

DEVELOPMENT OF A BANKING SERVICE SYSTEM BASED ON THE SYSTEMATIZATION OF DIFFERENT DISTANCE SYSTEMS

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ABSTRACT

This article identifies common problems substantiating the feasibility of using and developing a unified system of innovative banking services based on the analysis and systematization of various systems of remote banking services and methods for assessing its effectiveness. On the example of large commercial banks of Uzbekistan, innovative banking, the use of which will solve the identified problems. Implementation of the specified unified system of innovative banking services is designed to provide banking service systems based on the systematization of various distance systems as a whole, with a focus on achieving criterial values of key performance indicators.

KEYWORDS: *Performance Criteria, Innovative Banking System, Systematization Of Various Remote Service Systems, Internet Technology, Remote Banking, Communication Technology.*

INTRODUCTION

As a strategic goal for the development of the economy of Uzbekistan, the Government of the Republic of Uzbekistan has determined the entire local and widespread introduction of innovative technologies and products created on their basis. This fully corresponds to the trends of modern development of the most economically developed states. Innovations have become the essence of modern development in all spheres of the economy, including banking. This process significantly affected the banking sector both as an area of application (object) of innovations and as a factor contributing to their implementation in the economy as a whole. The concept of "innovation" can be considered in a broad and narrow definition. In a broad definition, banking innovation applies to all innovations in all areas of the bank's operation. The area of interest of this study is innovative banking in a narrow definition, which is the implementation of banking operations and transactions based on communication and Internet technologies. The most common innovative banking products to date, resulting from the use of communication and Internet technologies, relate to remote banking (RBS).

A comparative analysis of the level of development of innovative activities, in particular, remote banking, allows us to assert that the foreign analogue of services is significantly superior to the Uzbek one. In developed countries, for more than 20 years, remote banking has been the main model for the development of the banking sector. At the same time, in Uzbekistan today there is

a noticeable lag behind foreign banks in the field of innovation process management, which leads to a significant weakening of their positions in the competition in the international financial market. To avoid this, it is necessary to urgently take measures to intensify the innovative activities of credit institutions, otherwise the domestic banking system will inevitably face serious difficulties. The consequence of this may be the absolute unwillingness of domestic commercial banks to compete with foreign financial institutions, even in the domestic market. An actively emerging global financial system is leading to an equally global financial competition. A fundamentally new external environment of activity is emerging for national banks. Therefore, the only correct solution in the current situation in the domestic banking services market is the organization of an effective innovation process in Russian credit institutions.

The relevance of this study is also explained by the fact that innovative banking technologies are the most important factor in ensuring the stability of the functioning of banks and contribute to their economic growth. Banking is becoming increasingly dependent on the latest technology. To improve the quality of services, to gain competitive advantages, banks that have entered the market and are striving to change their corporate image use the latest technologies.

The relevance of the work is also dictated by the need to develop mechanisms for the implementation of the task set by the Government of the Republic of Uzbekistan to increase the availability of banking services for the population. Currently, in fact, half of the population of the Republic of Uzbekistan is deprived of the opportunity to use banking services, there are disproportions in banking services between large cities and individual regions, between cities and rural areas. The introduction and widespread use of innovative banking service systems will alleviate this problem.

The above arguments prove the need for a scientific substantiation of ways to intensify the innovative activities of banks in the field of remote banking. Thus, a scientific study of the development of innovative banking activities, in particular, remote banking systems in order to increase the competitiveness and efficiency of the banks of Uzbekistan, ensure the availability and quality of banking services is objectively necessary and relevant.

The purpose of the study is to theoretically and methodologically substantiate the feasibility of using and developing a unified system of innovative banking services based on the analysis and systematization of various systems of remote banking services and methods for assessing its effectiveness.

METHODOLOGY

In the work, the author identified six tasks, the solution of which ensures the achievement of the research goal:

- 1. The first task of the work is related to the definition of the economic essence and specific features of an innovative banking product..** Considering the essence of an innovative banking product, the author in this study used the fundamental provisions of the above documents.

Innovations are innovations introduced into production or into the service sector in the form of objects, technologies, products that are the result of scientific research, inventions and discoveries, and which are qualitatively different from their counterparts (or have no analogues).

The paper adopted the well-established concept of innovation, or innovation, as a realized innovation, regardless of the scope. That is, an innovative product is the result of the process of creating new use values. And the novelty of the consumer properties of the goods (product) is a defining feature of innovation.

Innovations have a certain positive economic or strategic effect. At the same time, the benefit from innovation should exceed the costs of its creation and promotion, or at least be equal to them. Banks are interested in modernizing the methods of creating and delivering their services with the goal of bringing operating costs and prices for them to a level consistent with a competitive position.

Thus, the following conclusions can be drawn: the concept of "innovation" is applicable to all innovations in all areas of the bank's operation; innovation has the following characteristics: the use of new technologies; product novelty; satisfaction of market demand; commercial feasibility.

Therefore, an innovative banking product is the end result of innovative activity in the form of new or modified products and technologies for their implementation on the market; innovation is the process of building new and modified products and / or technological processes for their implementation on the market.

Innovative banking activity does not change the essence of banking products and services, but expands their content, modernizes forms, and introduces qualitative changes in the system of bank relationships with customers. The list of innovative banking products cannot be a constant value; it changes in each subsequent period of time. At present, transaction transactions based on communication and Internet technologies are innovative banking products.

2. The solution of the second task of the work is connected with the systematization of investment banking products, determined by the specific functions of the bank. In order to concretize the goals and results of innovation activity, as well as to systematize approaches to its many possible manifestations, a fairly complete classification of innovations is necessary.

Currently, in the economic literature there are many different approaches to the classification of banking innovative products. The most complete classification of innovations in the general scientific aspect is given by A.I. Prigogine. Relying on it, and also summarizing the theoretical and methodological studies of other authors (V. V. Maganova, P. Semikova, etc.) in this area, the paper reveals the main patterns that affect the emergence of banking innovations and their whole range is reduced to a certain structure.

The above classification of banking innovations eliminates duplication of the same type of concepts, provides a more complete and holistic understanding of the subject of research, and makes it possible to identify patterns in the development and application of innovative processes and problematic relationships between their various groups and types in credit institutions. The typology of banking innovations makes it possible not only to select a specific strategy and a method for forming an organizational and economic mechanism for managing remote banking services, but also to determine possible forms of implementation and promotion of banking products.

3. As a result of solving the third task and scientific work, an organizational model of banking engineering was built. The process of designing, developing and implementing competitive

innovative banking tools, products and business processes is called banking engineering. In the dictionary of the NIGMA website, financial engineering is interpreted as combining or separating existing financial instruments in order to create new financial products (financing packages). The essence of banking engineering is to create innovative banking products and services that are used by banks to redistribute financial resources, risks, increase liquidity, increase profitability in accordance with their own interests, the specific needs of counterparties and changes in the macro and micro environment of the bank.

The main goal of banking engineering is to extract additional profit based on the use of free market segments and their shortcomings through the achievement of innovative banking

Products of the optimal ratio between competing characteristics (risk, profitability and liquidity). The effectiveness of banking engineering is guaranteed by the methodology adapted to the conditions of Russian banking realities, which provides for its consideration as a process that includes a number of successive stages. The study, systematization and generalization of the methodological foundations and established practice of creating innovative banking products in the Republic of Uzbekistan and abroad formed the basis for identifying the most characteristic stages in the creation and promotion of an innovative banking product. The paper proposes a typical organizational model for the creation and implementation of innovative banking products on the market, based on the principles of banking engineering.

Each of the stages performs certain tasks and functions, reflecting the content of banking engineering. Thus, the proposed organizational model of banking engineering is based on the successive passage of several stages and can be involved in all spectrums of banking activities for the production of a bank-specific product of an innovative banking product. The identification of stages is of fundamental importance for determining the cost structure of the bank for the creation of an innovative banking product and, on this basis, assessing the effectiveness of its implementation.

4. The solution of the fourth task of the work is connected with the analysis of systems of innovative systems of banking services. An innovative banking service system is a set of innovative banking products and technologies for their creation, methods of implementation and promotion on the market, forms of service, functional and technical support, as well as the relationship between them.

To date, the most common form of innovative activity of banks in Uzbekistan is remote banking. Remote banking service (RBS) is a technology for providing banking services on the basis of orders transmitted by a client remotely, using communication and Internet technologies. Systems for remote servicing of legal entities are already used by almost all banks. Among the 20 largest banks, this figure is 91%.

The most common remote banking system for legal entities - "Internet-client" - is installed in 94.7% of banks. Remote banking services for individuals are used in 80.8% of banks. The most common remote banking system - "Internet Bank" - is installed in all banks that have remote banking services for individuals (80.8%). The most actively developing segment is "Internet banking", and Uzbek bankers note the constant growth of the client base. According to MForum Analytics, at the end of 2022, the number of users of Internet banking services in Uzbekistan exceeded 8 million people, and its penetration was more than 8%, which is 4.5 times higher than the corresponding indicator in 2008. However, therefore, the indicator of Uzbekistan is still

significantly behind countries such as Canada, France, Great Britain, Spain and the USA, in which this indicator ranges from 75% to 65%. According to the statistics of the Central Bank of the Republic of Uzbekistan, there are currently about 100 software and information systems that provide Internet banking services. The number of organizations developing Internet banking systems has approached 50. In addition, remote banking systems are also created by credit organizations themselves, which have specialists of a certain qualification and hardware and software. The presented information clearly indicates good opportunities for increasing in the future the level of distribution among the population of Uzbekistan of such a type of remote banking service as Internet banking, which is becoming more and more accessible to customers of banks in the Republic of Uzbekistan. The annual growth in demand for Internet services will be at least 100% in the coming years.

There is a significant territorial differentiation of innovative banking services. The degree of dissemination of innovations in the banking sector of the country's regions is significantly lower than in Tashkent. In order to study the situation in this area of banking in more detail, during the study, on October 1, 2022, a survey was conducted of 14 credit institutions, that is, 85% of 27 independent regional and branches of nonresident banks (excluding additional and operating offices and operating cash desks outside the cash center) Samarkand region.

The data show that the indicator of remote access increased in 2022 by more than 1.5 times compared to 2019. In 2022, 1.27 million customers of surveyed banks were covered by remote banking services, which is almost 40% more than in 2019. A fairly high level of Internet solutions is noted in the accounts of individuals. The share of which is 84.7%. At the same time, their coverage with remote banking services is 9.2%, which is not much more than in 2019 - 8.3%. Clients - legal entities are more actively using remote banking systems. In the total number of clients in this category, more than a quarter of clients use remote banking systems. Of these, every third (32.1% against 24.3% in 2019)) small and medium-sized businesses use various remote banking systems. Comparison of the growth rates of the total number of clients serviced by credit institutions in the Samarkand region (107.6%) and the number of clients using remote banking systems (134.0%) indicates the activation of investment processes in the region. It should also be noted that small and medium enterprises are more actively involved in remote banking services than corporate clients. The growth in the number of clients using remote banking systems for these categories of clients amounted to 147.0% and 109.8%, respectively. Comparison of the growth rates of the total number of clients serviced by credit institutions in the Samarkand region (107.6%) and the number of clients using remote banking systems (134.0%) indicates the activation of investment processes in the region. It should also be noted that small and medium enterprises are more actively involved in remote banking services than corporate clients. The growth in the number of clients using remote banking systems for these categories of clients amounted to 147.0% and 109.8%, respectively. Comparison of the growth rates of the total number of clients serviced by credit institutions in the Samarkand region (107.6%) and the number of clients using remote banking systems (134.0%) indicates the activation of investment processes in the region. It should also be noted that small and medium enterprises are more actively involved in remote banking services than corporate clients. The growth in the number of clients using remote banking systems for these categories of clients amounted to 147.0% and 109.8%, respectively. It should also be noted that small and medium enterprises are more actively involved in remote banking services than corporate clients. The growth in the number of clients using remote banking systems for these categories of clients

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The most demanded service among individuals is the Mobile client (bank). 127,900 respondent bank clients are used, which is 8.9% of the total number of individual clients. However, it should be noted that this service is offered in the region by only 2 banks, one of which accounts for 99% of the volume of this type of service. Despite the apparent ease of serving customers through the Self-Service Kiosk, only four banks have installed it. It is not possible to determine the actual number of users of this service in view of the fact that when using it, registration of clients and opening of accounts is not required. Thus, the most accessible system of remote banking customer service - individuals is Internet - banking.

For legal entities, the most common service at the moment is the Client-bank. 70.3% of corporate clients in the surveyed banks are used. Internet banking and Telebank are used by only 29.3% and 9.8% of clients, respectively.

Almost half of the operations conducted by banks via the Internet are payments for cellular services. The share of traditional banking services accounts for only 12%. This indicates the underdevelopment of the innovative system of banking services and the existing large potential for growth.

The results of a survey of credit institutions in the Samarkand region show that the main factor hindering the wider use of various remote banking systems is the conservatism of customers. This opinion is shared by 11 out of 22 correspondent banks (50%). Almost a third of banks cited the high costs of their implementation and maintenance as such a reason. Most banks are accompanied by two or more remote banking systems, which increases the costs of their activities.

Correspondent banks also pointed out the difficulties in the development of a new product by customers, the risk of transactions, problems with communication and with the provider. Therefore, in order to expand and improve the effectiveness of the Application of remote banking systems, it is necessary to: increase their security, expand the information content and accessibility of customers to the systems; reduction of bank expenses for the implementation and use of innovative service systems.

The solution of these problems is connected with the need to modify the innovative systems used in banks.

5. The solution of the fifth task of the study is related to the justification of the need and the development of a unified innovative system for servicing bank customers.

The paper scientifically substantiates the possibility of modifying individual remote banking systems, taking into account two factors: the client base and the list of services offered. Such a unified system is "Internet-Bank Client" Freedom on/off line", which is based on the integration of the most demanded by clients systems "Client-Bank" and "Internet - banking". The advantages of this system are: support for a larger number of simultaneously connected users; mandatory notification of users of all actions performed by the bank with payment documents;

better functionality (prompt updating of the regulatory framework, import / export of payment documents using accounting programs 1C, INFIN, Parus).

The introduction of such a unified system provides the bank with the opportunity to serve legal entities and individuals at the same time. For banks using this system, the savings in implementation and, most importantly, customer service are obvious, which is confirmed in the dissertation by calculations. Of no small importance in the universalization of remote banking systems is the use of tools (cards, communication channels) of third-party banks in a single interface. This will allow using, for example, bank cards, to pay for utilities, communication services, transfer funds to a card of another person and replenish a card from an account in any bank. To service the card, you do not need to open a bank account. "Plastic clients" of the bank get access to a wide range of banking and information services through various channels and means of communication:

6. The solution of the sixth problem is related to the development of a methodology for assessing the effectiveness of innovative banking systems.

Evaluation of the effectiveness of innovative banking systems is considered on the example of remote banking systems. The methodology includes two blocks: 1) a methodology for the comparative effectiveness of remote banking services and 2) a methodology for evaluating the effectiveness of remote customer service.

The paper provides a comparative assessment of the total income and expenses of the bank for customer service in different ways: in the bank branch and through the remote banking system. The calculations were based on the actual data and expert assessments of the heads of the banks of the respondents in the Samarkand region. The current annual service costs in the remote banking system depend on the type of system and the number of customers, although there is no clear interdependence of these parameters. The decisive influence is exerted by the type of system (own development or purchased) and the degree of its development (operation) in the bank.

Based on a comparison of itemized assessments of the necessary investments, it is obvious that the use of innovative systems is more economically feasible compared to the "classic" customer service through a bank office. Customer service remotely in large banks is on average 10 times cheaper than in the office.

However, this approach has certain disadvantages: it is impossible to evaluate some parameters (for example, the quality of service), the assessment is made on the basis of the current market situation, while market conditions are changing rapidly, new participants and regulations for their activities appear. In addition, there are factors that lead to a change in the business itself.

In this regard, the paper proposes a new approach to evaluating the effectiveness of remote banking systems, which consists in developing a methodology for a comprehensive assessment of the effectiveness of remote banking systems. We consider it expedient to assess the effectiveness of the implementation of an innovative banking product using modified indicators that combine, on the one hand, traditional indicators, and, on the other hand, take into account the specifics of banking innovation. This involves determining the main indicators of the effectiveness of the implementation of the remote banking system: net present (discounted) income, internal rate of return and payback period, taking into account the time factor of investment risks.

Net present (discounted) income is the difference between the reduced (discounted) income and the reduced (discounted) costs of the following formula:

$$\mathbf{CPD = PD - PR} \quad (1)$$

These incomes can be calculated using the formula:

$$\mathbf{PD = D_i : (1 + r)^n} \quad (2)$$

These costs can be calculated using the formula:

$$\mathbf{PR = R_i : (1 + r)^n} \quad (3)$$

where D_i - income from the implementation of i - that stage of the project; r - discount factor; n - is the number of project implementation periods, years; R_i - expenses (costs) from the implementation of the i - that stage of the project.

With $CPD \geq 1$, the implementation of the RBS system is recognized as effective, with $CPD \leq 1$ - ineffective. The discount factor (r) is most often determined by banks in an authoritarian manner, based on an analysis of the macroeconomic situation in the country, the level of inflation, the refinancing rate, and the interbank lending rate. We also consider it appropriate to calculate the discount rate taking into account the real financial condition of the bank. Given the fact that investments in innovative banking products ultimately lead to an increase in the total bank capital, the discount rate can be calculated based on the return on equity of the bank. So, according to the author, the discount rate can be calculated by the following formula: $\geq \leq$

$$\mathbf{R = DCC * CC / (CC + ZK) + DZK * ZK / (CC + ZK)} \quad (4)$$

where DCC - is the return on equity of the bank (return on equity); CC - equity (capital) of the bank; ZK - borrowed capital of the bank; DZK - is the return on the bank's borrowed capital.

This method of evaluating investments in an innovative product based on the calculation of net present (discounted) income is applicable to justify the adoption of one project. When choosing between two or three projects for the implementation of the remote banking system with completely different levels of funding, it is necessary to bring them to the total budget in order to be able to compare them. For this, the internal rate of return or internal rate of return (VNR) is used.

$$\mathbf{VNR = CPD / PR * n * 100,} \quad (5)$$

The indicator reflects the value of the current value of income per each ruble of net investment in the RBS system. The higher the rate of return, the more preferable the project. If the profitability index is equal to one or lower ($VNR < 1$), then the project is not profitable. An index of one ($VNR = 1$) corresponds to zero net present value.

The payback period (SO) is the estimated date starting from which the net present (discounted) income takes on a positive value. This means that the discounted value of income should be equal to the discounted value of capital costs (discounted costs). Based on this equality, the payback period can be represented as the following formula:

$$\mathbf{SO = PR / PD} \quad (6)$$

Banking activity is associated with a high level of risk, which can lead to real losses for the bank. Therefore, when calculating the Efficiency indicators for the implementation of remote banking

systems, it is necessary to take into account the risk factor. Here it is possible to use different approaches.

1. Ranking the types of innovative banking products, taking into account the probabilistic assessment of the occurrence of risk and calculating, on this basis, the average level of risk of implementing a remote banking system. Using the classification of innovative banking products given in the work, the author proposes risk level parameters by types of innovative banking products. The proposed approach, of course, requires the accumulation of a sufficient array of a representative sample of information on a large number of banks. But in any case, it will reflect only general trends in this segment of the banking sector of the Republic of Uzbekistan. Therefore, it seems more appropriate to use the second approach, which reflects the specifics of management and the level of risks in a particular bank.
2. Taking into account the general level of risks in a particular bank, the risk indicator can be taken as a correction factor when calculating the economic efficiency indicators of remote banking services.

Using the approaches discussed above, the effectiveness of remote banking services was calculated based on indicators of net present income, or net present effect; internal rate of return (profitability); payback period according to the "Client-Bank" and "Internet-banking" systems, as the most common in banking practice at present. To calculate the economic efficiency of the introduction and use of remote banking services, we also used data from a survey of respondent banks by types of remote banking systems.

The proposed methodology will allow banks at the stage of making a management decision to determine the economic feasibility of introducing and using certain remote banking systems in their practice, without conducting independent research on this issue. It allows you to take into account the impact of risk factors on the bank, reduce their impact on the financial stability of the credit institution, which is very important during the financial crisis, characterized by economic instability.

Calculations of the effectiveness of remote banking systems have shown a significantly higher economic efficiency for e-service banks, compared with the provision of the same services in offices. Therefore, their interest in the development of remote banking systems is obvious.

CONCLUSIONS

As part of the work, a theoretical generalization and practical solution of the important task of developing a modified innovative banking product and a methodology for evaluating its effectiveness were carried out. The main results of the work are as follows:

1. The existing types of innovative banking products have been systematized and a new approach to their classification has been developed, which makes it possible to determine the competitive strategy of the bank, the method of building an economic and organizational and managerial mechanism, forms of implementation and promotion of banking products, patterns in their development and application in commercial banks (for example, risk level, capital costs, etc.).
2. An organizational model of banking engineering was built, which formed the basis for identifying the most characteristic stages of creating an investment banking product and determining the average costs for each of them.

3. An analysis was made and an assessment was made of the use by banks of innovative banking systems, as well as various forms of remote banking services, which made it possible to identify the advantages and disadvantages of their use.
4. Based on the consolidation of disparate approaches to evaluating the effectiveness of the implementation of innovative banking systems, an author's methodology has been developed that provides for the calculation of the main indicators of the effectiveness of the implementation of the remote banking system: net present value (discounted) income, internal rate of return and payback period, taking into account the time factor of investment risks.
5. A method for calculating the discount factor for determining the values of reduced income and reduced costs for the implementation and use of remote banking systems is proposed.

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