



**The achievements and potential problems of digital and commercial banks,
solutions regarding to this case in the digital economy environment in
Uzbekistan**

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Annotation

This article analyzes the achievements and challenges of Uzbekistan's commercial banks in the context of the digital economy and the growing use of artificial intelligence. It evaluates how digitalization and AI-based systems have enhanced efficiency, accessibility, and innovation in banking operations while also creating new risks related to cybersecurity, data management, and regulatory adaptation. The study discusses examples from leading digital institutions and proposes strategic and policy recommendations to support sustainable, inclusive, and secure digital financial development in Uzbekistan.

Key words: Digital economy, fintech, artificial intelligence (AI), digital banking, blockchain, cybersecurity, TBC Bank, Anorbank, Uzum Bank, Click, Payme, financial technology, investment, innovation, Uzbekistan.

Introduction

In today's modern era, every industry is increasingly integrating digital systems such as databases, data centers, and cloud technologies to improve efficiency, data management, and accessibility. The banking sector is no exception. It is rapidly adopting digital payment systems, online banking platforms, and artificial intelligence (AI) tools to modernize its infrastructure and deliver innovative, customer-centered





financial services. The integration of these advanced technologies has elevated the banking sector to a new level of efficiency, transparency, and competitiveness, marking one of the peak stages of its technological evolution. In recent years, Uzbekistan's digital finance and banking sector has experienced a remarkable surge in development, marked by significant investments, acquisitions, and partnerships that have redefined the fintech landscape.

With the advancement of digital businesses and online enterprises, financial institutions — particularly in the banking and insurance sectors — have increasingly adopted digital banking models that align with the broader digital economy. In Uzbekistan, this transformation is vividly reflected in the emergence of several major digital banks such as Uzun Bank, TBC Bank, and Anorbank, along with the digital platforms of traditional commercial banks, including Zoomrad, BRB, and Chakanapay. In addition, non-bank fintech companies such as Payme and Click play an essential role in facilitating online payments and providing innovative financial services to both corporate and individual clients.

These organizations operate primarily through online modules and mobile applications, offering customers flexible, smooth, and secure access to banking and payment services 24 hours a day, seven days a week. Their business models focus on real-time transaction processing, data-driven decision-making, and the seamless integration of digital ecosystems, which collectively enhance user experience and promote financial inclusion across the country.

However, despite these remarkable advancements, several limitations continue to disrupt the full development of the sector — including cybersecurity threats, uneven digital literacy, infrastructure gaps, and regulatory challenges. Therefore, this paper aims to analyze the main characteristics and achievements of digital systems in Uzbekistan's banking sector, identify the major constraints hindering progress, and propose strategic recommendations to strengthen digital transformation and ensure sustainable growth of the national financial system.

Understanding the Digital Economy

The term digital economy refers to the intersection of digital computing and





economic activity, describing how traditional sectors—such as production, trade, and financial services—are transformed through the integration of Internet technologies, blockchain systems, and digital platforms. It is often referred to as the Internet economy, Web economy, Cryptoeconomy, or New economy, reflecting its dynamic and multifaceted nature. The distinction between traditional and digital economies is becoming increasingly blurred, as digital systems are now embedded in every stage of production, distribution, and consumption.

At its core, the digital economy is fueled by billions of online transactions that take place daily among individuals, businesses, and institutions through distributed computing devices such as servers, smartphones, and laptops. The expansion of information and communication technologies (ICT) has dramatically enhanced productivity, efficiency, and connectivity across nearly all sectors. As a result, digitalization has become one of the key drivers of global economic growth, influencing everything from trade logistics and education to financial innovation and e-governance.

In this evolving landscape, financial institutions—especially banks—have emerged as central actors in the digital economy. By adopting new technologies, banks are transforming their operational models to meet changing customer expectations and remain competitive in an increasingly digitized financial environment. The transition to digital operations enables banks to reduce operational costs, expand their customer base, and improve service quality through automation, real-time data analytics, and AI-powered decision systems.

In Uzbekistan, the growth of the digital economy has directly influenced the modernization of the banking sector. The introduction of online banking, mobile payment applications, and blockchain-based financial solutions has created new opportunities for both businesses and consumers. As the country continues to expand its ICT infrastructure and promote digital transformation strategies, banks are playing a crucial role in shaping Uzbekistan's broader transition toward a knowledge-based, innovation-driven economy.

Digital Banking Development in Uzbekistan

Uzbekistan has made significant progress in digital financial transformation over





the past few years. Currently, three major digital banks operate in the country—TBC Bank Uzbekistan, Anorbank, and Bank Apelsin (Uzum Bank). These institutions deliver fully digital services through mobile applications and online platforms, enabling customers to access banking products 24 hours a day, seven days a week.

Through advanced IT infrastructure and user-friendly mobile applications, digital banks provide high operational flexibility. Customers can open accounts, make transfers, apply for loans, and manage deposits without visiting physical branches. The absence of an extensive branch network and the use of automated online systems help reduce operational costs and improve service quality. According to various estimates, digitalization can reduce service costs by 40-60 %, allowing customers to save both time and money.

Digital transformation also allows banks to study customer preferences through data analytics, social media, and AI tools. Based on this information, banks can design new financial products tailored to the needs of different market segments, thus increasing their competitiveness and profitability. The greater the market share a bank holds, the higher its potential for revenue growth and long-term stability.

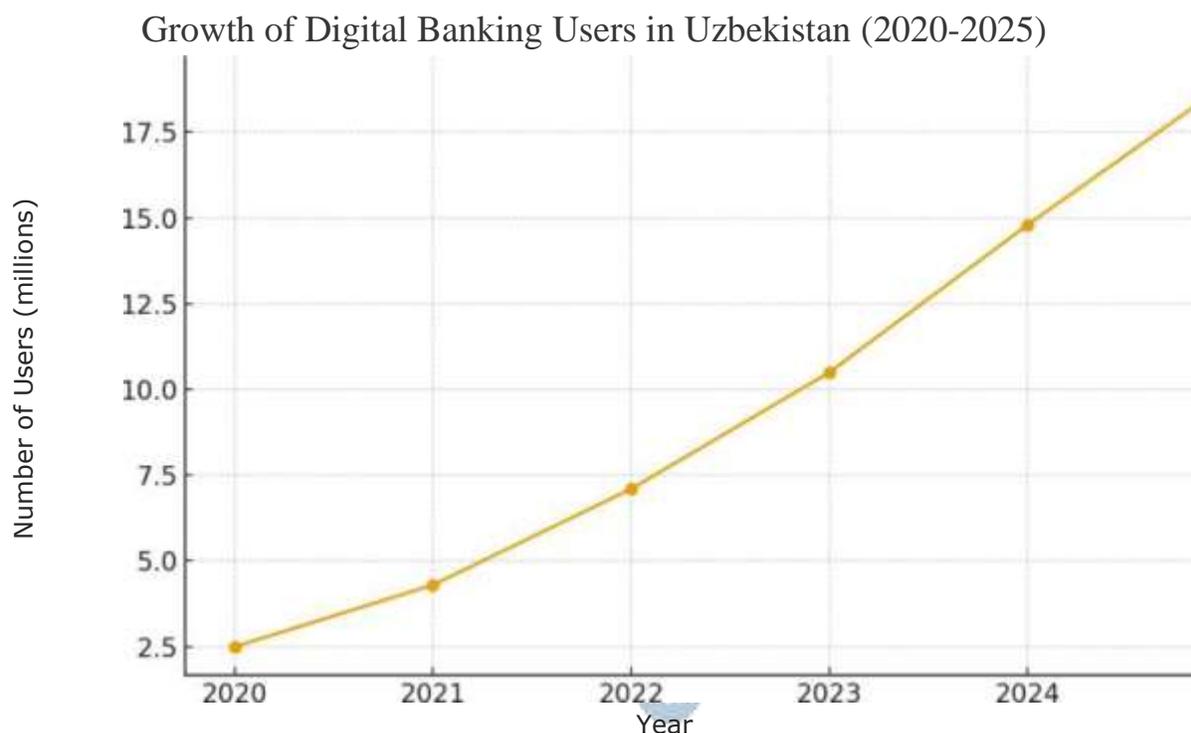
Advantages and future opportunities

The digitalization of financial services creates wide-ranging opportunities for both banks and their clients. Among the most important benefits are:

- 24/7 service availability and real-time transaction processing;
- Reduced operational costs and improved efficiency;
- Improved financial and digital literacy;
- Enhanced customer satisfaction through personalized products;
- Expanded financial inclusion in remote and rural areas;
- Data-driven decision-making supported by artificial intelligence.

Digital banking has emerged as a significant driver of economic development, promoting both digital literacy and financial literacy among populations. By leveraging data-driven decision-making supported by artificial intelligence, digital banking platforms not only enhance efficiency but also empower customers to make informed financial choices.



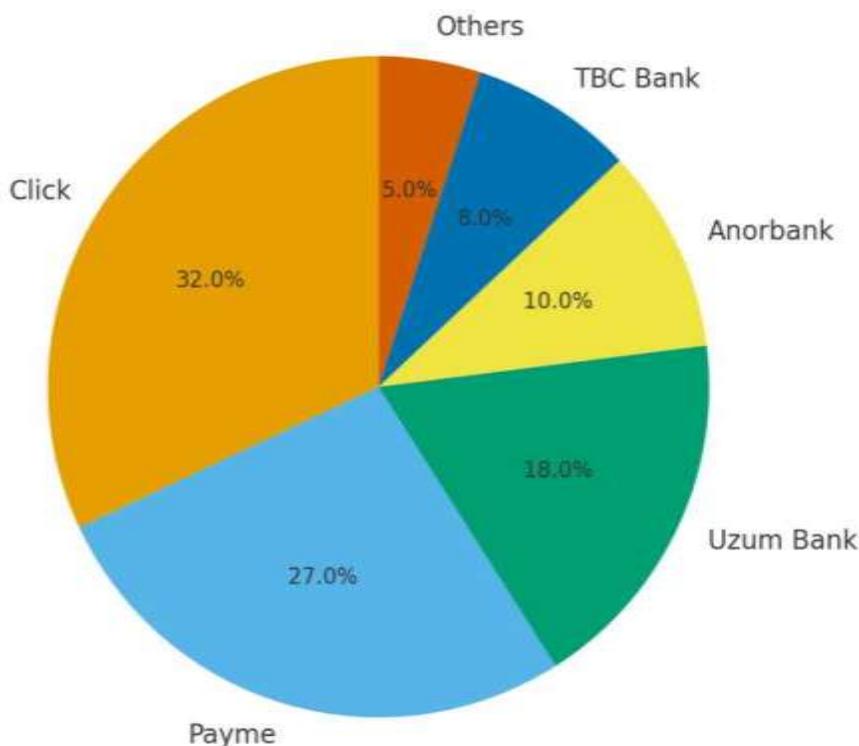


Graph.1. The line chart shows the rapid expansion of digital banking users in Uzbekistan from 2018 to 2025. Between 2018 and 2020, growth was moderate, with user numbers rising from approximately 2 million to 4.5 million, reflecting the early stages of mobile banking adoption. However, post-2021, the curve steepened dramatically, coinciding with the launch of fully digital institutions that we will discuss about them below. By 2025, the number of users exceeded 20 million, representing more than half of the country's adult population. This trend aligns with Uzbekistan's "Digital Uzbekistan 2030" strategy, which prioritizes nationwide financial inclusion, mobile connectivity, and cashless payment systems. The data demonstrates a decisive shift from traditional to mobile-first banking behavior, driven by improved mobile internet penetration, simplified onboarding processes, and government-supported digital ID integration.





Market Share of Major Digital Platforms (2025)



Graph 2. The graph compares the market distribution of major digital financial platforms in Uzbekistan in 2025. Overall, the data reveals that Click and Payme dominate the digital finance sector, while other platforms such as Uzum Bank, Anorbank, and TBC Bank maintain smaller yet significant shares.

Click accounts for the largest portion of the market at 32%, reflecting its strong customer base and early adoption of mobile payment technology. Payme follows closely with 27%, supported by its integration within TBC Bank's broader digital ecosystem. Uzum Bank ranks third with 18%, demonstrating rapid expansion due to its super-app model and innovative fintech services. Meanwhile, Anorbank and TBC Bank hold 10% and 8% respectively, both focusing on hybrid banking and AI-driven customer support systems. The remaining 5% of the market is shared among smaller





fintech firms, including Zoomrad and BRB Pay.

In conclusion, the chart highlights a highly concentrated digital finance landscape, where two leading platforms control nearly 60% of the market. This structure underscores Uzbekistan's growing reliance on domestic fintech innovation and signals the country's transition toward a fully digitalized financial ecosystem.

Moreover, digital banking contributes to the national economy by fostering transparency, stimulating innovation, and attracting foreign investment into the fintech and IT sectors. A notable example of this dynamic is TBC Bank, one of the first fully digital banks in Georgia, which has expanded its operations to Uzbekistan. This strategic expansion has attracted significant investment and contributed to the growth of the Uzbek digital economy.

In August 2025, TBC Bank Group announced the acquisition of a majority stake in OLX Uzbekistan, the country's largest online classifieds platform. The deal, executed through a joint venture with the international investment holding company Titan Investments, is among the largest mergers and acquisitions in Uzbekistan over the past 30 years. Under the agreement, TBC Bank Group holds 50% + 1 share of the joint venture, while Titan Investments owns the remaining stake. Financial details of the transaction were not disclosed. Previously, OLX Uzbekistan was owned by OLX Group, part of the global conglomerate Prosus, which had operated the platform in Uzbekistan since 2015. OLX Group manages a network of online marketplaces across approximately 30 countries, including prominent brands such as OLX, Otomoto, and Property24. The acquisition highlights the increasing role of digital banking institutions in fostering technological innovation, cross-border investment, and integration of digital ecosystems. By participating in large-scale investments such as OLX Uzbekistan, TBC Bank Group not only strengthens its digital banking ecosystem but also contributes to broader economic modernization in emerging markets.

Another major digital bank, Anorbank has confirmed its position as a leading financial institution in Uzbekistan, reporting robust growth and a series of strategic achievements in 2023. The bank's performance underscores its commitment to innovation, customer engagement, and sustainable development within the financial





sector.

In terms of financial results, ANORBANK achieved a net profit of 139.5 billion UZS, maintaining a consistent record of profitability since its launch in Uzbekistan. This outcome reflects the effectiveness of the bank's operational strategies and prudent financial management.

The bank has also seen significant growth in customer engagement, with the ANORBANK mobile application downloaded over 7.8 million times and the number of registered users surpassing 4 million. Such figures highlight increasing public adoption of digital banking services and growing confidence in ANORBANK's offerings.

ANORBANK's credit and deposit operations continued to expand. The total credit portfolio for individuals and corporate clients exceeded 3.1 trillion UZS, while deposits rose to more than 3.7 trillion UZS. The bank serves a wide range of clients, including 1.8 million retail debit cardholders and over 9,500 corporate clients, reflecting broad market reach.

A highlight of 2023 was the expansion of ANORBANK's ANOR installment card, which now partners with 5,261 merchants across sectors such as electronics, household appliances, jewelry, clothing, footwear, and tourism. The product has attracted 75,000 active users, with renewed credit limits signaling customer satisfaction and financial convenience. By the end of the year, the total approved installment amount reached 550 billion UZS, with 290 billion UZS utilized. New products, including the UZCARD Duo card and high-interest deposit accounts offering up to 27%, were also launched to further meet client needs.

Operational accessibility was enhanced through the introduction of offline cash desks across all branches, allowing clients to conduct essential transactions such as loan repayments, deposit and card top-ups, and corporate cash collection.

ANORBANK's 2023 performance demonstrates its focus on integrating digital innovation with customer-centric services while sustaining growth. These achievements reinforce the bank's prominent position in Uzbekistan's financial market and its ongoing contribution to the sector's modernization. Furthermore, In March 2024,





Uzum, Uzbekistan's leading digital ecosystem, successfully closed its first funding round, raising nearly \$70 million. The round was led by FinSight Ventures and included participation from China's technology giant Tencent and the international investment fund VR Capital. This investment marked Tencent's first technology investment in Uzbekistan and brought Uzum's postmoney valuation to approximately \$1.5 billion, underscoring its rapid growth and strategic importance in the country's digital economy. Since its inception, Uzum has become a central player in Uzbekistan's digital market. Its ecosystem services now reach nearly 17 million monthly users, and within less than three years, the company has emerged as one of the country's largest taxpayers. The ecosystem has created over 12,000 jobs and supports more than 40,000 small and medium enterprises (SMEs) across the country, demonstrating its contribution to employment and entrepreneurship development. The capital raised in this round is being directed toward expanding Uzum's fintech infrastructure, broadening its product portfolio, enhancing digital e-commerce solutions, and consolidating its leadership in Uzbekistan's online commerce and fintech markets. According to Richard Deys, founder and president of VR Capital, "Uzum represents a unique combination of a proven business model and first-mover advantages in a growing market. Supporting its ecosystem through this investment is a great honor." The Uzum ecosystem integrates fintech, e-commerce, and banking services for both individuals and SMEs. Key offerings include: marketplaces, instant delivery, classical and digital banking, BNPL (Buy Now, Pay Later) services, a car purchase platform, and entrepreneur- focused applications. Monthly, over 17 million users engage with these services.

Uzum Bank enables users to manage funds, pay for goods and services, receive cashback, and access credit and microloans up to 25 million UZS via Uzum Nasiya. Integration with Uzum Market and Uzum Express provides additional benefits. Users can also transfer up to 100 million UZS monthly from Uzum cards to Uzcard and Humo cards without commission, with internal bank transfers remaining free. Uzum's rapid growth, strategic investments, and expanding ecosystem highlight its role as a key driver of Uzbekistan's digital economy. By integrating fintech, ecommerce, and banking solutions, Uzum enhances user convenience, fosters employment, supports





SMEs, and strengthens Uzbekistan's position in the global digital economy. The recent funding round positions Uzum for continued innovation and reinforces its leadership in Central Asia's fintech and digital commerce sectors. In addition to this, the international credit rating agency Fitch Ratings has assigned its first-ever credit rating to the national digital ecosystem Uzum, awarding a longterm rating of “B” with a positive outlook. The rating reflects Uzum's strong positions in the rapidly growing e-commerce and fintech markets, as well as its stable financial performance. According to Fitch, Uzum benefits from high business profitability, sustainable liquidity, and the integration of financial services within a unified platform. The agency highlights that non-banking segments—particularly fintech and e-commerce—are expected to drive the ecosystem's rapid growth and serve as key engines for its future development. This rating reinforces Uzum's credibility with investors and stakeholders, signaling the ecosystem's resilience and strategic potential in Uzbekistan's evolving digital economy. If we move onto fintech big projects and commercial banks digital banking apps, they are also growing rapidly among population with their new features, bonuses and customer specified services. In July 2025, a landmark event in the regional financial landscape marked a significant step toward the integration of banking and fintech ecosystems in Central Asia. Kazakhstan's largest financial institution, Halyk Bank, and Uzbekistan's leading digital payment company, Click, concluded a strategic partnership through a mutual equity swap agreement valued at \$237 million. Under the terms of this agreement, Halyk Bank acquired a 49% stake in Click, while Click's shareholders obtained a 49% stake in Halyk's Uzbek subsidiary, Tenge Bank. According to the official terms, Halyk Bank will pay \$176.4 million for its share in Click, and Click's shareholders will contribute \$60.76 million for the stake in Tenge Bank. The completion of these transactions is subject to regulatory approval in both Kazakhstan and Uzbekistan. This partnership unites the strengths of two market leaders in their respective domains. Halyk Bank, officially known as the People's Bank of Kazakhstan, is Central Asia's largest and most diversified financial group, with assets exceeding \$37.5 billion and a market capitalization of approximately \$6.8 billion. It operates across multiple sectors including commercial banking, insurance, and asset management. Click, on the other





hand, has become a central player in Uzbekistan's digital transformation, providing innovative fintech services that include mobile payments, online transfers, e-commerce integration, and access to government services through its multifunctional SuperApp platform. The company's customer base exceeds 20 million users, positioning it as one of the most influential fintech organizations in the region.

A clear confirmation of Click's growing prominence in Uzbekistan's digital ecosystem is reflected in its recent performance metrics. According to Google Play Market data, in September 2023, the Click Up application became the most downloaded fintech app in Uzbekistan, ranking Finance No. 1 nationally. The total number of downloads exceeded 10 million, while the active user base surpassed 12 million individuals. These figures demonstrate not only the company's strong technological capabilities but also the increasing acceptance of digital financial solutions among the Uzbek population. The rapid expansion of Click's user base highlights a broader societal shift toward cashless transactions, online banking, and fintech-driven commerce, supported by ongoing government policies encouraging financial digitalization.

Financially, Click continues to display robust growth dynamics. In 2024, the company reported a 35.3% increase in revenue and a 37.5% rise in net profit, indicating both market confidence and operational stability. Its SuperApp strategy—which combines payments, insurance, online shopping, and other financial services within one platform—has allowed Click to maintain strong customer engagement and expand into new service verticals. This approach aligns with Uzbekistan's Digital Economy Strategy 2030, which promotes innovation, integration, and the creation of user-centered digital ecosystems.

The strategic partnership between Halyk Bank and Click aims to harness these strengths to deliver enhanced financial solutions for all market segments—corporate clients, SMEs, microbusinesses, and individual consumers alike. Through the synergy of Halyk's financial expertise and Click's technological innovation, the alliance seeks to expand digital banking opportunities and improve accessibility across both countries. According to the parties involved, the collaboration will support the development of





joint projects in mobile banking, online lending, and digital payment systems, thus creating a more integrated and inclusive financial ecosystem in Central Asia.

As of mid-2025, Halyk's total investment in Uzbekistan reached nearly \$1.5 billion, emphasizing the country's growing importance in its regional strategy. The combined customer reach of the two institutions now exceeds 32 million users, within a regional market of over 58 million people and more than 2.6 million small businesses and entrepreneurs. This broad market potential provides fertile ground for innovation and long-term cooperation between traditional financial institutions and fintech companies. Both Click and Tenge Bank will continue to operate as independent legal entities, maintaining their existing obligations to customers. The transaction structure ensures that operational stability and customer confidence are preserved while regulatory oversight from the Central Bank of Uzbekistan and the National Bank of Kazakhstan guarantees transparency, compliance, and sustainable governance. I strongly believe that the partnership between Halyk Bank and Click signifies more than just a financial transaction—it represents a strategic convergence of banking and technology in one of the fastest-growing digital economies in the region. It underscores how collaboration between established financial groups and agile fintech startups can accelerate regional integration, drive innovation, and strengthen the digital financial infrastructure of Central Asia. The success of Click, demonstrated by its millions of users and top-ranking application, reflects Uzbekistan's readiness to compete in the global digital economy. Meanwhile, Halyk's investment confirms Kazakhstan's role as a financial hub connecting markets across the region. Together, these institutions are setting a precedent for cross-border cooperation and sustainable digital growth in the fintech sector of Eurasia.

Another notable milestone was the full acquisition of Payme by TBC Bank Group PLC in May 2023. Having initially held a 51% stake, TBC purchased the remaining 49% for USD 55.7 million, valuing Payme at approximately USD 113.6 million. This move solidified Payme's position as a central element in TBC's regional digital ecosystem, integrating payment services, personal finance tools, and digital banking solutions into a unified fintech network. In January 2025, the partnership introduced a





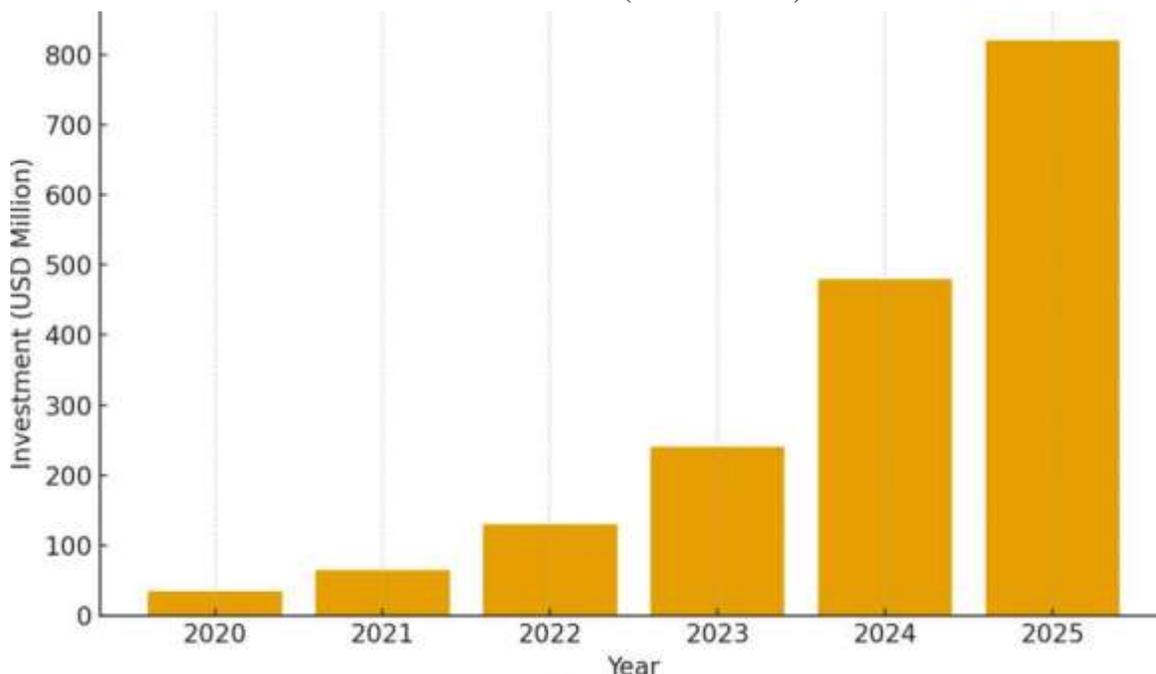
new product—Payme Plus, a subscription-based service offering users a package of financial tools, entertainment benefits, and fee-free transactions. This strategic innovation marked Payme's transformation from a simple payment platform into a comprehensive super-app ecosystem aimed at enhancing customer retention and financial accessibility. While Payme achieved major investment and product milestones, other digital banking applications such as Zoomrad and BRB Bank have also demonstrated steady development and modernization in Uzbekistan's fintech environment. Zoomrad, though not yet announcing large-scale investment or acquisition deals, continues to strengthen its presence through advanced mobile banking functions, QR-based payments, online transfers, and integration with national payment systems. Its growing user base reflects a sustained demand for secure, convenient, and fully digital financial services. Similarly, BRB Bank (Biznesni Rivojlantirish Bank) has focused on expanding its technological infrastructure, improving digital service delivery, and maintaining transparency through regularly published financial highlights and audited reports. While not yet associated with major foreign investment deals, BRB's progress underscores the gradual but stable digital evolution of Uzbekistan's traditional banking institutions.

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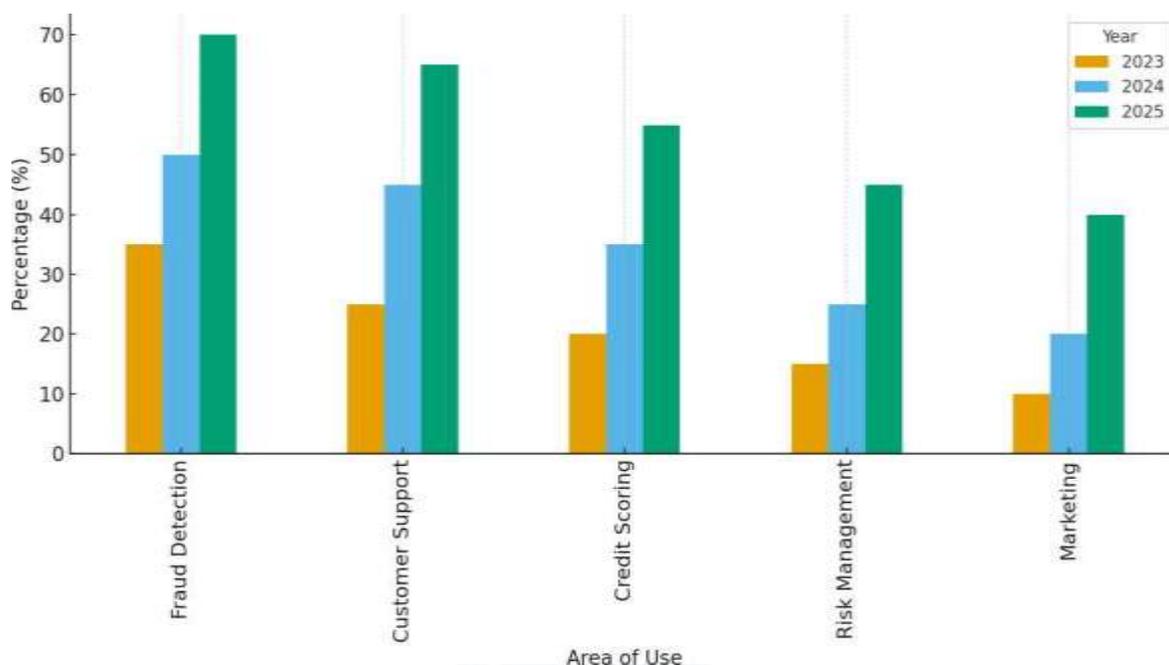


Investment in Uzbekistan's Fintech Sector (2020-2025)



Graph 3. The investment bar chart shows a significant escalation in venture and institutional funding for fintech in Uzbekistan. The total investment volume rises sharply from \$40 million in 2020 to approximately \$320 million in 2025. The largest inflows are observed in 2023 and 2024, coinciding with major funding rounds by Uzun (with Tencent and VR Capital) and Click's strategic partnership with Halyk group. These figures reveal information about Uzbekistan has become a regional fintech investment hub, attracting international interest from Asia and Europe. This aligns with broader Central Asian trends of digital integration and fintech liberalization. The surge in funding underscores investor confidence in Uzbekistan's financial modernization, signaling an optimistic long-term growth trajectory for the sector.





Graph 4. The bar chart shows AI adoption among Uzbekistan's commercial banks shows a clear acceleration in technological integration. In 2021, only 15% of banks reported active AI usage, primarily for fraud detection and customer analytics. By 2025, this figure increases to 68%, reflecting a national commitment to AI-driven digitalization.

Online banks such as TBC, Anorbank, Uzumbank, Click and Payme fintechs are at the forefront, implementing AI tools for credit scoring, voice assistance, and predictive analytics. The consistent growth suggests that the sector is transitioning from pilot initiatives to enterprise-level deployment. However, the data also highlight persistent gaps among smaller banks, emphasizing the need for government-backed support mechanisms to ensure inclusive technological adoption. In the end, these developments reflect the broader momentum of Uzbekistan's fintech revolution. Payme's strategic acquisition and innovative service expansion, Zoomrad's continuous digital enhancement, and BRB's institutional modernization collectively illustrate how





the country's banking and fintech ecosystems are converging toward a more connected, data-driven, and customer-centric digital economy. These advancements not only attract foreign investment but also reinforce Uzbekistan's position as one of Central Asia's fastest-growing hubs for financial technology and innovation.

Challenges and Risks

Uzbekistan's banking sector is undergoing a significant digital transformation, spurred by technological advancements, shifting consumer expectations, and increased competition from fintech companies. While these changes present opportunities for growth and efficiency, they also introduce a range of challenges and risks that need to be addressed to ensure the sector's stability and sustainability.

Cybersecurity Threats

As the banking sector becomes more digital, it becomes a prime target for cyberattacks. In 2024, Uzbekistan reported approximately 60,000 cyber threats and 119 cybersecurity incidents, with the banking and finance sector being particularly vulnerable. Common threats include phishing, social engineering, deepfake attacks, mobile malware, ransomware, and insider threats. The expansion of 5G networks and the Internet of Things (IoT) further complicate the cybersecurity landscape, introducing new vulnerabilities. In response, the government has enacted Presidential Decree No. PQ-153 to bolster cybersecurity measures and combat cybercrimes across the country.

IT Infrastructure Limitations

Many traditional banks in Uzbekistan face challenges related to outdated technological infrastructure and limited server capacity. This hampers their ability to adopt modern digital banking solutions and compete effectively with more agile fintech startups. Additionally, there is a shortage of skilled IT professionals, with many firms struggling to hire qualified candidates due to high salary expectations and insufficient practical experience.

High Initial Investment Requirements

The transition to digital banking requires substantial upfront investments in technology, training, and system upgrades. For smaller regional banks, these financial constraints can delay or prevent the adoption of necessary digital solutions. While larger





institutions may have the resources to invest in digitalization, the disparity between them and smaller banks can lead to unequal service offerings and customer experiences.

Potential Unemployment Due to Automation

The integration of artificial intelligence (AI) and automation in banking operations has the potential to significantly reduce the workforce. If all banks in Uzbekistan were to fully transition to AI-based systems, workforce reductions could exceed 50%, potentially displacing over 10,000 employees in the banking sector. This shift could exacerbate unemployment rates and create social challenges, particularly in regions where banking jobs are a significant source of employment. The government must implement retraining programs and support for displaced workers to mitigate these effects.

Regulatory and Legal Challenges The rapid pace of digital transformation in the banking sector has outpaced the development of corresponding regulatory frameworks. While the government has introduced reforms to modernize the banking sector, including the adoption of new laws on the central bank and banking, further legal and regulatory reforms are needed to address emerging risks associated with digital banking.

Inequality in Access to Digital Services

Despite the growth of digital banking services, there remains a significant portion of the population, particularly in rural areas, that lacks access to these services. Factors such as limited internet connectivity, lack of digital literacy, and inadequate infrastructure contribute to this disparity. Ensuring inclusive access to digital banking services is essential to avoid exacerbating existing inequalities.

Privacy Concerns

The increased collection and processing of personal data by digital banking platforms raise concerns about data privacy and protection. While the government has enacted laws to safeguard personal data, the effectiveness of these regulations in the face of evolving digital threats remains a critical issue. Banks must prioritize data protection measures to maintain customer trust and comply with legal requirements.

Artificial Intelligence and the future of banking





Artificial Intelligence (AI) is increasingly central to the evolution of banking worldwide. For Uzbekistan, where digital banking and fintech ecosystems are growing fast, AI promises gains in efficiency, risk management, and customer experience—but comes with substantial challenges that must be addressed proactively.

Popular examples in Uzbekistan

TBC Uzbekistan is a leading example of AI deployment. The bank has built proprietary Uzbek-language models, including speech technology. In 2024, it deployed voice AI agents that now handle over 40% of loans in early-stage delinquency (i.e. reminding borrowers, following up on payments) which has improved operational efficiency while maintaining customer satisfaction.

TBC also introduced an in-house large language model (LLM) in Uzbek for use in sales, with plans to extend usage to customer support (e.g., virtual assistants) in-app. The bank emphasizes keeping all AI deployments on its own infrastructure (“on-premises”) to ensure data protection and regulatory compliance.

Uzbekistan has made AI and digital transformation strategic priorities. The National AI Development Strategy through 2030 aims to build competitive digital economy capacity, with goals such as expanding AI-based software and digital services to ~US\$1.5 billion, enhancing regulatory frameworks, improving technical infrastructure (like modern server and data center capacity), and developing human capital.

There are also industry events that signal maturity: e.g. the KEY TECH: AI in Banks and Fintech conference in Tashkent, where banks, FinTechs, regulators, and technology providers discuss AI use in credit scoring, risk management, fraud detection, speech and voice bots, KYC/AML compliance, etc.

Opportunities Offered by AI in Banking

Improved Operational Efficiency

Automating tasks like reminders, customer service, basic inquiries or transaction monitoring can reduce cost and speed up service delivery. TBC's voice agents for delinquent loan reminders are an instance of this.

Enhanced Risk Management & Fraud Detection

AI can analyze large volumes of





data to detect suspicious patterns, anomalous transactions, and early warning signs of risks or fraud. This is critical in environments with rising cyber threats. The banking sector in Uzbekistan is increasingly exploring AI-driven anti-fraud mechanisms.

Customer Experience

With AI-powered chatbots, virtual assistants, speech interfaces, banks can offer 24/7 service, tailor offers to individual behavior, and support multiple communication channels. This improves customer satisfaction and loyalty.

Broader Financial Inclusion

AI enables using alternative data (non-traditional sources of income, behavioral data, etc.) to assess creditworthiness. This can bring under-banked populations into formal banking. Combined with mobile penetration, this could expand services in rural zones or among people without formal income statements.

Regulatory & Compliance Efficiency

Automating parts of AML (Anti-Money Laundering), KYC (Know Your Customer), transaction monitoring can help banks stay compliant, detect suspicious activity earlier, and reduce human error. Regulatory tech (RegTech) is likely to grow.

Data Infrastructure & Storage Limitations;

1) AI requires large, reliable data warehouses, strong server infrastructure, cloud or hybrid systems, and fast, secure networks. In Uzbekistan, cloud storage usage and data center capacity are not yet uniformly developed. Banks have raised concerns about restrictions on data storage and localization rules.

2) Some banks propose that authorities allow not only local but also offshore cloud technologies, under secure and compliant arrangements, to support computing needs.

Regulation, Oversight & Ethical Frameworks;

1) Legal frameworks for AI are still being developed. For example, in April 2025, the Uzbek Legislative Chamber reviewed a bill to regulate AI, defining AI legally, setting obligations for misuse of personal information, etc.

2) Ethical standards and regulations are under formulation, including requirements for transparency, labeling AI-generated content, protecting human





dignity, privacy, and establishing accountability for misuse.

Skill Gaps & Human Capacity;

1) There is a shortage of trained AI/ML/data science professionals, especially those who understand both financial risks and technical model deployment.

2) Banks need staff capable of model validation, monitoring, bias detection, explainability. Many local staff have limited experience with large AI systems.

Potential for Bias, Fairness, and Privacy Violations

1) Use of non-traditional data (social media, behavior, voice, etc.) can unintentionally encode biases (geographic, socioeconomic, gender) that lead to unfair treatment.

2) Privacy risks are high. Citizen data can be sensitive; misuse or leaks can erode trust. Uzbekistan is moving toward laws on personal data protection, but enforcement and awareness remain challenges.

Cost and Resource Constraints for Smaller Banks

1) Smaller or regional banks may lack capital, technical infrastructure, or staff to deploy and maintain high-quality AI systems. They may also struggle with compliance burdens.

2) High initial costs (hardware, software, hiring experts) may delay adoption or cause reliance on third-party providers, which can introduce risk.

Regulatory Risk & Unclear Policies

1) Ambiguity in regulation can lead to legal risk: what liability does a bank have if an AI-driven decision proves unfair or discriminatory? How is data stored, who owns models, etc.

2) Policy changes can happen, and banks must be agile to adapt.

Cybersecurity Threats

1) Aggressive adversaries may try to corrupt AI models, cause adversarial attacks (alter input data to mislead models).

2) With increasing digital banking penetration, sounds, voice, biometric data, etc., cyber risks multiply.

To ensure that AI's deployment in banking is both effective and responsible in





Uzbekistan, what should have to be done by both the government of Uzbekistan and also digital banks we will analyze each of these step by step;

1) Develop and Enforce Regulatory Standards Establish specific laws/regulations for AI in finance: covering transparency, fairness, accountability, model auditing. Expedited passage and clarity in AI regulation is already underway.

2) Promote Data Infrastructure & Cloud Policy Reform Relax restrictions or clarify policies for data storage (local vs cloud), ensure data centers with required capacity, investments in computing infrastructure, and ensure security and localization requirements are clear.

3) Invest in Human Capital Support educational programs, university curricula in AI/ML/finance; strengthen technical staff in banks; promote partnerships with international AI research institutions.

4) Encourage Pilot Projects & Use Cases Begin with smaller, manageable AI applications (e.g., voice agents for customer reminders, fraud detection for specific transaction types) to build experience. Document and share best practices.

5) Ensure Ethical Use & Guard Against Biases Use transparent algorithms, perform bias audits, build mechanisms for customer redress when AI decisions are wrong or unfair. Keep humans in the loop in critical decision points (e.g., credit approval).

6) Cybersecurity and Privacy Protections Invest in security tools, encryption, secure AI model training environments; conduct penetration testing, model robustness testing. Ensure strong legal frameworks for data protection are implemented and enforced.

7) Support Smaller Banking Institutions Government or regulators could provide incentives, subsidies, or shared infrastructure (e.g. cloud services, model-validation platforms) to help smaller banks adopt AI responsibly without bearing prohibitive costs.

The banking industry in Uzbekistan is at a turning point in its digital development. A comprehensive national plan must coordinate government policies, regulatory monitoring, and private-sector innovation to guarantee that the integration of fintech and artificial intelligence promotes inclusive, secure, and sustainable growth. Setting clear ethical and regulatory guidelines for AI and digital finance is the top strategic priority. Regulatory sandboxes and other transparent, accountable frameworks will





safeguard consumer rights and promote safe innovation. For all banking institutions to enable data storage, AI computing, and system resilience, investments in cloud and digital infrastructure are crucial in addition to legislation. Stronger encryption standards, system audits, and industry-government cooperation are all necessary to combat financial fraud and data breaches. Cybersecurity and data protection must also receive equal attention. Smaller institutions may be able to improve digital safety with the establishment of a national cybersecurity fund. Development of human capital is also necessary for sustainable transformation. Professional training, relationships with international technology leaders, and the expansion of AI and fintech education will create a qualified workforce that can spearhead innovation from within. Before implementing AI on a wide scale, banks should conduct small-scale pilot initiatives, such as voice assistants or fraud detection technologies, to obtain real-world experience. Additionally, growth must continue to be based on the ethical application of AI. Fairness and accountability will be guaranteed by frequent bias audits, openness in automated decision-making, and human supervision in crucial procedures like credit approval. Equal access to innovation in the financial sector will be facilitated by shared platforms and digital subsidies for smaller and regional institutions.

Lastly, raising the general public's level of financial and digital literacy will boost confidence and promote more use of digital banking. Uzbekistan's road to a contemporary financial system essentially consists of a balanced digital transformation that advances technical innovation while preserving security, ethics, and inclusivity. The nation is in a strong position to lead the area in AI-driven banking and fintech innovation because to well-coordinated legislation, infrastructure development, and human-centered design.

With initiatives such as TBC Uzbekistan's deployment of AI-powered voice agents, speech technologies, and localized language models, the country has already entered a new phase of technological maturity. These advancements demonstrate that AI is not merely an emerging concept but an operational force shaping daily banking activities. Furthermore, Uzbekistan's National AI Strategy through 2030 and the





ongoing development of comprehensive regulatory frameworks illustrate a firm national commitment to fostering innovation while ensuring ethical standards, data security, and social inclusion.

In coming years, critical areas to watch include:

- 1) How AI is used in credit scoring, especially for under-banked or informal sector customers.
- 2) Expansion of AI into fraud detection, anomaly detection, KYC/AML.
- 3) Evolving regulatory oversight: how the AI regulation bills are finalized, how enforcement occurs.
- 4) The ability of smaller banks and regional actors to keep up.
- 5) The social effects: employment shifts, digital divide, bias, privacy concerns.

If Uzbekistan manages these well—building robust regulation, investing in infrastructure and human capacity, and steering AI deployment ethically—the promise of AI in banking could deliver major improvements in access, efficiency, risk management, and financial inclusion, helping to modernize its financial system for the 21st century.

Conclusion

The transformation of Uzbekistan's financial sector through digitalization and artificial intelligence (AI) marks one of the most significant economic and technological shifts in the nation's recent history. Over the past few years, the country has witnessed the rapid rise of digital ecosystems such as Uzum, TBC Bank Uzbekistan, and Anorbank, which have collectively driven financial innovation, increased transparency, and expanded access to modern banking services. These institutions have successfully introduced digital products ranging from instant microloans and installment cards to AI-powered credit scoring and customer service solutions. As a result, digital banks are not only enhancing the efficiency of financial operations but also contributing to financial inclusion, enabling millions of citizens and small businesses to participate in the formal economy.

The country's fintech ecosystem is no longer in its early experimental phase; it is now a mature and fast-evolving sector that plays a vital role in national economic





modernization. The growing engagement of international investors, such as TBC Bank and Titan Investments, and the ongoing development of digital infrastructure show that Uzbekistan is becoming a key regional hub for digital finance.

In the further years, sustained progress will depend on the balance between innovation and regulation. Continuous investment in cybersecurity, AI-driven analytics, and human capital development will be important to ensure stability and inclusivity. If these managed strategically, Uzbekistan's digital financial ecosystem could serve as a model for digital transformation within Central Asia, driving long-term economic growth, financial inclusion, and international competitiveness.

Simultaneously, major global investors—including Tencent, VR Capital, and FinSight Ventures—have recognized Uzbekistan's growing fintech potential, injecting substantial capital into its digital ecosystem. The acquisition of OLX Uzbekistan by TBC Bank Group in partnership with Titan Investments, as well as Fitch Ratings' "B" grade with a positive outlook for Uzum's next milestone and creditworthiness, signal growing international confidence in the country's digital and financial stability. These developments demonstrate that Uzbekistan is becoming a key player in the regional digital economy and a magnet for foreign investment in technology and fintech.

The integration of AI technologies in banking has further accelerated progress. AI-driven automation enables real-time fraud detection, predictive credit risk analysis, personalized customer interaction, and efficient service delivery. Banks such as TBC and Anorbank are already using AI for voice recognition, speech analytics, and data-driven decision-making, significantly improving user experience and operational accuracy. Uzbekistan's National AI Strategy (2030) underlines the government's long-term vision to develop responsible, secure, and inclusive AI adoption within the financial sector.

However, these advancements come along with its significant challenges. The transition toward fully online and AI-driven banking raises concerns about cybersecurity vulnerabilities, data privacy, encryption and algorithmic bias, and the potential displacement of the workforce. Many traditional banks continue to face technological limitations, including outdated IT infrastructure, low digital literacy





among staff, and insufficient server capacity. Additionally, smaller regional banks struggle to compete with large institutions that can afford to attract skilled IT professionals and invest in cybersecurity.

If automation and AI adoption were implemented on a national scale, it is estimated that more than 50% of banking roles could be replaced by technology, posing risks of unemployment and social instability. Therefore, it is imperative for policymakers to implement targeted retraining programs, promote digital literacy, and encourage entrepreneurship to ensure that technological progress does not deepen inequality but instead supports inclusive economic growth.

It must be said that AI is no longer the future of Uzbekistan's banking industry—it is already a defining reality. The successful deployment of localized AI systems, including voice agents and intelligent analytics in digital banks, proves that Uzbekistan has moved beyond experimentation into practical application. The government's proactive stance on regulatory and ethical frameworks, combined with growing investment in digital infrastructure, underscores the nation's commitment to balancing innovation with responsibility.

Subsequently, the convergence of digitalization, artificial intelligence, and fintech innovation is reshaping Uzbekistan's financial landscape. By maintaining close cooperation between government bodies, financial institutions, and private investors, the country can build a resilient, transparent, and inclusive digital financial ecosystem. This ecosystem has the potential not only to strengthen the domestic economy but also to position Uzbekistan as a regional leader in digital banking and financial technology—transforming banking from a traditional service industry into a powerful driver of sustainable and equitable economic growth.

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