
POST-PANDEMIC PERSPECTIVES FOR THE DEVELOPMENT OF DIGITALIZATION IN UZBEKISTAN

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Abstract

Keywords:

Digital economy, cognitive, cloud technologies, Internet of things, big data, virtual reality, 3D printing, quantum computing, distributed ledgers, artificial intelligence and robotics, biotechnology.

This article examines the features of the development of the digital economy in a particular region in a pandemic. The key technologies of the digital economy of a particular region are given. The effectiveness of the use of the digital economy in Uzbekistan is analyzed and a strategy for its development is proposed.

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INTRODUCTION

Today, the rapid process of digitalization has created an innovative “new economy”. This little-studied and growing market segment is one of the active mechanisms for manufacturers to determine the best ways to effectively organize their business, minimize costs, maximize profits and successfully sell goods and services. The role of digital technologies in creating quality service and convenience for consumers, buyers and customers is growing day by day.

To make the most of this time, there are options to order lunch online, call a taxi through a mobile application, send money to distant relatives and friends, including cross-border business cooperation, e-commerce, remote office. All systems in Uzbekistan are being digitized. In particular, the demand for online goods and services under the quarantine regime introduced due to the coronavirus has increased even more, and the range of digital opportunities in all areas has expanded.

Today, you can make payments without leaving your home, receive distance education without any problems, use and even work in the world's largest libraries. Digital services have a number of advantages over the traditional type, such as paperwork, lack of formalities, and time savings. For example, if you receive government services digitally you will be offered a 10 percent discount on the set fee. All this is a sign of our country's active transition to a digital economy.

LITERATURE REVIEW

The literature at the end of the article [1,2,3,4,5,6,7,8,9] is analyzed in depth to reveal the study.

In recent years, in the context of digital globalization, all countries have begun to pay special attention to digital transformation in order to increase the competitive immunity of the economy. Uzbekistan's digital ecosystem has grown rapidly since the country launched a massive openness program in 2016 to reform the national economy and government. In particular, Uzbekistan pays special attention to this industry, and the announcement by the Government of 2020 as the "Year of Science, Education and the Digital Economy" has become one of the main directions for increasing the level of international economic competitiveness and creating quality jobs for young intellectuals.

METHODS AND ANALYSIS

The social, economic and political damage from the COVID-19 pandemic has strengthened the government's commitment to digitalization in its operations and the integration of digital technologies in all sectors of the economy, and has accelerated the practical work on digital technologies among the general public. In order to develop a comprehensive development strategy for the country in October 2020, the Government adopted the Strategy "Digital Uzbekistan-2030", which identifies five priorities for the development of the Strategy "Digital Uzbekistan", namely:

1. Digital infrastructure;
2. Electronic government;
3. Digital economy;
4. National information technology (IT) sector;
5. IT education.

The digital strategy has developed programs in this area in each region of the country and the Republic of Karakalpakstan and roadmaps for their implementation. The digital economy is an economic activity based on digital technologies associated with electronic business, electronic commerce, production and provision of digital goods and services, and payments for economic services and goods are carried out with electronic money. The digital economy opens up wide opportunities for the active use of information and communication technologies and the Internet in business, industrial facilities and the service sector. In the traditional economy, material goods are the main resource, while in the digital economy, information is processed and transmitted. The digital economy allows large industrial facilities to increase work efficiency, increase production, ensure transparency, and reduce production costs.

According to the analysis of leading international organizations, the digital economy will increase GDP by at least 30%, while eliminating the shadow economy, in particular, it is rapidly entering the areas of healthcare, science and education, construction, energy, agriculture and water supply. management, transport, geology, cadastre, archives, Internet banking and others, and each of them gives high results.

The provision of electronic services and electronic products by the state to its citizens is a key part of the digital economy. The wide development of this sphere in our country will eliminate the scourge of corruption and ensure close cooperation between business entities, the coverage of production and services in all spheres and industries with digital technologies, the development of intellectually gifted personnel with modern knowledge in this area, thereby creating an environment of "information society" in country. According to the World Bank, 66% of the total wealth of our planet - 365 trillion US dollars - is in human capital, mainly in the level of knowledge of the individual. In the United States, that figure is 77 percent of the nation's wealth, \$95 trillion. According to statistics, the share of

the digital economy in the gross domestic product of countries is 10.9 percent in the United States, 10 percent in China and 5.5 percent in India. Vouchercloud researchers have published a list of the 25 "smartest" countries in the world. According to the results of the study, Japan took the first place. The country also received the highest marks in the main indicators of the study - the number of Nobel Prize winners, the average level of IQ (intelligence) of the population, the level of school performance.

They were followed by Switzerland, China, the USA and the Netherlands. While China ranked third due to its high level of intelligence, the US ranked fourth in terms of the number of Nobel laureates. South Korea, Taiwan and Singapore are among the leaders in terms of the number of educated (intelligent) youth, but only because of the small number of Nobel Prize winners could not be at the top of the ranking.

McKinsey experts have calculated that digital assets today account for about 10 percent of global GDP, and their growth rate is 30 percent of global economic growth. The development of digital assets is similar to the movement of an accelerator.

Therefore, in this year's Address, the head of our state emphasized the idea that "The greatest wealth is intelligence and knowledge, the greatest heritage is good education, and the greatest poverty is ignorance!" Today, the global digital economy is valued at \$2 trillion in 20 developed countries.

In the UK, the world leader in the development of the digital economy, it has already reached 12% of the country's gross domestic product. The digital economy implies the digitalization of technological and business processes, production, logistics and sales of finished products. In our country, by 2020, such areas as transport, geology, education, archives will be fully digitized, and work in this direction is being intensively carried out. "IT parks" with modern infrastructure are also a confirmation of our opinion. In order to further develop contactless forms of communication between the population and business with government agencies

The launch of a new version of a single interactive portal of public services, the virtual reception of the business portal of the Prime Minister "business.gov.uz" is an important step in the development of the digital economy. The lack of digital skills in all segments of the population has become another obstacle to the development of the digital economy. The digital turnover is also not sufficiently implemented. In this regard, it is worth recalling the opinion of Bill Gates, the founder of Microsoft, well known in the world of technology: "Soon there will be only two types of companies on Earth. The first is companies that are doing business online, and the second is companies that are going out of business." With this in mind, it is advisable for entrepreneurs to build their activities on the basis of principles known throughout the world: business for the consumer, business for business, consumer for the consumer.

Despite the availability of payment systems that allow you to make payments Click, Payme, M-bank, Upay, Easy and other online payments, the speed of making online payments for mobile communications, the Internet, housing and communal services is low. In 2017, 34% of account holders made a digital payment. For comparison, in the UK this figure is 96 percent. It is noteworthy that the number of payments through the terminal is growing. For example, in 2018, payments through the terminal amounted to 53 trillion soums. Another problem in the implementation of the digital economy was that for a long time IT specialists, who are technical staff in budgetary organizations, were not paid high wages. The reason is that qualified programmers did not stay long in this position. They preferred to work for international organizations, joint ventures, foreign clients.

Now they have an overpayment mechanism. Along with the achievements, there are also problems, a lot of work remains to be done, as President Sh. Mirziyoyev said: Of course, we are well aware that the formation of a digital economy requires the necessary

infrastructure, a lot of money and labor. But no matter how difficult it is, if we do not start this work today, when will we start?! Tomorrow will be too late. Therefore, an active transition to a digital economy will be one of our priorities for the next five years.” Another factor in the development of the digital economy in the post- pandemic process is cybersecurity. Under the quarantine, there have been cases of the spread of viruses in the global network under the brand name “Guidelines for protection against coronavirus ”, which disable software systems.

Financial scammers who deceived ordinary people by promising to sell and deliver pills online and asking for money to be deposited in advance used fake online stores, websites, social media accounts and email addresses. It also confirms the need to ensure information security. The concepts of digitalization and cybersecurity always go hand in hand. Because along with the digitalization of all systems and processes, it is important to ensure their technically perfect and flawless operation and safety. The more attention is paid to the development of the digital economy in our country, the more relevant it becomes to ensure cybersecurity. Uzbekistan strengthens its position in the global cybersecurity index in 2017, our country ranked 93rd in this ranking, and in 2021 it rose to 50th place.

Cybersecurity is a concept other than high spirituality that serves to sort information, being a form of information security. It refers to more technical processes and tools that allow the average user to set secure and strong passwords in mail, social networks, payment systems, protect their personal computer and smartphone from viruses. In a broader sense, cybersecurity is a set of measures aimed at protecting networks, mobile applications and devices. This means maintaining the confidentiality of data, protecting their integrity, the full operation of a particular site, application, program. According to the analysis of the SUE “ Cybersecurity Center”, in 2021, about 300 cybersecurity incidents were identified on the sites of the national segment of the Internet .

This means that the number of offenses in the digital world has decreased by 44% compared to the previous year. Of these, 222 were unauthorized downloads of content, 45 were hits (a hacker attack in which one page of the site was replaced by another, for example, a page with advertising) and one was hidden mining (hidden activity on a cryptocurrency platform). 69% of incidents were found on sites hosted by hosting providers in Uzbekistan, while the remaining 31% were related to sites hosted by hosting providers in foreign countries. 80 cases were investigated and practical recommendations were given to eliminate the identified vulnerabilities, and the remaining 188 cases were resolved by the site owners themselves.

Security problems in cyberspace are caused by managing content with security bugs in the code, dealing with outdated versions, making it easier to access passwords, templates downloaded from insecure sources, managing websites on virus-infected computers. Monitoring of the national segment of the Internet revealed more than 130,000 cybersecurity threats . Of these, 106,508 cases relate to hosts that have become members of botnet networks. 13,882 cases were associated with various services blocking blacklisted IP addresses due to spam or password violations. 8,457 cases are associated with the use of the TFTP protocol (Trivial File Transfer Protocol) and the corresponding ports, which can result in downloading third-party content due to the lack of authentication mechanisms. 2,114 cases are associated with the use of a weak RDP protocol (Remote Desktop protocol). 1,042 cases were related to the lack of an authentication mechanism in software and database management systems, as well as expired or invalid SSL signing certificates.

These analyzes once again confirm the relevance of the issue of cybersecurity, since software vulnerabilities can lead to remote access by an attacker to an information system or website, as well as to files and data, as well as to the leakage of personal information of

citizens. Cyber security measures prevent such cases. According to the State Program for the implementation of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021 in the “Year of Science, Education and the Digital Economy”, the National Cybersecurity Strategy for 2020-2023, and a draft law “OnCybersecurity” will be developed.

On this basis, on April 15, 2022, the Law “OnCybersecurity” No. ZRU-764 was adopted. Legal strengthening of cybersecurity standards is a necessary and appropriate measure. The digital world has not yet been able to clearly define its status legally. In this regard, there are new types and forms of threats that need to be reflected in the legislation. The development of a national cybersecurity strategy will regulate the activities in the field of combating crime in the national cyberspace. After all, the harm and risk of crime in the virtual world is no less than in the real world.

In addition, the National Cybersecurity Strategy for 2020-2023 will form a unified cybersecurity system and a legal framework for protecting critical infrastructure from cyberattacks, introducing modern mechanisms, defining the rights and obligations of state institutions, enterprises and organizations in this area, and coordinating their activities. Indeed, there was a need to unify the legal documents in this area. As a result of the reforms carried out in the new Uzbekistan, openness, development of international economic and political relations, opportunities have opened up for modernization, technical and technological re-equipment of the industrial sectors of our country. An example of this is the growth of our country's foreign trade. With many phrases such as “e-government”, “electronic management”, “telecommunications”, “internet”, “website” have become an integral part of our life. IT covers all areas of our daily lives.

As a result of the reforms carried out, 178 services have been launched through e-government and a single portal of interactive services that save time and money for the population.

We know perfectly well that the necessary infrastructure, a lot of money and labor force are needed to form a digital economy. Therefore, an active transition to a digital economy will be one of our top priorities for the next 5 years. Digital technologies not only improve the quality of products and services, they dramatically reduce overhead costs, especially corruption costs. Also, exact quantitative indicators of the development of the digital economy in Uzbekistan have been established, covering the period 2020-2023. In particular, in 2020-2021, all healthcare institutions, schools and preschool institutions, as well as villages and microdistricts will be connected to high-speed Internet and the quality of communication services will be improved, a complete modernization of the digital infrastructure will be carried out and access to modern telecommunications services in 2023 will increase the share e-government services to 60% and double the share of the digital economy in the country's GDP.

The results of practical efforts were not long in coming. The global “Speedtest” index published new data for June 2020, and Uzbekistan is currently ranked 94th in the internet speed ranking, up 36 places in a year. In general, the speed of wired Internet in Uzbekistan has increased by 2.5 times over the past year.

In order to join the ranks of developed countries, we must first take the shortest path of progress through the deep acquisition of knowledge in the field of advanced modern information and communications, the Internet and digital technologies.

Because, according to our geographical position, we have to cross at least two state borders to access ports on large water bodies by land. This will negatively affect our position in the global market, both in terms of time and economy. The solution to this problem depends on intelligence, new innovations and the potential of qualified personnel.

Another important aspect is that in our country the priority is the digitalization of the most conflict zones, alleviating the burden of people. In particular, practical processes have been launched to digitalize healthcare, cadastre, social protection, agriculture, and education, which will soon give positive results.

The digital economy will cause certain changes in society, in particular, its impact on working conditions will be significant. In the context of digital transformation, increased automation processes, artificial intelligence, analytical systems that work with huge data, and increased use of robots will serve as a replacement for labor resources. As a result, business conditions will improve and efficiency will increase significantly. The results of the World Bank study “Digital Dividends” show how relevant and important the digital economy is in the development of economies. In particular, an increase in Internet speed by 10% will lead to an increase in the country's GDP. In developed countries, this figure is 1.21%, and in developing countries - 1.38%. This means that if Internet speed doubles, GDP could also increase by about 15 percent.

In countries with a developed digital economy, both the volume of GDP and the share of GDP per capita are high. In this regard, the attention of the head of our state to this issue at the state level pursues one goal, which is, firstly, to improve the living standards of the population, and secondly, to increase the real incomes of the population.

The competitiveness of the national economy largely depends on how quickly we adapt to the Industrial 4.0 revolution, which is an important component of the digital economy, and how quickly we can solve the problem of introducing digital technologies into all sectors of the economy. The effective organization of work in this area depends on mature personnel with sufficient competencies in the field of digital technologies. It should be noted that systematic measures are being taken in this regard.

In particular, the Ministry of Information Technologies and Communications was instructed to open at least 100 training centers for digital technologies in all regions. It is planned to organize short-term training courses in such areas as the basics of programming, e-commerce and graphic design. In addition, it is planned to open special departments for blockchain technology in the country's leading higher educational institutions.

The adoption of the Decree of the President of the Republic of Uzbekistan dated February 17, 2021 “On measures to create conditions for the accelerated introduction of artificial intelligence technologies” was an important step in creating the necessary conditions for the introduction of artificial intelligence technologies in industries and sectors.

CONCLUSION

The pandemic has had a positive impact on these countries in terms of digitalization, in addition to the damage it has done to the economies of many developing and developed countries.

For example, for Uzbekistan it is:

- Increased computer and digital literacy of all segments of the population under quarantine conditions;
- has led to an increase in Internet resources in all areas, in particular:
 - a) In all areas of education;
 - b) in health care;
 - c) In the service sector.

Thus, the share of information and communication, Internet and digital technologies in the GDP of the Republic of Uzbekistan increased from 2% to 2.5%.

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