

**DIGITAL ECONOMY AS AN INSTRUMENT OF GLOBALIZATION****Yaroslav Izmaylov**

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**Abstract.** The article is devoted to the analysis of the opportunities and prospects of digital economy as an instrument of globalization. The authors consider the impact of digital economy on investment and innovation development, export-import potential and international competitiveness of the country. In the context of the main directions of the global digital economy, the most favorable and perspective directions for the countries of the world are determined.

**Keywords:** digital economy, high technology, innovation, research and development

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**Introduction**

Globalization processes, digitalisation, the strengthening of international competition and integration into the international space place new challenges for the countries of the world, which need to be addressed effectively in the shortest possible time. Declaring the support of the principles of the concept of sustainable development, most countries, including Ukraine, strive for the formation of a system of social relations based on the principles of solidarity, freedom, partnership, environmental friendliness, trust, care for future generations, ethical and spiritual values. Under the constant influence of internal and external factors, the awareness of the role of the digital economy as an instrument of globalization, which determines the choice of priorities for the development of national economies, took place. The main ones are investment-innovation cooperation and digitalization of public relations at macro level (state) and micro-level (enterprises). After all, these priority areas actively stimulate the development of society. They contribute to increased productivity, economic growth, job creation and quality of life for citizens.

In the global and national capital markets, there are structural changes due to increased investment in a wide range of digital technologies, including software, internet games, e-commerce, storage technology for database arrays, etc. The digital economy creates new products, shapes new needs, and the speed and volume of information are increasing day by

day. The development of global and local digital markets creates favorable conditions for countries with a high level of education of the population. Therefore, each country finds digitization opportunities for access to global markets.

At the same time, changes in economic relations at the global level give rise to the need for the accumulation and effective use by individual countries of world experience in the new circumstances. In today's environment, for productive activities, each economic entity and countries in general need information about partners who are interested in establishing sustainable economic ties. Information and digital management of national economies and their individual entities is the basis for sustainable development. In order to increase the competitiveness of individual countries in the global environment on the basis of the digital economy, it is necessary to develop the institutional and infrastructural environment, high-tech branches of the economy and gradual harmonization of the legislative field of different countries of the world.

In view of this, there is a need for countries to find concerted opportunities to respond to new global challenges by choosing priorities for further development of countries on the basis of the rapid development of IT technologies. Therefore, timely and relevant consideration of issues related to clarification of the structural features, principles and main areas of development of the digital economy as an instrument of globalization.

**The purpose of the article** is to substantiate the possibilities, identify the features and directions of the development of the digital economy in individual countries as an instrument of globalization.

### **Information in the digital economy**

The World Bank's World Economic Outlook outlines the recent alarming slowdown in investment growth in emerging and emerging market countries. It is the share of these countries accounting for one third of world GDP, about 75% of the world's population and the poor world population. The growth of investments has decreased, on average, from 10% in 2010 to 3.4% in 2015. Another half percentage point was the reduction in 2016 (*Global Sourcing Advisory, 2016*).

The investment opportunities of global IT companies are growing faster than traditional TNCs, targeting the traditional sectors of the economy. The level of return on shares of such companies as Facebook, GOOGL, AMZN and EXPE in 2016 amounted to 19%. A positive trend has been formed in 2017 and 2018. Rapidly increasing revenues are Exchange Trade Funds - stock exchanges that invest in certain assets or groups of them. In fact, they have basic assets (stocks, bonds, commodity futures, foreign currency, etc.). As the change in the value of assets changes ETF price. Ideally, ETFs accurately reflect changes in the structure of an investment portfolio. The ETF Global Market is essentially controlled by three financial institutions: BlackRock (iShares), Vanguard, and State Street Global Advisors (SPDR ETF). As of mid-2016, these organizations accounted for 70% of the world's ETF assets.

One of the priority areas of the European Commission is the abolition of regulatory and other barriers for the creation of a Single Digital Market in the coming years. The implementation of this initiative will bring € 415 billion annually to the EU economy (amounting to € 14 trillion), as well as helping to create hundreds of thousands of new jobs (*Digital Community, 2016*).

According to the Academic Explanatory Dictionary of the Ukrainian language, information is a message about something; bringing to know; message about something;

information about any events, somebody's activities, etc (*Academic Explanatory Dictionary, 2018*).

Having analyzed the qualitative characteristics of information in the countries of the world (Table 1), it is possible to state that information is one of the most important investment and innovative resources that can create the most significant competitive advantages in terms of dynamism, variability and uncertainty of both internal and external environment.

Table 1

### Qualitative characteristics of information in countries of the world

Qualitative characteristics of information	The use of individual countries										
	USA	Ukraine	Belgium	Germany	France	Netherlands	Great Britain	Australia	Canada	Russia	Estonia
Intelligibility	+			+		+	+	+	+		
Reactivity	+	+		+		+	+	+	+		
Appropriateness		+		+		+	+	+	+		
Relevance	+					+	+	+			
Materiality	+						+	+	+		+
Certainty	+	+		+	+	+	+	+	+	+	
Neutrality	+					+	+		+		
Caution		+	+	+	+						+
Completeness		+					+		+	+	+
Comparability	+	+				+	+	+	+		
Timeliness	+					+		+	+	+	
Value of benefits and expenses	+			+				+		+	

Note: compiled by authors

Due to the qualitative information, it is possible to find reserves for improving the production process (provision of services) and the implementation of competitive products (services). Influencing the consciousness of society, information not only reflects, but also constructs social and economic reality. Information is a factor in globalization in the information society. Therefore, national strategies for the economic development of the countries of the world should be built taking into account the specifics and main trends of globalization processes. Their foundation is the concept of sustainable development.

Every country that wants to have strategic gains in the global world and to ensure the competitiveness of its economy on an innovative basis should draw attention to the creation of a digital economy. The basis of this economy will be the data in digital form, which will be a key factor in production in all spheres of socio-economic relations.

Relations between people, the state, business and foreign countries should acquire a new form and qualitatively modernize.

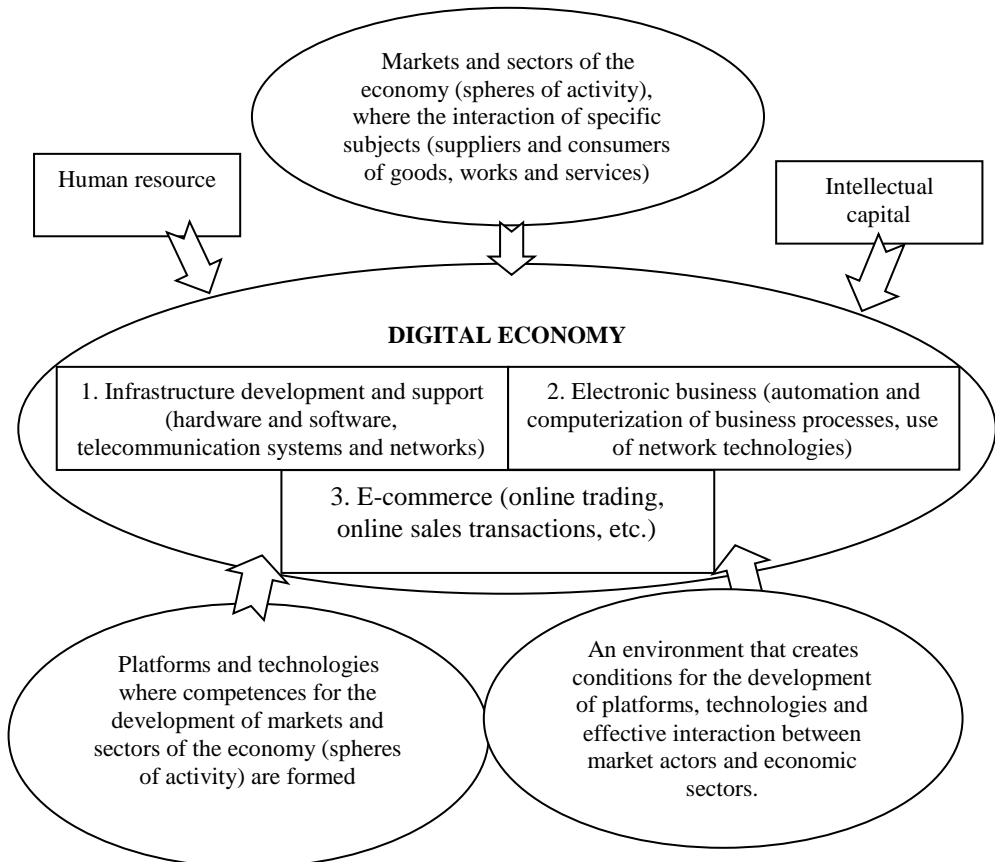
The steady movement towards a global information and digital society began with the adoption of the Law of Ukraine "On the Basic Principles of the Information Society Development in Ukraine for 2007-2015", which outlined the directions of the national policy of the development of the information society.

**The structure of the digital economy as an instrument of globalization**

According to Prime Minister of Ukraine V.B.Groisman (Groisman, 2018), digitalisation of economic relations, decentralized storage and protection of information will lead to the replacement of the classical functions of banks, notaries, state institutions, to eliminate corruption, to ensure the full transparency of all processes and to provide a huge competitive advantage to the country.

In contrast to the industrial economy, the digital economy forms a system of new economic relations, where it is possible to effectively solve socio-economic and global problems of the country, to produce and implement high-value high-value products with high added value and to create qualitatively new jobs.

The digital economy can be represented in the form of three interrelated levels (Figure 1), which, with effective interaction, positively affect the lives of citizens and society as a whole.



**Fig. 1. The structure of the digital economy as an instrument of globalization**

Note: compiled by authors

Inside the digital economy, there are three main parts:

- 1) Infrastructure development and support (hardware and software, telecommunication systems and networks);
- 2) electronic business (automation and computerization of business processes, use of network technologies);
- 3) e-commerce (online trading, online sales transaction, etc).

But for the effective functioning of the digital economy, driving forces such as human resources and intellectual capital are needed.

Major digital technologies include: large data; neurotechnology and artificial intelligence; distributed registry system; quantum technology; new production technologies; industrial internet; components of robotics and sensor; wireless technology; virtual and supplemented reality technologies.

In the process of scientific and technological progress, the development of the areas that underlie the basis for maintaining and improving the digital economy as an instrument of globalization (Table 2).

Table 2

**Characteristics of the priority directions of the development of the digital economy as an instrument of globalization**

Direction	Characteristic
The use of digital technologies	large data; neurotechnology and artificial intelligence; distributed registry system; quantum technology; new production technologies; industrial internet; components of robotics and sensor; wireless technology; technology of virtual reality
Wider introduction of information technology and telecommunications	the development of products that process the growing amount of information in a short period of time. In particular, fax machines, telephone switching devices, radars, communication satellites, servers, computers and the corresponding hardware peripherals, as well as software products, etc.
Computerization	development of technologies for automation of industrial production. In particular, robotics, machines and devices with numerical control, automated means of transport, which can significantly increase the flexibility of production and reduce the human impact on the technological process, etc.
Development of electronics	the development of electronic components (without opto-electronic components) such as integrated circuits, boards, liquid crystals and other similar components, through which the main functions are improved and developed, as well as miniaturized products, etc.
Development of optoelectronics	electron and ion beam technologies, laser technologies, etc. Technologies for the production of functional materials for electronics, laser and diagnostic equipment, optical scanners, optical CDs, solar panels, photocells, laser printers, etc.
The use of new materials	improvement and creation of the newest composite materials and the study of mechanical properties of complex structures and systems constructed on their basis
Use of aerospace technology	manufacture of the majority of military, civilian propellers, aircraft and spacecraft (without communication satellites), jet aircraft engines, flight simulators and autopilots
Improvement of armament	the development of military technology for the production of conventional weapons, missiles, bombs, mines, torpedoes, rocket launchers, etc.

Note: compiled by authors

In each of the directions, developed countries are looking for their niche, their specific direction of the digital economy, which will bring in future relative advantages over competing economies.

The growth of cybercrime in a "digitalisation" of socio-economic relations leads to the need for such an important direction in the development of the digital economy as information security. The latter is the state of protection of the individual, society and the state from internal and external information threats, in which the implementation of the constitutional rights and freedoms of man and citizen, decent quality and standard of living of citizens, sovereignty and sustainable socio-economic development of the country.

The development of global and local digital markets creates favorable conditions for countries with a high level of education of the population and the level of informatization of national economies.

Summarizing the experience of the development of "digital economies" in the world, it is proposed to build socio-economic relations of different countries on the principles of "digitalization", which are systematized and presented in Table 3. This will better realize the potential of each national economy in the global environment.

Table 3

### Principles of "digitization" of social and economic relations in the conditions of globalization

Principle	Characteristic
Providing every citizen equal access to services, information and knowledge provided on the basis of information and communication technologies	Implementation of this principle requires extraordinary consolidation efforts of politicians, authorities, business and the public, to remove barriers to expanding access to the global information environment and knowledge
"Digitalization" should be aimed at creating benefits (benefits) in various aspects of everyday life	Digital technologies, applied applications, etc. are tools for achieving the goals related to different spheres of human life and the country: improving the quality of healthcare, creating new jobs, developing entrepreneurship, agriculture, transport, environmental protection and management of natural resources, raising the culture, promoting poverty reduction, preventing disasters, etc.
"Digitization" is the mechanism (platform) of economic growth due to increased efficiency and increased productivity from the use of digital technologies	It is necessary to achieve the "digital" transformation of existing industries, spheres of activity, their new quality and properties.
"Digitalization" should contribute to the development of the information society, the media, "creative" environment and "creative" market	An important role is assigned to the creation, distribution and preservation of the content part, that is, the content in various languages and formats with due recognition of the rights of the authors. The information society requires freedom of the press and information, independence, pluralism and diversity of the media, freedom to seek, receive, transmit and use information to create, accumulate and disseminate knowledge.
"Digitalization" should be guided by international, European and regional cooperation in order to integrate into the European and world market of e-commerce and services, banking and stock activities, etc.	One of the top priorities for economic growth and integration with European and global systems is "digitalisation"

Principle	Characteristic
Standardization	Ensuring compliance with standards increases the competitive position of business entities by reducing the cost of production and product sales, ensuring compatibility, maintaining quality, creating prerequisites for increasing the country's GDP. The development and use of open, functionally compatible non-discriminatory standards is a basic component of the development and diffusion of digital technologies. The construction of business-oriented and open-market digital systems, only at "internal" standards, is unacceptable. E-commerce systems, stock markets and financial markets, etc., must comply with international standards
Trust and security when using information and communication technologies	Strengthening trust, including information security, cyber security, privacy protection of personal information, privacy, and rights of ICT users is a prerequisite for the simultaneous development and security of "digitalisation"
"Digitalization" should become the object of focus and integrated public administration	Public administration should focus on removing barriers to "digitalisation" of the country, correcting market failures, maintaining fair competition, attracting investment, developing a "digital" infrastructure and a "digital" economy in order to achieve national priorities.

Note: compiled by authors (*Digital Agenda, 2018*)

The development of "digital" socio-economic relations in national economies of the countries in the conditions of global cooperation is expedient to carry out in the following ways:

1. The development of e-government requires the integration of state registries with external databases. This will facilitate the expansion of the use of registers and databases of government agencies, electronic purchases, declarations, etc.

2. For the development of the "digital economy", the development of convenient, secure and affordable eID (eID) is needed through the introduction of e-services, e-commerce medicine, e-public services, e-banking. Implement transborder e-identification and authentication at a fast pace due to joining the Stork 2.0 project.

3. Development of open data (Open Data). Integration of public web portals of open country data into the central European open source portal [europeandataportal.eu](http://europeandataportal.eu) and [data.europa.eu](http://data.europa.eu). will give an opportunity to increase the openness, transparency and efficiency of public institutions with the justification of the ways of developing a "digital" open data industry.

Thus, for the effective development of the "digital economy" of countries in the conditions of globalization, the following measures are proposed:

- to develop a unified state strategy for the development of the digital economy;
- to simultaneously develop all components of the "digital economy";
- to form a broadband infrastructure, to stimulate consumers to use modern information services;
- to create a mechanism for motivating the development of intellectual and human potential;
- to develop public services in conjunction with the introduction of digital technologies;
- to provide access to the Internet of vulnerable segments of the population;
- to improve the coverage of the Internet through the creation and implementation of a plan for the development of broadband access, the elimination of areas of digital inequality;
- to promote popularization of information technologies and Internet services;



- to create favorable conditions for creative self-realization of talented youth, highly skilled specialists, scientists, engineers in order to prevent mass migration abroad;
- to improve the quality of specialists training in secondary and high school;
- to stimulate the development of e-commerce and e-services;
- to develop and implement modern Internet services in all spheres of social life;
- to ensure observance of rights to intellectual property objects in order to stimulate the creation of high-quality domestic media content (music, cinema);
- to create favorable conditions for the transfer of business entities to electronic interaction systems (electronic document management, customer relationship management systems, enterprise management systems);
- to modernize the main means of production through the transition to more modern digital and energy-efficient technologies;
- to develop and implement cloud computing technologies in order to virtualize the main business processes of enterprises;
- to actively use technologies Open Data, Big Data in order to increase the efficiency of economic activity;
- to implement modern IT technologies and services in various spheres of life (education, health care, security, environmental protection, housing and communal services, transport, etc.) in order to increase efficiency;
- digitization of the interaction of society, business and the state in order to prevent corruption, improve the quality of public service provision, ensure transparency and accountability of government activities.

### Conclusions

Thus, the formation of the information society implies the subordination of economic growth to qualitative parameters of social and economic development. After all, further progress will be determined not only by the production of goods, but by the increased use of information. The digital economy consists of three main parts, namely: infrastructure development and support; e-business and e-commerce. In order to maintain and improve the digital economy as an instrument of globalization, the following priority directions of its development have been proposed and characterized: the use of digital technologies; wider introduction of information technology and telecommunications; computerization; development of electronics and optoelectronics; application of new materials; use of aerospace technologies; improvement of armaments. It is recommended to build socio-economic relations of different countries on the principles of "digitalization". The ways of development of "digital" socio-economic relations in the national economies of countries in the conditions of global cooperation are outlined, among them: development of e-governance; introduction of cross-border e-identification and authentication; development of open data. Measures have been developed for the effective development of the "digital economy" of countries in the conditions of globalization.

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