The experience of foreign countries in the implementation of digital systems in the economy

La experiencia de los países extranjeros en la implementación de sistemas digitales en la economía

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ABSTRACT

In the world economy, the digital economic system is regularly supported by the country as an integral part of the economy. In Uzbekistan, the digital economy is an essential factor for increasing the share of innovation in the gross domestic product, producing competitively differentiated quality products and improving the quality of public services. It is given the trends in the digital economy of countries such as France, South Korea, and Japan, where digitalization is high in the world economy in this article. In the economy of Uzbekistan, the study of the implementation of digital systems of foreign countries, such as South Korea, Japan, and Russia is relevant in the branches and sectors of the economy.

Keywords: innovation, digital system, digital economy, electronic service

RESUMEN

En la economía mundial, el sistema económico digital es apoyado regularmente por el país como parte integral de la economía. En Uzbekistán, la economía digital es un factor esencial para aumentar la cuota de innovación en el producto interno bruto, producir productos de calidad competitiva diferenciados y mejorar la calidad de los servicios públicos. En este artículo se dan las tendencias en la economía digital de países como Francia, Corea del Sur y Japón, donde la digitalización es alta en la economía mundial. En la economía de Uzbekistán, el estudio de la implementación de sistemas digitales de países extranjeros, como Corea del Sur, Japón y Rusia, es relevante en las ramas y sectores de la economía.

Palabras clave: innovación, sistema digital, economía digital, servicio electrónico.

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INTRODUCTION

The study of foreign countries' method of digital economic systems will help to solve the following problems in the economy of Uzbekistan:

-Implementation of a network of indicators and methods of calculating the level of digitization of the economy by extensive study of the strategy of foreign countries' digitization;

-calculation of the average level of digitization in the branches and sectors of the economy based on the experience of foreign countries;

-Preparation of the strategic program "digital-2050" of Uzbekistan, like the strategic programs of Japan '' team-5.0 '' or Germany '' Industry- 4.0 ''.

The purpose of this research is to develop proposals for the development of the digital economy in Uzbekistan based on extensive analysis of the digital experience of economies of developed countries.

According to the information above, it is given exploring below in the process of scientific explore

-Analysis of trends of state support for the digital economy in European countries and the role of European countries in the global digital economy rankings;

-Study of the peculiarities of digital systems in South Korea and the possibilities of their implementation in Uzbekistan;

-Depth analysis of the essence and social orientation of Japan's "team- 5.0" strategy.

Based on the study of the experience of foreign countries on the development of digital systems, we conclude the following:

-Each country has a different approach and orientation to the introduction of digital systems based on their level of economic development and their competitive advantages;

- Any innovative technology should serve the benefit of the people. Thus, international digital rankings are key indicators of access to digital technologies, households with Internet access, and digital education systems.

Measures of improving Uzbekistan's position in the Global Competitiveness Index (Lex.uz online, 2019) and Global Innovation Index (Lex.uz online, 2018) of the World Economic Forum aimed at development of scientific and innovative activity, protection of intellectual activity results, increasing the share of the sector of informative communications technology as the gross domestic product of the country, all these require the creation of a digital system with a high level of security.

In the development of global digital systems, first of all, the agencies of state and economy, local government agencies with the introduction of the necessary information systems and resources, software and electronic services through the establishment of digital economy, information technology market, including technology parks and coworking centers based on public-private partnerships, creation of favorable conditions for attracting foreign investments, development of modern telecommunication infrastructure, telecommunication technologies and networks, coordination of development of advanced telecommunication services, enhancement of digital economy through introduction of electronic services in public administration and economy, development of e-commerce and software market - developing proposals for technical and economic development, city and region y infrastructure management, in particular, housing and utilities, transport logistics, development of "smart" systems for a safe and "smart city", improving the training of qualified personnel (Lex.uz online, 2018) are becoming more critical.

For this reason, the study of the implementation of digital systems in various sectors of the economy of foreign countries, such as South Korea, Japan and Russia, is relevant in the economy of Uzbekistan. Studying the method of introduction of digital economic systems of foreign countries gives a chance to solve the following problems in the economy of Uzbekistan:

- Developing a network of indicators and methods of calculating the level of digitalisation of the economy by extensive study of the economic digitalisation strategy of foreign countries;

- Calculating the average level of digitisation in various sectors of the economy based on the experience of foreign countries;

- Preparation of the project of the Strategic Program "Digital-2050" of Uzbekistan like the strategic programs of "Japan-5.0" or "Industry-4.0" of Japan.

Based on the above, the research aims to explore below:

- Analysis of the trends of state support for the digital economy in European countries and the role of European countries in the global numeric economy ratings;

- To study the features of digital systems in South Korea and the possibilities of their implementation in Uzbekistan;

- Analyzing deeply the content and social orientation of Japan's "Team-5.0" strategy.

RESEARCH METHODOLOGY

In the process of the research they widely used such methods as analysis and synthesis, induction, deduction, grouping in order to analyze deeply digital systems, introduction and experience of state stimulation in foreign countries.

THE EXTENT WHICH THE SUBJECT STUDIED

Many foreign scientists have been studied the scientific and methodological aspects of the digital economy and its forms and factors' affects such as, M. Kastel's (Kastel's, M. 2004), B.N. Panshin (Panshin, B. 2016), A.I. Sokolov (Sokolov, I.A., 2018) A.A. Kuntman (Kuntman, A.A., 2016), and others.

According to M.L: "Digital economy is the communication environment of economic activity on the Internet, as well as forms, methods, means and results".

According to Castells, digital economics is the second phase of the information economy, and its definition has been used since 2016 as the World Bank's definition of digital economics. The definition is as follows: "Digital economy is a system of economic, social and cultural relations based on the use of information and communication technologies" and concludes that "Digital economy is a new paradigm of rapid economic development."

According to a study by Thomas Mezenburg, there are three main components of the digital economy concept:

1) Infrastructure support;
2) e-business;
3) e-commerce.

In the developed countries, because digital systems are widely used in various sectors and branches of the national economy, this topic has been widely researched by economists, technologists, and scientists who are the expert of information and communication. That is why there are countless publications and research papers on the subject.

ANALYSIS AND RESULTS

Based on the experience of such digital countries which digital economies are rapidly developing (China, UAE, Saudi Arabia) (Denmark, Singapore, South Korea, Germany, USA), four types of tools can be distinguished:

1. It is eliminated the inefficient zones of the current economic system to upgrade the resources "Digital production" and increase its competitiveness. The tasks are solved with the help of the most interested and capable players.

2. Because of the creation of conditions for "Digital leap"-new business development and the rapid development of modern technologies, big data, artificial intelligence, neural networks, block chain originate.

3. "Digitalization" increases the efficiency and transparency of all processes of cooperation with the state, facilitates business in the country, which has a broad positive impact on the economy.

4. "Digital Reinvestment". As a result of the first three tasks, value added, transaction costs were reduced, and significant inter-sector impacts were created.

Information and Communication Technology Development Index (IDI) - Index published on the basis of internationally accepted information and communication technologies (ICT) indicators by the United Nations

International Telecommunication Union. It is an important tool for comparing the most important indicators for measuring the information society.

In particular, if we analyze the position of the European Union in this index, we can see that in 2015, the whole EU gained 0.47 points on the Digital Economy and Society Index. The index is analyzed according to the following indicators:

1. Connectivity.
2. Human capital / digital skills.
3. Use of Internet services by citizens.
4. Integration of digital technologies and business entities.
5. Digital government services.
6. ICT research and development.

While the European Union (EU) has improved the Digital Economy and Society indexes of all categories in recent years, it has been the highest in the communications group (0.51 to 0.55). This was mainly due to the expansion of mobile coverage (from 58 to 67 per 100 people) and high-speed coverage (the share of high-speed internet increased from 18 to 22 percent). The level of basic digital awareness of citizens has also increased (from 55% to 59% of the EU population), but there is still much to be done to provide the population with the necessary skills to effectively use the digital economy.

This can be seen in:

76% of homes in Europe have broadband Internet (at least 30 Mbps);

Mobil In 2013, mobile Internet access exceeded 58 subscribers per 100 people - 4G mobile services cover 84% of the EU population;

3.5% of the total workforce of ICT specialists;

Almost half (44%) of Europeans do not yet have basic digital skills such as using mailboxes, editing tools or installing new devices;

79% of Europeans use the Internet at least once a week. In 2017, growth was 3% compared to 2016;

78% of Internet users listen to music, watch movies and play games;

70% of European Internet users read online news (64% in 2013);

63% use social media (57% in 2013);

66% buys online traffic (61% in 2013);

59% use online banking (56% in 2013);

39% - use the Internet to make calls (33% in 2013);

18% of European businesses send electronic invoices (10% in 2013);

34% of Internet users completed online without paper copies (27% in 2013) (Information Policy We, 2017).

Thus, according to the European Commission, 41% of businesses do not currently use digital technology, and only 2% of companies fully realize their benefits. That is why European businesses are trying to create new opportunities for businesses, accelerate the "digital" business landscape, encourage the use of new digital technologies to improve processes, create new business models, deepen business analytics, enhance growth rates, and create jobs. The last task is related to the high unemployment rate of youth, especially by 20% in the EU, and more than 55% in Spain and Greece.

Denmark, Sweden, Finland and the Netherlands have the leading digital economies in the EU, followed by Luxembourg, Ireland, the United Kingdom, Belgium and Estonia. Romania, Greece and Italy are the lowest in the index. In 2017, all member states improved in the index structure. In Ireland and Spain, the highest level was achieved (5 points versus 3.2 on the EU average). On the other hand, there was a slight increase in Denmark and Portugal (below 2 points).

Table 1. "Business Digitization Index 2017" in European countries (European Commission, 2019)

Country	Position	Country	Position
Finland	50	Spain	41
Belgium	47	Germany	38

Denmark	46	Luxembourg	37
Netherlands	43	France	36
Sweden	43	Great Britain	35
Norway	42	Italy	35

The need for the use of digital technologies to enhance competitiveness, entrepreneurship and innovation was highlighted in the Business 2020 Action Plan. The European Commission supports the use of opportunities provided by the digital revolution, encourages innovative transformation of existing businesses and promotes digital business in Europe.

The Business 2020 Action Plan provides the basis for the development of policy and key priority areas for the period up to 2020. The program is divided into five categories, each of which describes the key factors influencing digital entrepreneurship. The Commission intends to work towards the dissemination and implementation of this approach based on a five-component strategy.

In the European Union, France is one of the leaders in the field of digitalization. In France, the high quality and standard of infrastructure has long been a tradition: roads, water lines, utilities, and even parking spaces. At the same time, the state has not stopped in its achievements and the improvement of the digital economy has become one of the critical sectors of the country's strategy. In addition, it is essential to develop information security nationwide, to keep in mind the personal use of businesses or digital products.

Nowadays, France actively cooperates with "Cisco Systems, Inc." The company will help accelerate France's economic growth, increase its competitiveness and employment.

"Cisco Systems, Inc." is an American multinational company that develops and sells networking equipment for large companies and telecommunications companies. It is one of the largest companies in the world, specializing in high technology. Cisco Systems consultants will assist in accelerating the widespread introduction of digital technologies in France, promoting the country's development and encouraging innovation, as well as creating new jobs. To that end, Cisco is helping the government in promoting education and information security, infrastructure development, and innovation across the country in smart cities and other areas.

"The Cisco Systems,Inc". Networking Academy will provide training programs for up to 200,000 people in the future for critical technologies so that French entrepreneurs can gain the skills needed to participate in digitalisation of the country. In addition to this, innovation centres are being established to assist in the development of programs.

The transition to wider use of digital technologies will increase the global competitiveness of the country through increased employment in France, education, information security, innovation and business encouragement. It is also expected to increase GDP by 1-2%. This is a unique opportunity for France to provide innovative development based on its values - peer networks such as French people are based on equal relationships, create new digital freedoms, and provide an Internet architecture that contributes to significant socio-economic growth.

The first stage is 1996-2000. During this period, the Education Network - Edunet information service was established in the country, along with the retraining of teachers of educational institutions on digital educational technologies, as well as increased awareness of the population in the field of information and communication technologies.

In the second phase, 2001-2005, the Information Network "Education Network - EDUNET" was upgraded, Training and Education Center - Teaching and Learning Center and Cyber Home Learning System - CHLS were established, as well as digital libraries. organized. This has made it possible to introduce e-learning nationwide.

The "CHLS" system is designed for independent training of students in educational institutions. This content allows students to choose the appropriate curriculum based on the interests and education of their students, to obtain additional information without resorting to tutors. It is especially useful for low-income families.

Third stage - 2006-2010 South Korea has a strong position in the global electronic education market. 2 bln. Income from the United States.

The e-learning system was developed in 2011-2015. There are 17 regional subdivisions on e-education coordination - Metropolitan & Provincial Offices - Education - MPOES.

An algorithm for the development of e-learning in South Korea was launched:

- Electronic-education(E-learning);
- Mobile-learning (M-learning);
- Ubiquitous-learning (U-learning);
- Smart education.

In South Korea, information and communication technologies are limited to primary, secondary education institutions. 83% of all universities in the country are covered by the "E-learning" system. In addition, there are 17 cyber universities that have 40,000 hours of online education at the age of 18 to 60 years. There is a software for monitoring these students. EDUNET web portal for digital copies of e-books, e-books and educational materials. people use it. Every day, 410,000 people visit the portal and they earn $ 27 million. pagespreferences and other educational materials.

South Korea is recognized in the global scale of education. Great Britain's "Pearson" has supported Japan, which has recently failed to take the lead in the international education-sharing group. This is the most highly effective ICT development activity in South Korea (Table 2).

Table 2. Index of the use of information and communication technologies in the world 2017

Place	Countries	Index
1	Iceland	8.98
2	South Korea	8.85
3	Switzerland	8.74
4	Denmark	8.71
5	Great Britain	8.65
6	Hong Kong	8.61
7	Netherland	8.49
8	Norway	8.47
9	Luxembourg	8.47
10	Japan	8.43
95	Uzbekistan	4.90
109	Kyrgyzstan	4.37

In the Japanese economy, the "Team-5.0" strategy has been developed to digitize all segments and sectors of society. The main purpose of this strategy is to link the production process with other processes, increasing their efficiency. In addition, this strategy has been accepted as a guarantee that Japan will not lag behind other countries in the introduction of digital systems. The main goals and objectives of this strategy are:

- prevention of future social problems;

- increasing the competitiveness of the industry through digital production and forecasting, thereby improving the living standards of the population;

- wide use of digital systems in the country, both in cities and in rural areas;

- ensuring scientific cooperation between public and private businesses, increasing the transparency of government and ministries, etc.

Unlike other digital systems in other developed countries, Japan's Community-5.0 strategy is aimed at improving the human factor, improving the quality and standard of living of the population, and preventing unemployment without reducing the competitiveness of national products.

As a result of the policy supporting digital systems in the country, the level of Internet access is also increasing.

Table 3. Japan Internet users in% of the total population [8, Knoema.ru]

Years	Indicators	Compared to the previous year,%
2017	90,9	-2,48%
2016	93,2	2,33%
2015	91,1	2,19%
2014	89,1	1,01%
2013	88,2	10,97%
2012	79,5	0,56%
2011	79,1	1,08%
2010	78,2	0,27%
2009	78,0	3,45%
2008	75,4	1,48%
2007	74,3	8,17%
2006	68,7	

Although the number of Internet users has declined in 2017 compared to 2016, we can see that in 2006-2016 this figure increased almost 1.5 times.

CONCLUSIONS AND SUGGESTIONS

Based on the experience of foreign countries in the development of digital systems, we conclude:

- each country has its own approach and orientation to digital systems based on their level of economic development and their competitive advantages;

- any innovative technology should serve the interests of the person. For this reason, such international indicators as the number of people using digital technologies, households with internet access, education of digital systems in education are essential.

Based on the experience of the studied foreign countries, we offer the following expertise of improving digital systems in Uzbekistan:

- The digitisation of the economy should begin with the education system. Based on the experience of South Korea, it is necessary to increase the expertise of teachers of schools and higher educational institutions on information technologies and to send them for retraining. Then it is essential to introduce the subject "Digital Systems" in the educational system aimed at increasing students' knowledge in information and communication systems. This course, in addition to teaching theory, should also give students the skills and abilities needed to create and apply new software technologies;

-It is necessary to develop a multistage long-term strategy "Digital-2050", aimed at digitisation of society in Uzbekistan, which is close to the "Team-5.0" of Japan. This strategy should include programs aimed at improving the digital literacy of the population, starting with the transition to high-quality Internet systems and the process of digitising industries and sectors of the economy;

- It is necessary to create in Uzbekistan a national rating system, which reflects the level of digitisation of the economy based on the experience of European countries. This rating system should include indicators of the level of internet access, the number of mobile users, and the number of online and offline modes.

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