

THE DIGITAL ECONOMY IS A DEMAND OF A NEW AGE

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Abstract. The article examines the priorities in the development of intellectual information systems in our country, covers concepts such as the digital economy, its elements, artificial intelligence, blockchain technology and their essence. It also explores ways to achieve cost-effectiveness in the future through the effective use of these technologies.

Keywords: digital economy, artificial intelligence, blockchain technology, Internet of Things, e-government, online commerce.

1. INTRODUCTION

The digital revolution, which is emerging as a new stage of economic and technological development, is rapidly changing the lives of mankind, creating vast opportunities and ushering in a period of further intensification of the international competitive arena.

In the context of globalization and technological development of the world economy, it is difficult to imagine the economic development of Uzbekistan without a digital economy. For example, the consulting company Accenture predicts that by 2022, a quarter of global GDP will be in the digital sector. This is not surprising, as the era of technology giants began in 2019, with 7 companies in the technology industry firmly entrenched in the list of the 10 most expensive companies. However, in order to stimulate the digital economy, it is necessary to remove barriers to digitalization and the development of digital commerce. According to the Information and Communication Technologies (ICT) Development Index, Uzbekistan ranks 103rd out of more than 170 countries, for example, ahead of Egypt, but after Turkey and Brazil.

Digital technologies not only improve the quality of products and services, they reduce unnecessary costs. At the same time, they are also an effective tool in overcoming the most serious flaw that bothers and bothers me the most - the scourge of corruption. We all need to understand this deeply.

Public and public administration, as well as the widespread introduction of digital technologies in the social sphere, can increase efficiency, in short, dramatically improve people's lives. "

According to various studies, the share of the digital economy in the world economy ranges from 4.5% to 15.5%. The United States and the People's Republic of China account for nearly 40 percent of the value added created in the global ICT sector and 75 percent of blockchain technology-related patents.

President of our country Sh.M. According to statistics presented by Mirziyoyev at an event dedicated to the development of information technology on February 13, 2020, the share of the digital economy in GDP is 10.9%, 10% in China and 5.5% in India. In Uzbekistan, this figure does not exceed 2%.

To assess the growing importance and impact of digitalization, it is enough to look at the share of capital in the global market of several major technology companies and digital platforms over the last decade. In particular, according to the UN Conference on Trade and Development, this figure rose from 16% in 2009 to the end of 2018 reached 56 percent.

However, the term "digital economy" was first coined in 1995 by American researcher Nicholas Negroponte. "Digital economy" is defined as an economic activity in which the main tool is digital data, the use of which in large quantities serves to increase the efficiency of production and services. In fact, the concept of digital economy is a very broad concept and there is no clear perfect or general tariff. But there are different views by many scholars. At the same time in the literature the terms "e-economy", "Internet economy", "network economy", "virtual economy" are also used. They are synonymous with the "digital economy." [1]

By 2020, the world will have 2.4 billion. It is expected to be connected to the "Internet of Things". Global economic growth in the world is estimated at 11.1 trillion. An increase in the U.S. dollar should allow for an 11% increase in world GDP.

"Internet of Things" is defined by Kevin Ashton, who coined the term in 1999, as "the concept of a computer network that interacts with each other or with the external environment without human intervention through connected technologies." Examples include the now-popular "smart economy," "smart city," "smart agriculture," "smart medicine," "smart home," and so on. [2]

"Internet of Things" includes automatic control of infrastructure (utilities, public transport), cars and agricultural machinery without a driver, performing operations with the help of robots. In the UK, for example, a study by Schneider Electric found that a standard office building consumes 200 kilowatt-hours of electricity per square meter per year. Implementation of the "smart home" project based on the concept of "Internet of Things" allowed to reduce these costs by 2.5 times - to 80 kilowatt-hours.

"Digital economy" has created a new concept - "blockchain" (English: "Block" - "block" and "chain" - "chain", ie "chain of blocks"). Blockchain is a multi-functional and multi-level information technology based on reliable accounting of various data. The interconnected blockchain in this cryptographic form is based on strict sequencing. In the blockchain, all the data is collected and a database is formed, which is regularly replenished. It is not possible to change the data entered in the blockchain. The blockchain can be filled with data indefinitely. So they compare it to a supercomputer.

In the process of such rapid changes in the world community and the intensification of competition, it is true that without the widespread introduction of innovations and digital technologies, we will not be able to sustainably develop our economy in the near and long term, ensuring its competitiveness, which in turn requires scientific and practical efforts. .

2.LITERATURE REVIEW

Scientific and methodological aspects of the digital economy, its forms and influencing factors have been studied by many foreign scientists, including: Lapidus L.V. [1], Kevin A. [2], Sadovsky G. L. [3], Kaluga M.L.[4], B.N. Panshin [5], A.I. Sokolov, A.A. Kuntsman, R. Bucht, R. Hicks, M. Researched by A.Polozhikhina, I.A.Strelkova, M.L.Kalujsky, S.A.Plugotarenko, M.Kastells, B.N.Panshin and others.

Research on the use of information technology in the economy of Uzbekistan, current issues of the introduction of the digital economy and measuring the socio-economic impact S.S.Gulyamov, R.H.Ayupov, O.M.Abdullaev, G.R.Baltabaeva, K.H.Abdurahmonov , O.Umarov and many other leading economists of our country.

Methodical aspects of establishing a control system over compliance with principles of decent work and social security in textile enterprises were researched by Gulnora Kalandarovna Abdurakhmanova and others [8;10] Innovative development of Uzbekistan agroindustrial complex were dedicated works of Yldashev, N., Nabokov, V. I., Nekrasov, K. V. [11;12]. Estimation methodology of efficiency of production capacity management at textile enterprises were investigated by Kirill K. and others [13]. Role of Managing Industrial Stocks in Increasing of Textile Enterprises Capacity were studied by Tursunov B. and others [14;15].

Their research work includes research on the digital environment, which has a set of features that meet the needs of consumers and manufacturers, as well as enable direct interaction between them.

3.ANALYSIS AND RESULTS

In recent years, as part of the comprehensive reforms to radically modernize the national economy, a number of measures have been taken to introduce digital technologies in the socio-economic life of the country and the public administration system. In particular, the Decree of the President of the Republic of Uzbekistan "On measures to develop the digital economy in the Republic of Uzbekistan" dated July 3, 2018

The adoption of Resolution PQ-3832 is an important step in the development of the digital economy, which identifies the most important tasks for the further development of the digital economy in our country, which include:

- introduction of technologies in the field of crypto-asset turnover to diversify various forms of investment and business activities, including mining, smart-contracting, consulting, issue, exchange, storage, distribution, management, insurance, crowdfunding (collective financing);

- training of qualified personnel with good understanding of modern information and communication technologies in the field of development and use of blockchain technologies, practical work skills, as well as the involvement of highly qualified foreign specialists;

- Comprehensive development of cooperation with international and foreign organizations in the field of crypto-assets and blockchain technology, as well as the creation of the necessary legal framework, taking into account the best international practices;

- Ensuring close cooperation between government agencies and businesses in the introduction of innovative ideas, technologies and developments for the further development of the digital economy.

In particular, the introduction of e-government in our country is an integral part of the development of the digital economy, the main purpose of which is to simplify the transition to administrative procedures, improve the quality of life, improve the investment and business environment.

In order to achieve the set goals, as well as to achieve the goal of developing a digital society in the country, creating opportunities for the population and entrepreneurs, developing an effective and transparent system of public administration free from bureaucratic barriers and corruption, today all sectors of the economy need to be modernized. The national concept of "digital economy" is being developed, which is expected to increase GDP by an additional 30% through the development of the digital economy.

It should be noted that the problems of developing the digital economy in Uzbekistan are similar to the common problems faced by developing countries.

One of the main problems is the telecommunications infrastructure and poor communication. Lack of investment in ICT (2.8% of total investments in 2017) the density of base communication stations in the country remains very low (1 base station per 1600 population). In contrast, such a tower in Kazakhstan meets the needs of 643 people, and in Russia - 235 people.

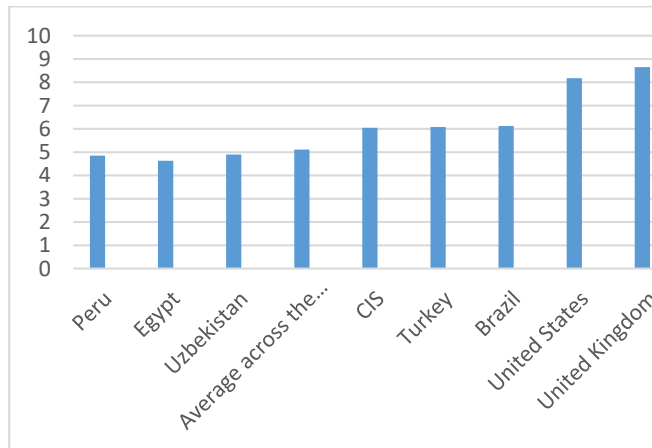


Figure 1. ICT development index for some countries, as of 2018

Source: Compiled by the author based on data from the World Bank

This leads to poor Internet and mobile services slowing digital economic growth and widening the digital divide. Compared to the CIS countries, in 2019 the average speed of the Internet in Uzbekistan (mobile and fixed broadband) was about twice as low.

Lack of digital skills can be a serious obstacle to digital transformation. As one of the least developed countries, Uzbekistan has an absolute GDP per capita

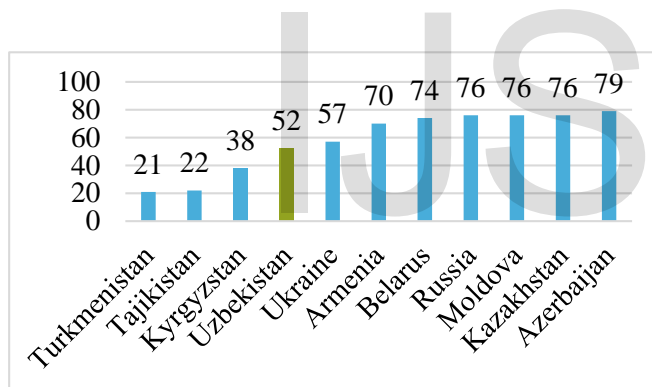


Figure 3. On making online payments [16]

Nevertheless, over the past 13 years, the average payment per card through the terminal has increased from 207,000 soums to 2.7 million soums. In 2018, the total amount of payments made through the terminal will reach 53 trillion. soums. Although the Parliament passed the Law on Electronic Digital Signatures in 2005, which is the basis for legal transactions via the Internet, the lack of regulation remains a major obstacle to the development of e-commerce in the Republic of Uzbekistan.

(100% in 2016) compared to other countries (for example, 84.66% in the Lao People's Democratic Republic). year). On the other hand, despite the high level of adult literacy in developing countries, digital literacy remains low. Perhaps this can be explained by the low level and prevalence of ICT in schools. In 2017, 32 out of 1,000 students had personal computers. In addition, the lack of computers in schools means that there are 50 personal computers per 100 households. This is confirmed by trends in the labor market - according to a survey conducted to assess the lack of skills in the labor market of Uzbekistan, 68% of companies surveyed emphasize the importance of IT and computer skills as one of the main reasons for hiring new candidates.

Due to the weakness of the digital infrastructure and the lack of digital skills in the country, digital circulation in Uzbekistan is developing at a slow pace. For example, the decree of the President of the Republic of Uzbekistan states that there are not enough online shopping and trading platforms in the country.

In 2017, only 34% of account holders made digital payments to existing payment systems (Click, Payme, M-bank, Upay, Humo, Easy, etc.) that allow you to make online payments for mobile, Internet, government services, taxes and fees or field (Figure 3).

The United Nations e-Government Index reflects how a country uses information technology to provide access and integration for its people. In 2018, the figures for Uzbekistan are equal to the average in the CIS and higher than the world average. Among the 193 countries in the ranking, Uzbekistan ranked 81st (Figure 4).

Experts believe that by 2020 the stage of industrial development of the world economy will come to an end. The subsequent development of the world economy will be influenced by cognitive factors (from the Latin word "cognitio" - "knowledge", "thinking") and the economy, economy based on nano- and biotechnology. This leads to a sharp increase in the amount of information required to develop and make management decisions in macroeconomics. As a result, the knowledge of the staff and the level of development of information and communication technologies in each country determine its development and competitiveness.

We are confident that these technologies (quick and easy analysis of large amounts of data, the creation of objects with the highest accuracy using Nano 3D printers, the effective use of touch controls in the management of techniques, the high level of robotics in the industry, etc.) have entered a new era.

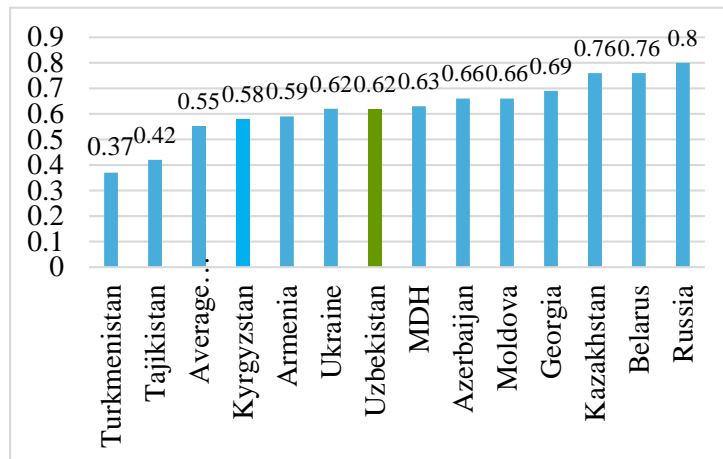


Figure 4. E-government index [17]

For example, the introduction of e-government and e-mediation in South Korea brings in \$ 10-15 billion a

year. This is 30-40 times more than the cost of a "digital economy." [3]

Table 1
The modern technologies in the world

Information & communication technology <ul style="list-style-type: none"> - Artificial intelligency - Internet of Things - Cloud computing - Large\small data analytics - 5G - Natural language interaction - Hyper converged systems - Mesh app & service architecture - Blockchain & distributed ledgers - Mixed reality (AR\VR) - Data & cybersecurity 	Health & Wellness <ul style="list-style-type: none"> - Immune engineering - Gene editing - Cancer tumor profiling - Predictive biomarkers - Human microbiomics - Cellular therapeutics - Medtech - Smart assistive devices - Point of care diagnostic - Health informatics - Nutraceuticals
Energy & Utilities <ul style="list-style-type: none"> - Battery energy management - Distributed energy generation - Smart grids - Solar PV/Offshore wind energy - Lithium batteries - Enhanced oil recovery 	Environment & Sustainability <ul style="list-style-type: none"> - Carbon capture utilization & storage - Off grid desalination - Precision agriculture - Wastewater nutrient recovery
Advanced MFG & Automation <ul style="list-style-type: none"> - Robotics exoskeletons - Metal 3D printing - Collaborative industrial robots - CIM - Nano 3D printing - Predictive analytics - Sustainable manufacturing (C&G) 	Medical devices& Imaging <ul style="list-style-type: none"> - Super resolution microscopy - Artificial organs - Optical biopsy - Surgical robots - Tactile imaging - Neurostimulation - Image engineering

Microelectronics <ul style="list-style-type: none"> - Wearables - OLED lighting - Next gen data storage - Micro LED - Holographic display - Wireless charging 	Sensors & Instrumentation <ul style="list-style-type: none"> - Biosensors - Touchless sensing - Smart haptics - Electronic skin - Driver assistance systems
Chemicals & Advanced materials <ul style="list-style-type: none"> - High strength lightweight materials - Corrosion mitigation - 2D materials - Self- healing materials - Micro and Nano encapsulation - Smart glass 	

The "digital economy" has its own systemic criteria and characteristics (Table 2).

There is a huge amount of data being created and processed in the world today. This means that we need to be willing to process this information, use it in the right size and format, and make quick and quality decisions.

Table 2
Systemic criteria and features of the "digital economy"

Systemic criteria of "digital economy"	System features of the "digital economy"
Production organization system	Decreased level of production centralization
The role of employees	Full participation of employees in production processes, even far from major economic centers

Economic management system	Increased staff independence, transformation of organizational units into "functional modules"
Value system	Expansion of social functions of companies
Characteristics of economic processes	Increasing level of interdependence of economic processes in the world

A report released by IBM on marketing trends for 2017 states that 2.5 quintillion bytes of data are generated every day. They note that 90 percent of the information in the world today was created in just the last two years.[18]

4.CONCLUSIONS

We consider it expedient to list the following main conditions and priorities for the development of the digital economy in our country:

- Creating an institutional environment and digital infrastructure for the sustainable operation of digital technologies, public services, the widespread introduction of digital technologies in the real sector of the economy, health, state cadastre and other areas, as well as opportunities to connect the Republic of Uzbekistan to the global Internet provide step-by-step coverage as complete as possible;
- expanding the scope of training and training of qualified programmers and engineers with in-depth knowledge in these areas, training in modern information technology that fully meets international standards at all stages of the education system, including the successful implementation of the "1 million programmers" project together with our foreign partners;
- Strengthening the scientific and theoretical base in the field of digital economy and supporting scientific activities in this area with the targeted use of funds from the Digital Trust Fund;
- Conducting seminars, courses and other events in educational institutions in order to promote and expand "digital literacy" among the general population, to involve them in the adoption of information technology;
- Strengthening the regulatory framework and improving the legislation in the field of digital economy, as well as the concept of "startups", the creation of a legal framework for their financing through venture funds;
- organization of the labor market that meets the requirements of the digital economy and increase its mobility, training of specialists for the rapid adoption of new technologies;
- Strengthening international cooperation in the field of digital economy, implementation of joint projects with leading international technology companies.

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