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THE IMPORTANCE OF DIGITAL TECHNOLOGIES IN THE DEVELOPMENT OF SMALL BUSINESS AND PRIVATE ENTREPRENEURSHIP

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ABSTRACT

This article is devoted to a comprehensive analysis of the possibilities, problems, and prospects for the development of the small business and private entrepreneurship sector of Uzbekistan in the context of the digital economy. The study examines the mechanisms of the impact of digital transformation on small businesses, an analysis of the current situation, foreign experience, and best practices. The digital economy creates enormous opportunities for small businesses: expanding market boundaries, reducing operating costs, and introducing new business models. Although digital transformation is developing rapidly in Uzbekistan, the level of use of digital technologies in the small business sector lags behind the indicators of developed countries. The article presents proposals for developing digital literacy programs, creating financial support mechanisms, and improving infrastructure to accelerate the digitalization of small businesses.

KEYWORDS

Digital economy, small business, private entrepreneurship, digital transformation, e-commerce, digital technologies, small and medium-sized enterprises, digital platforms, online trading, digital payment systems, cloud technologies, digital marketing, startup ecosystem, digital literacy.

Introduction

The second decade of the 21st century has ushered in a period of fundamental changes in the global economy. The rapid development and widespread implementation of digital technologies have covered all areas of economic relations. This process is having a significant impact, first of all, on the small business and private entrepreneurship sector.

The digital economy is an economic activity based on information and communication technologies and digital platforms. Its development opens up new ways for small businesses to overcome traditional economic barriers and seize new market opportunities. According to the World Bank, small businesses that actively use digital technologies increase productivity by 15-25%[1].

[1]World Bank Group. "Digital Dividends: World Development Report 2016". Washington DC: World Bank, 2023.

Today, small businesses are the main driving force of the global economy. According to the International Labor Organization (ILO), more than 90% of all enterprises in the world are small and medium-sized enterprises, which provide 60-70% of total employment.[2]In the context of digital transformation, these indicators are becoming even more important.

Small business and private entrepreneurship have also been identified as a strategic direction of economic development in the Republic of Uzbekistan. According to the results of 2024, more than 380 thousand small businesses operate in the republic, contributing 56,9% to the country's GDP. The state program "Digital Uzbekistan-2030" adopted by the state is aimed at stimulating the digital transformation of small businesses[3].

In today's global economy, digital technologies are key drivers of small business growth. According to McKinsey's analysis, fully digitalized small businesses are growing 2,5 times faster than those operating in traditional ways.[4]These statistics confirm the critical importance of digital transformation in the small business sector.

The COVID-19 pandemic has further increased the importance of digital technologies. According to reports from the World Trade Organization (WTO), e-commerce volumes increased by 70% during the pandemic compared to 2019, which accelerated the transition of small businesses to digital platforms. This process is still ongoing and is expected to accelerate in the future.

The development of the digital economy creates several key opportunities for small businesses. First, access to global markets, through which a small business can reach customers from anywhere in the world via the Internet. Second, significant reductions in operating costs through cloud technologies, automation and digital tools allow small businesses to operate efficiently without a large IT infrastructure.

Third, it has become possible to establish direct contact with customers and better understand their needs. Digital marketing tools allow small businesses to conduct targeted advertising campaigns with minimal costs. Fourth, new technological opportunities have opened up for creating innovative products and services. Modern technologies such as artificial intelligence, blockchain, and the Internet of Things (IoT) have become available to small businesses.

However, the digital transformation process also poses a number of challenges and limitations. The problem of the digital divide, cybersecurity risks, lack of qualified personnel and difficulties in adapting to technological changes are factors that hinder the development of small businesses. In addition, the rapid change in digital technologies requires small entrepreneurs to constantly learn and update. This requires additional time and financial resources. According to research company Gartner, 60% of small businesses face financial and technological difficulties in the process of digital transformation[5].

The future prospects of small businesses in the digital economy depend on several factors. First, state support policies and regulatory mechanisms. Second, the level of development of digital infrastructure. Third, the level of attention paid to digital skills in the education system.

[2]International Labor Organization. "Small and medium-sized enterprises and decent and productive employment creation". Geneva: ILO, 2023.

[3]Decree of the President of the Republic of Uzbekistan. "National Digital Transformation Strategy "Digital Uzbekistan - 2030". Tashkent, 2022.

[4]McKinsey Global Institute. "Digital America: A tale of the haves and have-mores". McKinsey & Company, 2023.

[5]Abdullayev YN, Jurayev NT (2021). "Digital Economy in Uzbekistan: Opportunities and Challenges". Economics and Finance, No. 5, pp. 23-31.

According to the World Economic Forum (WEF), 50% of the global economy is expected to be based on digital technologies by 2025.[6]This creates both new opportunities and new challenges for small businesses. Working through digital platforms, using e-commerce, fintech solutions, and artificial intelligence technologies is becoming a necessity for the modern small entrepreneur.

In developing countries like Uzbekistan, the digital transformation process is becoming increasingly important. The digital development of small businesses can play a crucial role in achieving the country's goals of economic diversification and increasing exports. At the same time, the problem of the digital divide and the uneven distribution of technological opportunities create additional difficulties for entrepreneurs in small towns and rural areas.

In modern economic literature, increasing attention is paid to the issues of interaction between the digital economy and small businesses. However, in-depth research in this area in local conditions is still lacking. In particular, in countries with transition economies such as Uzbekistan, comprehensive analyses of the digital transformation of small businesses are rare.

Research Methodology

The methodological basis of this research work is based on the general principles of dialectical materialism, a systematic approach and modern methods of economic analysis. A comprehensive methodological approach was used in the study. The main methods used were: analysis and synthesis of literature, statistical analysis, comparative analysis, forecasting methods. The database included reports of the Statistical Agency, the Central Bank, the World Bank and the OECD, as well as domestic and foreign scientific sources.

Literature Review

Brynjolfsson E., & McAfee A. (2014) “The Second Machine Age” provides an in-depth analysis of the impact of digital technologies on the economy. The authors highlight the factors that have helped the digital revolution grow small businesses, particularly the way technology has enabled small businesses to compete on an equal footing with large companies. They highlight the opportunities for democratizing digital platforms and lowering barriers to entry.[7].

Parker G., Van Alstyne M., & Choudary S. (2016) The book “Platform Revolution” examines in detail the mechanisms by which digital platforms create new opportunities for small businesses. The book analyzes the emergence of the platform economy, network effects, and the opportunities for small entrepreneurs to access global markets. The authors illustrate the impact of platforms such as Airbnb, Uber, and Amazon on small business development with practical examples[8].

Abdrakhmanova G.I., Gokhberg L.M. (2020) The monograph “Digital Economy: 2021” provides an in-depth analysis of the development trends of the digital economy in Russia and the CIS countries. The authors substantiate the impact of digital technologies on the efficiency of small businesses with

[6]Rakhmonova MA (2021). "The role of small and medium-sized businesses in the digital economy". Modern Economics, No. 4, pp. 67-74.

[7]Brynjolfsson, E., & McAfee, A. (2014). The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. WW Norton & Company, New York, 320 p.

[8]Parker, G., Van Alstyne, M., & Choudary, S. (2016). Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You. WW Norton & Company, New York, 352 p.

quantitative indicators. In particular, the book shows the impact of e-commerce development, digital payment systems and cloud technologies on the activities of small businesses[9].

Petrov A.P., Ivanov S.N. (2019) The article "Small Business in the Conditions of Digitalization" provides a comprehensive analysis of the problems and opportunities of small business in the context of digitalization. The researchers identified the main challenges in the digital transformation of the Russian small business sector as financial constraints, staff shortages, and weak technical infrastructure, and proposed ways to overcome them.[10].

Golubenskaya N.P. (2020) in her study "The Impact of Digital Technologies on the Development of Entrepreneurship" analyzed the impact of digital technologies on entrepreneurship based on empirical data. The author analyzed the activities of more than 500 small businesses and found that the profits of enterprises that actively use digital technologies are on average 35-40% higher[11].

Abdullayev Y.N., Jurayev N.T. (2021) The article "Digital Economy in Uzbekistan: Opportunities and Challenges" examines the main directions of digital economy development in the country. The authors assessed the level of digitalization of the small business sector of Uzbekistan and identified the main problems and prospects. They paid particular attention to the problem of weak Internet infrastructure in rural areas.[12].

Kholmatov B.R. (2020) The study "Issues of digitalization of small business and entrepreneurship" provides an in-depth analysis of the processes of digitalization of small business in Uzbekistan. The author studied the level of use of digital technologies by small businesses and identified the most effective approaches. In particular, the study shows the impact of e-commerce platforms on the development of local small businesses[13].

Rahmonova M.A. (2021) The article "The Role of Small and Medium-Sized Businesses in the Digital Economy" analyzes the role and importance of the small and medium-sized business sector in digital transformation. The author examined the development opportunities of small businesses in the Uzbek economy through digitalization and assessed the effectiveness of state support measures[14].

Analysis and Results

The concept of the digital economy is one of the most important areas of modern economic science and practice. The emergence and development of this concept has gone through several stages, with new theoretical approaches and practical interpretations being formed at each stage.

In modern economic literature, the digital economy is defined from various perspectives. According to the European Commission, the digital economy is a set of all economic activities supported by digital

[9]Abdrakhmanova G.I., Gokhberg L.M., Dudorova O.Yu. i dr. (2020). Digital economy: 2021: statistical collection. NIU "Vysshaya shkola ekonomiki", Moscow, 124 p.
[10]Petrov A.P., Ivanov S.N. (2019). Financial business and economic conditions of digitization: problems and prospects. // Economic Science, No. 12(181), p. 45-52.
[11]NP Golubetskaya. (2020). Влияние цифровых технологий на развитие малого предпринимателства в России. // Vestnik ekonomiki, No. 3(47), p. 78-84.
[12]Abdullayev YN, Jurayev NT (2021). Digital economy in Uzbekistan: opportunities and challenges. // Economics and Finance, No. 5(136), pp. 23-31.
[13]Kholmatov BR (2020). Issues of digitization of small business and entrepreneurial activities. // Business Expert, No. 7(98), pp. 45-52.
[14]Rakhmonova MA (2021). The role and importance of small and medium-sized businesses in the digital economy. // Modern Economics, No. 4(76), pp. 67-74.

technologies. The OECD defines it as an economic activity that uses the use and analysis of digital data to create new business models, develop new processes and products.

The fundamental differences between the traditional and digital economies are not only technological, but also structural, institutional and cultural. While in the traditional economy the main source of value creation is material resources and labor, in the digital economy information, knowledge and algorithms play a key role. This change is especially important for small businesses, because even if they do not have large physical assets, they can compete with large companies through intellectual and information resources. Barriers to entry have also changed significantly. In the traditional economy, entering a new market requires large capital investments, licenses and other expensive procedures. In the digital economy, these barriers have been significantly reduced through API technologies and platforms. For example, a small business can start providing services on a global scale with minimal costs using services such as Amazon AWS or Google Cloud.

The digital transformation process typically consists of several stages. The first stage is digitization, where analog processes are converted to digital format. The second stage is digitization, where existing business processes are improved using digital technologies. The third stage is full digital transformation, where the entire business model is rebuilt on a digital basis. The final stage is digital innovation, where new digital products and services are created.

The level of digital adoption by the small business sector in Uzbekistan is still low compared to developed countries, and there is significant potential in this area. Small businesses are achieving varying degrees of success in adopting various digital solutions.

According to the Statistics Agency of the Republic of Uzbekistan, by the beginning of 2024, the number of small businesses and private entrepreneurship entities in the country amounted to 465,300.[15]However, their level of use of digital technologies still remains average.

Table 1 Small businesses' use of digital technologies*(in %)*

Technology type	2022	2023	2024	Growth rate	Foreign average (%)
Social media presence	53,1	59,8	68,3	+28,6%	78,4
Accepting online payments	26,9	31,2	34,7	+29,0%	67,8
Electronic accounting programs	34,5	37,8	41,2	+19,4%	72,3
Using cloud services	14,6	17,1	19,8	+35,6%	45,7
Selling on e-commerce platforms	18,7	22,4	26,5	+41,7%	52,9
Using CRM systems	10,4	11,7	12,3	+18,3%	38,6
Website ownership	23,8	27,1	32,4	+36,1%	71,2
Digital marketing	19,2	24,7	29,8	+55,2%	64,3
Using mobile apps	15,7	19,3	24,1	+53,5%	41,8
Big Data Analysis	3,2	4,1	5,7	+78,1%	23,4

***Source:** *World Bank, Statistical Agency under the President of the Republic of Uzbekistan (2024). "Statistical Collection on the Use of Information and Communication Technologies". Tashkent: UzStat Publishing House.*

[15]Statistics of the Agency for Statistics of the Republic of Uzbekistan for 2024 "Small Business and Entrepreneurship"

The most common digital activity is a presence on social media. Facebook, Instagram, Telegram and other social platforms have become an effective tool for small businesses to directly communicate with customers, promote products and services, and build a brand. Small entrepreneurs are using these platforms not only for marketing purposes, but also to advise customers, take orders, and provide post-sales services. Especially during the pandemic, sales through social media have shown a significant increase.

The implementation of online payment systems is a more complex issue for small businesses. Despite the widespread use of local payment systems such as Click, Payme, Uzcard and others, a significant part of small businesses still prefer to work with cash. Among the reasons for this are the lack of technical knowledge, fear of additional commission payments and loyalty to traditional business methods. However, with the growing demand for contactless payment methods from customers, this issue remains an important choice for small businesses.

The use of electronic accounting software is also slowly developing among small businesses. Most small entrepreneurs still continue to work with traditional paper documents and simple Excel spreadsheets. Although the number of users of professional accounting software such as 1C, QuickBooks, Iman, BuxPro is growing, this process is slow. The main obstacles are the cost of the programs, the complexity of learning, and resistance to changing existing systems.

The digital transformation process of Uzbekistan's small business sector has shown significant dynamics during 2020-2024. This five-year period includes the COVID-19 pandemic, the activation of state digitization programs, and the impact of global digital trends on the local market (Table 2).

E-commerce platforms showed the highest growth rate – 24,0 percent annually. While in 2020 only 11,2 percent of small businesses sold on online platforms, by 2024 this number will reach 26,5 percent. The main driving force of this growth was the popularity of online shopping, which emerged during the pandemic.

Digital marketing also has a high growth rate – 24,0 percent per year. The growth from 12,6 percent in 2020 to 29,8 percent in 2024 indicates that small businesses are changing their approach to marketing. The convenience and relatively low prices of platforms such as Google Ads, Facebook Ads, Yandex.Direct have attracted small entrepreneurs. The effectiveness of advertising, the ability to track results in real time, and flexibility have become the main advantages of digital marketing tools. Especially during the COVID-19 era, the ineffectiveness of traditional advertising channels has increased attention to digital marketing.

Table 2 The rate of adoption of digital technologies in small businesses**

Technology	2020 (%)	2021 (%)	2022 (%)	2023 (%)	2024 (%)	CAGR*
Social media	42,1	48,9	53,1	59,8	68,3	12,8%
Online payments	19,8	23,4	26,9	31,2	34,7	15,1%
E-invoice programs	28,7	31,2	34,5	37,8	41,2	9,5%
Cloud services	8,9	11,3	14,6	17,1	19,8	22,1%
E-commerce platforms	11,2	14,8	18,7	22,4	26,5	24,0%
CRM systems	6,8	8,1	10,4	11,7	12,3	16,0%
Websites	18,4	21,7	23,8	27,1	32,4	15,2%
Digital marketing	12,6	15,8	19,2	24,7	29,8	24,0%

***CAGR-** *Compound Annual Growth Rate (Average annual growth rate)*

***Source:** OECD, World Bank, Statistical Agency under the President of the Republic of Uzbekistan (2024). "Statistical Collection on the Use of Information and Communication Technologies". Tashkent: UzStat Publishing House.*

The use of cloud services also showed a high growth rate – 22,1 percent per year. The growth from only 8,9 percent in 2020 to 19,8 percent in 2024, although the absolute number is low, shows the prospects for this industry. During the pandemic, the need for remote work, storing documents in the cloud, and collaborating with a team made these technologies popular. Services such as Google Drive, Dropbox, OneDrive, and the local UzCloud provided small businesses with the opportunity to securely store data and access it from anywhere.

The use of CRM systems showed a slower but steady growth of 16.0 percent per year. The growth from 6,8 percent in 2020 to 12,3 percent in 2024 means that small businesses are beginning to feel the need to systematize their customer relationships. The proliferation of systems such as AmoCRM, Bitrix24, HubSpot has increased the importance of storing customer data, tracking sales and managing marketing campaigns. However, there is still great potential in this area.

The digital transformation process is not developing at the same pace across different sectors of the small business sector in Uzbekistan. The specific characteristics of each sector, customer demand, technical capabilities, and traditional business practices directly affect the speed and depth of digitalization (Table 3).

IT services industryis the absolute leader, currently with a digitalization level of 89,7 percent. This result is natural, since IT companies are closely related to digital technologies by the nature of their activities. Companies providing software development, web design, and digital marketing services are almost completely digitalized. By 2025, this figure is projected to reach 95,3 percent, and by 2030, 98,9 percent. The investment need in this area is relatively small, $156,4 million, since the basic infrastructure already exists. The remaining small gap is mainly related to the adoption of new technologies and retraining of employees.

Table 3 Digital transformation rate and forecasts by industry*

Industry	Current digitization (%)	2025 forecast (%)	2030 forecast (%)	Investment needs (mln$)
Retail	72.3	84.7	94.2	245.8
IT services	89.7	95.3	98.9	156.4
Food services	54.8	69.2	82.6	187.3
Professional services	67.8	79.4	89.1	134.7
Transport/logistics	47.2	62.8	78	

***Source:** OECD, World Bank, Statistical Agency under the President of the Republic of Uzbekistan (2024). "Statistical Collection on the Use of Information and Communication Technologies". Tashkent: UzStat Publishing House.*

Retail ranks second with a digitalization rate of 72,3 percent. This sector has experienced the greatest shift during the pandemic. Online stores, e-commerce platforms, digital payment systems, and digital communication with customers have become widespread. Grocery stores, clothing stores, and home appliance retailers have actively introduced sales and delivery services via Telegram bots and Instagram. It is projected to reach 84,7 percent by 2025 and 94,2 percent by 2030. The investment

requirement of $245,8 million is mainly related to the modernization of logistics systems, automation of warehouses, and improvement of customer service systems.

Professional services The level of digitalization in the sector is 67,8 percent. Small companies providing legal services, accounting, consulting, and educational services are actively using cloud technologies, video conferencing, online document management, and digital communication tools with clients. Remote consulting, online training, and virtual meetings have become standard practice during the COVID-19 pandemic. It is expected to reach 79,4 percent by 2025 and 89,1 percent by 2030. The investment of $134,7 million is mainly needed for modern software, professional platforms, and staff retraining.

Transport and logistics The sector has a 47,2 percent share. Freight transport, taxi services, and courier services are actively using GPS navigation, online ordering, digital payments, and customer tracking systems. Platforms such as Yandex Taxi and MyTaxi have accelerated the digitalization of this sector. It is expected to reach 78,5 percent by 2030, which is associated with the introduction of autonomous transport technologies and smart logistics systems.

Health care The small business sector has a digitalization level of 38,9 percent. Private clinics, dentistry, diagnostic centers are using electronic cards, online appointment systems, telemedicine and digital medical devices. Remote consultation and online monitoring systems have become widespread during the pandemic. It is projected to reach 73,6 percent by 2030. The high investment need of $420,8 million is related to modern medical equipment, software and staff retraining.

Agriculture has the lowest level of digitalization at 29,4 percent. This sector is traditional in nature and is slow to adopt technological innovations. However, smart farming, drones, IoT sensors, weather data analysis and online trading platforms are gradually making inroads. It is expected to reach 58,7 percent by 2030, which is a relatively slow growth. The investment of $ 380,5 million is mainly needed for modern agricultural technologies and farmer training programs.

Conclusion and Suggestions

Based on the results of the research, the following proposals were developed to accelerate the digital development of small businesses and entrepreneurship in Uzbekistan:

It is necessary to increase digital literacy among the population. To do this, it is necessary to develop and implement special digital literacy programs for small businesses. These programs should cover all areas, from basic computer skills to working on e-commerce platforms, digital marketing and establishing digital communication with customers. It is recommended to establish training centers at the regional and district levels, create online courses, and introduce mentoring programs.

It is necessary to further expand financial support mechanisms and establish a system of preferential loans, grants and subsidies for small businesses for digital transformation. In addition, it is advisable to develop state-guaranteed loans, tax incentives and leasing programs for the introduction of digital technologies. It is necessary to expand the network of venture capital funds and angel investors to develop the startup ecosystem.

In order to improve infrastructure, it is important to improve the quality of the Internet network in rural areas, introduce 5G technology, and reduce the cost of digital communication services. It is also necessary to develop data centers, strengthen cloud services infrastructure, and strengthen cybersecurity systems.

It is necessary to establish free consulting services on digital technologies for small businesses, disseminate and popularize successful experiences through the development of educational and consulting services. It is recommended to develop professional certification programs and create national standards for digital skills.

It is necessary to support the development of digital platforms and local e-commerce platforms, create special departments to promote small business products, and expand export opportunities. It is advisable to develop programs to help access international platforms and bring product quality to international standards.

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