

THE CONCEPT AND THE ESSENCE OF DIGITAL TECHNOLOGIES IN BANKING ACTIVITIES

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Annotation. This article analyzes the concepts and the essence of digital technologies in banking activities. Methods for increasing the competitiveness of banks through the introduction of modern banking services and digital technologies, diversification of financial products, electronic payment systems and fintech solutions are considered. The role of the internal and external environment in the implementation of innovation strategies, issues of improving staff skills and taking into account customer needs are also discussed. The results of the article help to identify ways to effectively develop innovations in the banking system.

Keywords: digital technologies, digital banking services, fintech, financial technologies, banking strategy, electronic payment systems, competitiveness, financial products, blockchain.

Introduction. The banking system, as an integral part of the modern economy, is continuously evolving. In recent years, the acceleration of globalization processes, the rapid development of information and communication technologies, and changing customer needs have required new approaches to banking activities. In particular, the introduction of digital technologies is becoming a key factor in increasing efficiency, improving service quality, and reducing operational costs in the banking sector. The concept of digital technologies is broad and refers to the use of modern information tools for creating, processing, storing, and transmitting data. From the perspective of banking activities, this concept includes areas such as remote banking services, mobile applications, internet banking, artificial intelligence, blockchain technologies, and big data analytics.

These technologies enable banks not only to optimize internal processes but also to bring customer interaction to a new level. Today, customers demand speed, convenience, and security from banking services. Therefore, banks are gradually moving away from traditional service methods and transitioning to digital platforms. For example, mobile banking applications allow users to manage accounts, obtain online loans, make payments, and even conduct investment operations. This significantly reduces the distance between banks and customers and greatly improves service efficiency. At the same time, digital transformation poses new challenges for banks. Ensuring cybersecurity, protecting customer data, and modernizing technological infrastructure have become critically important issues. Moreover, the successful implementation of digital technologies requires the training of qualified personnel and the adoption of innovative management approaches.

Literature Review and Methodology. The study of digital technologies in banking requires a comprehensive approach in modern scientific research. In providing a methodological foundation for this topic, regulatory and legal documents, theoretical concepts, and empirical studies play a significant role. Based on the content and focus of the literature used in this article, it is considered appropriate to apply systemic, institutional, innovative, and comparative approaches in analyzing digital transformation within the banking system. First, the regulatory and legal framework of the research is formed by strategic documents adopted in the Republic of Uzbekistan. In particular, Presidential Decree No. PF-5953 identifies the development of the digital economy as a priority and substantiates the need for the widespread introduction of modern technologies in the banking

and financial sector.¹ Methodologically, this document forms the basis for an institutional approach, demonstrating that the development of digital technologies in the banking system is closely linked with public policy, regulatory mechanisms, and infrastructural changes.

Presidential Decree No. PF-6155 emphasizes the social orientation of this process, highlighting the importance of increasing the accessibility of financial services for different segments of the population.² This makes it possible to apply the principles of inclusiveness and customer orientation as methodological foundations in the research. In developing the theoretical framework, the book *Bank 4.0* by Brett King holds particular significance. The author explains the transition of banking services from traditional formats to digital platforms through the concept of a “bank that is always present.” This approach requires the application of a functional-transformational methodology in the research, meaning that banking activities should be reconsidered in terms of service models, customer interaction, and value creation mechanisms.³

The approach proposed by T. N. Fliginskikh and T. Yu. Tarasova is important in studying the factors influencing innovative development, as it provides a comprehensive analysis of the determinants shaping innovations in banking products. Based on this methodology, the use of factor analysis becomes possible within the research.⁴

Furthermore, the works of V. M. Tumin and co-authors empirically explain the mechanisms for introducing innovative banking products, which necessitates the application of practical analytical methods.⁵ In identifying trends in the development of the digital banking system, the studies of O. A. Vasilenko and N. N. Korsunova enable the use of comparative and forecasting approaches. In particular, analyzing the activities of neobanks helps to determine the future directions of banking service development.⁶ This highlights the importance of methods such as comparison, analogy, and trend analysis in the research methodology. The approaches proposed by L. A. Petrova and T. E. Kuznetsova are also noteworthy in studying the digital transformation of the banking system in greater depth.⁷ They interpret digitalization not only as a technological process but also as a fundamental transformation of business processes and the organizational environment. Based on this, the application of systemic and process-oriented approaches becomes necessary.

Finally, the study by N. S. A. Polireddi serves as an important methodological foundation for analyzing the role of modern technologies—particularly artificial intelligence and machine learning—in the banking sector. This work combines empirical and analytical approaches, allowing for the assessment of the impact of these technologies on efficiency.

Discussion and Results. When introducing digital technologies in banks, it is important to take into account both internal and external factors. Internal factors include employee qualifications, technological infrastructure, and financial capacity. External factors are related to

¹ PF-5953 (2020). Decree of the President of the Republic of Uzbekistan dated March 2, 2020 “On the State Program for the Implementation of the Action Strategy on Five Priority Areas of Development of the Republic of Uzbekistan for 2017–2021 in the ‘Year of Science, Enlightenment and Digital Economy Development’.”

² PF-6155 (2021). Decree of the President of the Republic of Uzbekistan dated February 3, 2021 “On the State Program for the Implementation of the Action Strategy on Five Priority Areas of Development of the Republic of Uzbekistan for 2017–2021 in the ‘Year of Youth Support and Public Health Strengthening’.”

³ King, B. (2019). *Bank 4.0: Always with You – Now and Everywhere*. Tashkent: ILM-ZIYOZAKOVAT LLC, 464 p.

⁴ Fliginskikh, T. N., & Tarasova, T. Yu. (2016). Factors determining the development of innovations in the form of new banking products. *Creative Economy*, 10(10), 1157–1168.

⁵ Tumin, V. M., Bukhonova, S. M., & Krivosova, V. A. (2018). Implementation of innovative banking products in the activities of Russian commercial banks.

⁶ Vasilenko, O. A. (2019). Trends and prospects for the development of financial innovations in the banking business in Russia. *World of New Economy*, 2, 80–89.

⁷ Petrova, L. A., & Kuznetsova, T. E. (2020). Digitalization of the banking system: digital transformation of environment and business processes. *Financial Journal*, 12(3), 91–101.

macroeconomic conditions, the competitive environment, and regulatory requirements. The study showed that before introducing new products, banks need to conduct a thorough analysis of these factors and make decisions based on forecasts. In addition, it is essential for banks to deeply understand customer needs and create a virtual banking system by integrating digital and remote services. This enables banks to provide faster and higher-quality services compared to traditional branches. At the same time, considering customer intuition and their interaction with technology is one of the key factors for the success of digital banking services.

Table 1**Implementation of Digital Technologies in Banks**

№	Asosiy yo‘nalish	Tavsif / Maqsad	Kutiladigan natija
1	Implementation of Digital Banking Service	Expansion of Remote Banking Services (Internet Banking, Mobile Banking, SMS Banking)	Improving Customer Convenience, Service Speed, and Efficiency
3	Development of Information Technology Infrastructure	Improving Servers, Software, and Cybersecurity in Banks	Increasing the Security and Efficiency of Operations
4	Customer Relationship Management (CRM)	Managing Customer Databases and Personalizing Service Quality	Customer loyalty and trust in the bank increase
5	Artificial Intelligence and Data Analytics	Application of Big Data, Artificial Intelligence (AI), and Machine Learning Technologies	Early risk assessment, service optimization, and revenue growth

The analysis also indicated that expanding the number of payment terminals, transactions, and ATMs is one of the most effective strategies for increasing banks' net profit. However, it should be noted that, in some cases, the growth of the customer base may negatively affect bank revenues. Therefore, it is important for banks to implement systems for assessing risks and potential threats in advance during the process of attracting customers.

Conclusion. In conclusion, it should be emphasized that by 2026 the introduction of digital technologies in banking activities has become not only a factor of development but also a necessary condition accelerated globally, fundamentally changing the form, content, and delivery methods of banking services. Banks are now compelled to operate not merely as traditional financial institutions but as high-tech platforms. As of 2026, mobile banking, internet banking, artificial intelligence-based services, biometric identification, blockchain, and big data analytics are widely used in the banking sector. These technologies have significantly improved the speed and quality of customer service, reduced human-related errors, and optimized operational costs. In particular, the development of remote services has expanded access to banking services geographically, thereby increasing the level of financial inclusion.

At the same time, the implementation of digital technologies presents new challenges for banks. Issues such as cybersecurity threats, ensuring data privacy, modernizing technological infrastructure, and the growing demand for highly qualified IT specialists remain highly relevant.

In addition, ensuring equal participation of all customer segments in the process of digital transformation—that is, reducing the digital divide—has become an important task. The research findings indicate that the effective application of digital technologies in the banking system largely depends on public policy, the innovation environment, technological infrastructure, and the development of human capital. From this perspective, the reforms being implemented in Uzbekistan are contributing to the acceleration of digital transformation in the banking sector, and this process is expected to continue consistently in the coming years.

Overall, the introduction of digital technologies in banking plays a decisive role in increasing economic efficiency, fully meeting customer needs, and forming a competitive banking system. In the future, deepening scientific research in this area, studying advanced foreign experience, and adapting it to national practice will remain important priorities.

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