

DIGITAL TECHNOLOGIES AS A FACTOR IN INCREASING THE EFFICIENCY OF FINANCIAL ASSET MANAGEMENT

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ABSTRACT

An analysis of global trends in the development of the digital economy and financial technologies has revealed an intensification of the digitalization of financial assets due to the emergence of new types of digital tools in addition to key digitalization technologies in financial asset management, such as blockchain, artificial intelligence, and big data.

This article examines the role of digital technologies as a key factor in improving the efficiency of financial asset management in the context of the digital transformation of the economy. The article analyzes the main areas of digital solution implementation in the financial and economic activities of organizations, including the automation of financial processes, the use of analytical tools, digital platforms, and information systems to support management decisions. Particular attention is paid to the impact of digital technologies on increasing the transparency of financial transactions, reducing transaction costs, and improving the quality of financial asset management. It concludes that digitalization is essential for ensuring sustainable development and enhancing the competitiveness of organizations in the context of the emerging digital economy of Uzbekistan.

Keywords: Digital transformation of the economy, digital technologies, digital assets, financial sector, blockchain, AI, Digital Uzbekistan.

Introduction

Digital transformation has become a key driver of global economic development in recent years. Technological innovations such as artificial intelligence, blockchain, and big data are disrupting traditional business models, creating new opportunities to optimize processes and increase productivity. Financial assets, in particular, are undergoing significant changes as they become part of the digital ecosystem. An important aspect is studying the impact of digital technologies on financial asset management and the risks associated with their implementation in the economy. The relevance of this topic is due to the rapid development of digital financial instruments and the need to integrate them into existing economic systems.

In recent years, the use of digital technologies in Uzbekistan has increased significantly. According to the Statistics Agency of the Republic of Uzbekistan, the share of internet users in the country will reach 89% by 2025, and over 49% of organizations are actively implementing digital tools in their operations. The Ministry of Digital Technologies of the Republic of Uzbekistan predicts that the adoption of ERP and digital systems by 2026 will reach ~90% [16]. In business, key areas of digital transformation have become cloud computing, big data

management systems, and digital platforms for customer interaction. Particular attention is paid to the development of artificial intelligence and blockchain technologies, which enable the creation of more flexible and efficient management systems, including in the financial sector. Therefore, studying the impact of digital technologies on financial asset management and the risks associated with their implementation is becoming critical to maintaining economic competitiveness.

The aim of this study is to analyze current trends in the digital transformation of the economy in the financial sector, with a focus on the development of the digital financial asset market. To achieve this goal, the following objectives were set:

- to review theoretical approaches to the concept of the digital economy and digital technologies;
- to study the impact of digital technologies on financial asset management;
- to assess the risks and benefits of the digital transformation of financial assets;
- to analyze practical examples of the use of digital assets in various economic sectors and the impact of digitalization on business processes.

METHODS

The study utilized secondary data analysis and comparative analysis, comparing digital adoption indicators in Uzbekistan with average values for OECD countries and countries with emerging digital economies. This allowed us to synthesize existing theoretical approaches and empirical data on digital transformation. A comparative analysis was used to identify differences between traditional and digital financial assets. Statistical analysis methods were used to assess the impact of digital technologies on financial asset management and identify the risks and benefits associated with their implementation in various economic sectors.

RESULTS

The development of scientific and technological progress worldwide has facilitated the development of economic relations, which were soon channeled into the information sphere or transformed by the development of ICT.

Financial assets are resources that can have monetary value and are used to generate profit or capital appreciation. In other words, they represent various instruments that can be used for investment, trade, and savings.

Financial assets possess a number of unique characteristics that distinguish them from other types of assets, such as tangible or intangible assets. These characteristics influence how financial assets are used, valued, and managed by investors. Their primary characteristic is high liquidity—many can be quickly converted into cash without losing value. Assets can generate income in the form of interest, dividends, or capital gains, but are associated with various risks, such as credit or market risk [2].

Financial assets are undergoing significant changes in the context of the digital transformation of the economy. The development of technologies such as blockchain, artificial intelligence (AI), big data, and digital platforms is facilitating the emergence of new asset forms, changing existing business models, and creating new opportunities for investors and financial institutions.

The digital economy offers new business opportunities, streamlines processes, and significantly reduces costs. In the digital economy, financial assets have been transformed by the emergence of cryptocurrencies, tokens, and electronic money. Digital technologies enable instant transactions, online asset management, and the use of fintech solutions such as robo-advisors and decentralized finance (DeFi). The digitization of assets simplifies cross-border transactions, but also carries cybersecurity risks. Regulators are actively adapting to these changes, introducing laws to regulate new financial instruments. Digital currency will serve as an example.

It "represents the future stage of development of the global economic system due to the transformation of all spheres of human activity under the influence of information and telecommunication technologies. The prevalence of the Internet and other innovative technologies demonstrates the impossibility of ignoring their impact on the global economy" [3].

However, digital transformation is also associated with numerous challenges, such as uneven access to technology, cybersecurity issues, the need to train qualified personnel and manage data. The successful development of regional economies in the digital era requires a comprehensive approach, including government support, infrastructure development, education, training, and the stimulation of innovation. The joint efforts of the state, business, and society, as well as the exchange of successful practices between regions, play a key role in ensuring sustainable and successful economic development in the context of digital transformation" [5].

Based on the analysis obtained, it can be said that the digital economy is an integral part of modern global development, transforming the economic structure and people's daily lives thanks to information and telecommunication technologies. It has a significant impact on national GDP, increases productivity, promotes innovation, and improves quality of life. However, as its importance grows, so do challenges such as cybersecurity, uneven access to technology, and the need for skilled labor. The development of the digital economy requires a comprehensive approach and collaboration between government agencies, businesses, and society to ensure sustainable and inclusive economic growth in the context of digital transformation.

Digital technologies are part of digital transformation and encompass a wide range of tools and systems that use digital data to improve, automate, and optimize various processes. They play a key role in transformation both in the economy and in everyday life.

As part of the "Digital Uzbekistan 2030" strategy, the country is implementing a set of measures for the digital transformation of public services, the economy, and society, including expanding internet coverage, developing e-government infrastructure, and introducing digital services for citizens and businesses. These initiatives contribute to Uzbekistan's transition to a digital economy, increasing the availability of services, and improving governance efficiency across various sectors [1].

These initiatives are aimed at improving the competitiveness of the economy, enhancing the quality of public administration, and enhancing the convenience of citizens and businesses when interacting with government agencies.

In her article, "The Potential of Digital Technologies as a Tool for Enterprise Economic Development," M.N. Tolchinskaya highlighted various aspects of digital technologies, their implementation, and their impact on business processes [11]. The work emphasizes the need to create conditions for digitalization and support companies developing digital technologies. At the same time, collecting, processing, and analyzing large volumes of data enables more effective decision-making and eliminates the human factor from routine processes, reducing errors and increasing speed. This changes the way businesses are managed and conducted, as well as how value is delivered to customers.

Batov, G. Kh.'s article, "Methodological Aspects of Digital Economy Formation," examines the specifics of digital technologies [12]. "Digital innovations play a key role in shaping an organizational and corporate culture based on change, innovation, and knowledge. They contribute to the improvement of technologies and business processes, the creation of a unified information space, the development of corporate knowledge management through the application of HR technologies," and increased employee digital engagement through the development of digital thinking and motivation for self-learning. Belousov, Yu. V.'s article, "Digital Economy: Concept and Development Trends," examines various aspects of digital transformation and its impact on enterprises [13]. As the author notes, the use of digital technologies allows enterprises to develop new products and services that meet modern requirements and customer expectations. This facilitates the development of innovative solutions and strengthens competitive positions in the market. Digital technologies improve customer interactions, creating personalized customer experiences and ensuring a higher quality of service. The article also examines the challenges associated with digital transformation. Among them are financial constraints, fear of change, and the need for employee training. These factors can hinder the implementation of new technologies and require careful planning and management.

In the article by S. S. Gulyamov, "Key Trends in the Development of the Digital Economy in Uzbekistan: 10 New Technologies," key areas of development in the digital economy of the Republic of Uzbekistan are examined, focusing on the impact of modern information and communication technologies on economic processes. The author identifies ten cutting-edge technologies that form the foundation of digital transformation, including big data, cloud computing, blockchain, artificial intelligence, and other innovative digital solutions that contribute to increased business efficiency, the creation of new business models, and the integration of the national economy into global digital processes. The work also analyzes the challenges of implementing digital technologies in the economy, the need to develop information infrastructure and enhance personnel competencies, and identifies strategic directions for state policy in the field of digitalization [2].

Digital technologies are significantly changing business processes and organizational culture. The introduction of digitalization enables the automation and optimization of routine operations, minimizing errors and increasing speed. This also facilitates the creation of new customer engagement models and improved service quality. However, digital transformation requires significant investment and support for successful implementation and faces challenges such as financial constraints and the need for staff training. The development of a digital

economy is important not only for entrepreneurial innovation but also for creating sustainable and competitive businesses in a rapidly changing market and technological environment.

Companies that successfully implement digital technologies gain significant competitive advantages. They can offer more attractive and personalized services, reduce costs, and improve operational efficiency. In a globally competitive environment, this is becoming a crucial factor for business survival and growth.

To assess the impact of the digital economy on financial assets, a comparison was made between the traditional economy and the digital economy. Table 1 reflects this comparison.

Table 1 Comparative analysis of the traditional economy and the digital economy

Characteristics	Traditional Economy	Digital Economy
Main Asset	Physical	Data, Information, Digital
Scale	Local/Regional	Global
Speed	Slow Adaptation	Rapid Innovation
Interaction	In-Person	Online, Automated
Business Models	Classic	Platform, Service

The digital economy offers greater flexibility, speed, and global opportunities, but faces new challenges in cybersecurity and data management. While the traditional economy retains its strengths in the physical realm, it is less dynamic and globally scalable.

Based on this analysis, digital transformation encompasses the use of digital technologies to change processes and business models to increase efficiency, improve customer experience, and create new opportunities. It seeks to fully or partially automate and optimize processes based on data analysis and the application of new technologies. Therefore, digital technologies can be defined as electronic tools and systems aimed at optimizing and transforming business processes and services across various economic sectors. They are based on the use of modern information technologies, including computing systems, coding, and data transmission methods, enabling the efficient solution of various problems, ensuring end-to-end management, and meeting the demands of the modern market and customers.

Table 2 provides a more detailed description of some of the digital technologies used in digital transformation. Modern digital technologies, such as the Internet of Things (IoT), big data, artificial intelligence (AI), blockchain, and cloud computing, are rapidly developing and finding widespread application across various industries. These technologies offer new opportunities for optimizing business processes, improving customer experience, and creating innovative services.

Table 2. Digital Tools for Digital Transformation

Tool	Meaning
Big Data Analysis	Includes the collection, consolidation, and analysis of massive, structured, and unstructured data, which impacts decision-making and process optimization.
Robotic Automation	Reduces the time required for manual, routine operations, increasing operational efficiency and reducing operational risks.
Internet of Things	A network of interconnected, autonomous devices that exchange data and are controlled remotely. Enables optimization of business processes, improved product quality, and cost reduction.
Blockchain	A distributed database in the form of a "chain of blocks" that ensures transaction security and transparency, and supports the creation of decentralized applications and services.
Artificial Intelligence and Machine Learning	Designed to perform complex tasks and optimize human resources. Includes tools with machine learning algorithms, neural networks, and video and speech recognition.
Chatbots	Are programs that imitate human speech and are designed to automate repetitive functions and perform them as quickly as possible.

The following data were used:

- OECD analytical reports (Digital Economy Outlook);
- World Bank data (Digital Adoption Index);
- International Telecommunication Union (ITU) materials;
- national strategic documents of the Republic of Uzbekistan (in particular, the "Digital Uzbekistan 2030" strategy);
- secondary data from international studies and expert reviews.

The use of international sources was due to the limited availability of official statistics on the adoption rate of individual digital technologies in organizations in Uzbekistan.

To assess the level of digital technology adoption, a share indicator was used, calculated as the ratio of the number of organizations using a specific technology to the total number of organizations:

$$U_i = \frac{N_i}{N} \times 100\%$$

Where:

U_i —the level of implementation of the i -th digital technology;

N_i —the number of organizations using this technology;

N —the total number of organizations surveyed.

OECD indicators in the following areas were used as benchmarks for interpreting the results:

cloud computing;

Big Data and data analytics;

Internet of Things;

Artificial Intelligence.

Based on international trends and the initial level of digitalization in Uzbekistan, Table 3 presents the digital technologies used in organizations.

Table 3 Forecast for the Use of Digital Tools in Uzbekistan

Technology Expected	Dynamics by 2030	Sources
Cloud services	growth to ~40–60% of organizations	OECD trend + government support for digitalization
Big Data	growth to ~20–30%	gradual implementation of analytics
IoT	growth to ~25–35%	expansion of smart manufacturing solutions
AI	growth to ~15–25%	accelerated implementation with increased skills
Data centers	growth in corporate data centers	development of national infrastructure

An analysis of data on the use of digital technologies in organizations in Uzbekistan for 2023-2025 reveals a steady increase in the use of most of these technologies. Data centers and digital platforms are being implemented. The use of AI technologies is gradually but steadily increasing, while adaptive technologies remain at a relatively low level of adoption.

It can be concluded that by 2026 and presumably in subsequent years, there will be a general trend toward increasing adoption of digital technologies in organizations compared to previous years. This demonstrates businesses' desire for digital transformation and process optimization using modern technological solutions.

Digital technologies are rapidly developing, and blockchain has become a key innovation in this area, offering new approaches to security, transparency, and reliability.

Discussion: The study highlights the significant impact of information and communications technologies on the modern economy, including cryptocurrencies, digital platforms, and digital currencies. However, digital transformation brings not only benefits, such as process optimization and access to new markets, but also challenges. The transition to digital financial assets requires increased attention to data protection, as data breaches can lead to significant economic losses.

Artificial intelligence, big data, and blockchain technologies play a key role in improving the efficiency of business processes and creating new business models. However, it is important to consider the uneven distribution of access to technologies across countries and regions, which can exacerbate existing economic gaps.

The digital transformation of the economy must consider both the positive aspects and the associated challenges. Careful planning and a comprehensive approach to the implementation of digital technologies will help avoid potential risks and maximize the benefits of their use.

CONCLUSIONS

The study demonstrates that the digital economy is an integral part of the modern global economy. An analysis of the conceptual framework reveals the lack of a unified and comprehensive definition of the digital economy, which complicates the development of

universal strategies and regulatory documents. Different approaches to defining terms create methodological gaps that lead to misunderstandings in both academic and practical settings. The development of the digital economy requires the development of unified approaches that will accelerate digitalization processes and reduce the risks associated with the implementation of new technologies, including cybersecurity issues. The digital technologies discussed in the study, such as blockchain, artificial intelligence, big data, the Internet of Things, and cloud services, are currently being applied in all spheres of life to improve interaction efficiency and reduce transaction costs. However, despite their obvious advantages, digital technologies are associated with new challenges. One of these is ensuring data security, especially in the face of growing cyber threats. Furthermore, the uneven distribution of technologies remains a significant issue, potentially exacerbating the digital divide between regions and countries.

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