BG Pulse Journal USA
ISSN:1947-2536 http://www.bgpulseusa.com/index.php/bg
BG PULSE JOURNAL

THE ROLE OF DIGITAL BANKING SERVICES IN THE FORMATION OF COMMERCIAL BANKS' REVENUES AND PROSPECTS FOR THEIR DEVELOPMENT

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Doi: https://doi.org/10.5281/zenodo.21997828

Abstract: The digital transformation of the banking sector has changed the way commercial banks interact with customers, deliver financial services and generate income. In recent years, digital banking has moved beyond the role of an alternative service channel and has increasingly become an important component of banks' business models. Mobile applications, remote banking, digital payments, online lending, QR payments, card services and other technology-based products allow banks to reach customers more efficiently while creating additional opportunities for fee and commission income.

This article examines the role of digital banking services in the formation of commercial banks' revenues and evaluates the prospects for their further development, with particular attention to the banking sector of Uzbekistan. The research is based on statistical information published by the Central Bank of the Republic of Uzbekistan, international reports and academic literature. Comparative, statistical, structural and analytical methods are used to identify changes in the use of digital banking services and their potential impact on bank revenues.

The analysis shows that the expansion of remote banking is accompanied by a rapid increase in customer activity and digital transactions. Central Bank statistics indicate that the number of customers using remote banking systems continued to increase throughout 2025, while digital payment infrastructure and payment-card usage also expanded. This creates favorable conditions for commercial banks to increase transaction-based revenues, develop cross-selling, reduce the cost of routine banking operations and improve customer retention. At the same time, digital transformation requires considerable investment in information technology, cybersecurity, data protection and human capital. The article argues that the revenue effect of digitalization depends not simply on the number of digital users, but on the ability of banks to convert digital customer activity into sustainable financial results.

Keywords: digital banking, commercial banks, bank revenues, digital transformation, remote banking, digital payments, fintech, mobile banking, financial technology, profitability, Uzbekistan.

INTRODUCTION

The banking industry is going through a fundamental transformation. For many years, a bank's physical branch network was one of the main factors determining its ability to attract customers and provide financial services. Today, this relationship is changing. A customer can open an account, transfer money, pay for goods and services, apply for a loan, monitor savings and communicate with a bank without visiting a branch. In many cases, a smartphone has become the main point of contact between a customer and a financial institution.

This change has important implications for the financial performance of commercial banks. Digital banking is often discussed in terms of convenience and technological innovation, but its economic consequences are equally important. A digital transaction can be processed at a lower marginal cost than a similar transaction carried out through a traditional branch. At the same time, a

digital platform allows banks to serve a larger customer base, collect information about customer behavior and offer several financial products through the same channel.

The expansion of digital financial services is not limited to developed economies. The World Bank's Global Findex Database shows that the share of adults in developing economies making or receiving digital payments increased from 35 percent in 2014 to 57 percent in 2021. This indicates that digital payments have become an increasingly important part of financial behavior in emerging markets. (World Bank)

Uzbekistan is also experiencing a rapid shift toward digital banking. The Central Bank regularly publishes data on customers using remote banking systems, and these statistics show a continuous expansion of digital access. For example, the number of remote banking users reported for the beginning of 2025 was already substantial, and the number continued to rise during the year. (CBU)

The importance of digitalization for Uzbekistan is also connected with the changing structure of competition in the financial market. Commercial banks are no longer competing only with one another. Fintech companies, payment organizations and digital financial platforms are also influencing customer expectations. Customers increasingly expect banking services to be fast, available 24 hours a day and accessible from a single application.

For commercial banks, therefore, digitalization is becoming a question of both competitiveness and revenue management. A bank that invests in digital services but does not achieve higher customer activity, lower costs or additional income may not receive an adequate return on its investment. Consequently, the economic efficiency of digital banking deserves closer examination.

The practical importance of the research lies in the fact that digitalization should be evaluated not only as a technological project but also as a component of banks' revenue strategy.

LITERATURE REVIEW

The relationship between digitalization and banking performance has attracted increasing attention in recent years. Although researchers use different approaches, most studies agree that digital technologies affect banking performance through several channels rather than through a single mechanism.

One of the most important channels is the expansion of financial access. Digital services allow banks to reach customers who may live far from traditional branches. This is particularly relevant for countries with large geographical territories or rapidly growing urban populations. Digital accounts and mobile applications reduce the importance of physical distance between a bank and its customers.

The World Bank's Global Findex research emphasizes that digital payments can contribute to broader financial inclusion by encouraging account usage for payments, savings and borrowing. In developing economies, the rapid growth of digital payments has been one of the most visible changes in financial behavior during the last decade. (World Bank)

Another strand of the literature focuses on operational efficiency. Digital technologies allow banks to automate repetitive tasks, reduce paper-based processes and process transactions without direct employee involvement. The resulting cost reduction can improve profitability even when a particular digital service does not generate substantial direct fees.

However, the relationship between digitalization and profitability is not necessarily linear. Banks have to make significant investments in software, servers, cybersecurity, data infrastructure, employee training and digital product development. In the initial stages, these investments can increase operating expenses. The financial return may appear only after the number of digital users and transactions reaches a sufficient scale.

Digital transformation also affects the structure of bank revenues. Traditional commercial banking relies heavily on interest income generated from lending activities. Digital banking creates additional possibilities for non-interest income, particularly through payment processing, card services, transfers, merchant acquiring and other transaction-related services.

At the same time, digital channels provide banks with more information about customers. When properly managed, transaction data can support credit scoring and personalized marketing. A customer who uses a payment service can subsequently be offered a deposit, credit card, consumer loan, insurance product or investment service. Thus, digital banking may increase revenues indirectly through cross-selling.

The regulatory perspective is also important. The Basel Committee on Banking Supervision has emphasized that digitalization creates both opportunities and new risks for banks. Technology can increase efficiency and improve customer services, but it also creates additional operational, cyber and third-party risks. Therefore, digital transformation needs to be accompanied by appropriate governance and risk-management frameworks.

The existing literature therefore suggests that digital banking should not be evaluated solely by counting the number of mobile application users. A more comprehensive assessment should include transaction activity, revenue per digital customer, cost savings, customer retention, cross-selling and profitability indicators.

This observation is particularly relevant to Uzbekistan, where the number of remote banking users has grown rapidly. The next analytical step is therefore to examine whether this expansion creates a sufficiently strong foundation for commercial banks to strengthen their revenue base.

ANALYSIS AND RESULTS

The Central Bank of Uzbekistan publishes monthly statistics on customers using remote banking systems. These data provide a useful indication of the scale of digital banking adoption.

At the beginning of 2025, the Central Bank reported more than 2.5 million remote banking users at the National Bank alone, more than 6.3 million at Uzpromstroybank and almost 5.9 million at Agrobank. (CBU)

By July, the corresponding figures had changed considerably. For example, the number of users reported by Uzpromstroybank exceeded 5.6 million, while Xalq Bank reported more than 8.1 million users. (CBU)

The statistics should be interpreted carefully because the Central Bank's indicator represents customers registered in remote banking systems and does not necessarily mean that every registered customer actively performs transactions every month. Nevertheless, the indicator is useful for assessing the scale of the digital customer base.

By December 1, 2025, the Central Bank reported 6.41 million remote banking users for Uzpromstroybank, 4.49 million for Agrobank, 5.06 million for Ipoteka-bank and 8.64 million for Xalq Bank. (CBU)

Table 1.

Selected remote banking users in Uzbekistan, 2025[1]

Bank	January 1, 2025	December 1, 2025	Change
National Bank	2,511,760	3,379,282	+867,522
Uzpromstroybank	6,310,942	6,410,701	+99,759
Agrobank	5,942,125	4,491,100	-1,451,025
Ipoteka-bank	—	5,061,085	—

[1] compiled by the author based on Central Bank of the Republic of Uzbekistan statistics. (CBU)

Mikrokreditbank	—	2,251,997	—
Xalq Bank	—	8,639,159	—

The table illustrates an important point: digital transformation does not progress uniformly across all banks. Some institutions show substantial growth in registered remote customers, while others may report changes resulting from customer migration between platforms, database consolidation or changes in registration practices.

This is why the number of users alone cannot be considered a direct measure of financial success. The more meaningful question is how actively these customers use digital services and what revenue or cost-saving effect their activity creates.

Another indicator of digital banking development is the expansion of payment infrastructure.

As of July 1, 2025, the Central Bank reported millions of bank cards in circulation and a substantial number of POS terminals and ATMs across commercial banks. The transaction volume processed through POS terminals during January–June 2025 was also significant. (CBU)

Table 2.

Selected payment infrastructure indicators of commercial banks, July 2025[2]

Bank	Bank cards issued	POS terminals	ATMs and self-service kiosks	POS transactions, Jan–Jun 2025 (mln UZS)
National Bank	4,160,883	39,578	914	14,011,033
Uzpromstroybank	2,839,764	30,779	677	7,582,923
Agrobank	7,676,298	32,305	2,030	9,751,428
Mikrokreditbank	1,908,799	20,236	837	11,882,452
Xalq Bank	10,083,400	39,033	3,104	6,407,002
Garant bank	419,750	6,284	271	664,390

The figures show that digital banking is developing together with the broader payment ecosystem. A mobile banking application cannot generate significant economic value if customers do not have convenient opportunities to use digital payments. Therefore, digital banking development should be considered together with card infrastructure, merchant acquiring, POS terminals, QR payments and instant payment systems.

Table 3.

Proposed indicators for evaluating digital banking effectiveness[3]

Indicator	Calculation / interpretation	Strategic importance
Digital active-user ratio	Active digital users / registered users	Measures real engagement
Digital revenue per customer	Digital revenue / active digital users	Measures monetization
Digital transaction cost	Digital operating cost / digital transactions	Measures efficiency
Digital customer acquisition cost	Digital marketing cost / new digital customers	Measures marketing efficiency

[2] Central Bank of the Republic of Uzbekistan. (CBU)
[3] Central Bank of the Republic of Uzbekistan. (CBU)

Digital cross-selling ratio	Products per digital customer	Measures customer value
Digital retention rate	Retained digital users / total users	Measures loyalty
Digital fee-income share	Digital fee income / total fee income	Measures revenue contribution
Digital ROA	Digital-related profit / digital assets	Measures profitability
Digital cost-to-income ratio	Digital operating costs / digital income	Measures financial efficiency

These indicators would allow bank management to distinguish between **digitalization for technological modernization** and **digitalization that actually creates economic value**.

The development of digital banking in Uzbekistan is likely to continue in several directions.

The first is the expansion of integrated mobile applications. Customers increasingly prefer platforms where several services can be accessed without switching between applications.

The second is the growth of QR and contactless payments. These services can strengthen relationships between banks, merchants and consumers.

The third is the expansion of digital lending. Automated credit scoring can make lending faster and more scalable.

The fourth is the development of open banking and API-based financial services. This can encourage cooperation between banks, fintech companies and other digital platforms.

The fifth is the use of artificial intelligence for personalized banking. Instead of offering identical products to all customers, banks can develop more targeted financial solutions.

The sixth is the strengthening of cybersecurity. As digital dependence increases, cybersecurity becomes a direct component of financial stability and customer confidence.

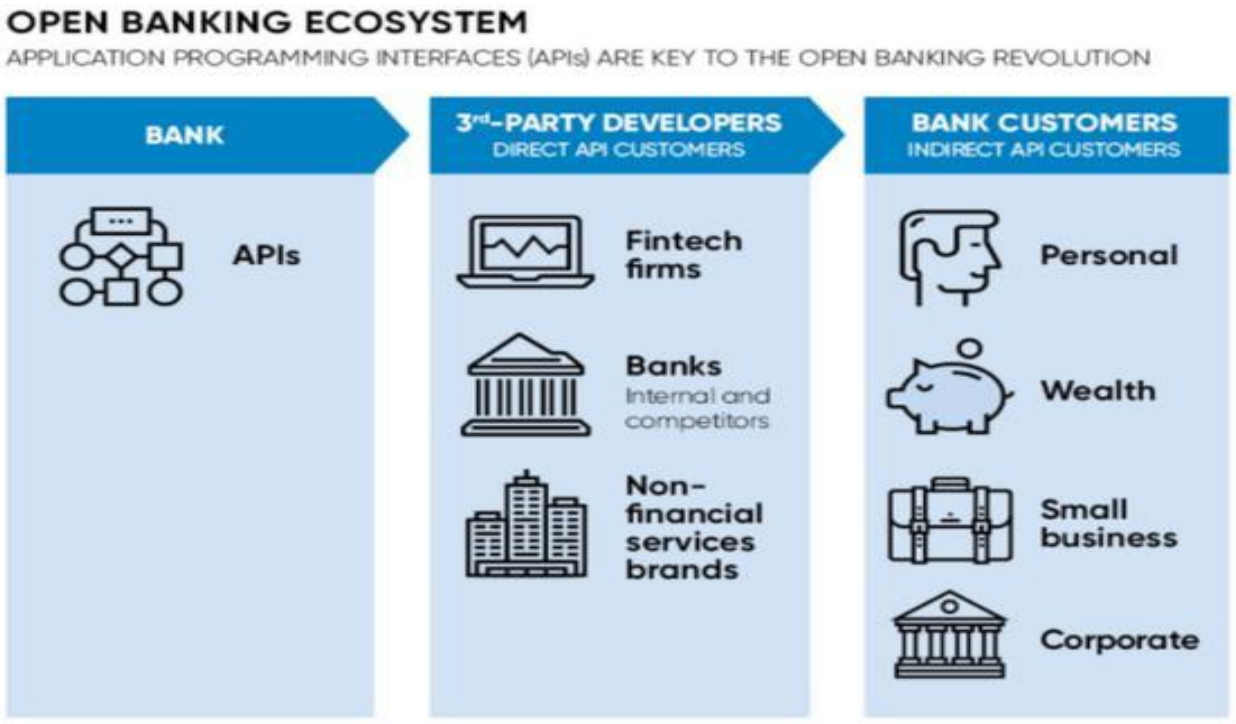


Figure 1. Prospective digital banking ecosystem

CONCLUSION

Digital banking is gradually changing the economic foundations of commercial banking. The transformation affects not only the way services are delivered but also how banks attract customers, generate income and manage operating costs.

The analysis of Uzbekistan's banking sector shows that the customer base for remote banking has already reached a significant scale. Official Central Bank statistics demonstrate that major commercial banks serve millions of customers through remote banking systems, while card and payment infrastructure continues to expand. (CBU)

These developments create favorable conditions for increasing the revenue potential of commercial banks. The most direct opportunity is associated with fee and commission income generated by payments, transfers, acquiring and other digital services. At the same time, digitalization can indirectly increase interest income through digital lending and can reduce the cost of servicing customers.

However, the relationship between digitalization and profitability should not be simplified. A large number of digital customers does not automatically mean higher bank revenues. The economic effect depends on customer activity, transaction frequency, product diversity, cross-selling, cost management and the bank's ability to maintain customer trust.

For this reason, the next stage of digital banking development in Uzbekistan should focus on the transition from **digital service delivery to digital value creation**. Banks should increasingly measure digital performance through indicators such as active users, revenue per digital customer, digital transaction cost, cross-selling, retention and digital profitability.

The long-term development of the sector is likely to be shaped by artificial intelligence, digital lending, open banking, QR payments, personalized financial products and fintech cooperation. At the same time, cybersecurity, data protection and responsible lending will remain essential conditions for sustainable development.

In our assessment, the most effective model for Uzbek commercial banks is an integrated digital ecosystem in which payments, lending, savings, transfers and other financial services are connected through a single customer-oriented platform. Such a model can help banks increase the volume of transactions, diversify income sources, reduce operating costs and strengthen long-term customer relationships.

Ultimately, the success of digital transformation should be measured not by how many technologies a bank introduces, but by how effectively those technologies improve the economic value created for both the bank and its customers.

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