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THE CONCEPT OF DIGITAL ECONOMY AND ITS IMPORTANCE

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Annotation. This article provides scientific, theoretical and practical information about the concept of the digital economy and its significance in modern society.

Keywords: digital economy, automatic production, smart technologies, mobile social networks, cloud technologies, sensor networks, Internet of things, automatic production, quality principles.

The digital economy is a new modern form of economic management, in which a large set of data in digital form and the process of processing them serve as the main factor of production and management. Using the results obtained in practice makes it possible to achieve much greater efficiency compared to traditional forms of management. Examples include various automated manufacturing processes, 3D technologies, cloud technologies, telemedicine services, production and delivery of products using smart technologies, and various processes for storing and selling goods.

What does the transition to a digital economy mean? - the question can be answered like this:

1. The transition to a digital economy means the creation of a new type of society and economy based on computers and knowledge;

2. The main components of the transition to a digital economy include mobile social networks, cloud technologies, sensor networks, the Internet of things and artificial intelligence technologies that work with data.

The above-mentioned technologies together make it possible to create "smart" objects and processes (smart state, smart home, smart city, healthcare, transport and entrepreneurship).

The digital economy manifests itself in:

1. This is the creation of new personnel and new jobs;
2. This is the creation of a new corporate culture;
3. This is the emergence of new methods of management and control;
4. It is big data and accurate;
5. This is in the formation of artificial intelligence and intelligent control systems;
6. This is the introduction of virtualization processes in education, production and management;
7. This is due to the large-scale use of the Internet of Things and distance learning (MOOCs);
8. This is the implementation of the blockchain and various processes carried out through it;

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9. This is the process of May and the emergence of the possibility of independent business;

10. This is a new monetary system and expansion of banking activities;

11. This is an implementation of the ICO (Initial Coin Offer) process, which allows you to attract large investments;

12. This is an independent currency and cryptocurrencies are put into practice;

13. This is due to the development of e-commerce and e-business and other great opportunities.

The following stages of development of digital technologies can be distinguished:

Stage:

1. Computerization and automation of processes (including ARM, ERP, EDI, SRM, CAD, automated control system, process control system, etc.);

2. Telecommunications – wired and wireless, optical.

Stage:

Online platforms (search engines, e-commerce sites, distance education, social networks)

Cloud and virtual technologies.

Stage:

Predictive analytics of big data, Internet of things, robotics, additive technologies (including 3D printers), artificial intelligence (including machine learning).

The main principles of the digital economy are the following:

1. Possibility of using global resources without intermediaries;
2. Possibility of renting various resources;
3. Possibility of using a volunteer model (open source model);
4. Possibility of trading through a global ecosystem.

The resources needed for the digital economy, e-business and e-commerce include the following:

1. Computing and communication infrastructure;
2. Various digital technologies;
3. Fast Internet system;
4. IP blocks;
5. Human resources trained in the digital economy;
6. Business models;
7. Intelligent online manufacturing;
8. Financial support;
9. Possibilities for organizing crowdsourcing and crowdfunding.

In a sense, the service business is becoming the “default” (unconditionally accepted) digital business. On the one hand, no company wants to repeat the fate of Kodak, which in the photography business once missed the transition from film to digital without realizing it. On the other hand, Amazon, Uber, Airbnb and others are showing how to harness the digital revolution and create and implement entirely new ways of doing business. Gone are the days when the Internet was seen first as an online storefront and then as an online magazine as an addition to an offline business. The arrival on the scene of new generations - young people “living” on the Internet, has led to online (“digital”) business. Humanity has entered an era of global change. Until

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recently, the main areas of human activity were economics and management, science and security, but now they are beginning to take on a new form and content. Humanity has become different, which leads to changes in social relations. One of the characteristics of the future world is that digital technologies will continue to permeate our lives. This is due to progress in the field of microelectronics, information technology and telecommunications. Thus, digitalization is an objective, inevitable process that cannot be stopped. One of the most serious risks accompanying digitalization is mass unemployment among mid- and low-skilled specialists. The middle class could shrink dramatically as these jobs become the first to be automated and replaced by intelligent robots. A significant part of the active, educated, able-bodied population, accustomed to a fairly high lifestyle, will fade into the background due to the Western lifestyle. However, the digital world is evolving so quickly that only accelerating the process of training highly qualified personnel can prevent their shortage. Therefore, those who are ready for change now have enough time for it.

In the long term, the “digital” (electronic) economy can become a tool capable of realizing the centuries-old dream of freedom for people doomed to hard physical labor. Many people have ample opportunities for creativity, science (both fundamental and applied) and art. The digital revolution will penetrate some industries and countries earlier and more strongly, while others later and to a lesser extent. Services, media and entertainment will come first, followed by telecommunications companies and banks. But according to the general opinion of analysts and the results of a survey of company executives, digitalization affects us all to one degree or another. Today we can identify every entity as belonging to this world, but after a certain period of time we will not be able to make such a distinction for most objects. Such examples already exist today: an IP camera or any other transmitter connected to a network - what universe is it part of? Undoubtedly, they form the essence of the events of both worlds. A mobile phone today stores a lot of information: phone numbers, birthday information, photos, passwords and other information. Even though we are not physically connected to the phone, we feel functionally one with it. It doesn’t take much courage to say that the merging of the real and virtual worlds has begun and cannot be stopped.

As a result of the merging of the real and virtual worlds, a new hybrid world is created, in which different laws and rules apply, different from those laws and rules that are common to us now. From this point of view, it is worth saying that there is no “digital” economy that exists separately from the rest of the economy: “Digital” (electronic) economy is an economy that exists in a hybrid world. A hybrid world is the result of combining the real and virtual worlds, characterized by the ability to perform all “vital” actions in the real world through the virtual world. Low cost, high efficiency and openness of the digital infrastructure are prerequisites for this process.

Digital business is the emergence of new business models that merge the physical and digital worlds. Schoolof Managementesa defines digital transformation as “the use of modern technologies to fundamentally increase the value and productivity of enterprises that will change the world in which they operate.” They will either have to fill gaps in the new market or adapt to change by modifying existing gaps. The process of digital transformation of organizations is a response to the development and active dissemination of new information technologies around the world. Reaching different

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levels of digital transformation, the difference between them lies in two terms - “digitalization” and “digitalization” are the same. meaning as the difference between . Digitization is the transfer of information from physical media to digital media. Examples of digital rendering are e-books, video courses, creating a digital copy of a photograph, etc. In this case, the structure of the information will not change: it will only have electronic form. Digitalization is often used to improve existing business models and optimize business processes. Digitalization is the creation of completely new products in digital form. For example, a dynamic learning course with multiplication or an interactive document interpretation system is digitization. It is impossible to transfer a product created on the basis of digitalization to technical means without a serious loss of its quality, therefore digitalization, unlike digitalization, allows a business to significantly accelerate development and gain new competitive advantages.

In practice, there are two directions of digital transformation. The first direction is automation and robotization of existing business processes in order to minimize human participation. The second direction is scaling the resulting management system in order to create an exponential organization. By being an exponential organization, we mean that due to scaling, they have at least ten times the productivity of other organizations working in the same field. It's no secret that regional and international expansion of companies is often hampered by the difficulty of replication. the control system on a global scale is coming to a standstill. Problems with limiting rapid growth are often caused by replication difficulties. An example of this is the process of changing the educational process from a business school limited by the size of the region, the size of the classrooms and the number of teachers, to the creation of a business of national or international scale. Digitalization of the educational process makes it possible to minimize costs and make educational courses open to an unlimited audience that understands the language spoken by the teacher (MOOCs - massive open online courses). One of the main conditions for creating an exponential organization is the ability to homogenize services. If a service is homogenized, then the system for managing the provision of these services can also be homogenized and in the future can be fully automated. Dumping at this price and minimal costs due to the digital interface for ordering services will ensure “explosive” business growth.

Digital transformation of a business process can be accomplished using BPMS (Business Process Management Suite) class systems. The second stage of digital transformation is the automation of individual operations. For example, customer trustworthiness is assessed automatically, similar to testing among participants in training courses. To automate operations, “digital robots” are often used, which make decisions independently based on mathematical algorithms or even artificial intelligence. We can say that the development of the digital economy and e-commerce is considered in three main segments:

- sector of suppliers and buyers of real goods and services;
- software and technology developers sector;
- infrastructure in the form of a regulatory framework, a personnel training system, all types of data transmission and storage channels.

Includes the following areas and technology segments:

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o Big data;
o artificial intelligence;
o blockchain;
o quantum technologies;
o production technology;
o industrial Internet;
o robotics;
o wireless communication;
o virtual reality.

Another innovative area related to digitalization is augmented reality (AR). Augmented reality technology, which allows you to add objects of the virtual world to the real one, is one of the most promising technologies. Imagine walking down the street and seeing more information about the people and objects around you. There are examples of augmented reality that are actively used in life. For example, in some parks in Moscow you can find signs indicating that an object in the material world is connected with an object in the virtual world. Games with augmented reality elements are actively spreading, virtual mirrors and dressing rooms have appeared in stores, and augmented reality is being tested in cars. In business, virtual reality technologies are not used so actively; now there is a stronger demand for 3D modeling technologies. Examples of creating digital 3D models of the real world are service enterprises, construction companies, manufacturers of complex technological products, oil production and other industries. Within the framework of 3D modeling, we can talk not only about building models of objects, but also about filling them with data, which, in turn, helps to optimize the process of making management decisions and, as a result, allows us to connect product design tools with the means of their production. At the same time, on the way to the mass introduction of virtual reality technologies, it will be necessary to ensure a further increase in the reality of the reflection of the virtual world in new generations of technology that provides more realistic human participation. in virtual reality. There is no doubt that the digital economy is closely related to robotics.

The participation of robots in human life has been discussed many times in science fiction, but now robots are quickly and directly entering our real lives. Robots that perform simple functions performed by humans in manufacturing can significantly reduce errors and increase work speed. It's no secret that many industrial companies actively use robotics on assembly lines and in logistics, which makes it possible to reduce the importance of the human factor and involve a minimum number of people in the work. Reducing the cost of industrial robots makes it possible to achieve economic efficiency from their use, and people can only monitor how the machines produce products automatically without human intervention. In Germany, the term 4.0.Industry even appeared, which involves the creation of fully automated production and logistics networks that interact within the production process. The combination of robotics, Internet of Things, artificial intelligence and 3D printing is now making it possible to build fully mechanized factories to produce products ranging from sneakers to cars. 3D printed construction is a technology that has the potential to revolutionize several industries and mechanical engineering. The creation of a large number of 3D printers capable of printing products from polymers, concrete, metal and even gold will also change the understanding of the production cycle itself, because many types of products can be

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manufactured without leaving home, only in three dimensions. . It will be possible to purchase a model and a 3D printer. Mechanical engineering has also actively participated in the development of 3D printing, where it is cheaper to print than to obtain parts in the "classical" way. Clothing and shoe designers also print their new items. Builders, jewelers, and medical professionals are also actively using 3D printing in their business processes. A printer has also been created that can print itself. And Chinese companies have begun to produce construction kits with which anyone can build a 3D printer at home. While there are still some questions in the technology's journey regarding printing complex products, it is highly likely that it will be possible to print products with complex components, given the characteristics of the sole of the foot. new sneakers can be printed. The main thing is that this can be done without leaving home.

Now let's talk about technology synergy. The use of innovative digital technologies in conjunction with other tools allows not only to change a particular business process, but also to completely reorganize the network, producing a product that did not yet exist. The most exciting thing about digital transformation is the changes that are happening and how all these technologies can be used together. From the point of view of the theory of synergetics, we can say that the social system is constantly changing, and random changes (fluctuations) of institutional forms are an indicator of disorder at the micro level of the system and the potential for its development. Some fluctuations are so strong that they determine the trajectory of future development and create qualitative changes. For example, the Internet of Things allows the integration of the virtual world with the real world, and artificial intelligence can form conclusions and decisions based on very large data sets obtained from the Internet of Things. Augmented and virtual reality makes a new world visible to the human eye. Robotics and 3D printing make it possible to fully automate many routine operations. It can be said that the emergence of many advanced technologies will radically change people's lives, eliminate a number of old professions and create new ones, and will undoubtedly turn the world into a digital world. This digitalization of the world will lead to great changes in all industries and, most importantly, many new companies will emerge as a result of this, and the companies that drive it will not only find a place in the wave of digital transformation, but will also become leaders. If all the problems have been solved and a center of competence for digital transformation has been created, it is necessary to begin to analyze the capabilities and needs of customers that new technologies will allow them to satisfy online. Then it is necessary to determine the prospects for standardization of internal business processes and services and formulate a plan for their digitalization. Digital transformation initiatives are often initiated by mid-sized companies whose shareholders want to take the company's business to the next level and enter new markets. Examples of Uzbek companies embarking on the path of digital transformation can be cited from the banking sector, telecommunications, education, services and information technology.

In many foreign countries, there is an ecosystem of startups (those who start a new business), within which new ideas arise, which, after testing, turn into successful commercial solutions. In the future, these technologies will either be acquired by large international companies for global reproduction, or will serve as the basis for the creation of new innovative world-class IT companies. Based on the above, I would like

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to conclude by making the following points. Firstly, digitalization is a reality that is happening everywhere. Examples of the emergence of a “everyone economy” through the creation of new digital ecosystems are now emerging across a variety of industries. The most developed companies are those in the media, retail and banking sectors. For example, retail stores create new product collections that suit our tastes by analyzing our social media engagement.

Bank account holders carry out transactions through solutions created by banks together with leading Internet companies. The digitalization process is also penetrating traditional industries such as oil and gas production. Currently, companies in the resource sector analyze digital information using unmanned aerial vehicles (drones) monitoring oil fields and use new tools for processing large amounts of data in the cloud to predict critical situations. Many large international oil and gas companies have already directed their capabilities not only to improving the quality and efficiency of production, but have also begun to implement the “Intelligent Mines” program, aimed at specific results in a particular production. Secondly, already now. Digitalization has a global scale – examples of “digital ecosystems” exist in various industries and companies. Year after year we are getting closer to the fact that our lives and activities are carried out within these systems. Thirdly, today there are serious changes in the economy that are significantly changing market relations between companies. Invasive things are moving all participants in the Internet market - from companies to consumers, products, services and other processes - into a common world. This is due to the emergence of new “digital ecosystems” that connect manufacturers, platforms and applications, device manufacturers and service providers. It is necessary to find yourself in a changing world and “make friends” with new partners. Companies must become an indispensable part of the ecosystem or create one themselves. Here we are not talking about finances and powers, but about trust between partners, joining forces and a new look at the services or goods offered. A number of countries (Switzerland, England, Israel, etc.) have expressed a desire to create their own virtual currencies using blockchain technology, issued and controlled by their respective central banks. On the one hand, the introduction of blockchain and other digital technologies will certainly increase the reliability of state virtual currencies; on the other hand, this approach contradicts the idea of cryptocurrencies and cannot completely resist them. In any case, all countries must prepare their financial system and economic system for the parallel circulation of several currencies, some of which are not regulated. This is a great incentive for the development of e-commerce and e-business.

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