

INTERNATIONAL FINANCIAL TECHNOLOGIES: MODERN TRENDS AND OPPORTUNITIES FOR APPLICATION IN UZBEKISTAN

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Abstract: *This work is devoted to studying the use of modern financial technologies in the context of the development of ICT and the economy as a whole.*

Keywords: *Fintech, blockchain technologies, online banking, financial transactions, cryptocurrencies, startups.*

Recent advances in technology and widespread use of the Internet have brought about significant changes in the global financial sector. Financial technology, or fintech, has offered a cheaper and more convenient alternative to traditional banking, investment and insurance services. Fintech companies have developed the financial market by offering various financial services such as P2P lending, mobile payments, crowdfunding and robo-advisory, which have changed the way people and businesses conduct financial affairs. These technologies are being actively implemented not only by traditional players in the financial market (banks, innovative, insurance organizations, etc.), but also by newly created organizations seeking to work in this direction. In addition, organizations from other sectors of the economy are actively entering this market.

The global fintech industry is growing rapidly, attracting billions of dollars in investment and displacing traditional financial institutions. According to a KPMG report, global investment in fintech reached \$137 billion in 2019, and although the COVID -19 pandemic caused a temporary slowdown, the industry remains resilient today. The development of financial technology is also driven by supportive policies, regulatory frameworks and collaboration among stakeholders, including governments, financial institutions, start-ups and investors. Vivid examples of the trend are the launch of the SamsungPay payment system by Korean electronics manufacturer Samsung and GooglePay payment system, created by the American Internet company Google, and in Uzbekistan the Zood payment system ZoodMall 's Pay is one of the first that appears last years¹.

Uzbekistan is not far from this trend and is striving to develop its fintech ecosystem. The country has a relatively young, tech-savvy population and a growing economy that offers great opportunities for fintech startups and investors. The government recognizes the potential of

¹ Bakoeva G. M. DERIVATIVES' MARKET AS AN ESSENCE FACTOR OF INTEGRATION INTO INTERNATIONAL CAPITAL MARKET IN TERMS OF GLOBAL DIGITALIZATION PROCESSES // Frontline Marketing, Management and Economics Journal. – 2023. – T. 3. – №. 08. – C. 20-31.

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financial technology and has taken various initiatives to support its development. In 2018, the Central Bank of Uzbekistan developed regulatory laws and measures for fintech startups to test their innovative ideas in a controlled environment. In addition, the government has launched several programs to encourage entrepreneurship and digitalization in all sectors, including the Startup Support Program and the Digital Uzbekistan initiative.

This development plays an important role in the development of the financial sector and information (digital) technologies, and is of great importance in the implementation of the Development Strategy of the new Uzbekistan, planned for 2022-2026.

However, despite these measures, the financial technology market in Uzbekistan is still in its infancy and faces a number of challenges. These include problems such as low financial literacy of the population, limited financing opportunities, insufficient infrastructure, qualified personnel and insufficient legislative framework for fintech. Therefore, it is very important to study the experience of other countries that have developed fintech systems and adapt them to the conditions of Uzbekistan. By creating a financial technology support system, Uzbekistan can strengthen its potential and become a regional center of innovation, attract foreign investment and increase the financial inclusion of its citizens.

The rise of fintech has transformed the financial industry around the world and has given countries like Uzbekistan the opportunity to take full advantage of its potential. The Government of Uzbekistan's initiatives to support fintech development are excellent, but there is a need for more comprehensive policies, collaboration and appropriate regulatory frameworks to create an enabling environment for fintech entrepreneurs, start-ups and investors. The purpose of this study is to study the problems and opportunities of financial technologies for Uzbekistan, as well as to study foreign experience and determine the necessary directions for the country's development in order to unlock its potential for economic growth and prosperity. Determining the reasons for such rapid development of fintech in modern conditions: its scale; Analyzing the state and statistical indicators of organizations providing financial technologies in the Republic of Uzbekistan, the development of fintech in our country is of great scientific and practical importance.

The evolution of financial technology has gone through three important periods. In every era, fintech is different based on how consumers interact with money.

Fintech 1.0. The history of financial technology began with the emergence of banks in the world of financial business. For two centuries, in the 19th and 20th centuries, banks were considered the most technologically advanced and reliable source of any financial business activity. The biggest change in the history of financial technology occurred with the invention of Diners Club credit cards in 1950, and the second largest change occurred in 1969 with the advent of the first ATM.

Fintech 2.0. Significant changes in the fintech industry occurred in 1971 with the creation of the NASDAQ stock market and the world's first electronic stock market. This setup has significantly changed the way transactions are carried out. Currently, the most popular communication system for cross-border payments is SWIFT, which was introduced in 1973.

Fintech 3.0. One of the first breakthroughs in the field of financial technology in 1998 was PayPal. Unlike other payments competitors, PayPal was an independent platform and did not depend on



banks to grow or find customers. Thanks to this, PayPal has become the mainstay of online payments.

Fintech allows people and businesses to access traditional financial services in innovative ways that were previously unavailable. For example, many traditional banks' mobile apps now offer customers access to banking services, including the ability to view a balance, transfer funds, or deposit a check. At the same time, robo-advisors like Betterment (automated advisers, that is, they provide the necessary credit and investment advice based on a client's portfolio) are cheaper and more convenient than bank advisers. Fintech also automates many services used by businesses, such as credit, underwriting (the process of assessing the risk associated with a financial transaction such as a bond issue, bank loan, or insurance policy) and real estate appraisal. Artificial intelligence, combined with storing large amounts of consumer data, can help fintech companies understand their customers and improve their marketing campaigns, product development and underwriting.

As financial technology evolves, so do concerns about cybersecurity in the tech industry. The massive growth of fintech companies and markets around the world has led to an increase in vulnerabilities in fintech infrastructure, making it a prime target for attacks by cybercriminals. But today, technology continues to evolve to reduce the risk of existing fraud and mitigate the threats that continue to arise.

Mobile banking and neobanks. Mobile banking is the focus of many financial technology companies. In the world of finance, consumers are increasingly demanding easy access to their bank accounts, especially through mobile devices. Most major banks now offer some form of mobile banking functionality with the advent of digital banks or neobanks². Neobanks are essentially banks without any physical branches, serving customers with checking, savings, payment services and loans on a completely mobile and digital infrastructure. Some banks also allow third-party software applications to access a user's financial information, which is called open banking. Some examples of fintech banks or neobanks are Chime (USA), Current (USA), Aspiration (USA) and Varodir (USA).

Cryptocurrency. It is a digital or virtual currency that uses cryptography to secure and verify transactions and control the creation of new units. Cryptocurrencies operate independently of central banks and use decentralized control, meaning they are not subject to control by governments or financial institutions.

Cryptocurrencies are typically based on blockchain technology, which is a decentralized system that stores an ever-growing list of records, called blocks, that are chained together and secured using cryptographic algorithms. This system allows you to record transactions securely and anonymously.

Cryptocurrencies allow users to bypass traditional financial systems and can be used to purchase goods and services online, as well as trade other currencies. Some popular examples of cryptocurrencies include Bitcoin, Ethereum, Ripple, and Litecoin.

² Bakoeva G. M. PECULIARITIES OF THE CURRENT SITUATION OF THE BANKING IPO MARKET //International Scientific and Current Research Conferences. – 2023. – C. 78-81.

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Table 1. Types of cryptocurrencies and prices³

Name of cryptocurrency	Cryptocurrency price	1 hour %	24 hours %
1. Bitcoin	\$26,464	+ 0.43%	+0.94%
2. Ethereum	\$1809.01	+ 0.29%	+1.02%
3. Tether	\$0.9999	+ 0.01%	+0.02%
4. BNB	\$305.07	+0.36%	-0.09%
5. USD Coin	\$0.9999	-0.01%	-0.01%
6. XRP	\$0.4522	+0.53%	+0.45%
7. Cardano	\$0.3582	+0.43%	-1.40%
8. Dogecoin	\$0.07075	+0.66%	+0.10%
9. Polygon	\$0.8935	+0.90%	+2.66%
10. Solana	\$19.32	+0.42%	+0.71%

Fintech investing is a system of investing money or capital using financial technologies, especially digital technologies. With the help of financial technologies, one can make investments in the form of mutual funds, shares, deposits, gold, or even act as a lender in the lending system. All investment processes can be carried out and controlled using the Internet and technological devices such as smartphones.

Fintech has led to an increase in investment and savings apps in recent years. Robinhood is an American financial services company that provides commission-free trading of stocks, exchange-traded funds, cryptocurrencies and personal retirement accounts through its mobile app. Stash is a personal finance app that combines banking, investing and advice into one platform, while Acorns is an investment app for managing finances. Companies like tech companies are breaking down barriers to investment. While these apps differ in approach, each uses small investment amounts, such as rounding up deposits, to introduce consumers to the markets.

Today, financial technology is evolving to make it easier for millions of people around the world to develop financial institutions, make payments, purchase shares and other financial instruments, and access financial services. There are many different fintech companies that offer services to their clients. Here are some examples of such companies:

Robin Hood: Robinhood offers a user-friendly mobile app that allows traders to trade quickly and easily using a clear interface. In addition to commission-free trading, Robinhood also provides a market information and news section that helps users stay up to date with developments in the financial markets. Robinhood operates in the United States and is registered with the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA).

Venmo: Venmo is owned by PayPal and operates as a subsidiary of the company. It was founded in 2009 as a P2P mobile payments company that allows users to send money to each other through a mobile app. Venmo's business model is primarily based on its ability to provide a convenient, secure, and easy-to-use platform for processing electronic payments. Users can link their bank

³URL <https://coinmarketcap.com/>



accounts, debit or credit cards to their Venmo accounts and send or receive payments for free. Venmo also allows users to pay for goods and services with pomo. The figure above shows the concentration of the US market. The lower and green level here represents a highly competitive market, and the upper and red level represents an oligopoly market, i.e. a market controlled by 1-5 companies. As we can see, the US market is represented at the end of the green indicator and before reaching the yellow indicator. That is, although the US market is not completely competitive in the field of financial technology, it has a very strong competitive process. I'm looking for applications.

Wealthfront: Wealthfront's business model is based on providing investment management services - a set of affordable and diverse portfolios using automated algorithms. Clients define their goals and risk preferences, and the robo-advisor automatically recommends an investment portfolio to the client based on the data. Wealthfront develops client portfolios based on traditional asset allocation theories, including environmental, social and governance (ESG) criteria.

Klarna: Klarna allows online shoppers to buy items online and pay later, usually within 14 to 30 days or in installments. Klarna's payment services are a platform that requires minimal manual work or data entry from consumers. Their payment options include "pay now" where customers can pay for their purchases immediately, or "pay later" where customers can pick up their product first and pay later.



Picture 1 . Leading US fintech companies and US market concentration.⁴

The figure above shows the concentration of the US market. The lower and green level here represents a highly competitive market, and the upper and red level represents an oligopoly market, i.e. a market controlled by 1-5 companies. As we can see, the US market is represented at the end of the green indicator and before reaching the yellow indicator. That is, although the US market is not completely competitive in the field of financial technology, it has a very strong competitive process.

⁴URL <http://www.US-Fintech.com>



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The German financial technology (FinTech) market is the fourth largest in the world and the second largest in Europe. Between 2015 and 2019, the FinTech sector grew at an average annual growth rate of 131%. In 2019, more than 64% of internet users in Germany used FinTech services. The demand and market size of FinTech in Germany is predicted to grow at a high rate due to various socio-economic factors:

- High GDP per capita – 46,000 US dollars*;
- Annual per capita consumer spending is \$23,000*;
- 86% of the population have an account number in a financial institution*;
- As of 2020, more than 71% of Germans are online payment users.

These figures show that Germany is above the global and European average, making it the second most attractive FinTech market in Europe after the UK. However, the UK's exit from the European Union in 2020, Brexit, is expected to have a lasting impact on the country as a European leader in the financial technology sector. While the COVID-19 pandemic has had a negative impact on the economy and therefore investment and spending levels, the crisis has accelerated the growth of digital payments worldwide. According to a 2020 report by the German digital association bitkom, more than 70 percent of Germans want more digital and contactless payment options.

The online payments sector is one of the largest sectors of the financial technology sector. Digital payments in Germany are expected to grow at a CAGR of 14% and double from annual transaction value of \$140.4 billion in 2020 to \$274.8 billion in 2025. Additionally, the country has the highest number of digital commerce users in Europe in 2020. Personal finance includes automated financial services (Robo-advisors) and (international) digital money transfers between private users. In 2020, China became the leader in the number of users of FinTech-related personal finance services, while Europe accounted for only 15% of the global market ⁵.

Depending on the specific corporate structure, fintech companies operating in Germany must obtain approval from the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht or BaFin), which is overseen by the Federal Ministry of Finance (BMF).

The German fintech market is expected to grow at a CAGR of 5% during the forecast period. Fintech adoption is growing around the world. According to EY, 64% of consumers worldwide use Fintech, with this figure rising to 87% in China and India. Fintech adoption in Germany almost doubled in 2017-2018, putting Germans now on par with the global average. German banking licenses are strictly regulated by Bafin, the Federal Financial Supervisory Authority. Fintech founders often highlight the difficulties of applying for a banking license and complying with strict market entry regulations.

⁵URL <https://www.trade.gov/market-intelligence/germany-financial-technology-fintech>

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Germany Fintech Market Size

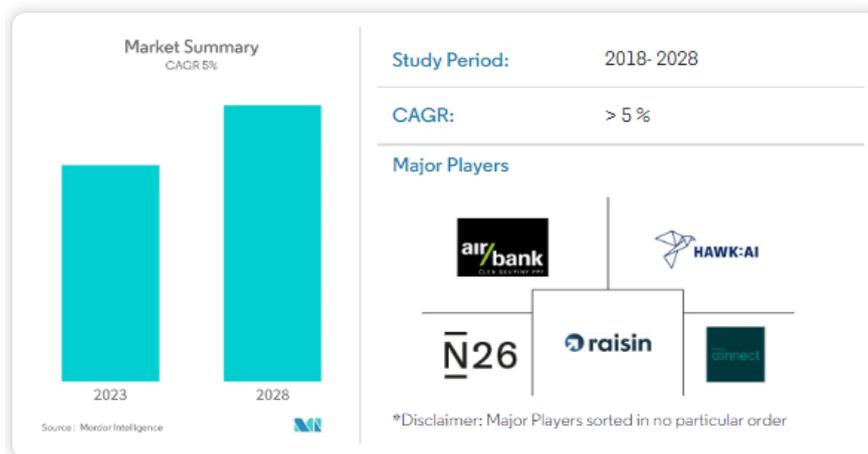


Figure 2 . German fintech market and market forecast until 2028⁶.

The German fintech market offers online payments (digital commerce and mobile POS payments), online finance (crowdfunding, crowdfunding and crowdlending), online investing (robo-advisors and neo-brokers), neo-banking, digital assets (cryptocurrencies and NFTs), divided into small sub-sectors. In Germany, the banking sector is responsible for the largest volume of investment in the FinTech sector in 2021. In Germany, the FinTech industry is the second largest in Europe, receiving 2.1 billion in investments. These investments will help the FinTech sector grow and become more competitive.

The digitalization process in Uzbekistan continues at a rapid pace. The government has set the goal of turning Uzbekistan into a digital country by 2030. To achieve this goal, the government implemented a number of reforms .

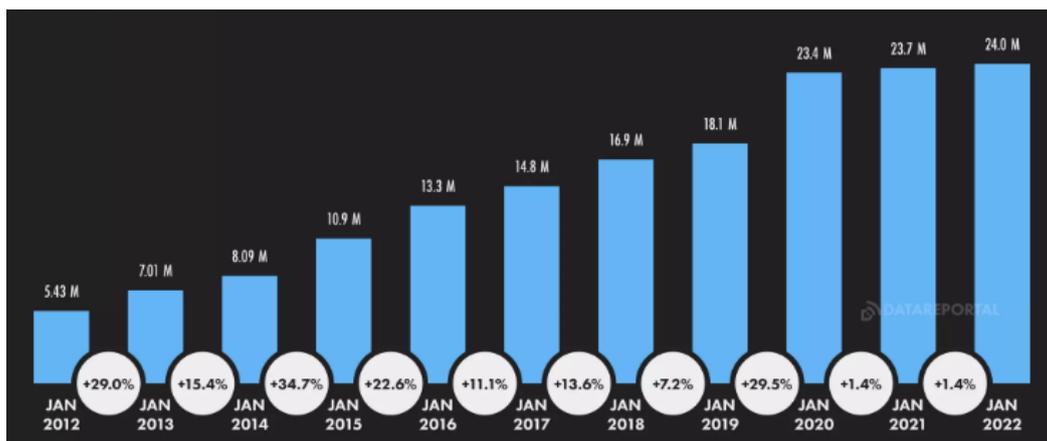


Figure 3. Number of Internet users in Uzbekistan.⁷

⁶URL <https://www.mordorintelligence.com/industry-reports/germany-fintech-market>

⁷URL <https://www.slideshare.net/DataReportal/digital-2022-uzbekistan-february-2022-v01>

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As a result of these reforms, Uzbekistan has made significant progress in digitalization. In 2022, the country's Internet penetration rate reached 70 percent and the number of mobile subscribers reached 24 million. The government has also launched a number of successful e-government services, including an online tax payment portal and an online business registration system ⁸.

In 2019, Uzbekistan adopted a new cybersecurity law designed to regulate the use of digital technologies and protect national security. The law requires companies to take security measures to protect their networks and data and report any data breaches to the government. In 2020, Uzbekistan passed a new e-commerce law to regulate online transactions and protect consumers. The law defines liability rules for online payment systems, electronic contracts and online markets.

Uzbekistan is the center of development of the Central Asian region; today it is one of the fastest growing countries and is open to international cooperation, new investments and innovative technologies. According to KPMG, in 2020 the e-commerce market in Uzbekistan amounted to \$643.9 million. According to him, Kazakhstan is the leader in the FinTech field in Central Asia, but Uzbekistan has also achieved digital achievements through payment systems in a short period. As a result, three digital banks were opened in Uzbekistan over two years - TBC Bank, Anor Bank and Apelsin Bank. The Central Bank is responsible for supervision of the financial technology market. The Fintech ecosystem of Uzbekistan consists of 2 payment services Humo and Uzcard, more than 10 payment companies (2 of them belong to communication companies), more than 28 mobile banking applications, 1 digital bank. The main participants are card providers Uzcard and Humo, as well as CLICK, Payme and PAYNET for non-bank payments.



Figure 4. Fintech platforms operating in Uzbekistan.

It should also be noted that financial technologies in Uzbekistan are supported at the state level. After this, IT was created in Tashkent in 2019 Park Uzbekistan, on the basis of which about 30 startup projects and 200 centers for training and development of information technology operate in our country.

⁸URL https://www.theglobaleconomy.com/Uzbekistan/Internet_users/

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Table 2. Important figures in the field of financial technologies in Uzbekistan .

Fintech startups	44
E-commerce market size	0.7%
Provision of mobile devices	96%
Internet provision	55%
Provision of mobile communications	76%

The infrastructure as a service (IaaS) market in Uzbekistan has already been formed; there are large telecom operators and Internet providers that provide virtual servers as an additional service to their clients. This became possible only thanks to the entry into the market of our country by international companies specializing in cloud technologies, having deep experience in this area and applying international standards. According to PRO DATA experts, the size of the IaaS market in Uzbekistan at the end of 2020 amounted to 9.17 million US dollars, and by 2025 will more than double and reach 20.89 million US dollars.

In February 2023, ATB Kapitalbank , the largest private financial institution in Uzbekistan in terms of assets (29.2 trillion soums as of February 1), became part of the Uzum holding. A few months ago, Uzum Bank, one of the leading digital banks in the country, became part of the ecosystem. The bank has launched an expanded cashback program, which allows entrepreneurs to attract new customers, while making payment for goods and services more profitable for bank clients.

In conclusion, we can say that the fintech industry in Uzbekistan is developing rapidly. The government is taking a number of steps to promote digital adoption in the financial sector, including online payments, mobile banking and other technology solutions. The growth of financial technology in Uzbekistan brings many benefits, such as improving access to financial services, reducing transaction costs and increasing financial inclusion. However, the industry faces challenges such as improving digital infrastructure, cybersecurity concerns and establishing a regulatory framework. However, with active government support and increased entrepreneurial activity among the younger population, the fintech industry in Uzbekistan is expected to continue its development.

Although the development of financial technology in Uzbekistan is still ongoing, the country has many opportunities for growth and expansion. Uzbekistan attaches great importance to the importance of the digital economy and therefore supports the introduction of digital technologies in many of its initiatives. Fintech is gradually integrating into the economy of Uzbekistan, but there are still many challenges ahead. To develop financial technologies in Uzbekistan, it will be necessary to maintain a strong digital infrastructure, regulatory framework and improve human resources. The country has great potential to become a fintech hub in Central Asia due to its strategic location and government support. The development of fintech solutions has the potential to stimulate the country's economy and shape it as a country with a developed digital economy.

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