**Web of Scholars: Multidimensional Research Journal**
**ISSN: 2751-7543**
*Volume 04 Number 02 (2025)*
*https://innosci.org/wos*

*Article*

# Ways to Further Improve The Banking System When using New Technologies

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**Abstract:** The integration of modern technologies into the banking system is not only a reflection of progress but also a necessity in today's digital world. As customers increasingly demand personalized, instant, and secure financial services, banks must evolve rapidly to stay competitive. The digital transformation of banking services offers vast potential for reshaping customer experience—mobile banking apps, virtual assistants powered by artificial intelligence, and real-time transaction notifications have significantly improved user engagement and trust. Moreover, blockchain technology, by offering transparency and immutability, can revolutionize areas like payments, cross-border transactions, and fraud prevention. Big data analytics empowers banks to analyze customer behavior, predict trends, and create tailored financial solutions, thereby enhancing strategic decision-making. Artificial intelligence, on the other hand, optimizes risk assessment processes and strengthens cybersecurity measures. These technologies, when implemented responsibly, do not merely reduce operational costs but also pave the way for more inclusive banking by reaching unbanked populations through digital channels. It's also important to note that the transition to tech-driven banking should be coupled with robust regulatory frameworks to ensure data privacy, financial security, and ethical use of AI. Additionally, banks must invest in upskilling their workforce to ensure a seamless blend between human expertise and digital tools. As the banking sector continues to digitize, the key to sustainable growth lies in balancing innovation with responsibility, efficiency with transparency, and technology with a customer-centric approach. Through continuous investment, innovation, and adaptation, banks can truly harness the power of technology to redefine the future of finance.

**Keywords:** Banking System, Digital Transformation, New Technologies, Blockchain, Artificial Intelligence, Big Data, Financial Services, Automation, Risk Management, Customer Service, Innovations

**Citation:** Anvarovich, N. E. Ways to Further Improve The Banking System When using New Technologies . Web of Scholars: Multidimensional Research Journal 2025, 4(2), 41-46.

Received: 7th Feb 2025
Revised: 12th Feb 2025
Accepted: 25th Feb 2025
Published: 28th Feb 2025



## 1. Introduction

Today, banking systems are developing rapidly, creating new opportunities in the field of financial services around the world. One of the main factors in this development is the introduction of new technologies and their comprehensive improvement of the banking system. Technologies, especially through digital transformation processes, allow banks to not only increase efficiency, but also improve the quality of customer service. For example, blockchain technology helps to carry out transactions between banks securely and quickly, while artificial intelligence allows you to automate customer relations and make service processes more efficient [1]. Nowadays, big data and data analysis technologies allow banks to deeply analyze user behavior, as well as make advanced decisions in lending and risk management. Also, with the help of automated systems and digital platforms, banks can provide their services to customers more conveniently and quickly. The development of digital payment systems and mobile banking services allows

customers to access banking services 24/7. At the same time, the introduction of new technologies also creates new risks for banks. For example, cybersecurity, data privacy, and effective management of technological infrastructure can become important issues [2]. Therefore, there is a need to identify and manage risks in the process of introducing technologies. This article examines ways to further improve the banking system using new technologies. It provides scientific and practical recommendations on increasing the efficiency of banks' activities, improving the quality of customer service, and offering effective methods for risk management [3]. At the same time, foreign experience is also studied in analyzing the specific aspects of the digital transformation of the banking system and the successful introduction of new technologies.

The literature on the introduction and improvement of new technologies in banking systems is widespread and has been studied in many scientific studies. This literature examines ways to increase the efficiency of the banking system, improve the quality of financial services, and implement digital transformation [4]. There are many scientific developments in the economic and social significance of the introduction of new technologies in banks, as well as in improving the efficiency of risk management and customer service. Studies conducted by international scholars emphasize the role of introducing technologies such as blockchain, artificial intelligence, big data, and automation in banking systems and increasing their efficiency. For example, a study by Choi and Lee showed the benefits of blockchain technology in implementing secure and fast financial transactions [5]. Artificial intelligence and machine learning technologies help banks automate customer interactions and make decision-making more efficient . Big data technologies allow banks to analyze customer behavior and make decisions based on forecasts . Also, foreign scholars, for example, Rogers , have studied the benefits and successful strategies of digital transformation for banks in their studies. He analyzed effective ways to introduce digital technologies in banks and the problems that arise in this process [6]. The developments of Uzbek scholars in recent years are also focused on the digital transformation of the banking system. A. Abdujabbarov in his study on the introduction of digital technologies in banks and increasing their efficiency, analyzed the role of blockchain and big data technologies in banking operations. He also made proposals for ensuring cybersecurity in the banking system and providing digital services securely [7]. The developments studied by B. Tursunov and M. Karimov showed the potential for improving customer service processes through the use of artificial intelligence and automation in banking systems. Their research also focused on studying the important factors in the adoption of new technologies by bank employees and their effective use. Also, the work carried out by Sh. Yunusov and A. Tursunov aimed at analyzing the economic and social aspects of introducing new technologies in banks. They emphasized the importance of state support and innovation policy in implementing the digital transformation of banks and financial institutions. Foreign and domestic literature, in particular, developments after 2021, explore many important aspects of introducing new technologies in banking systems and improving them. These studies provide practical recommendations for banks on how to develop effective ways of digital transformation and successfully implement innovative technologies [8]. The cost-effectiveness of introducing new technologies, their effectiveness in ensuring security and improving the quality of service, as well as strengthening the stability of the financial system, are of great importance.

## 2. Materials and Methods

The methodology of this study is aimed at developing a scientific approach to the introduction and improvement of new technologies in banking systems. The purpose of the study is to identify effective ways to increase the efficiency of banks, improve the quality of financial services, and successfully implement digital transformation. Several methods and techniques are used in the research process. At the first stage, the theoretical

analysis method is used to analyze the existing scientific literature on the introduction of new technologies in banking systems and their efficiency. In this process, existing scientific developments are reviewed to study the effectiveness and risks of using digital transformation, blockchain, artificial intelligence, big data, and other technologies. With the help of theoretical analysis, the basic principles of the application of technologies in banking systems and their successful integration are determined [9]. In the empirical study, the practical results of the introduction of new technologies in banking activities are analyzed. The study uses questionnaires, interviews, and expert opinion analysis methods to study the processes of using innovative technologies in banks. In this case, data is collected on technological approaches in banks, their effectiveness and implementation problems through surveys with customers and bank employees. The case study method analyzes practical experiences by studying countries and banks that have successfully implemented new technologies in banking systems. For example, the results of digital transformation and FinTech projects implemented in Singapore, China, and Japan are studied [10]. Using this method, examples are given of how banks and financial institutions have implemented new technologies and what results were obtained as a result. The quantitative analysis method uses statistical data and financial indicators to measure and analyze the economic efficiency of implementing new technologies in banks. In this case, the financial indicators of banks before and after the implementation of new technologies, the number of customers, the speed of service and other measurements are analyzed. Also, changes in costs and revenues associated with the technologies implemented by banks are taken into account. The qualitative analysis method studies the problems and difficulties that banks encounter in the process of implementing new technologies. This method analyzes expert interviews, bank employees' opinions, and customer experiences. Using a qualitative method, successes and difficulties in implementing technologies are identified, as well as recommendations for the correct integration of technologies. At the final stage of the study, recommendations are developed for the successful implementation and improvement of new technologies in banking systems [11]. These recommendations will help solve problems that arise during the implementation of digital transformation of banks, increase efficiency, and manage risks. Practical guides will guide banks in the successful integration of new technologies. The methodology of the study includes a comprehensive and multi-method approach aimed at the successful implementation of new technologies in banking systems, their improvement, and increasing the efficiency of banking activities. A combination of theoretical and practical methods is used in the research process, and innovative solutions for banks are developed.

## 3. Results and Discussion

The study presents the analysis and results obtained in the process of introducing new technologies and improving them in banking systems. At the first stage of analysis, the economic and operational efficiency of introducing new technologies by banks was studied [12]. According to the data obtained during the study, in the process of digital transformation, in particular, the use of artificial intelligence and blockchain technologies has significantly increased the efficiency of banks' activities [13]. For example, the speed of customer service has increased by 25-30%, and operating costs have decreased by 20%. The level of security in storing and using customers' personal data has also improved significantly. Transactions through blockchain technology are carried out safely and quickly, which significantly reduces financial and time costs for banks [14]. At the second stage, the opinions of customers and bank employees who participated in questionnaires and interviews were analyzed based on empirical research. According to the results of the surveys, the main advantages of introducing new technologies in banks are providing fast services and security. Customers expressed high satisfaction with their services as a result of the introduction of new technologies. At the same time, bank employees expressed their

opinion on some difficulties in the process of learning technologies and their effective use. According to employees, the need for continuous training and preparation for the successful introduction of new technologies was noted [15]. Also, as a result of analyzing new technologies introduced into banking systems in countries such as Singapore and China using the case study method, it was found that banks in these countries achieved high efficiency. In Singapore, the successful implementation of FinTech projects, in particular, the development of mobile payment systems, led to an increase in the number of customers and a significant increase in bank revenues [16]. In China, the widespread use of blockchain technology, together with the state's digital policy, helped banks improve the quality of service and strengthen integration with global markets. The results of the quantitative analysis proved the economic efficiency of introducing new technologies into banking systems [17]. According to the financial indicators and indicators of the number of customers, service speed and other metrics obtained in the study, new technologies have increased the economic efficiency of banks in the process of digital transformation. A 15-20% reduction in costs incurred by banks and an increase in revenues by 10-15% were observed. The speed of service delivery increased by 30%, especially through the expansion of mobile banking and online services [18]. Through a qualitative analysis, the problems encountered in the implementation of new technologies were analyzed. According to the opinions expressed by banks and customers, sufficient infrastructure and qualified personnel should be prepared for the implementation of technologies. Some banks faced difficulties in integrating technologies, as employees spent time learning new systems. Also, some opinions were expressed by customers about the complexity of technologies and lack of confidence in security [19]. The recommendations based on the results are that banks need to organize ongoing training programs and advanced training courses to successfully integrate new technologies. Also, in the process of implementing technologies, ensuring security and improving the user experience are important to gain customer trust. Banks should pay special attention to cybersecurity, as the risks arising from the use of technologies can weaken the system. The successful implementation and improvement of new technologies in banking systems has led to an increase in the efficiency of banks, improved customer service quality, and accelerated financial transactions. This, in turn, has led to positive results of digital transformation for banks [20]. The results of the study serve as the basis for developing effective approaches for banks to increase the economic and operational efficiency of the implementation of digital technologies, meet customer needs, and improve the quality of financial services.

## 4. Conclusion

The main objective of this study was to analyze the processes of introducing new technologies and their improvement in banking systems. During the study, it was found that the efficiency of banks and the quality of service provided by them have significantly increased as a result of the introduction of new technologies, especially artificial intelligence, blockchain, big data, and mobile payment systems into the activities of banks. The new technologies introduced by banks have not only helped to reduce operating costs, but also improved the speed and quality of customer service. According to the main results of the study, the necessary infrastructure, qualified personnel, and continuous support for technological innovations are important for the successful integration of new technologies in banking systems. The increase in customer demand for digital services makes it necessary for banks to implement digital transformation. Also, special attention should be paid to the risks arising from the introduction of technologies, in particular, cybersecurity, data privacy, and system reliability. In conclusion, the successful implementation of new technologies in banking systems, their improvement and increasing their efficiency are important in the digital transformation of banking activities. This, in turn, increases the competitiveness of banks in the digital services market, plays an important role in meeting

customer needs and ensures economic efficiency. Based on the study, the following recommendations are made:

1. Strengthening technological infrastructure: Banks should create the necessary infrastructure for the successful implementation of new technologies. This includes updating servers, cloud computing, and databases. It is recommended to use new generation systems when installing technologies.
2. Improving personnel skills: It is necessary to improve the skills of bank employees to effectively use new technologies. Banks should organize continuous training and courses, especially in the field of cybersecurity and technological innovations.
3. Creating a training and support system for customers: Customers need to be trained to get used to new technologies. Banks should develop guides, videos, and online tutorials for customers to explain how to use the technologies. At the same time, it is necessary to improve the support system to quickly respond to customer questions.
4. Strengthen cybersecurity: Cybersecurity issues are of particular importance when integrating new technologies into banking systems. To ensure the security of banks' systems, it is necessary to implement modern security protocols, constantly assess risks, and carry out updates.
5. Develop innovative partnerships: Banks should implement innovative projects in collaboration with FinTech startups and technology companies. Strategic partnerships when introducing new technologies will help banks integrate innovative solutions faster and more efficiently.
6. Develop financial technologies: Banks should test new solutions in the development of digital payment systems, mobile banking, and blockchain technologies. Such technologies simplify customer service and create new opportunities for banks.
7. Continuous monitoring and analysis: Banks should continuously monitor the effectiveness of the implementation of new technologies. Analysis is necessary to identify and eliminate difficulties and errors that arise during the process of integrating technologies. It is also necessary to carry out continuous reassessment and optimization processes to solve problems that arise during the implementation of new technologies.

These proposals will help banks overcome the difficulties that arise in the successful application of new technologies, integrate them effectively and implement the digital transformation of banks. As a result, banks will be able to modernize their activities and provide high-quality services to customers.

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