing the effectiveness of banking business.

Fast development of informative technologies and properties the functioning of Ukrainian banking institutions requires an analysis of the prospects for revitalizing the processes of implementing modern banking technologies under the latest conditions. Fast development and dissemination of modern communication and of information technologies leads to important changes in the information industry at the global level.

The consequence of the application of innovations in banking is the emergence of remote user service, which is now a necessary prerequisite for the bank's competitiveness. The online banking system is becoming more and more common. The online banking system can be implemented at the expense of: mobile phone - telebanking; personal computer – e-banking; the worldwide Internet network - Internet banking; portable devices - mobile banking mobile banking. In addition to the above, there are products and services that are based on a remote access system, namely: video-banking – receiving banking products and services through video contact with employees of a banking institution; DVT-banking – implementation of remote access to products and services of banking institutions from a TV [58, p. 10].

Thus, innovations are represented by modern banking products, services and technologies, and their rapid development significantly overtakes the necessary methodological and theoretical bases for formulating their properties for the creation of effective systems of strategic management, regulation, supervision and calculation of the effectiveness of innovation implementations.

Innovation solutions include the management industry of the banking institution as a whole, its structural units and online branches. Innovative approaches are also needed during the organization of relationships with bank clients, in particular, during the analysis of the creditworthiness of potential borrowers and its planning, because such an analysis is necessary for the purpose of quality management of credit risks. The objective need for the development and implementation of innovations by banking institutions is due to the fact that, according to current minds, the innovative practice of banking

institutions is the main tool for maintaining the effectiveness of the entire functioning of the banking institution in accordance with the processes carried out in the country's economy.

However, despite the serious development by foreign scientists of issues that arise during the management of the innovative work of a banking institution, some methodological, theoretical, and many more practical problems at the current period of banking development require their own solution and, as a result, additional study.

It touches the issues of taking into account the peculiarities of the implementation of innovative work in banking, when innovations become a strategic source for solving the problems of increasing the profitability and competitiveness of banking institutions. In 2008, the world financial crisis, among the causes of which there is a wide use of a number of special derivative financial instruments (derivatives), in particular by banking institutions, which at one time were recognized as actually advanced innovations, determines the need to rethink the innovation processes carried out in the banking industry.

Innovations of banking institutions must necessarily have specific strategic or economic efficiency. At the same time, the income from the implementation of the innovation by the banking institution should be greater than the costs of its formation and implementation, or at least be equal to them. Therefore, banks are interested in improving the methods of formation and implementation of their own innovative products and services.

However, the financial indicators calculated by banks in order to establish the consequences of their functioning, in particular, do not disclose and do not analyze the profitability of the innovative work of banking institutions.

Ensuring profitable innovative work of banks is possible under the condition of discussing the innovative activity of banks as a planned, complex systemic process, which is based on the main principles of innovation, which are focused on achieving strategic, social and economic effects.

As the main indicators of the profitability of innovations of banking institutions, it is proposed to study both the financial consequences of the implementation of innovations,

in particular the income from their implementation, the profitability of innovations, and the entire set of data on banking functioning, namely, economic added value, general indicators of profitability, financial consequences, etc.

Therefore, in the conditions of rapid development of innovations of banking institutions, there is a need for theoretical justification and applied implementation of indicators for evaluating the profitability of the implementation of banking functioning, taking into account various types of innovations that are used in banking institutions. These can be both independent innovative products and services, and completely modern products and services for a banking institution, and technologies aimed at increasing the quality of providing services to consumers or increasing the profitability of some areas of the banking institution's operation.

The next stage of the analysis is a study of the innovative development of the Ukrainian banking system. Current Banks of Ukraine are operating under conditions of financial and economic crisis and martial law. The number of active banking institutions in Ukraine has decreased to 68 banks. Therefore, banking institutions need to actively introduce innovative technologies, services and products into banking activities in order to maintain profitability and increase the profitability of their own operations. The implementation of innovations will enable Ukrainian banks to rationally redistribute banking resources, reduce costs, improve channels for promoting banking products and services to customers, improve the quality of services offered, and thereby increase the effectiveness of banking operations and ensure financial stability and competitiveness on the money market.

Today, all Ukrainian banking institutions have their own websites, and the number of banks that carry out their own work using the Internet is constantly increasing. Banks actively develop and implement modern innovative programs of banking services for customers, and JSC CB "Privatbank" is the leader in this way of functioning.

One of the main ways of innovative work of Ukrainian banks is gradually becoming remote banking services for customers. It should be noted that the main users of electronic banking services are individuals, who in recent years have significantly increased the demand for banking services for customers, including the prospect of paying utility bills through banking institutions.

It should be noted that the National Bank of Ukraine provides conditions aimed at revitalizing the innovative practice of banking institutions, namely, the access of foreign payment systems of settlements through the global Internet system to the Ukrainian financial market of Ukraine has been facilitated and the prospects for the use of electronic money issued by non-residents, in particular, Google Wallet, have been increased, Apple Pay, Pay Pal, etc. [5].

Note that under the current conditions of insufficient creditworthy borrowers and accumulated credit risks, Ukrainian banking institutions generate most of their own profits from commission income for settlement and cash services of clients. Therefore, the operation of foreign payment systems in Ukraine is a danger of reducing the competitiveness of Ukrainian banking institutions that process transactions with high banking commissions.

So, on the basis of the conducted research on the current state of innovations in the field of banking services in Ukraine, the following conclusions can be drawn.

The effectiveness of the implementation of innovations in the activity of a banking institution is not only in the perspective of saving a certain amount of labor, time, sources and money, but also in obtaining additional profit through the growth of the number of users and sources, which helps to create conditions for the purpose of sustainable development and strengthening the position in competition.

The commercial work of banks should be based on the continuous implementation of innovations, which are the resource of their competitiveness. Innovations are considered as the final consequence of the process of improving all areas of the bank's functioning, which consists in the modernization of banking products, services, technologies, business processes, marketing and customer service, with the aim of

maintaining competitive positions in the money market. The practice of progressive Ukrainian banking institutions shows that the implementation of the innovative model supports the organic growth of the banking institution, maximizes the prospects of existing business paths and provides an opportunity to form modern and generate additional income streams and increases the liquidity of the banking institution.

Banking innovations can become a stimulus in the further development of the banking system of Ukraine. Under the current conditions, innovation for banking institutions is one of the last ways to solve the issues of financial stability, reliability and competitiveness in the money market.

CHAPTER 3

PROSPECTIVE DIRECTIONS OF THE DEVELOPMENT OF INNOVATIVE ACTIVITIES OF BANKING INSTITUTIONS

1.1. Digital innovations in banking

The functioning of economic entities in order to maintain the advantages of competition requires a stable search for modern ideas for the implementation of activities, and banking is no exception. The increase in the number of banking institutions causes banks to search for modern and innovative ideas for the implementation of activities, which are focused on monetary savings, the growth of products and services, and high-quality, quick satisfaction of the demands of their customers. It is the innovations that have become possible with the help of digitization (digitalization) that provide the basis for the creation of modern, mobile banking, which is continuously developing and oriented towards private new customers.

Despite the relevance of innovative technologies in banking and the existence of research on this problem, the subject of modern innovative technologies in banking, in particular open banking, sharing, blockchain, cloud banking, crowdfunding, which have become implemented with the help of digitalization of banking business, requires a deeper analysis [10].

Digitization creates modern prospects for introducing innovations in banking. The use of modern technologies makes it possible to create banks of the modern generation, which differ from the usual ones in a number of operations, property rights, powers, speed and orientation to customer requirements. A solid obstacle to the introduction of these innovations for now remains, firstly, the lack of awareness among a large number of citizens about the modern prospects of conducting banking business, secondly, the risk of hacker attacks and the cost of individual user data, thirdly, the lack of sources for the purpose of implementing these technologies, fourthly, the lack of practice of banking

institution employees with innovative technologies for conducting activities. The basis for the introduction of these technologies in banking is, firstly, cost savings for banking institutions, secondly, the speed of meeting users' requirements, and thirdly, increasing the information, consulting and financial prospects of banking institutions [10].

Let's examine which innovations are currently likely to be introduced into banking activities with the help of digitalization. Already now, banks are acquiring a modern frank degree - a degree of activity in the common information space. The resources of the global Internet provide an opportunity to introduce blockchain and electronic sharing technologies into banking activities quite effectively. Blockchain technology in the banking business belongs to fintech innovations in the field of creating databases with general decentralized ownership for the banking industry and its users based on the construction of data lists. At the moment, the manifestation of blockchain in payment systems is smart contracts, tokenization of payments, cryptocurrency [33]. Blockchain is a fintech innovation in the banking industry, which, with the help of digitalization of the data of banking institutions, will make it possible to build linear relationships between the banking institution and its clients.

For banking institutions, the blockchain will ensure complete confidentiality of data, raise the level of cyber security of the information space of the banking institution. In addition, this technology provides a complete list of data and the construction of transaction history, while any transaction of the bank on the blockchain is permissible only in the case of successful agreement among the members of the row. The creation of common databases between banking institutions, banking institutions and their customers will in the future lead to a serious reduction in the number of employees of banks, banking institutions and a decrease in the cost of banking products and services.

It is also appropriate to note the modern prospects of banks with the help of the implementation of technology sharing in banking activities. This technology involves transmission "for rent" sources. It is in the banking business that this technology provides the prospect of, firstly, using databases of other electronic applications, secondly, receiving funds "for rent", thirdly, general use of funds through the construction of information platforms [10].

It is appropriate to note that a banking institution has the opportunity to cooperate with sharing organizations in a common information platform by providing loans to a sharing organization or creating its own sharing of sources for users [35]. For banking institutions, the queue is also the prospect of using information sharing, that is, document sharing for the purpose of opening current accounts and obtaining other banking products and services. Studying the sharing of the banking business of Ukraine, we note that already 3 banking institutions use electronic documents in the Diya application for the purpose of performing banking operations, namely JSC "A-bank", JSC "Monobank", JSC CB "Privatbank" [34]. In Sweden, the sharing technology has been used in banking since 2016. The practice of money sharing in the USA is the provision of "person-to-person" loans by the public institution Kiva through the creation of an Internet network based on the equal rights of subjects, and not on cooperation between a client and a banking institution [19], which creates competition for the current Internet - banking. It is appropriate to note that person-to-person loans, sharing of equipment, real estate, vehicles, etc. may lead to a decrease in the demand for bank loans, which is a risk for banking institutions to suffer significant financial losses.

In the banking industry, the creation of open databases of banks of banking institutions, in particular Open-banks, is also likely. Open banks in Western Europe already operate in accordance with the law. In particular, in accordance with the second PSD2 payment directive in the West, banking institutions are obliged to exchange data with third-party users, for example with start-up organizations, fintech organizations. It should be emphasized that the issuance of banking information to external users creates additional advantages for banking institutions, customers, startups, fintech organizations, and dangers.

Under Open banking, the competition of banking institutions will increase not only with each other, but also with other financial and credit institutions, which will encourage the improvement of banking services, products, services, the development of products and services for private clients, the reduction of the cost of products and services, which convenient for customers.

The greatest benefit from Open-banking will be the clients of banking institutions, who will receive modern, profitable, fast financial instruments, profitable interfaces, a common financial platform where banking institutions, fintech organizations will be compared, a considerable number of financial and non-financial services, cheaper products and services [10].

It is appropriate to tell about the advantages of fintech organizations, which will have a conspiracy to provide modern financial services and create a common financial system, a financial platform for the financial market.

However, open banking, along with its benefits, has the risk of loss, theft of banking institutions' data, and technical interruptions. In particular, fintech organizations and other external services will receive information about customers and their transactions, that is, individual data will not become confidential. It is appropriate to note that other non-bank financial and credit institutions will appear on the financial market, which will create additional competitors for banking institutions and a cyber security risk for both banking institutions and their customers.

Studying foreign practice, it is worth emphasizing that in Great Britain in 2018, HSBC, one of the largest banking and financial services institutions in the world, developed the Connected Money application, through which clients can view information on the conditions for opening current accounts, interest rates on deposits and loans from all banks. It is the Connected Money app that creates an additional competition between banking institutions, because the client receives one information environment, which quite quickly and simply provides an opportunity to compare information on the prices of banking products, services and the conditions of their receipt [20].

It is worth noting that creating a similar joint financial platform with five multinational companies in real-time services may create a threat of dependence and monopolization of the banking industry by these MNCs and the risk of losing the financial protection of countries and the world. However, now each of these TNCs is moving in its own direction. It should be noted that the concept of open banking is likely to work quickly in our country, because the President of the World Bank assumes that it is Open banking that will provide an opportunity to demonopolize the Ukrainian

economy, and therefore provides proposals for the implementation of open banking. These proposals were submitted in 2019 and their implementation is predicted by 2022 [8]. According to the resolution of the National Bank of Ukraine regarding the implementation in our country of the PSD2 directive of the European Union, the following groups of organizations will be able to provide payment services in our country in the format of open banking [8] (Table 3.1).

In Ukraine, the initial step towards open banking is the creation of the Let'sPartner marketplace in 2018.

Table 3.1

Participants who will have the opportunity to provide services in the form of open banking in Ukraine in accordance with the PSD2 directive of the European Union

Providers of payment services	Characteristics of the payment service provider
National Bank of Ukraine	Implementation of some types of payment services
State authorities	
Bank	opening current accounts for clients; implementation of settlement and cash service for clients
Organizations of electronic money	Issue of electronic money; provision of electronic money services; opening accounts for payment; provision of payment services
Postal institutions	Opening payment accounts; provision of payment services
Payment organizations	Opening accounts for payment; conducting payment transactions

This marketplace will provide an opportunity to exchange information between banking institutions, businesses, startups, and fintech organizations.

The application of crowdfunding prospects in the banking industry - predicts the voluntary combination of financial sources with the help of the global Internet. Both banks and non-bank financial and credit institutions, as well as some natural persons, can make these combinations.

Small business crowdfunding is an alternative to bank loans, and therefore banking institutions suffer financial losses from it. However, if banking institutions will connect their sources, then this is a prospect of obtaining additional income for the banking business. In addition, the banking institution will have the opportunity to act as a

financial intermediary for pooling the resources of some individuals and investing these resources in a specific project [10].

Therefore, a banking institution can receive income in the form of commission income during the pooling of funds and their investment without its own costs. Crowdfunding of banking sources for the purpose of "public investment" by banking institutions of individual projects is also an additional popularization for banks.

In 2018, it was proposed to form the first database in the world based on the creation of artificial intelligence [26], which will change the banking business in the future.

When conducting banking business with the help of "cloud technologies", it also creates modern, additional perspectives for banking institutions and their customers.

Thus, blockchain, sharing, open banking (Open banking), crowdfunding, banking in the clouds will cancel the legible division in the banking industry into banking institutions and customers.

The current banking institution is a union (synergy) of banking business (banking) and information space, which implements modern information technologies of blockchain, queue, open banking (open-banking), crowdfunding, banking in the clouds in the direction of providing digitally visualized (digitalized) services.

3.2. Trends in the development of innovations in the world, challenges and threats of the banking business in the conditions of the digital economy

The usual approaches to providing banking products and services and conducting banking business no longer satisfy the growing demand and expectations of customers, do not meet the needs of increasing efficiency and profitability. The banking sector is experiencing the growing influence of digitization (digitalization) of the economy, technologies and demographic factors. Digitization (digitalization) of the economy has changed the system of economic relations.

Competition and disintermediation on the part of financial service providers is growing, namely, not only non-bank financial and credit institutions, but also high-tech

institutions and start-ups "Fintech-kopaniy". In particular, Fintech companies can be considered, on the one hand, a specific danger for the development or even the functioning of the banking industry, considering that Fintech companies, next to modern technological regulations, want to become leaders in its highly profitable sectors, and on the other hand, a modern stage of development, if banking institutions can cooperate, creating modern advanced relationships with Fintech companies. Therefore, the banking system requires the selection of a response strategy to modern trends of digitization (digitalization) of the economy. A similar selection will characterize in the future the market position of a separate banking institution and the banking system as a whole, which will lead to the acceleration of the emergence of new financial innovations.

The digital (digitalized) economy is an economy built on modern methods of generating, processing, storing, and transmitting data, as well as digital (digitalized) computer technologies [34].

The above is indicated the study of innovative processes of banking institutions of states in the world confirms that thorough financial innovations have changed their own nature and are mostly based on digital (digitized) computer technologies (Table 3.2) [25, p. 69].

Table 3.2

Fundamental innovations in the banking sector

Bank-innovator of innovations	Characteristics of financial innovation
"Nana Bank" (South Korea)	"Nana Bank's Integrated Mobile Strategy@ - a unified mobile strategy for providing customers with various products, services with access to intelligent financial solutions online in order to solve and simplify the financial and life issues of customers
"Idea Bank" (Republic of Poland)	"Idea Cloud (Secure Banking Cloud)" - a banking temple that plans expenses, manages the budget and plans the financial state of the organization
"Fidor Bank" (Federal Republic of Germany)	"Fidor Smart Current Account" is an online settlement account for managing financial resources, finding the most profitable products, and services for creating additional income.
"CaixaBank" (Spain)	"Virtual Assistant in Foreign Trade WATSON" Successful financial terminal with more mobile access to information for employees and customers - provision of specialized recommendations and consultations

The use of cloud services for the purpose of carrying out the main work is a further latest trend of change in the banking industry. In particular, cloud solutions from JSC "Idea Bank", which gave it the opportunity to revolutionize traditional banking operations, which now require a reduction in time and ease of their execution. The innovation "Idea Cloud (Secure Banking Cloud)" provides an opportunity to warn consumers about the likely negative movement of cash flows and the subsequent result of the budget, based on the analysis of their behavior model [6].

"Idea Cloud" (Poland) is an intelligent system because, by modeling the behavior of customers, it evaluates and plans the financial situation of the organization and warns the company about an unforeseen deficit or the next surplus of the budget of financial sources. In case of an unexpected shortage of financial resources, the "Idea Cloud" system will mechanically recommend a solution, in particular, credit or factoring, so that the organization has the opportunity to continue functioning. One of the important functions of the "Idea Cloud" system is its virtual shelter, which is designed specifically for the purpose of saving valuable company documents, in particular, personal and financial data of presentations, etc., to ensure the maximum level of security, reducing operating costs [46].

Banks pay special attention to creating a customer base and strengthening relationships with customers. Thus, in recent years, the direction of a personalized approach to targeting and relationships with customers based on the creation of their complete profile has remained stable. This also provides an opportunity to form modern marketing strategies that are based on the activity of bank clients. Knowledge of the image of the bank client determines the development of modern products and modern relationships, exclusively with digital (digitized) and mobile clients of banking institutions (Table 3.3).

Table 3.3

Innovative products and services

Bank-innovator of innovations	Characteristics of innovation
"CaixaBank" (Spain)	"SegurCaixa Auto" is a modern auto insurance solution with additional functional perspectives for mobile devices. -
"CaixaBank" (Spain)	"RiciBox" is an online and multi-functional service that enables customers to fully manage and check their accounts.
"Fidor Bank" (Germany)	"Fidor Smart Current Account" is a free bank account that is built using an additional programming interface and provides additional prospects for continuously expanding the range of products and services.
"Wells Fargo" (USA)	"CEO Mobile biometrics" is a modern standard for protecting mobile banking products with the aim of providing mobile and reliable access to products

Awareness of the regularity of the financial association, increasing the profitability of the activity determines the search for modern approaches to attracting customers, which determined the further trend and the path of development of financial innovations.

Thus, the financial innovation "The Mobile ATM Service for Small Medium Enterprises" (mobile ATM) of JSC "Idea Bank" (Poland) combines a mobile ATM and a deposit service, which is located on an electric car "BMW i3", which is operated by highly qualified employees of the banking institution, which offered free of charge for small and medium-sized business entrepreneurs - bank clients.

The financial innovation "The Mobile ATM Service for Small Medium Enterprises" (mobile ATM) from JSC "Idea Bank" not only meets the growing demands of customers for mobile solutions that are convenient and easily accessible, but also encourages entrepreneurs to keep their own cash in a banking institution, thereby improving their own future prospects for obtaining loans. With the help of the online tracking system, which is built into the car, customers have the opportunity to carry out operations in it that are synchronized with their accounts within a few minutes [25, c. 70].

The innovation "Risk Modeling Innovation through Data Analytics" on risk modeling through data analysis from "CaixaBank" (Spain) confirms the trend of work on increasing the effectiveness of risk management and the implementation of modern approaches to the business analytical work of banks.

In the table 3.4 shows the trend of using digital (digitalized) technologies in order to

improve the quality of service to bank customers.

Table 3.4

Innovations in customer service channels of banks

Bank-innovator of innovations	Characteristics of innovation
Alior Bank (Republic of Poland)	"Online Credit Process by Alior Bank SA" - online lending, which allows the client to get a loan within the process without papers and going to the online store
MBank (Republic of Poland)	"New MBank" is a digital banking institution of the modern generation that combines banking functions with progressive private financial management, online customer relationship management, social network integration, commercial financing, video banking, etc.
"Bank of East Asia, Limited" (Hong Kong, China)	"Digital Branch" - a series of innovative tools of the bank, containing an interactive touch screen, which changes to an interface, carrying out direct communication with staff
Mizuho Financial Group Inc. Japan	"Pehher" is an innovative industry solution of the physical channel support service, acting as a concierge in the bank's regular branches in Japan, with the aim of researching and finalizing customer needs

A study of innovations in recent years shows that multi-channel access to products and services of banking institutions is gaining stability. Therefore, efforts to establish the best service channel are justified

bank client. Digital (digitalized) differentiation determined the classification of customers according to the level of feeling towards digital (digitalized) innovative technologies into groups, in particular, customers who use the usual channels of mutual relations; partially apply innovations in accordance with their profitability and accumulated practice; they try, but do not have the perspective to widely apply innovations; consider, innovations are a relevant and inseparable part of one's life [25, c. 70]. The existence of an individual profile of a bank client provides an opportunity to reveal the best service channel for this client online, based on data analytics and a model of behavior and interests, which adequately increases satisfaction and trust on the part of the client, and also reduces costs and increases the profitability of banking activities. The introduction and dissemination of the above-mentioned innovations led to a stable growth trend in the implementation of social and digital banking products and services.

Thus, innovations in payment systems will remain in the trend of change, making them simpler and more important, not worsening the existing models of the payment process, but changing the interfaces of their implementation, focusing on the personalized profile of customers.

Innovations that are socially oriented and affect the economic and social development of society are a separate group (Table 3.5).

Table 3.5

Socially oriented financial innovations

Bank-innovator of innovations	Characteristics of innovation
"Standard Bank" (South Africa)	"Standard Bank-AccessBanking" a complex of products, which is aimed at citizens who have a small income and live in areas that are poorly covered by bank services
Fifth Third Bancorp (USA)	"Bank Homeowner Reemployment" is an innovation designed to provide services to unemployed mortgage borrowers
"Nusenda Credit Union" (USA)	"Co-op Capital" for customers who are out of reach of conventional methods of financing and who have a small profit, unsatisfactory credit history
"Tyrk Ekonomi Bankasi" (Turkey)	"TEB Women Banking" - the opening of a separate division for the provision of services to women

In particular, the innovation "TEB Women Banking" (Republic of Turkey) is a response to the global trend of women's business development, the size of which in the world is almost 300 billion. dollars USA, or 37% of small and medium-sized enterprises. Thus, in Turkey, women's entrepreneurship owns 10% of the capital of national small and medium-sized enterprises, and in the Republic of Kazakhstan - 42%, which is 40% of GDP [9].

The financial program "Co-op Capital" (Nusenda Credit Union, USA), which combines sponsorship and microcredit, creates trust relationships within which member companies, in particular associations, cooperatives, unions financial and credit development institutions, sponsor a loan application at a low interest rate with the help of a personal deposit account for affiliated persons, and also issue loan underwriting [37]. At the same time, the introduction of "Co-op Capital" creates social consequences, in

particular, it increases the degree of business activity and employment of citizens, increases the chances of employment and the well-being of citizens.

The issue of bad loans, which intensified as a result of the financial crisis of 2008-2009, did not find its own solution. Therefore, the innovations of recent years regarding the improvement of the internal processes of the banking institution affect the increase in the success of the process of collecting overdue receivables, turning away any negative actions on relations with clients (Table 3.6).

Table 3.6

Innovations to improve the internal processes of the bank

Bank-innovator of innovations	Characteristics of innovation
"ZUNO Bank" (Czech Republic)	A bank platform has been developed that optimizes the IT structure and unifies the implementation of online banking
"DenizBank" (Turkey)	An information collection system that uses a rationalization algorithm for collecting overdue receivables is presented
"DenizBank" (Turkey)	Introduced a platform that combines customer relationship management strategies, plan analytics and search analytics with a user-friendly intelligent interface
"AliorBank" (Poland)	An intelligent automated debt collection process based on a scenario approach has been implemented

In particular, the innovation "Smart Collect" of JSC "Alior Bank" (Republic of Poland) is a modern strategy for collecting overdue payments for loans, tailored to an individual client. The financial innovation "Smart Collect" is a consolidated platform that combines Online Store System (CRM) strategy, data analytics and modeling to plan requirements and improve the quality of banking customer service. The financial innovation "Smart Collect" provides online access to all debt service tools, enables the formation of debt collection strategies based on a scenario approach, and reduces and optimizes costs.

Another issue is continuous improvement of customer relations [38]. The "Powerful Teller-Dashboard" concept from JSC "DenizBank" (Republic of Turkey) combines a customer relationship management system, intelligent analytics, data integration to create a personalized customer profile, and a practical channel-independent relationship interface. The prospect of customers choosing a relationship channel with a minimum

waiting time provides an opportunity to reduce operating costs, increase the size of sales, reduce the duration of operations, and increase the satisfaction of employees and customers of banking institutions.

Investments are a necessary prerequisite for the development of innovations. Therefore, investments in basic solutions of banking institutions in order to improve non-modern and existing systems, as well as in innovation in order to maintain and strengthen positions in the competition of banks in the market, is the next trend. At the same time, this trend is intensified by competition from non-bank financial and credit institutions and high-tech FinTech companies.

Currently, the strategy of cooperation of banks with FinTech companies can be different, namely: the position of waiting and buying FinTech companies (conservative); partnership with FinTech companies, formation of technological innovation laboratories (liberal); rejection of FinTech-companies until FinTech-companies have a significant specific weight in the financial market, and after the use of strict regulation of the National Bank of Ukraine (repressive).

Investing in security systems due to the increase in cyber threats for banks also remains on trend.

The following conclusions can be drawn on the basis of the conducted research on promising directions for the development of innovative activity in banks.

1. A modern bank is a synergy between banking products, services and information space, which is possible with the help of the latest innovative digital (digitalized) technologies. In the future, this synergy will provoke significant development of banking institutions in terms of authorized capital, operations, service, financial instruments, products, services, management, risks and methods of their minimization, forming linear relationships in the client-bank system and will provide an opportunity to create a modern type of banking, which in addition banking products will provide many other services to the client that are not related to finance and are tailored to the individual.

2. Formation of groups within the corporate structure from among talented to

highly qualified professionals and building a culture of generation, development and implementation of digital initiatives is another important problem. The combination of traditional and digital corporate culture requires the formulation of common goals, cooperation and general responsibility. Such groups should bridge the gaps between existing business models and innovative technological trends. When implementing digital (digitalized) initiatives, in particular, innovation implementation projects, a cross-functional approach is beneficial, which provides an opportunity to ensure flexibility and the ability to make transformative changes over time. The implementation of innovations based on digital (digitalized) technologies requires the integration of current corporate and modern technologies, which poses the problem of building third-party partnerships with high-tech campaigns capable of implementing innovative solutions, establishing the conditions for cooperation between banks and FinTech companies and criteria for assessing the contribution of such cooperation to formation of additional value, profitability and protection for the client and the bank in crisis.

CONCLUSIONS

In the qualifying master's thesis, a theoretical generalization was made and a solution to an important scientific task regarding innovations in the field of banking services was proposed. Based on the results of the research, a number of conclusions and generalizations were formulated.

The classification of features of a specific object at each stage of its analysis is conditional, which is the result of a hidden set of features of this object. The considered classification of bank innovations should serve as one of the theoretical foundations of the organization of strategic management of the innovation process of banks, establishing the essence and nature of innovative work strategies.

1. The identification of this business process consists in the formulation of its following properties:

- the manager of the business process, who is responsible for its organization and consequences and can change its structure, is one of the top managers of the bank or the head of a separate department;
- the board of the bank, all of them are providers of resources to the process. Users of the process who use its consequences can be both external, in particular counterparties and clients, and internal, namely the banking institution as an economic entity, some employees or departments, managers of various levels, etc.); schemes of relationships with other business processes of a banking institution are determined by the essence of operations performed at each stage of the innovation process.

The success of the implementation of innovations in the activity of banks is manifested not only in the perspective of saving a certain amount of time, labor, resources and money, but also in obtaining additional profit with the help of an increase in the number of customers and resources, which supports the formation of conditions for the purpose of sustainable development and strengthening the position in competition.

The analysis of the latest innovations implemented by modern banks made it possible to draw a conclusion about the active introduction of innovations into their activities,

however, some banks still pay little attention to the latest global trends in the development of innovative activities, which are based on a combination of modern technologies and automation of banking processes.

The transition to innovative models of banking activity will enable banking institutions to:

- improve the quality of banking products and services, provide them with modern consumer qualities, increase the specific weight of the banking institution on the money market;
- to improve the performance of the banking institution by means of cost savings, which will contribute to the improvement of organizational, personnel, technological, marketing, financial and operational activities of banking institutions;
- optimize the degree of risks and increase the liquidity of banks with the help of the growth of innovative products in the product line;
- achieve strategic, social and economic efficiency, which is expressed in strengthening the position of the banking institution on the market, increasing the degree of satisfaction of customer requirements in innovative products, services, technologies and exit of the banking institution to a qualitatively modern technological stage of development;
- to bring banking institutions to the world money market with the help of the application of innovations of a foreign nature.

As an innovative practice, banks, in particular JSC OTP Bank, JSC Oschadbank, JSC CB Privatbank, JSC PUMB, JSC Raiffeisen Bank, need to implement the most modern technologies that other banks on the financial market have not yet managed to use. One such technology, which is becoming more and more common over time, is blockchain technology. It is known that blockchain technologies represent a modern means of organizing data storage and security.

The use of biometric technologies becomes another way to reduce the costs of banking institutions by up to 50% during remote lending to the population. Biometrics significantly increases the range of providing banking services and online mode. Currently, banking

institutions store and process their own customers' biometric data in accordance with the Personal Data Act, but this need is likely to disappear quickly, allowing banking institutions to improve costs and offer more financial services to customers.

For the convenience of their own customers, Banks offer a language recognition system. This technology is not related to protection, but provides an opportunity to improve the practice of contacting call centers. Now it is enough for customers to give a voice command with the main word and the system will mechanically form an answer to the request.

In the case of not providing their own clients with the prospect of quality service using the global Internet network, Ukrainian banking institutions will lose in the competition for clients, therefore modern Internet technologies must be promptly introduced into banking activities. Research on the application of Internet technologies by banking institutions proves that an effective combination of traditional and virtual customer service schemes is needed. Such a strategy, based on the motivation of personnel in the implementation of innovations, creates advantages in the competition of banking institutions on the financial market and will help to increase the effectiveness of banking activities in our country.

Weak staff activity is another issue that hinders effective innovative banking activity. Currently, Ukrainian banking institutions must quickly solve the tasks of encouraging employees to participate in the development of innovative ideas based on systems of anonymous recommendations and open competitions for the development of personnel with financial incentives.

Modern the stage of digitization (digitalization) of the economy determined trends and ways of development of the banking sector, but at the same time revealed challenges and dangers, in response to which banks must mobilize all their resources. Thus, it is expedient to include the need to set priorities of digital (digitalized) initiatives and determine their specific compatibility with the bank's corporate development strategy as urgent tasks. In addition, the effect of digital (digitalized) offers should be reflected in the main indicators of the profitability of work, as well as in the assessment of the increase in the price of activity before and after the introduction of innovations.

During the digitization of the economy, data becomes a modern asset, which requires the rationalization of the infrastructure. Currently, most of the processes in the work of banks are automated, and the software is specialized, the latest and such that it is continuously renewed. However, strategic decisions increasingly require analytical support. Therefore, the strategic importance and the introduction of innovative approaches to the study of big data by banks are gaining importance.

At the same time, signs of digitization (digitalization) of the economy, along with benefits, bring modern challenges and dangers to all subjects of this process. Thus, the spread of personalization of digital services leads to a decrease in verification of their implementation, and therefore, an increase in the actions of fraudsters increases the risks of information leakage. In addition, with the help of a stable increase in cyber attacks, it is necessary to protect payment and automated banking systems, smart contracts, the Internet and mobile financial applications, etc. by increasing the degree of information protection under the condition of attracting additional investments and regulation in order to reduce the risks of digital (digital) technologies.

Thus, now the banking system of Ukraine does not stand aside from the foreign innovation process in the banking field and has an appropriate innovation reserve for the purpose of effective implementation of innovations that have proven themselves positively on the financial markets of other countries, as well as the development of its innovations, where it already has certain achievements . However, the general processes of digitization (digitalization) of the Ukrainian economy require acceleration, otherwise they may turn into dangers for Ukraine.

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Онлайн сервіс створення та перевірки кваліфікованого та удосконаленого електронного підпису

ПРОТОКОЛ
створення та перевірки кваліфікованого та удосконаленого електронного підпису

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Підписувач: УТЕНКОВА КАРИНА ОЛЕКСАНДРІВНА
П.І.Б.: УТЕНКОВА КАРИНА ОЛЕКСАНДРІВНА
Країна: Україна
РНОКПП: 2939018503
Організація (установа): ФІЗИЧНА ОСОБА
Час підпису (підтверджено кваліфікованою позначкою часу для підпису від Надавача): 18:38:13 04.12.2024
Сертифікат виданий: КНЕДП АЦСК АТ КБ "ПРИВАТБАНК"
Серійний номер: 5E984D526F82F38F0400000074586401307A3D05
Алгоритм підпису: ДСТУ 4145
Тип підпису: Удосконалений
Тип контейнера: Підпис та дані в одному файлі (CAAdES enveloped)
Формат підпису: З повними даними ЦСК для перевірки (CAAdES-X Long)
Сертифікат: Кваліфікований

Версія від: 2024.10.24 15:00

Онлайн сервіс створення та перевірки кваліфікованого та удосконаленого електронного підпису

ПРОТОКОЛ
створення та перевірки кваліфікованого та удосконаленого електронного підпису

Дата та час: 23:03:33 18.05.2025

Назва файлу з підписом: 04_диплом_Yang_Jian.pdf.p7s.zip[1].p7s[1].p7s
Розмір файлу з підписом: 1017.4 КБ

Назва файлу без підпису: 04_диплом_Yang_Jian.pdf.p7s.zip[1].p7s[1]
Розмір файлу без підпису: 982.0 КБ

Результат перевірки підпису: Підпис створено та перевірено успішно. Цілісність даних підтверджено

Підписувач - 1: АЗАРЕНКОВА ГАЛИНА МИХАЙЛІВНА

П.І.Б.: АЗАРЕНКОВА ГАЛИНА МИХАЙЛІВНА

Країна: Україна

РНОКПП: 2571514226

Організація (установа): ФІЗИЧНА ОСОБА

Час підпису (підтверджено кваліфікованою позначкою часу для підпису від Надавача): 20:29:38
05.12.2024

Сертифікат виданий: КНЕДП АЦСК АТ КБ "ПРИВАТБАНК"

Серійний номер: 5E984D526F82F38F04000000E4DA710112DF3D05

Тип носія особистого ключа: Незахищений

Алгоритм підпису: ДСТУ 4145

Тип підпису: Удосконалений

Тип контейнера: Підпис та дані в одному файлі (CAAdES enveloped)

Формат підпису: З повними даними ЦСК для перевірки (CAAdES-X Long)

Сертифікат: Кваліфікований

Підписувач - 2: Омеляненко Денис Олегович

П.І.Б.: Омеляненко Денис Олегович

Країна: Україна

РНОКПП: 3634714115

Час підпису (підтверджено кваліфікованою позначкою часу для підпису від Надавача): 13:24:41
03.01.2025

Сертифікат виданий: "Дія". Кваліфікований надавач електронних довірчих послуг

Серійний номер: 382367105294AF9704000000EF5A070007064B03

Тип носія особистого ключа: ЗНКІ криптомодуль ІІТ Гряда-301

Серійний номер носія особистого ключа: Не визначено

Алгоритм підпису: ДСТУ 4145

Тип підпису: Кваліфікований

Тип контейнера: Підпис та дані в одному файлі (CAAdES enveloped)

Формат підпису: З повними даними ЦСК для перевірки (CAAdES-X Long)

Сертифікат: Кваліфікований

Версія від: 2025.01.15 13:00