

## SOME ISSUES OF THE DEVELOPMENT OF THE DIGITAL ECONOMY IN UZBEKISTAN

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### ABSTRACT

This article analyzes the dynamics of the development of the digital economy in Uzbekistan. Uzbekistan began to prioritize the development of information and communication technologies and digitalization in the early 2000s. The country adopted the Comprehensive Program for the Development of the National Information and Communication System of the Republic of Uzbekistan for the period 2013-2020, the Action Strategy for five priority areas of development of the Republic of Uzbekistan in 2017-2021, the Strategy "Digital Uzbekistan-2030".

**Keywords:** State, law, digital economy, Strategy "Digital Uzbekistan-2030", personnel, Internet, traffic, development.

### 1.0 INTRODUCTION

Today, the digital economy occupies an increasingly important place in the countries of the world. The world economy is in fierce competition for digital leadership, and underdevelopment looks set to have far-reaching negative consequences for any given country. This was clearly expressed at the Osaka summit by the G20 countries, as well as Spain, Chile, the Netherlands, Senegal, Singapore, Thailand, and Vietnam. The adopted joint declaration on the digital economy states that digitalization is irrevocably changing economies and societies and is also an important source of economic growth, and its effective use will lead to well-being in all countries. [1]

Today, the leadership of Uzbekistan pays more and more attention to strengthening cooperation with foreign countries, in particular, in the direction of introducing innovations and advanced technologies. In this issue, one cannot but ignore the role and experience of the countries of the East, which demonstrate impressive GDP growth rates. Such participants in the region as China, India, Vietnam and not only, today act as the locomotive of the world economy. Japan and South Korea retain leadership in many areas of innovative and high-tech industries. Singapore, Malaysia, and Thailand show exceptional achievements in the export of goods and services to world markets. And the United Arab Emirates, Qatar, and Saudi Arabia are making serious progress in the field of alternative energy, and innovative projects in the field of finance and space exploration.

### 2.0 RESEARCH METHODOLOGY

During the implementation of scientific work in the field of the development of the digital economy in general, and in particular, in the banking sector, conversations were held with scientists and representatives of this industry, their written and oral reviews were analyzed, an expert assessment was given, a systematic approach to economic events and processes was carried out, a comparative analysis was carried out with the experience of the author, suggestions and recommendations were given.

### 3.0 ANALYSIS AND RESULTS

Today, the role of the digital economy in the world and its development trends are increasing. For example, in 1992, the change in data rate was 100 gigabytes per day of global internet protocol (IP)-based traffic, while in 2019 this figure exceeded 89,000 gigabytes per second. Considering that these data refer to the initial stages of the development of the digital economy, it is not difficult to imagine the pace of its development. Global IP traffic is predicted to reach 150,700 Gb/s by 2022, driven by an increase in the number of new users on the Internet and further expansion of the Internet. On a global scale, the two countries are leaders in the geography of the development of the digital economy. These are the US and China. These countries account for 75 percent of all blockchain patents, 50 percent of the value of the Internet of Things, and more than 75 percent of the global open cloud computing market. In particular, they control 90 percent of the market capitalization of the 70 largest digital platforms in the world.

According to the Decree of the President of the Republic of Uzbekistan "On measures for the widespread introduction of the digital economy and e-government" dated April 28, 2020, PP-4699, by 2023 it is planned to double the share of the digital economy in GDP. The economic development strategy is based on such factors as the development of industry, e-commerce, services, and agriculture, the strengthening of entrepreneurship, and the provision of financial resources.

The digital economy refers to such a system of economic, social, and cultural relations, the basis of which is the widespread use of digital technologies. There are many definitions of the digital economy.

#### 3.1 Digital economy:

- formation of business models and alignment of business processes based on the possibilities of digital technologies (ICT and the Internet) and the exchange of big data (BIG DATA);
- this is a set of relations that develop in the processes of production, distribution, exchange, and consumption, based on online technologies (ICT and the Internet) and aimed at the qualitative satisfaction of the needs for life's goods.

By 2025, the world's digital economy will reach \$23 trillion. USD USA. Its share in world GDP will increase from the current 17.1% to 24.3%. There will be 100 billion connections in the world to stimulate digital transformation in public utilities, industry, agriculture, transport, finance, etc. The number of enterprises using cloud technologies will be 85%, artificial intelligence - 86%, and digital big data - 80%.

In Uzbekistan, the development of the digital economy is one of the priorities of the state economic policy. The proof of this statement is the Decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev dated July 3, 2018, No. PP-3822 "On measures to develop the digital economy in the Republic of Uzbekistan", states: "The state is taking large-scale measures to develop the digital sector of the economy, introducing electronic document management systems, developing electronic payments and improving the legal base in the field of e-commerce. [2].

The digital economy, functioning on information technology platforms, is developing at an intensive speed, which necessitates the creation of new models and technologies for such platforms. These are end-to-end (complex) technologies of the digital economy:

1. Big Data technologies;
2. Internet of things technology (IoT - Internet of Things);
3. Mobile technologies;
4. Cloud technologies (Cloud computing);
5. Technologies of virtual (VR - virtual reality) and augmented reality (AR - augmented reality);
6. Neurotechnologies and artificial intelligence (AI);
7. Digital platforms;
8. Quantum technologies;
9. Robotics;
10. Blockchain and cryptocurrency technologies;
11. Crowdsourcing and crowdfunding.

Blockchain technologies (distributed data registry technologies), artificial intelligence, the use of the capabilities of supercomputers, as well as activities on crypto assets are one of the directions for the development of the digital economy in many countries of the world [3].

## 4.0 DISCUSSION

In the Republic of Uzbekistan, the national strategy "Digital Uzbekistan" -2030 has been developed and is being actively implemented, where the task is set: in 2030, the share of the digital economy in the republic's GDP should be 30%. The program for the development of agriculture until 2030, as well as the digital program "Smart Agriculture", are being intensively developed and implemented. However, the process of forming a digital economy is not always smooth and lightning-fast. To date, the following problems have been identified in the implementation of the national strategy "Digital Uzbekistan" -2030:

- equipping the regions of Uzbekistan with fiber-optic systems is still insufficient;
- the speed and percentage of wireless broadband Internet coverage are low;
- difficult access to the basic network infrastructure in remote areas of the country;
- despite the active training of specialists in the ICT industry, there is a shortage of highly qualified personnel;
- the processes of effective development of the digital economy require constant modernization of the technical and technological platforms [4].

To eliminate these problems as soon as possible and achieve the set goals, a national program and a roadmap for the digital economy until 2030 have been developed.

Despite the difficulties of introducing modern innovative solutions, the following main technologies can be distinguished at the present time, which has arisen since the beginning of the formation of the digital economy. The technology of "Big data", allows you to analyze and process a large amount of data in different formats at the extreme limit of practicality. The category "big data" includes most data streams over 100 GB per day; its most common definition is a set of information that is larger than the hard drive of a single personal device and cannot be processed by classical tools used for smaller volumes. On the other hand, BIG DATA is a variety of tools, approaches, and methods for processing both structured and unstructured data in order to use them for specific tasks and purposes. It should be noted that in the World the volume of all data is increasing exponentially: in 2011 the volume of generated information reached 1.8 zettabytes, and in 2012 - 2.8 zettabytes. In 2020, this figure will reach 40 zettabytes. In 2020, the size of the BIG DATA market in monetary terms will be about \$70 billion [5].

The introduction of blockchain technology (chain of blocks) in the industries and spheres of the national economy of the Republic of Uzbekistan was discussed at the ICT SUMMIT in May 2019. In particular, such questions were raised as the place and role of this technology in achieving market reforms, the main goals of development and economic competitiveness, the development of digital archives, in particular in investment activities, in trade, and on the exchange of crypto-assets.

On November 12, 2018, for the first time in Uzbekistan, the first pilot implementation of blockchain technology took place. The implementation was carried out as part of a joint project between the Uzbek Digital Trust Fund for Supporting the Development of the Digital Economy and the Russian company Blockchain Industrial Alliance. This technology has been introduced into the field of the automated registry system for the State Center for Expertise and Standardization of Medicines, Medical Devices, and Medical Equipment [6].

This technology allows you to store and process data that is available to any medical institution that has access rights. Over time, this system will allow doctors, drug and medical device suppliers, and patients to receive various types of information 24 hours a day, 7 days a week. Thus, the technology of "blockchain" includes the registration of various transactions, confirmation of the identity of the person performing this or that operation, and the conclusion of counterparties. The next technology that is currently widely used is the artificial intelligence system (AI) [7].

Artificial intelligence is understood as a modern scientific technology for creating intelligent machines, software systems capable of processing text in natural language, performing machine learning, operating expert systems, making recommendations, and working at the level of virtual agents /

Experts explain that it is customary to include e-commerce, the e-government system, the introduction of "smart" technologies in production processes, the creation of "Smart City", and "Safe City" systems, etc., as well as the widespread use of "Internet of things" technologies in the components of the digital economy. "

The degree of development of the digital economy in the country, which is directly related to the level of development of information and switching technologies (ICT), is usually assessed by various indicators: the share of the digital economy in GDP, the amount of investment in the ICT industry, Internet speed, its coverage of the country's territory and accessibility for use by the population, the level of development of e-commerce, the share of public services in the e-government system, the provision of organizations with specialists in the field of ICT, etc. In addition, indicators in international ratings that assess the degree of development of information technologies in the country are important.

Thus, the gross value added created in the field of services in the field of "information and communication" has doubled since 2016 from 4.4 to 8.8 trillion soums, and the volume of services provided by the type of economic activity "information and communication" has increased by 2 times from 6.3 to 12.9 trillion soums.

#### **4.1 Uzbekistan in international ratings**

According to the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan, the total number of mobile subscribers has increased by 7.6 million people since 2017 and amounted to 29 million. And the number of Internet users - almost doubled, reaching 27.2 million.

It is important to note that the reforms carried out in the country also had a positive impact on the ratings of Uzbekistan in international indicators. For example, according to the Global Cybersecurity Index (GCI) in 2018, the republic ranked 52nd among 175 countries (in 2017 - 93rd). According to the E-Government Development Index (EGDI), since 2016 it has improved its position: on the 87th line out of 193 states.

It is worth noting the success of Uzbekistan in international ratings to assess the development of information technology in the country. In these ratings, along with the occupied place, an index is indicated, which takes into account several parameters at once, reflecting the state of development of this area.

Telecommunication Infrastructure Index (TII), which is formed on the basis of the following indicators per 100 inhabitants of the country: the number of users of the Internet and fixed telephone lines, as well as subscribers to mobile communications, wireless broadband, and fixed broadband networks. Since 2016, Uzbekistan has improved its performance on this index from 0.246 to 0.472.

The ICT Development Index (IDI), was last compiled by the International Telecommunication Union at the end of 2017 among 176 countries of the world. The IDI index consists of 11 statistical indicators that reflect the accessibility to ICT, the degree of their use, and practical skills in the use of ICT by the population. A new methodology for compiling the IDI index is currently being developed. In the latest ranking of the IDI index, Uzbekistan rose by 8 positions compared to 2016 and took 95th place (index - 4.9) among 176 countries of the world.

The Global Cybersecurity Index is also compiled by the International Telecommunication Union and assesses the level of government commitment in five areas: legal measures, technical measures, organizational measures, capacity development, and international

cooperation. Since 2016, Uzbekistan has improved its performance in this ranking from 0.1471 to 0.666 and has risen from 93rd to 52nd place among 175 countries.

The Mobile Index is compiled by the International Association of Mobile Operators (or "GSMA Association"), which also includes all mobile operators in Uzbekistan. The index shows the degree of development and use of the mobile Internet. The index measures performance in more than 170 countries against the key drivers of mobile internet adoption: infrastructure, accessibility, consumer readiness, content, and services.

## 4.2 Long-term plans for the development of the digital economy

By a presidential decree dated October 5, 2020, the Digital Uzbekistan-2030 Strategy was approved, which provides for the implementation of over 280 projects for the digital transformation of regions and sectors of the country's economy in the next two years.

### Key indicators of the Strategy "Digital Uzbekistan - 2030"

No. p / p	Name of Indicator	Unit	Current state	Goals by year		
				2022	2025	2030
1.	The length of the complex of fiber optic lines connected to the republic	thousand km	41	70	120	250
2.	The level of protection by high-speed Internet of the regions of the republic	percent	67	74	85	100
3.	The level of high-speed Internet provision of social facilities	percent	45	100	100	100
4.	Level of provision of households with broadband Internet access	percent	67	74	85	100
5.	The level of provision of settlements with a network of broadband mobile communications	percent	78	100	100	100
6.	E-Government Development Efficiency Indicator in the International Ranking "E-Government Development Index"	bold (range 0–1)	0.66	0.70	0.75	0.86
7.	The share of e-government services provided through the Unified Interactive Portal of Public Services in relation to public services provided by public service centers	percent	34	60	70	90
8.	The share of e-government services available for payment via mobile devices compared to e-government services on the Unified Interactive Public Services Portal	percent	5	thirty	42	60
9.	The share of transaction services provided through the state's only interactive portal.	percent	25	45	60	75



10.	The share of large businesses that have implemented an enterprise Russuras management system (ERP)	percent	20	40	65	100
11.	Number of users of Internet banking services (legal entities and individuals)	million units	10	15	17	20
12.	A number of start-up projects, incubation and program incubation and acceleration of technology parks, software products and information technologies	PC.	50	250	700	2300
13.	Number of quotas for admission to higher and secondary specialized educational institutions for training personnel in the field of information technology	quiet	7	12	15	20

In the near future, the task was set to double the share of digital services in the country's GDP. [8]

### 4.3 Training of IT specialists

More than 120 universities operate in Uzbekistan, each of which is introducing a digital learning module and opening incubation centers. A program for the development of IT education was adopted, aimed at creating a new system of vertical education. In 2020, the One Million Programmers program was launched, providing free training in programming skills, under which more than 130,000 students are trained.

### 5.0 CONCLUSION AND RECOMMENDATIONS

Educational IT centers are being created in the regions of the country, more than 100 of them have already been opened, and more than 85 thousand students have been trained in them. In 2021, it is planned to open an additional 200 such centers.

For IT companies until 2028, benefits are provided on the basis of extraterritoriality (benefits in IT parks: income tax - 7.5%, corporate and social tax - 0%, customs payments for the import of goods and services - 0%).

In conclusion of their study, the authors note: "The experience of foreign countries shows that the digital economy is developing simultaneously in a wide range of areas and cannot be built by a limited number of companies, even if they are endowed with special powers and resources. Therefore, the main role in the digital economy should be played by private businesses with a strong entrepreneurial and innovative approach, and the state should create the infrastructure and conditions for private initiative."

According to researchers, the state can stimulate the digitalization of economic processes by the following actions:

- act as an organizer of common technological platforms that unite various organizations, or as a regulator that directive establishes requirements for the use of certain technological solutions since without synchronization of the processes of implementing standard technological solutions in entire segments of the economy, their wide distribution is impossible;
- constantly improve the existing regulatory framework governing the development of the digital economy, and do this in a dialogue mode and taking into account the opinions of users, developers, and service providers who, in practice, will encounter new types of objects and subjects of information legal relations that require legal registration;
- become a participant in the overall process of digitalization of relations, including by developing the e-government system and the list of public services provided in electronic format;
- stimulate and encourage the introduction of information systems, and electronic services in organizations and introduce tax incentives for the development of digital technologies, as well as cross-border online trade;
- to train in the required quantities personnel of both IT specialists and programmers themselves, as well as qualified users capable of using constantly updated digital technologies;
- ensure security from cyber threats, as well as the confidence of all entities involved in the digital economy to some extent that the data they collect, store, and use is protected from possible criminal acts;
- Expand international cooperation and create attractive conditions for the influx and introduction of advanced information technologies in all areas of economic activity.

“According to the theory of K-cycles (Kondratiev), humanity is going through the fifth technological order, characterized by the development of electronics, robotics, computing, laser, and communication technology, and is approaching the sixth, which will be based on NBIC - convergence or on the unification and synergistic strengthening of the achievements of nano-, bio-, information, and cognitive (cognitive) technologies, the researchers write. “In this regard, in order to keep up with technological development, it is necessary not only to be a consumer of innovative products produced in other countries but to create them yourself or participate in international cooperation chains for their production.”

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