

The Role of Digital Transformation in Uzbekistan: Digital Intelligence

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Abstract: In modern realities, vast volumes of digital data have become a key economic resource. These data are generated through the analysis of “digital footprints” left on various digital platforms as a result of the activities of individuals, social groups, or enterprises. Taking into account current realities and trends, Uzbekistan has also intensified its transition to a digital economy through the development of digital intelligence. This is confirmed by the statement of the President of the Republic of Uzbekistan in his Address to the Oliy Majlis: “...we must develop a National Concept for the Digital Economy, aimed at modernizing all sectors of the economy based on digital technologies, and on this foundation implement the ‘Digital Uzbekistan–2030’ program.”

Keywords: Intelligence, Development, Measures, State, Efficiency, Uzbekistan, Digital Intelligence, Footprint, Realities, Resources.

INTRODUCTION

At present, processes of digital transformation are taking place worldwide. Under the influence of these processes, new professions, new sectors of the economy, and new markets are emerging, while the balance of power in global markets for traditional goods is also changing. In almost all countries of the world, national strategies for transitioning to a digitally transformed economy have been adopted [1].

Digital transformation has become a defining feature of modern economic development, reshaping industries, governance systems, and social interactions worldwide. The rapid growth of digital technologies, including artificial intelligence, big data, and cloud computing, has significantly altered traditional economic models and created new opportunities for innovation and competitiveness. In this context, digital intelligence (DQ) emerges as a critical factor that determines the ability of individuals, organizations, and states to effectively adapt to digital environments.

Uzbekistan is also following these global trends in the field of digital transformation. In particular, the national development strategy “Digital Uzbekistan 2030” has been adopted [2].

METHODOLOGY

The objective of this Strategy is to ensure a successful transition to a digital economy, taking into account modern realities. As of 2025, the share of the digital economy in Uzbekistan's GDP is approximately 9%. At the same time, the average optimal level is considered to be 7–8%. For comparison, this indicator is 12.4% in the United Kingdom, 8% in South Korea, 6.9% in China, 5.6% in India, while in Russia it is 2.8% and in Kazakhstan 3.9% [3].

RESULTS AND ANALYSIS

According to the draft Concept for the development of the “Electronic Government” system of the Republic of Uzbekistan, it was planned to increase the share of ICT services in GDP to 5.0% by 2025. In reality, the share of information and communication technology (ICT) services in Uzbekistan's GDP amounted to 2.6%, with the main contributions coming from computer programming (43.2% of ICT services) and telecommunications (35.1%). By 2030, this share is expected to reach 10% [4].

Uzbekistan is striving to introduce innovative ideas, products, processes, and developments across various spheres of life, viewing them as a driving force for its economic growth. The country has set a goal of entering the top 50 leading countries in the Global Innovation Index by 2030. These plans have gained even greater significance in light of the serious consequences of the COVID-19 pandemic for both the population and the national economy [5].

Projects aimed at modernizing Uzbekistan's economy have been supported by the World Bank's Board of Executive Directors, which approved \$50 million in financing for the implementation of the project “Modernization of the National Innovation System in Uzbekistan.” [6].

Among its key objectives are strengthening scientific capacity and improving the efficiency of research and development activities, creating mechanisms for integrating education, science, and entrepreneurship to ensure the widespread implementation of research, experimental design, and technological outcomes (R&D), as well as increasing both public and private investment in innovation and R&D [7].

Expenditures on R&D in Uzbekistan during 2020–2025 demonstrate steady growth, supported by government reforms. By mid-2025, spending on scientific research exceeded 1.5 trillion soums.

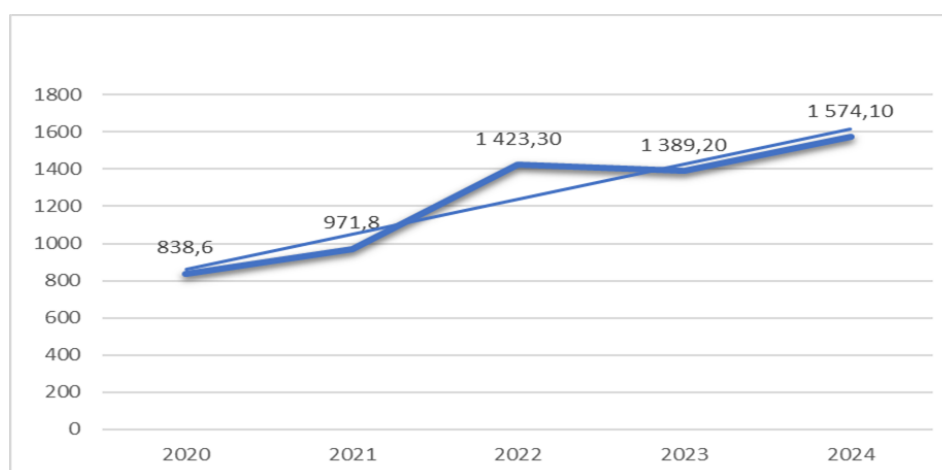


Figure 1. Expenditures on Research and Development (R&D) in Uzbekistan for the period 2020–2024 (billion UZS).

In 2024, Uzbekistan allocated approximately 1.6 trillion UZS to research and development (R&D). This is based on data from the State Committee of the Republic of Uzbekistan on Statistics [8].

Notably, R&D funding in 2024 increased by 184.9 billion UZS, or 13.3%, compared to the previous year, 2023.

In the new economic reality, vast volumes of digital data have become a key economic resource. These data are generated through the analysis of “digital footprints” left on various digital platforms as a result of the activities of individuals, social groups, and enterprises [9].

At the same time, the accumulated data vary in type: they may be personal or general, private or publicly accessible, used for commercial or governmental purposes, empirical or analytically derived, confidential or non-confidential. Depending on these characteristics, they exert different impacts on development processes and policymaking.

Breakthroughs in digital technologies have led to the rapid accumulation of enormous intellectual and financial capital within a short period of time, concentrated among a limited number of countries, companies, and individuals. In this context, the concept of “digital intelligence” has become increasingly relevant.

Digital intelligence (DQ) refers to a set of social, emotional, and cognitive abilities that enable individuals to meet the challenges and adapt to the demands of digital life. The effectiveness of digital economy development in the modern world is largely determined by the level of digital intelligence.

Its importance will continue to grow, as it has become an essential requirement for employees and professionals across various industries. The theory of digital intelligence (DQ) was developed in 2015 by Park Yuhyun in collaboration with colleagues from Nanyang Technological University. This work led to the creation of the DQ Institute, an online platform that promotes the concept of digital intelligence and develops DQ standards [10].

Discussions on digital intelligence reached the global stage in 2018, when the topic was raised at the World Economic Forum. During the COVID-19 pandemic, when virtually the entire world shifted to an online mode, these discussions became even more relevant. Lockdowns, in particular, exposed a lack of digital intelligence in modern society—specifically, the inability to respond effectively to cyber threats and to interact efficiently with others through digital technologies.

Digital IQ (Digital-IQ) is an indicator of an organization’s ability to leverage technology in the work of its specialists, as well as their scientific potential and experience, in order to utilize these capabilities to generate profits and reduce costs. This is achieved through the optimization of organizational processes by integrating digital technologies into business operations.

The most important first step in increasing such an IQ is aligning a company’s digital development strategy with its business objectives. In other words, it involves expanding the capabilities of the physical world through the digital environment, which represents a key characteristic of digital intelligence.

“A well-developed digital intelligence is a requirement of the time for companies seeking to outperform competitors, increase efficiency, and become more attractive to customers and investors,” experts note.

The most successful companies implement technologies and solutions that, on the one hand, enable them to manage large flows of valuable information from corporate sources, and on the other hand, allow them to thoroughly understand the structure of key processes in order to improve their efficiency.

As a result, an entirely new data value chain has emerged. Its components include companies engaged in data collection, aggregation, storage, analysis, modeling, and ultimately monetization—transforming data into digital intelligence. Control over information strengthens market influence, creates competitive advantages, and serves as the foundation for rapidly developing digital technologies such as data analytics, artificial intelligence, blockchain, the Internet of Things, cloud computing, and various online services.

Another important aspect and driving force of digital intelligence is digital platforms, which

function as two-sided or multi-sided markets with online infrastructures that facilitate various operations and transactions among different participants. Such platforms have become the primary business model for major digital corporations, such as Amazon, Alibaba Group, and Uber.

Ensuring continuous analysis of users' digital experience and "digital footprint" is critically important for organizations. To achieve this, active DevOps approaches are employed. According to Greg Adams, Regional Vice President at Dynatrace, such software plays a key role in achieving this objective.

Companies with a high level of digital intelligence do not merely adopt technologies; they also transform management practices and develop new business ideas based on digital innovations [11].

According to a recent study by Dynatrace, leading organizations increased their software release frequency by 58% in 2023. However, this acceleration created challenges, as many specialists struggled to adapt to these technologies, and DevOps teams encountered difficulties in their implementation. Organizations with high digital intelligence not only utilize advanced technologies but also redesign management systems and refine business strategies grounded in digital transformation [12].

Dynatrace was recognized as a Leader and Outperformer in 2025 in the Giga Om Radar Report for Cloud Observability. This recognition confirms the company's ability to help businesses transform complex data into valuable assets through its advanced platform.

The structure of digital intelligence integrates more than 24 leading frameworks of digital literacy and DQ skills (DQ24). It provides a unified language, structure, and taxonomy of digital literacy, skills, and readiness that can be compared, applied, and utilized across different countries and sectors worldwide.

DQ24 corresponds to eight critical domains of digital life: identity, personal safety, emotional intelligence, technology use, technical security, digital literacy, communication, and digital rights.

These eight domains develop across three levels: digital citizenship, digital creativity, and digital competitiveness.

Table 1. Eight criteria of digital intelligence DQ24.

Criteria	Citizenship	Creativity	Competitiveness
Self-Identity	Understanding digital space and personal role in it.	Information flow orientation.	Ability to process large volumes of information and adapt quickly.
Technology Use	Balancing life, health, work, and technology.	Using technologies without harm.	Efficient interaction through technologies.
Personal Safety	Cyber safety behavior awareness.	Understanding harmful content and responding appropriately.	Awareness of cyber risks.
Technical Security	Understanding phishing, viruses, hacking.	Preventing cyber risks.	Analyzing and solving cybersecurity issues.
Emotional Intelligence	Awareness of emotional impact online.	Managing emotions and conflicts.	Applying emotional intelligence professionally.
Communication	Understanding digital footprint.	Building online relationships.	Effective digital communication.
Digital Literacy	Analyzing digital content critically.	Creating digital content.	Processing and structuring data.
Digital Rights	Understanding personal data protection.	Avoiding plagiarism and piracy.	Awareness of digital rights.

The main objectives of Digital Intelligence (DQ) are to develop digital skills and literacy and to prepare society for future technological changes. Standards and frameworks are expected to accelerate and simplify these processes. In the long term, a well-developed digital intelligence will improve not only online human interaction but also the global economic situation. As technology becomes an integral part of everyday life, an increasing number of professions will be connected to the IT sector.

The evolution of the digital economy requires non-traditional economic thinking, policy analysis, and the establishment of “rules of the game.” In this regard, companies need to have a realistic understanding of the desired digital future, while regulatory authorities must take measures to reduce inequality and power imbalances. Addressing this complex challenge requires revising existing strategies and legislation across multiple sectors. When developing such frameworks, it is necessary to consider the blurring of boundaries between industries due to the growing role of services, as well as the significant difficulties in applying national laws and regulations to cross-border trade in digital services and products.

New regulatory frameworks should facilitate the creation of new opportunities for value generation and local economic benefits, as well as enable further structural transformation through digitalization.

“A well-developed digital intelligence is a requirement of the time for companies seeking to outperform competitors, become more efficient, and increase their attractiveness to customers and investors. The most successful companies apply digital technologies and solutions that enable them to manage large flows of specialized information from corporate cloud systems and to analyze the structure of key processes in order to improve efficiency.”

The ability to expand the physical world through the digital realm can be defined as digital intelligence.

In today’s global society, digital intelligence has become a core competency that enables individuals to be fully integrated into modern life, allowing them to access and utilize essential resources in a convenient format.

The success of corporate digital transformation initiatives at the current stage is assessed through the level of a company’s Digital Intelligence (Digital IQ). This is an index of digital competence that determines a company’s ability to benefit from digital technologies. It is also referred to as a digitalization index and is proposed to be measured using several key parameters, including:

- The development of digital products and sales channels;
- The maturity of transformation program management processes;
- The level of digitalization of business processes, among others.

Uzbekistan, as a country keeping pace with modern global trends, is also implementing measures to enhance the digital intelligence of both economic structures and the population in general, based on Presidential Decree of the Republic of Uzbekistan No. 6079 dated 05.10.2020 on the Strategy “Digital Uzbekistan 2030” [13], issued by the Digital Uzbekistan 2030 Strategy.

For the next three years, the implementation of 1,627 digital transformation projects across regions and sectors has been planned. The development of the mobile base station network has enabled the expansion of mobile communication coverage to 98% of the population, including 90% coverage of high-speed internet services. During 2020–2022, investments totaling 498.1 million USD were attracted to the information technology and communications sector [14].

As evidence of the effectiveness of these measures implemented by the Government of Uzbekistan, it can be noted that companies are increasing their digital intelligence not only by adopting digital technologies but also by improving management systems and developing new business ideas based on digital solutions.

The success of companies operating both in Uzbekistan and globally is determined by timely and effective managerial decisions aimed at improving business efficiency. In order to respond

quickly to market changes and forecast the outcomes of their actions, company management must have a comprehensive understanding of processes and data—these are key elements of digital intelligence.

According to the draft Concept for the Development of the “E-Government System for 2019–2025,” the share of public services provided in electronic form has increased from 37% to 80%. As a result, the country has improved its digitalization performance, reaching 9th place globally in the GovTech Maturity Index (GTMI), which has placed it among the leading countries. Uzbekistan also ranked 1st in Central Asia, advancing by 71 positions compared to 2020, due to the implementation of online services, digital citizen engagement, and core government systems.

Another fact confirming the active development of digital intelligence in Uzbekistan is reflected in the Concept of the Development Strategy of the Republic of Uzbekistan until 2035, particularly in Part 2: “Global Trends Affecting the Development of the Republic of Uzbekistan” [15]. One of the megatrends identified is human capital, which includes demographic development, personal development, and technological potential as key components.

CONCLUSION

The “Digital Uzbekistan 2030” Strategy aims to accelerate the country’s economic development, improve the quality of life of the population, and create conditions for transitioning to a fundamentally new stage of economic development—a digital economy of the future supported by advanced digital intelligence. This strategy is expected to drive technological transformation in the country, enhance the competitiveness of the national economy, improve citizens’ living standards, and increase the efficiency of governance at the global level. Its implementation will ensure the provision of high-quality digital services to the population, thereby increasing their digital intelligence and enhancing the demand for domestic specialists both within the country and in regional and global labor markets.

In conclusion, it can be noted that the successful implementation of these strategies will contribute not only to the transition toward a digital economy based on the development of digital intelligence but also to improving Uzbekistan’s position in global indices and rankings (such as the ICT Development Index, Telecommunications Infrastructure Index, Internet Speed Index, E-Government Development Index, and Global Cybersecurity Index), as well as strengthening the country’s international image. The implementation of these strategies should enable Uzbekistan to secure a strong position in the global economy through technology, innovation, and digital intelligence.

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