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## **DEVELOPMENT OF FINTECH TECHNOLOGIES IN THE BANKING SYSTEM OF UZBEKISTAN AND THEIR ECONOMIC IMPORTANCE**

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### **Abstract**

This article analyzes the development trends of fintech technologies in the banking system of Uzbekistan, their implementation process, and their economic significance. The study examines the impact of digital payment systems, mobile banking, blockchain, and artificial intelligence-based financial services on the banking sector. It also highlights the role of fintech solutions in increasing financial inclusion, reducing transaction costs, and improving the efficiency of banking services.

## Introduction

In recent years, global economic development has been characterized by accelerating digital transformation processes, leading to significant changes in the financial services sector. In particular, fintech (financial technology) has become a key driver of banking system development, replacing traditional banking services with digital, fast, and efficient solutions. Fintech solutions enable the optimization of financial operations through mobile banking, electronic payment systems, artificial intelligence, and blockchain technologies.[1]

In Uzbekistan's banking system, digital transformation processes have also intensified in recent years, and a fintech ecosystem has been gradually emerging. Strategic documents aimed at developing the fintech sector have been adopted by the Central Bank, and within the framework of the Fintech Strategy for 2026–2030, the expansion of digital infrastructure, support for innovative services, and attraction of investments have been defined as priority directions.[2]

In addition, the Central Bank of Uzbekistan has introduced a “regulatory sandbox” mechanism for innovative startups, enabling the testing of new financial technologies. This contributes to the rapid implementation of innovations in banking services and increases competition in the financial market.[3]

Furthermore, the implementation of fintech technologies reduces operational costs in the banking sector, increases transaction speed, and expands financial inclusion. As a result of the development of mobile payment systems and digital banking services, the level of access to banking services among the population has significantly increased.

At the same time, fintech companies in Uzbekistan are expanding their activities, and financial service diversification is increasing through payment systems, online banking services, and digital platforms. This positively contributes to the overall digital development of the economy.[4]

The main objective of this article is to analyze the development trends of fintech technologies in the banking system of Uzbekistan and to scientifically assess their economic importance.

## Literature Review

The integration of fintech technologies into the banking system has been widely studied by various scholars. In particular, in Tohir Sharipov's article “Fintech is an Important Factor in the Digital Transformation of Commercial Banks”, it is emphasized that the main function of fintech technologies is to digitize banking services, improve operational efficiency, and transform the financial system. According to the author, fintech is fundamentally changing banking business models and becoming a key driver of the digital economy [5].

In addition, Azizjon Sobirjonovich Ulmasov, in his work “Revolutionizing Uzbekistan's Banking Sector Through Fintech Innovations”, scientifically analyzes that the implementation of fintech solutions in Uzbekistan's banking system has increased electronic payments, changed customer behavior, and strengthened competition in the banking sector. The author highlights that fintech innovations contribute to financial inclusion and improve the quality of digital services [6].

Furthermore, in Feruza Nabieva's research “Legal, Innovative and Scientific Approaches to Study Modern Digital Banking”, the evolution of digital banking and fintech concepts is analyzed, along with their legal and institutional frameworks. The author notes that fintech development has led to the emergence of new terms such as neo-bank, digital bank, and online banking [7].

In the article by Shamsiddin Allayarov and Maktuba Ravshanova, “Financial Technology: Development of Innovative Fintech Start-Ups and Its Application in Banking System of Uzbekistan”, it is emphasized that fintech startups are forming an innovative environment in Uzbekistan's banking system, particularly in digital payments, online lending, and mobile banking services. According to the authors, fintech startups increase competition and improve service quality in the banking sector [8].

Moreover, in the research of Mokhirakhon Abdullaeva, it is scientifically proven that fintech integration into electronic payment systems leads to the formation of hybrid business models, and banks are transforming from intermediaries into digital service platforms [9].

Additionally, studies conducted by international organizations such as the World Bank and OECD emphasize that fintech development contributes to open finance, data sharing, and the sustainable development of the digital economy. These studies also note that fintech innovations require improvements in risk management, security, and regulatory policies in the banking system [10].

Overall, the reviewed literature shows that fintech technologies are a key factor in the transformation of banking systems, significantly improving financial service efficiency, developing the digital economy, and enhancing customer convenience.

## Methodology

This study uses a comprehensive scientific approach to analyze the development of fintech technologies in Uzbekistan's banking system and their economic significance. The methodological framework is based on systemic analysis, comparative analysis, and statistical generalization methods. Systemic analysis was used to study the integration process of fintech technologies into the banking sector. Comparative analysis was applied to compare Uzbekistan's fintech development with international experience. Statistical data were used to analyze the growth dynamics of digital payments, mobile banking, and electronic services.[11] In addition, economic analysis was applied to assess the impact of fintech technologies on banking efficiency and cost reduction. Empirical data were collected from the Central Bank, international financial institutions, and academic literature. Inductive and deductive methods were used together to form general conclusions.[12]

## Results and Analysis

The development of fintech technologies in Uzbekistan's banking system has emerged as one of the most significant strategic priorities within the broader digital economy agenda in recent years. This process reflects not only the technological modernization of financial services but also a fundamental transformation of the entire financial architecture, including payment systems, banking infrastructure, and customer interaction models. In this context, digital transformation is reshaping traditional banking mechanisms and accelerating the shift toward a fully integrated digital financial ecosystem.[13]

Statistical evidence indicates that key indicators of financial digitalization—such as cashless payment volumes, the number of mobile banking users, and the expansion of digital financial infrastructure—have been increasing at a consistently high rate. This sustained growth demonstrates that digital financial services are no longer supplementary tools but have become core components of the national banking system, actively influencing economic behavior and financial decision-making processes at both individual and institutional levels.

According to the Central Bank of the Republic of Uzbekistan, by the beginning of 2026, the number of bank cards in circulation exceeded 68.27 million, representing nearly a twofold increase compared to 2023 [14]. This sharp rise reflects not only the expansion of banking penetration among the population but also the successful implementation of fintech-driven financial inclusion policies. It also indicates that electronic payment instruments are rapidly replacing traditional cash-based transactions in everyday economic activities.

This growth clearly confirms the deep and irreversible integration of fintech technologies into the banking system. Mobile banking applications, online payment platforms, QR-code-based transaction systems, and electronic wallets have become essential components of daily financial behavior for individuals and businesses alike. These tools have significantly simplified access to financial services, reducing the need for physical interaction with banking institutions and enabling real-time financial operations.

As a result of these developments, the convenience, speed, and transparency of banking services have improved substantially. Financial transactions that previously required time-consuming manual

processing are now executed instantly, with higher levels of accuracy and security. Moreover, the increasing reliance on digital channels has strengthened user trust in electronic financial systems and contributed to the overall modernization of consumer banking behavior in Uzbekistan.

**Table 1. Fintech Infrastructure and Operational Indicators in Uzbekistan's Banking System (2023–2026)**

Indicators	2023	2024	2025	2026
Number of bank cards (million units)	34.2	46.2	62.0	68.27
Cashless transaction volume (trillion UZS)	224.3	326.7	460.2	500+
Payment terminals (thousand units)	380+	426.2	430.7	442.4
ATMs and info kiosks (thousand units)	29.9	36.0	40.0	44.8

**Source:** Author's compilation based on Central Bank of Uzbekistan statistical data [1].

The table shows that as fintech infrastructure expands, the share of the cashless economy is also steadily increasing. In particular, the growth of bank cards and payment infrastructure indicates the strengthening of institutional foundations of the digital economy.

Scientific analysis shows that the most important economic impacts of fintech technologies are the reduction of transaction costs, increased speed of financial services, and automation of banking operations. Real-time payment systems and mobile banking platforms have significantly reduced operational burdens for banks while improving service efficiency.

Fintech also plays an important role in expanding financial inclusion. People living in rural and remote areas are increasingly gaining access to banking services through mobile applications and digital platforms, ensuring regional financial equality.

In addition, fintech development has intensified competition among banks. Digital banks, fintech startups, and traditional banks are increasingly competing, leading to new innovative products such as online lending, virtual cards, P2P transfers, and instant payment services [15].

Overall, fintech technologies have led to the following key outcomes:

- increased share of the cashless economy;
- full digitalization of banking services;
- reduced transaction costs and improved efficiency;
- expanded financial inclusion and service accessibility;
- increased competition and innovation in the banking sector;
- faster and more transparent financial services.

## Conclusion

The rapid development and widespread adoption of fintech technologies in Uzbekistan's banking system clearly demonstrate a profound structural transformation of the national financial sector. The transition from traditional banking models to digital, technology-driven financial ecosystems is no longer a gradual process but a strategic shift reshaping how financial services are delivered, consumed, and regulated. The findings of this study confirm that the continuous growth of digital banking services, mobile payment platforms, electronic money systems, and instant transfer solutions is steadily accelerating the formation of a cashless economy in Uzbekistan.

The analysis conducted in this research indicates that fintech technologies have significantly improved the overall efficiency of the banking sector. In particular, the digitalization of financial services has reduced operational costs associated with manual processing, physical infrastructure, and intermediation.

Automation of banking operations, real-time payment systems, and artificial intelligence-based financial tools have contributed to faster transaction processing, improved accuracy, and enhanced transparency in financial operations. As a result, both banks and customers benefit from reduced time costs and increased reliability of financial transactions.

Another important outcome highlighted in this study is the improvement in customer experience and service accessibility. The expansion of mobile banking applications, digital wallets, and online banking platforms has made financial services more user-friendly, flexible, and available 24/7. This transformation has shifted customer expectations, making speed, convenience, and simplicity key competitive factors in the banking sector. Consequently, financial institutions are increasingly investing in user-centered digital solutions to maintain competitiveness in a rapidly evolving market.

Furthermore, fintech technologies have played a crucial role in strengthening financial inclusion across Uzbekistan. The expansion of digital financial services has significantly reduced geographical and infrastructural barriers, allowing populations in rural and remote regions to access banking services without the need to physically visit bank branches. This development has contributed to reducing regional disparities in financial access and has supported the integration of previously underserved populations into the formal financial system. In this regard, fintech acts as an important instrument for promoting inclusive economic growth.

The study also reveals that the emergence of fintech ecosystems has intensified competition within the banking sector. Traditional commercial banks are increasingly facing pressure from digital banks and fintech startups, which offer faster, cheaper, and more innovative financial products. This competitive environment has stimulated innovation in financial services, leading to the introduction of new products such as instant lending platforms, virtual payment cards, peer-to-peer transfer systems, and fully digital account management services. As a result, the banking sector in Uzbekistan is becoming more diversified, dynamic, and innovation-oriented.

In addition, fintech development contributes to broader macroeconomic stability and economic modernization. By improving the efficiency of financial intermediation and increasing the speed of capital circulation, fintech supports higher levels of economic activity and productivity. The growing reliance on digital financial infrastructure also enhances data transparency and improves the effectiveness of monetary policy implementation. Over time, these factors are expected to strengthen the resilience of the national financial system.

Overall, fintech technologies in Uzbekistan should not be viewed merely as technological innovations, but rather as strategic drivers of economic transformation. They are reshaping the structure of the banking system, improving financial accessibility, enhancing operational efficiency, and fostering innovation-driven competition. In the long term, continued development of fintech is expected to further integrate Uzbekistan's financial system into the global digital economy, support sustainable economic growth, and accelerate the transition toward a fully cashless society.

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