



**OPEN BANKING TECHNOLOGY IN THE BANKING SYSTEM:  
OPPORTUNITIES FOR CUSTOMERS AND TRANSFORMATION  
PROCESSES**

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**ABSTRACT**

This article explores the role of "Open Banking" technology as a driver for the transformation of commercial banks in the digital economy. The research analyzes the significance of Open API interfaces in banking ecosystems, data exchange mechanisms, and the financial opportunities created for customers in this process. It scientifically substantiates how digital changes in the banking system of Uzbekistan, particularly the partnership between banks and fintech, affect the speed and quality of customer service. In conclusion, proposals are put forward to overcome existing barriers to the implementation of Open Banking.

**KEY WORDS**

Open Banking, digital transformation, API, banking ecosystem, fintech, financial inclusion, cybersecurity.

**Introduction**

Today, traditional banking services in the global financial market are increasingly giving way to digital ecosystems. At the core of this transformation lies the concept of Open Banking, which is reshaping banks from mere repositories of funds into platforms for data exchange and innovation. For Uzbekistan’s economy, the digitalization of the banking sector is of strategic importance, as it represents one of the most effective mechanisms for enhancing financial inclusion and reducing the cost of banking services.

The institutional foundations for the comprehensive reform of the banking and financial system in the Republic of Uzbekistan were established by Presidential Decree No. PF-5992, issued on May 12, 2020, titled “On the Strategy for Reforming the Banking System of the Republic of Uzbekistan for 2020–2025.” This strategic document identifies the development of a competitive environment in the banking services market, the introduction of innovative technologies, and the enhancement of transparency within financial institutions as key priorities.

Furthermore, the Laws of the Republic of Uzbekistan “On Payments and Payment Systems” and “On Banks and Banking Activities” provide the legal framework for regulating the secure provision of customer data to third-party providers with the explicit consent of customers, while ensuring the safety and integrity of banking operations.

Currently, the banking sector of Uzbekistan is transitioning from a stage of quantitative growth to one of qualitative transformation. According to data from the Central Bank, although the number of users of remote banking services has increased significantly, the majority of banks continue to operate within “closed” systems. In such systems, customer information and transaction data remain confined within a single banking institution. Open Banking technology aims to address this limitation by utilizing Open APIs (Application Programming Interfaces), enabling secure data sharing and interoperability among different financial platforms. This approach empowers customers with greater control over their financial information, allowing them to transfer, manage, and utilize their data securely across multiple service providers.

## LITERATURE REVIEW

Open Banking and the digital transformation of banking systems have become important research topics in contemporary financial studies. The rapid development of financial technologies has encouraged researchers to investigate the impact of Open Banking on banking efficiency, competition, innovation, customer experience, and financial inclusion.

Chen L. and Li X. examined the relationship between Open Banking and consumer trust in the Chinese banking sector. Their study demonstrates that technological capability and strategic market positioning enable banks to achieve competitive advantages while strengthening customer confidence in digital financial services [1].

Berezina A.V., in her study entitled “*Open Banking in the Context of Economic Digitalization*,” analyzes the implementation of Open Banking in Russia. The author pays particular attention to the role of regulatory authorities, data protection mechanisms, and the recommendations of the Central Bank of Russia regarding API standardization and secure information exchange [2].

In Uzbekistan, Nazarov A. investigates the challenges and opportunities associated with the digital transformation of the banking sector. His research highlights the importance of technological infrastructure, regulatory adaptation, and institutional reforms required for the successful expansion of digital financial services [3].

Tadjibayeva S. focuses on the legal aspects of digital integration within the banking system of Uzbekistan. Her study identifies legislative gaps related to the implementation of API technologies by commercial banks and evaluates potential cybersecurity risks arising from increasing digitalization [4]. Empirical research conducted by Bakhtiyorov S. and co-authors (2022) confirms the positive impact of digital banking services on deposit mobilization and lending activities. Their findings reveal that deposits attracted through digital channels increased by approximately 60 percent during 2021–2022, indicating growing customer acceptance of digital banking platforms [5].

Similarly, Khalilov M. and Jurayev F. (2023) report that transactions processed through digital payment systems account for more than one-quarter of total financial turnover. According to their findings, the expanding share of digital transactions reflects the increasing importance of technology-driven financial services within the national economy [6].

The banking sector of Uzbekistan has experienced significant digital transformation over the past five years. The national development program “Digital Uzbekistan – 2030” identifies the expansion of remote financial services, integration of payment infrastructures, and implementation of electronic identification systems as key priorities for the modernization of the financial sector [7]. As a result, commercial banks have introduced mobile banking applications that allow customers to open accounts,

conduct payments, and access deposit and lending services remotely. Reports published by the Central Bank indicate that the number of digital banking application users exceeded 40 million during 2023–2024, with annual growth rates ranging from 30 to 40 percent [8].

The reviewed studies suggest that Open Banking represents more than a technological innovation; it constitutes a fundamental transformation of the financial ecosystem. Existing literature emphasizes the importance of regulatory support, technological readiness, cybersecurity, and consumer trust as critical determinants of successful implementation. In the context of Uzbekistan, the development of Open Banking requires not only advanced technological infrastructure but also effective mechanisms for protecting customer data and enhancing public confidence in digital financial services.

## **RESEARCH METHODOLOGY**

This study employs a comprehensive methodological approach to evaluate the impact of Open Banking technology on customer opportunities within the banking sector.

The empirical basis of the research consists of statistical data published by the Central Bank for the period 2020–2024, annual financial reports of commercial banks, and digital indicators obtained from publicly available data sources. The collected data were analyzed in accordance with the principles of logical consistency, scientific rigor, and objectivity to ensure the reliability and validity of the research findings.

## **ANALYSIS AND RESULTS**

The rapid acceleration of digital transformation processes in the global banking sector has significantly increased the demand for Open Banking technologies. Open Banking refers to a system of data sharing between banks and third-party financial service providers through Application Programming Interfaces (APIs). This technology enables customers to access financial services in a more convenient, efficient, and user-oriented manner.

International experience demonstrates that Open Banking has become an important driver of competition in the financial services market. In particular, the implementation of Open Banking frameworks under the PSD2 (Payment Services Directive 2) regulation in the United Kingdom and the member states of the European Union has facilitated the expansion of fintech companies and the development of innovative financial products. As a result, customers have gained the ability to manage multiple bank accounts through a single mobile application, execute real-time payments, and utilize advanced personal financial management services.

The adoption of the Open Banking model has substantially improved customers' access to remote banking services by enhancing convenience, speed, and security. The primary objective of modern banking systems is to improve customer experience through the comprehensive digitalization of financial operations and service delivery processes. In this regard, Open Banking serves as a strategic instrument for increasing customer engagement and promoting financial innovation.

Statistical information provided by JSC “O‘zmilliybank” indicates a significant increase in the use of mobile applications and online banking services in recent years. The observed growth reflects the increasing demand for digital financial services and demonstrates the readiness of customers to adopt innovative banking technologies. These trends suggest that the implementation of Open Banking principles may further accelerate the development of digital banking ecosystems and enhance customer access to diversified financial services.

**Figure 1. Dynamics of Customer Digital Activity in JSC “O‘zmilliybank” [9]**

Indicators	2020	2021	2022	2023	2024
Mobile application users (million)	1.20	2.00	2.99	3.16	3.74
Internet banking users (million)	0.60	1.00	1.20	1.50	1.80
Number of transactions (million)	0.45	0.70	1.00	0.98	0.97
Transaction volume (million USD)	320.0	500.0	866.9	669.1	776.4
Percentage of users utilizing online services (%)	21	30	38	52	65
Average transaction amount (USD)	711.1	714.3	866.9	682.7	800.4
Share of transactions via API (%)	0.0	5.0	12.0	18.5	26.0
Number of new digital services	1	2	4	6	9
Number of loans issued through the mobile application (thousand)	2.1	4.6	6.8	8.9	11.3
Share of digital transactions in total transactions (%)	10	25	40	58	72
Number of payments through mobile banking (million)	0.3	0.8	1.5	2.6	4.2

The table data demonstrate that JSC “O‘zmilliybank” has been experiencing a consistent and systematic development of its digital transformation processes. During the period 2020–2024, the number of mobile application users increased from 1.2 million to 3.74 million, while internet banking users grew from 0.6 million to 1.8 million. This indicates a growing level of customer trust in, and demand for, digital banking services.

The volume of transactions also rose significantly, from 320 million USD to 776.4 million USD, reflecting the active utilization of digital channels for banking operations. At the same time, the share of users of online services increased from 21 percent to 65 percent, while the proportion of digital transactions in total banking operations expanded from 10 percent to 72 percent.

Notably, the share of API-based transactions increased from 0 percent to 26 percent, which represents an important indicator of the gradual formation of Open Banking infrastructure within the bank. The growth in the number of new digital services and the increasing volume of loan disbursements through mobile applications further confirm the bank’s innovation-driven development strategy.

Overall, these indicators demonstrate that JSC “O‘zmilliybank” is progressively expanding its digital banking services, improving customer-oriented solutions, and gradually aligning its operations with the Open Banking model.

Indicators	2022	2023	2024
Number of API services	5	10	15
Number of transactions via API (million)	1.0	2.5	4.0
Number of fintech companies providing services based on API	2	5	8
Number of integrated API services	3	6	10
Volume of loans issued via API (trillion soums)	0.5	1.2	2.3

**Figure 2. Indicators of API Services at JSC “O‘zmilliybank” [9]**

The table data indicate that the Open Banking infrastructure within JSC “O‘zmilliybank” is developing actively and consistently. The number of API services increased from 5 in 2022 to 15 in 2024, representing a threefold growth. This reflects the strengthening integration of the bank with external platforms and fintech companies.

The number of API-based transactions rose from 1 million to 4 million, indicating an increasing level of customer engagement with Open Banking services. In addition, the number of fintech companies operating through API integration grew from 2 to 8, demonstrating a continuous expansion of the bank’s digital ecosystem.

The number of API-integrated services increased from 3 to 10, which highlights the bank’s efforts to diversify its digital service offerings. Furthermore, the value of payments processed via APIs grew significantly from 0.5 trillion UZS to 2.3 trillion UZS, confirming the practical effectiveness of Open Banking technologies in the financial system.

Overall, the table demonstrates that JSC “O‘zmilliybank” is rapidly developing its API technologies and Open Banking infrastructure, gradually transitioning toward a fully digital ecosystem-based banking model.

**Table 1. Key Indicators of Bank Cards and Payment Infrastructure, First Quarter of 2026**

No	List of Commercial Banks	Dynamics of Bank Cards in Circulation	Dynamics of Installed Payment Terminals	Dynamics of Installed ATMs and Info Kiosks
1	Milliy bank	4,271,316	42,424	1,023
2	O‘zsanoatqurilishbanki	2,962,002	30,958	677
3	Agrobank	6,619,551	32,516	1,823
4	Mikrokreditbank	1,916,524	19,758	836
5	Xalq banki	11,387,931	33,586	3,132
6	Garant bank	416,813	6,081	235
7	Biznesni rivojlantirish banki	1,037,081	16,908	651
8	Turonbank	546,099	12,696	429

Source: Author’s compilation based on data from the Central Bank.

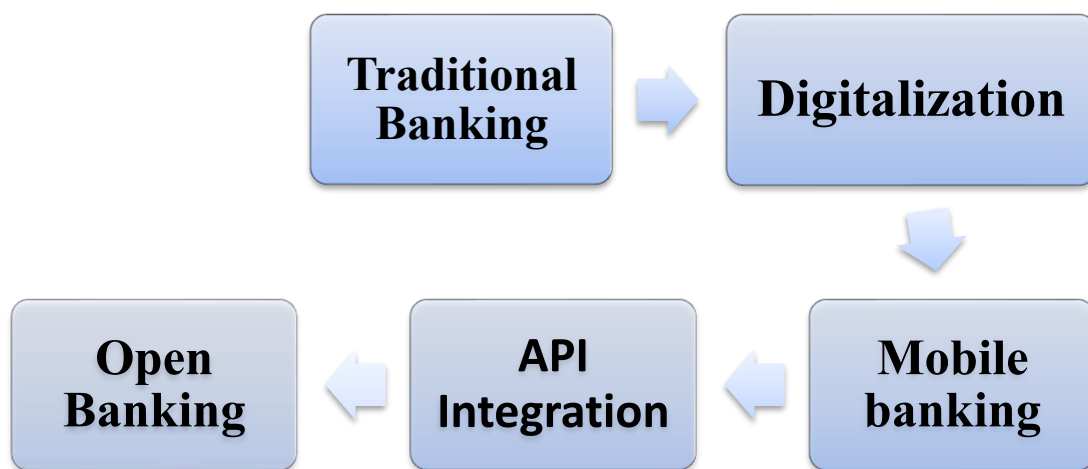
According to the analysis, the highest number of bank cards in circulation belongs to Xalq Bank, which has issued more than 11.3 million cards. This indicates a wide coverage of banking services and strong demand among the population. Agrobank (6.6 million) and JSC “O‘zmilliybank” (4.2 million) rank next in terms of issued bank cards.

In terms of payment terminals, JSC “O‘zmilliybank” holds the leading position, having installed more than 42,000 terminals. Agrobank, Xalq Bank, and Uzbek Industrial and Construction Bank also demonstrate high figures in this segment, indicating their active participation in retail and service payment networks.

Regarding ATMs and info kiosks, Xalq Bank is also the leader, with more than 3,000 installed units. This significantly enhances 24/7 accessibility of banking services for customers. Agrobank also shows strong performance in this direction, with more than 1,800 installed devices.

Although smaller banks such as Garant Bank and Turonbank demonstrate relatively lower indicators, they are also actively engaged in developing their digital payment infrastructure. This reflects increasing competition among banks in the field of digital financial services.

Overall, the table data confirm the steady development of digital banking services, cashless payments, and electronic infrastructure within the banking system of Uzbekistan. This process plays an important role in the broader implementation of Open Banking principles and the development of the digital economy.



**Table 2. Stages of Digital Transformation in the Banking Sector**

*Source: Compiled by the author.*

This table illustrates the gradual transition of the banking system from a traditional operational model to a fully digital transformation process. Initially, banking services were delivered through conventional channels; however, with the onset of digitalization, electronic banking services began to develop progressively.

The introduction of mobile banking technologies significantly expanded customers' access to remote banking services, enhancing convenience and accessibility. Subsequently, API integration enabled the interconnection of banking systems with third-party platforms, laying the foundation for the emergence of the Open Banking model. As a result, the speed, convenience, and overall efficiency of banking services have increased significantly, reflecting the ongoing digital transformation of the financial sector.

## CONCLUSION

In conclusion, Open Banking is one of the key innovative directions in the digital transformation of modern banking systems. This model creates broader opportunities for customers by ensuring banking services are more open, convenient, and efficient. In particular, the strengthening of integration

between banks and fintech companies through API technologies contributes to improving the quality and competitiveness of financial services.

The results of the study indicate that Open Banking elements are being gradually implemented in Uzbekistan, while mobile banking, internet banking, and API-based services are actively developing within commercial banks. The analysis conducted using JSC “O‘zmilliybank” as a case study demonstrates a continuous increase in the volume of digital transactions, the share of users of online services, and the number of API-based operations over the years. These trends clearly indicate the acceleration of digital transformation processes within the banking sector.

## Recommendations

- It is necessary to implement unified and secure API standards to develop Open Banking infrastructure within the banking system.
- Cybersecurity systems should be strengthened, and modern authentication methods should be widely adopted to ensure the protection of customers’ personal data.
- Expanding cooperation between banks and fintech companies is essential for the development of new innovative financial services.
- Special programs and awareness campaigns should be introduced to improve the population’s digital financial literacy.
- Enhancing mobile banking and internet banking services is crucial for providing customers with more convenient and faster financial services.
- Studying international best practices in Open Banking and adapting them to the national banking system will contribute to improving the overall efficiency of the banking sector.

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