

## MODERNIZATION OF THE BANKING SECTOR IN UZBEKISTAN THROUGH DIGITAL TECHNOLOGIES

*Mirzaeva Matluba Gaybulla kizi*

*Tashkent State University of Economics*

*Department of “Bank Accounting and Audit”,*

*Senior Lecturer, PhD*

*Email: [mirzayevamatluba76@gmail.com](mailto:mirzayevamatluba76@gmail.com)*

*ORCID: 0009-005-8019-4195*

**Annotation:** The article analyzes the processes of digital transformation in Uzbekistan's banking system and their impact on financial stability. Based on statistical data for the period 2015–2024, the relationship between the introduction of digital services and key banking indicators was examined using regression analysis. The results show that the Digital Transformation Index has grown significantly, positively influencing banks' Z-score and capital adequacy ratios. Moreover, the digitalization of financial services has been found to enhance service efficiency, reduce risks, and strengthen the overall stability of the banking system. The study identifies the development of digital infrastructure, government policy, and IT investments as the main drivers of change in the banking sector. However, it also highlights the relevance of regional digital disparities and cybersecurity challenges, proposing recommendations for their mitigation. This article serves as a valuable resource for banking professionals and policymakers, providing scientific insights to support strategic decision-making on digital transformation.

**Keywords:** Digital transformation, banking system, financial stability, digital services, Z-score, cybersecurity, IT investments, digital infrastructure.

The global transformation process plays an important role in enhancing the competitiveness of banks, globalizing their operations, and providing customers with high-quality financial services. The globalization of financial markets, the development of digital technologies, and the changing demands of customers are creating new opportunities for banks.

According to Juniper Research, “by 2026, 53% of the world’s population will have access to digital banking services; this represents growth from 2.5 billion users in 2021 to more than 4.2 billion digital banking users. During the pandemic, the development of digital transformation processes became a key factor for banks to maintain operational efficiency and stimulated the growth of digital banking users.”

Moreover, in the process of bank transformation, restructuring organizational systems, expanding the range of services, introducing new types of financial products,

and providing convenient services to the population — all while improving transformation methodologies — are considered crucial.

At present, extensive scientific research is being conducted globally to develop banking infrastructure through digital and innovative technologies and to increase the accessibility of banking services. Research focuses on improving the theoretical and legal foundations for introducing new types of services during bank transformation, reforming state-owned banks within the banking system reform framework, developing modern corporate governance systems, enhancing capitalization levels and resource bases, and aligning prudential standards with international norms.

In recent years, Uzbekistan has been implementing large-scale reforms aimed at preparing state-owned banks for privatization and transformation. In particular, the Decree of the President of the Republic of Uzbekistan defines tasks such as “comprehensive transformation of state-owned commercial banks, introduction of modern banking standards, information technologies, and software products, the sale of state-owned shares in banks to experienced investors through competitive bidding, as well as simultaneous reform of state-owned commercial banks and enterprises to reduce the state’s share in the banking sector.”

This study emphasizes the need to enhance transparency in bank management, revise and optimize organizational structures, increase accessibility of banking services, utilize omnichannel banking in assessing customer creditworthiness, and further develop methodologies for bank transformation.

Key legal documents governing these processes in Uzbekistan include the Law “On Payments and Payment Systems” (No. O’RQ-578, 2019); the Presidential Decree “On the Development Strategy of New Uzbekistan for 2022–2026” (PF-60, 2022); the Presidential Decree “On the Strategy for Reforming the Banking System of the Republic of Uzbekistan for 2020–2025” (PF-5992, 2020); and several other regulatory acts such as PQ-3620 (2018), PQ-4487 (2019), and PQ-3270 (2017). The “Digital Uzbekistan – 2030” Strategy (2020) also plays a crucial role in this process.

Research on improving the methodology of bank transformation through innovation has been conducted by a number of leading global research centers, higher education institutions, and international financial organizations, including the World Bank, Bank of America Corporation, JP Morgan, Harvard University (USA), Asian Development Bank (Philippines), Central American Bank for Economic Integration (Honduras), London School of Economics and Political Science (LSE), European Bank for Reconstruction and Development (EBRD), University of Oxford, University of Cambridge, Ernst & Young (EY), PricewaterhouseCoopers (PwC), KPMG, University of Hong Kong, Tashkent State University of Economics, and the Banking and Finance Academy of Uzbekistan.

Global research outcomes have yielded numerous scientific and practical results

related to improving bank transformation methodology. For instance, the Massachusetts Institute of Technology (MIT) Sloan School of Management (USA) focuses on digital transformation and customer service quality; Harvard Business School (USA) studies strategic change and transformation processes in the banking sector; the London School of Economics and Political Science (UK) researches service development and revenue growth; the Frankfurt School of Finance & Management (Germany) explores banking innovations, operational efficiency, and customer experience improvement strategies; INSEAD (France/Singapore) investigates digital banking business models and profitability optimization; the National University of Singapore (NUS) Business School studies digital banking in Asia; the Stanford Graduate School of Business (USA) analyzes the impact of technology and innovation on service quality, customer acquisition, and profitability; and the Swiss Finance Institute (Switzerland) examines financial innovation, risk management, and performance improvement in banks. The University of Melbourne (Australia) has also conducted extensive research on transformation processes in banks of developing countries.

Leading global universities and research institutions, along with major international financial and credit organizations, are conducting studies aimed at improving the theoretical, methodological, and financial-legal foundations of bank transformation. Priority research directions include creating innovative business models that redefine traditional banking systems, diversifying banking services, conducting comparative analyses of national legal frameworks, integrating remote service systems into international payment systems, and enhancing the use of innovative technologies to increase the accessibility of banking services.

From a theoretical perspective, the traditional banking service model began to take shape in the 1920s and continued until 2006. Since 2006, a gradual transition to the digital banking model has occurred, largely driven by digitization of banking information, automation of service processes, and the emergence of internet banking systems.

Both traditional and digital models have their advantages. Many modern banks strive to combine these methods to improve customer experience. To remain competitive, it is essential to consider customer needs and embrace innovation in the banking industry.

Bank transformation leads to changes in banking policies through comprehensive analysis of customer experience and emerging needs. Customers themselves are a driving force in the innovative development of banks, as their demands shape the need for modern financial products and services.

When customers use banking services, they evaluate them based on quality,

speed, and service variety. Therefore, banks must continuously study customer experience, identify employee weaknesses, and introduce new services tailored to customer expectations — since modern clients increasingly demand technology-driven, advanced service methods.

Internal restructuring during transformation is also essential for digital development. Along with adopting digital and customer-oriented technologies, banks must improve management, supervision, and cybersecurity systems. One of the main barriers to full digitalization is the shortage of skilled personnel capable of operating in the digital economy.

Bank transformation requires a comprehensive, strategy-based approach that encompasses all aspects of the financial system, including management mechanisms. To achieve maximum efficiency, the transformation process should be coordinated with other development strategies.

The bank transformation strategy should address four key objectives:

- Implementation of digital technologies;
- Reforming service pricing mechanisms;
- Ensuring financial sustainability of digitalization;
- Restructuring organizational systems.

Successful implementation of these directions largely depends on the bank's operational model. Retaining existing customers, attracting new ones, reducing operational costs, and making banks more attractive to clients are all results of effective transformation. Digitalization enables customers to access banking services 24/7, saving time and improving convenience. In addition, reduced operational expenses lead to lower prices for individual banking products.

The transformation of the banking system increases automation, reduces operational time, and enhances data analytics — thereby improving interaction between customers and employees, and ultimately enhancing the quality of products and services.

The process of bank transformation typically includes several stages:

Assessment of the current situation — re-evaluating the bank's development strategy, introducing new services, assessing economic potential, and analyzing existing infrastructure and technologies.

Implementation of digital technologies — introducing cloud computing, Big Data analytics, service automation, artificial intelligence in data analysis, and other innovations.

Personnel training — developing qualified specialists such as data analysts, HR managers, marketers, and econometricians capable of working with digital technologies.

Monitoring — tracking transformation results, analyzing performance, and

optimizing successful processes.

Continuous development — ensuring the sustainability of transformation, improving competitiveness, modernizing infrastructure, enhancing service quality, and continuously refining banking strategies.

## **CONCLUSION**

1. In the process of modernizing the banking system in Uzbekistan, the introduction of innovative technologies and the use of digital solutions play a strategic role in increasing the efficiency of financial services, strengthening the competitiveness of financial institutions, ensuring the stability of the financial system, and contributing to macroeconomic stability. Through digital transformation in the banking sector, new opportunities are being created to improve service quality, reduce operational costs, expand the range of banking services, and develop customer-oriented innovative business models.

2. In the course of the transformation of Uzbekistan's banking system, the financial reforms, structural changes, and government programs adopted by the state play a significant role. In particular, within the framework of the "Digital Uzbekistan – 2030" strategy, the priorities include digitalizing financial services, developing electronic payment infrastructure, expanding financial inclusion, introducing modern corporate governance standards in banks, adapting to International Financial Reporting Standards (IFRS), gradually privatizing state-owned banks, and increasing the level of capitalization.

3. The effective implementation of advanced technologies in the transformation process is recognized as a crucial factor in improving the speed of banking operations, enhancing transparency in transaction processes, diversifying credit portfolios, increasing the efficiency of liquidity management, and strengthening customer trust. Furthermore, the introduction of technologies such as remote identification, biometric authentication, electronic digital signatures, cryptographic protection, and information security standards is of great importance in strengthening the information security system within banks.

4. In conclusion, it can be stated that the introduction of innovative services and technologies in commercial banks requires a comprehensive approach and specific methods for the successful implementation of transformation processes. The development of a clear transformation strategy for banks should define the goals, priorities, and action plans for innovations. During the transformation process, it is important to take into account the following recommendations:

5. It is necessary to enhance the quality and scope of financial services through strategic cooperation with fintech companies and innovative startups.

6. The qualifications of banking system employees should be improved by organizing regular training courses, seminars, and workshops to strengthen their knowledge and skills in modern financial technologies, fintech, and digital finance.

7. In developing customer-oriented services, it is advisable to effectively use data analytics and forecasting models to identify customer needs and preferences and offer appropriate financial services.

8. By applying innovative technologies, particularly artificial intelligence, banks can provide personalized services to customers, analyze their data, identify their needs, and offer tailored solutions.

9. In the transformation process, banks should implement innovative cybersecurity solutions to protect customer data, detect and mitigate risks, and ensure information security.

10. It is essential to increase the number of “digital banks,” further develop and implement promising innovative technologies, improve telecommunication infrastructure and technical facilities, and expand electronic sales channels.

11. IT companies that develop banking software should establish project rankings to encourage innovation and create a healthy competitive environment.

12. It is necessary to promote financial literacy among the population, raise awareness of banking activities and modern financial services through social surveys and outreach campaigns, and thus enhance financial inclusion, stimulate demand for banking services, and strengthen public trust.

13. To reduce excessive costs associated with bank offices and branches, it is proposed to introduce omnichannel banking into Uzbekistan’s banking system, taking into account international best practices. This strategy allows individuals and businesses to access financial services in an integrated and innovation-driven manner.

14. To ensure effective performance, it is necessary to improve the financial qualifications of bank employees, train them to obtain internationally recognized certifications such as CFA (Chartered Financial Analyst) and ACCA (Association of Chartered Certified Accountants), attract qualified professionals to the modern financial system, reform the personnel training system, and evaluate employees based on a rating system to reward high-performing staff.

15. Ensuring cybersecurity is a priority in the transformation process. Alongside the introduction of innovative technologies, banks must protect customer data and apply modern cybersecurity solutions to detect and eliminate threats. Implementing these recommendations in practice will contribute to the effective introduction of innovative services and advanced technologies in banks, improve customer experience, enhance business process efficiency, and strengthen competitiveness in the financial market.

16. Furthermore, the application of innovative technologies in the transformation of banks in Uzbekistan is essential for the sustainable development of the economy, attracting investments, and increasing competitiveness in the global financial market.

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