

CONCEPTUAL FOUNDATIONS OF THE DIGITAL ECONOMY: THE ROLE OF INNOVATION IN FORMATION SYSTEMS

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Abstract. Digital information technologies are increasingly being developed and used in the modern world, becoming a key factor in shaping the global economic environment. The dynamic growth of the digital economy sector is accompanied by an increase in the number of users and processes. Thus, it can be argued that information and digital technologies are becoming a powerful state-of-the-art engine of all spheres of social and economic life, and the world's leading companies consider digitalization and informatization processes to be the driving force behind modern innovation development, growth of economic competitiveness, quality of life and social progress. First and foremost, the active development of digital information technologies is associated with the search by economic entities for new sources and means that would ensure stable and sustainable growth. The peculiarity of digitalization processes as drivers of economic development is their impact on the economic system through modifications in the processes of production, circulation, distribution and consumption, as well as ensuring their dynamic interaction. That is why it is advisable to study the conceptual characteristics of the digital economy sector, since the global digital network is not only a new way of doing business or technology, but also a qualitatively new form of economic relations which functions not separately but in an integrated manner, transforming all other traditional sectors and areas of economic activity and forming a fundamentally new international economic environment.

Keywords: digital economy, innovation, digitalization, digitalization, e-commerce, blockchain.

1. Digital economic transformation. One of the characteristic features of economic transformation in the context of globalization and the development of the information society is the revision of existing doctrines and the formation of modern concepts of decision-making. In this context, it is particularly important to build a digital economy that enables online financial and other services, thus fundamentally changing traditional views on various economic processes and relations in society.

The digitalization of society creates new opportunities for business entities that can be realized through the creation and implementation of innovations in the business sector and public administration. Innovations in management, production, or in the goods and services themselves are the main drivers of digital achievements in the activities of business entities and the mechanism for their transition to the digital economy. Innovation, like other types of economic activity, undergoes significant transformations in the context of digitalization, which are in the expansion of the types of innovative resources and actors.

The overall goal of the digitalized economy is to transform into a flexible and adapted to modern realities production, so that the country's competitiveness in the digital global space is enhanced and the expected benefits and results demanded by society are achieved. This means that the introduction of digital information platforms at different levels of economic systems will allow solving various strategic problems within the framework of the New Industrialization. The digitalized economy is growing on the basis of the information economy and is its continuation as an unprecedented technological breakthrough as a result of the achievements of the Fourth Industrial Revolution, where innovations, including digital ones, are spreading with nonlinear speed, depth and scale of penetration, and the power of influence on complexes and systems. Digital technologies contribute to the formation of new demands, requiring an immediate innovative response from national economies, previously created ecosystems, individual enterprises and society as a whole [1].

A comparative analysis of the definitions of the digital economy allows us to classify views on this concept based on the following features: a type of economy characterized by the introduction of digital technologies for collecting, storing, processing, transforming and transmitting in all areas of activity; a set of economic activities as a branch of the national economy for the production and trade of digital goods and services in the virtual environment; a complex combination of combination of various elements (technical, infrastructural, organizational, programmatic, regulatory, legislative), which is a complement to the real economy, focused on sustainable economic development. development.

In recent years, the concept of the e-economy has begun to go beyond commercial aspects. Today, this type of economic relations also includes the use of virtual processes within the framework of activities of large companies and corporations,

social spheres of life of the population of countries, as well as the implementation of these processes in internal work of government organizations, structures and departments.

When the most complex levels of digitalization are reached, the economy undergoes a fundamental transformation of the production relations of participants, which results in the integration of production and services into a single digital (cyber-physical) system in which:

- all elements of the economic system are present simultaneously in the form of physical objects, products and processes, as well as their digital copies (mathematical models);
- all physical objects, products and processes, due to the presence of a digital copy and the element of "connectivity", become part of an integrated IT system;
- due to the availability of digital copies (mathematical models) and being part of a single system, all elements of the economic system continuously interact with each other in a near real-time mode, model real processes and predicted states, and ensure continuous optimization of the entire system [2].

Classically, the transformation towards building a digital economy is driven by the domestic market for the production, use and consumption of information and communication technologies. At the same time, it is based mainly on the latter, whose rapid development and spread are already affecting the traditional (physical) economy, transforming it. Data itself is becoming a key resource; it is generated and ensures communication interaction through the functioning of digital tools and systems.

That is, digitalization is the saturation of the physical world with electronic and digital devices, tools, systems and the establishment of electronic communication exchange between them, which actually makes it possible to integrate the virtual and physical, i.e., to create a cyber-physical space.

The digital economy is a system of social, cultural, economic and technological relations between the state, business and citizens operating in the global information space, through the widespread use of network technologies, generating digital types and forms of production and promotion of products and services to consumers, leading to continuous innovative changes in management methods and technologies to improve the efficiency of socio-economic processes.

The development of the digital economy has led to a digital transformation of all aspects of human activity.

Digital technologies are both a powerful market and industry, as well as a kind of integration platform that ensures the interaction and competitiveness of all other markets and industries. High-tech production, innovation, and modernization of industrial sectors based on information, communication, and digital technologies, as

well as the dynamics of digital transformation should be a priority solution for Ukraine to achieve sustainable economic growth and development [3].

The digitalization of Ukraine's economy should aim to achieve the following goals:

- accelerating economic growth and attracting investment;
- transformation of economic sectors into competitive and efficient ones;
- technological and digital modernization of industry and creation of high-tech industries;
- making the benefits and opportunities of the digital world available to citizens;
- realization of human resources, development of digital industries and digital entrepreneurship [4].

In accordance with the above goals and the Concept for the Development of the Digital Economy and Society of Ukraine until 2025 and its significance, the following main tasks currently facing society can be identified:

- formation and development of digital skills and digital competencies in society that will contribute to the development of the digital economy and society, as well as the development of e-democracy and human capital;
- ensuring legal regulation on the formation of state policy in the field of development of digital skills and digital competencies of citizens;
- development of comprehensive amendments to the legislation that will ensure the definition of digital education, digital skills and digital competencies in the spheres of public life;
- defining a system and description of the components of digital competence (digital competence framework), as well as requirements for the level of digital skills and digital competencies of different categories of employees, in particular in professional standards;
- ensuring coordination of actions at the level of executive authorities on the development of digital skills and digital competencies;
- creating indicators for monitoring the state of development of digital skills and digital competencies;
- raising public awareness of the dangers of the Internet [5].

Digital competence framework. The system and description of the components of digital competence are determined by:

- development and approval of a description of digital competence that defines key concepts, the structure of digital competence by areas, the scope of knowledge, skills and practical skills of citizens, levels of digital competence and can be used to recognize, plan, form, develop and improve the digital competence of citizens and employees of the main professional groups in various fields of economic activity (digital competence framework);

- introducing requirements for the levels of professional digital competencies when hiring personnel, performing professional and official duties, conducting certification, attestation, etc.;

- development of a framework of professional digital competencies for the main professional groups by economic activity and guidelines for their application.

Indicators for monitoring the state of development of digital skills and digital competencies are created by:

- developing a methodology for conducting research on the development of digital skills and digital competencies;

- conducting research on the level of digital literacy of various population groups, including school leavers and students of educational institutions, teachers, and civil servants;

- forecasting the needs of employers for certain digital skills of employees of the main professional groups [6].

Formation and implementation of the state policy in the field of development of digital skills and digital competencies of citizens will have an impact on the key interests of citizens, business entities, and executive authorities.

The implementation of this Concept will allow to:

- accelerate the digital transformation process in Ukraine;
- significantly increase the level of digital skills and digital competencies in society, as well as the level of competitiveness of the state and the quality of human capital

- increase the competitiveness of employees by mastering new digital skills and digital competencies;

- increase the level of access to public services for the elderly, people with disabilities, low-income families, and other vulnerable groups;

- significantly reduce the risks of dangers while using the Internet;

- introduce legal regulation on the formation of state policy in the field of development of digital skills and digital competencies of citizens;

- to develop comprehensive amendments to the legislation that will ensure the definition of digital education, digital skills and digital competencies in the spheres of public life;

- define a system and description of the components of digital competence (digital competence framework), as well as requirements for the level of digital skills and digital competencies of different categories of employees, in particular in professional standards;

- ensure coordination of actions at the level of executive authorities on the development of digital skills and digital competencies;

- create indicators for monitoring the state of development of digital skills and digital competencies [7].

The implementation of this Concept will have a positive impact on ensuring legal regulation aimed at developing digital skills and digital competencies, defining directions and main tasks in this area, increasing the level of digital literacy of the population, increasing the efficiency of the use of digital technologies and electronic services, increasing the level of security of citizens in the digital environment and accelerating the processes of digital transformation in the economy and society of Ukraine, which will contribute to the development of the digital economy and competitiveness.

In general, it should be added that the innovation environment is a set of framework conditions created by the functioning of innovation-active organizations that are its elements. The development of the innovation environment creates preconditions for the effective implementation of innovation activities. The activation of innovation potential and integration into the processes leading to the formation and development of a new innovation environment contains reserves for increasing the efficiency and effectiveness of even the most conservative organizations, since as actors in the innovation environment of the digital society, economic agents are able to generate and diffuse innovations and manifest them in various forms [8].

At the same time, it is worth paying attention to the obstacles that arise when implementing the digital economy in modern society.

The initial lack of a unified definition of the digital economy has led to a lack of understanding of what criteria to use to evaluate it, which of the existing methods are correct, and which data sources to use. As a result of these processes, together with the rapid development of the digital economy, countries have faced taxation problems, as it is not clear what to tax and under what rules or legislation. Since taxes are the main source of revenue for each country's budget, tax policy issues are critical given the pace of the digital revolution [9].

The BEPS Action Plan, created by the OECD in 2015, which is an international tax rule aimed at strengthening the tax base, is obviously not capable of fully assessing new innovative technologies, business models, blockchain and other results of the digital economy. The EU, LuxLeaks, Panama Papers, and Paradise Papers investigations have revealed a huge number of large-scale tax evasion schemes, creating a public outcry, thus contributing to the search for a fair and unified way to collect taxes on a global scale.

As a result, the recently expanded BEPS (Inclusive Framework on BEPS) has published for consideration a program aimed at addressing issues related to the taxation of the digital economy. The program includes two components: "Unified Approach and Global Anti-Base Erosion Proposal (GloBE) [10].

The essence of the Unified Approach is the rules for the distribution of tax rights between jurisdictions, as well as the creation of a new procedure for the fair distribution of profits. Prior to the digital economy, non-resident companies paid taxes to a country if they had a permanent establishment in that country. The digital economy has completely destroyed this rule, as companies can cooperate with other jurisdictions without a physical presence using Internet technologies. This practice is especially relevant for world-famous companies such as Google, Apple, Facebook, the so-called large digital businesses, as they can sell their services worldwide without having physical representative offices.

To solve this problem, the "unified approach" provides three possible options for the distribution of taxable profits. These methods are:

- modified method of distribution of residual profit;
- the proportional share distribution method;
- distribution of profits based on marketing and distribution activities [11].

Each of the approaches is universal, regardless of whether the company has a physical representative office in the country or not, i.e., in fact, part of the profit will be taxed in the country where the service was provided to the consumer.

The "Global Proposal to Combat Base Erosion" is aimed at developing rules to address the current risks of using structures that will ultimately allow companies to migrate their profits to jurisdictions with no or very low taxation.

The main goal of this component is to establish a minimum tax rate for multinational businesses by coordinating tax policy at the level of the global economic space [12].

In fact, if the company's income is subject to taxation in a certain jurisdiction where the tax rate is lower than the minimum globally established rate, then this income will be subject to taxation in another country, or there will be certain restrictions on payments made to related parties. First and foremost, both components of the program should be implemented for countries with no or very low levels of profit taxation. The components are also peculiar in that they complement the BEPS Action Plan rather than exclude it. The key is to ensure that the taxation proposed by the program is relevant at the present time, while remaining relevant in the future, regardless of the pace of development of the digital economy.

Currently, there are several factors that could potentially threaten the development of the digital economy, so it is necessary to take timely measures to combat them. First of all, this factor is the so-called "brain drain", as this phenomenon leads to a reduction in the number of competent labor force capable of promoting and controlling digitalization, as a result, the labor force without the necessary skills to work in the digital economy will be depreciated [13].

The next factor is that the usual governing bodies will lose their authority, as globalization is the driver of the development and functioning of the knowledge economy, and business entities that stay away from digital technologies will lose their competitiveness. An equally important factor is that global digital platforms and players dominate the global economic space, dictating their own rules and directions of development, thereby widening the gap between countries involved in the digital economy and those not.

The successful functioning and development of the digital economy in any country is impossible without:

- improving access to mobile Internet, its quality and availability for the entire population;
- strengthening the institutional environment and developing special digital rules;
- promoting investment in digital enterprises, digital R&D, training of the digital workforce, and the use of digital applications to create new jobs;
- take measures to reduce inequalities in free access to the Internet and digital tools across racial, gender, class, ethnic, or geographic boundaries [14].

The problem of legal regulation within the digital economy is no less important than the problem of its definition and measurement. Since any activity must be regulated by law, within the knowledge economy, the main areas requiring legal support are

- production - this includes the so-called Lean Production, i.e. "lean manufacturing", through the use of automated data collection, processing and analysis technologies; application of innovative project management methods; use of blockchain technologies to optimize and automate management chains and document flow;
- finance - through the introduction of electronic payments, the use of cryptocurrencies and the initial public offering of tokens;
- e-commerce - through the use of "big data" technologies for advertising goods and services; activities of so-called aggregators in each area of trade (aggregators include, for example, Aliexpress, Amazon, Uber, Airbnb, etc.) [15].

The accelerated pace of development of the digital economy, its tools and technologies creates the problem of their legislative regulation. State legislatures need to develop and adopt reliable and comprehensive draft laws that would regulate the areas of digital economy.

The frantic pace of digitalization of the economy creates not only new areas of development, but also problems and threats for both national economies and the entire population. In January 2020, the United Nations identified the "four horsemen" that are dangerous in the future and may pose threats to every aspect of life. That's why the

organization believes that four solutions need to be created to avoid these threats. The "four horsemen", as defined by the UN, are:

1. Conflicts, wars and confrontations, including terrorist attacks and the consequences of the use of nuclear weapons.

2. Global warming and large-scale extinction of some species of flora and fauna.

3. Growing global distrust, inequality, lack of freedom and discrimination on any grounds.

4. The "dark side" of the digital revolution. The UN notes that in order to combat the negative effects of the accelerated development of digitalization, it is necessary to act in various directions, including:

- 1) the labor market, as automation will make tens of millions of people unemployed in the future;

- 2) education, as people do not have time to react and adapt to the frantic pace of technology and scientific achievements, which is why it is necessary to make changes to educational programs to teach people to quickly understand new tools, get used to their use and the constant emergence of new ones;

- 3) combating cybercrime, as, unfortunately, new opportunities and technologies are not always used only in a positive way, it is expected that in the absence of measures taken, the amount of fake information will increase significantly in the future, which can provoke crimes, theft, fraud of people via the Internet or using digital technologies [16].

For a comprehensive understanding of the threats and negative impacts of digitalization, each of the main areas affected by the knowledge economy should be considered and then compared with the key opportunities and positive aspects of the digital economy to draw balanced conclusions. It is worth highlighting the negative factors of digitalization:

- macroeconomic threats;
- deepening tensions between states over technological dominance;
- cybercrime and cyberattacks;
- digital divide;
- "digital dictatorship";
- unemployment.

It is believed that the digital economy may pose macroeconomic threats, because despite the expected increase in productivity, reduction of inequality, and optimization of governance within the global economic space, the world is currently experiencing the exact opposite trend. The reasons for these phenomena are the lack of sufficient digital skills, the backwardness of education systems from the latest technologies, resulting in a decrease in the number of registered patents; distrust and lack of desire

to invest in digital economy technologies; global aging of nations, as it is much more difficult for older people to master the use of digital tools.

However, the digital economy also has a negative impact on the younger generation, as it can lead to the loss of acquired socialization and social life skills, a fact that is called digital autism, which means a lack of critical thinking and perception of the environment not as an integral interconnected system but as separate independent phenomena.

Macroeconomic indicators are interconnected with the level of economic development, and the above-mentioned threats to the digital economy are causing a slowdown in economic development. This trend is confirmed by an international study by the well-known PwC company. PricewaterhouseCoopers conducts an annual survey "Survey among CEOs of the world's largest companies", according to the results of the twenty-third survey, 53% of all respondents said they predict a slowdown in economic growth [17].

This is the first time in the last few years that the company has received such a high score, as in 2019 only 29% of respondents said so, and in 2018 only 5% voiced their pessimistic outlook. While 42% of respondents voiced positive forecasts of economic development in 2019, this figure halved to 22% in 2021. The most pessimistic responses came from companies in North America (63%), Western Europe (59%), and the Middle East (57%). The survey was conducted among 1,581 people from 83 countries, and the results were presented at the World Economic Forum in Davos.

Another negative consequence of the digital economy is the deepening tension between states over technological dominance. A vivid confirmation of this is the trade war between the two world giants, China and the United States, which began in 2018 due to the development of Chinese technologies and their active competition with American ones. In fact, this "war" is a covert struggle between the two countries for dominance in the technology sector, and trade has become just a tool in this confrontation. It can be argued that in the future, world leadership will belong to the country that will have developed the latest economic sectors and technologies [18].

This is evidenced by a study by AXA Investment Managers, which estimated the consequences of a trade war in the form of sanctions (mainly targeting high-tech elements of production) at more than USD 250 billion in early 2022.

One of the most favorable technologies for the development of the digital economy, namely the 5G mobile connection, has caused a flurry of incomprehensible steps in different countries of the world, with different levels of economic development. The reason for this is that the leader in the supply of 5G is the Chinese company Huawei, which, if it establishes a monopoly status over this technology, according to economists, will make a profit of 23 trillion US dollars by 2025. Of course,

this fact was unacceptable to the United States, which was the developer of 4G technology. As a result, the US-initiated campaign to counter Huawei's 5G has gained significant momentum around the world.

Many countries have joined the initiative: Switzerland, known as the leader among countries in the implementation of mobile Internet connection technologies, imposed an indefinite moratorium on the use of 5G; the population of the United Kingdom launched massive actions of setting fire to 5G towers, arguing that they are the spreaders of coronavirus; the population of Ukraine began collecting signatures for a petition to the President to ban the 5G network in the country due to the unproven fact that there is no negative impact of the technology on human health, the required 25 thousand signatures were collected in a few hours, and the petition was considered with an order to conduct the necessary thorough research [19].

As you can see, the confrontation between the two world leaders for dominance in the world of technology has a negative impact on other countries, slowing down their adoption of digital technologies due to the political factor. Another important problem that has already been mentioned in this section is cybercrime and cyberattacks. According to statistics, the number of cybercrimes has increased tenfold in recent years, most often occurring in the financial and credit industry, but in the future this reality may cover almost all sectors of the economy. The main feature of cybercrime is that it is transforming and improving every day, along with digital technologies, and this, accordingly, makes it much more difficult to combat this phenomenon.

At this stage, the most common cyberattacks are related to cryptocurrencies and blockchain technologies. A deep problem is the so-called digital inequality, or digital divide, or polarization. Digital inequality has emerged on the basis of other inequalities, while deepening pre-existing inequalities in countries around the world. The consequences of digital inequality are fewer opportunities for the population, poorer quality of education and healthcare, and a lower quality of life in general [20].

It is obvious that highly developed countries benefit most from the digital economy, as they have greater access to many opportunities there, and as a result, this deepens the already existing significant gap with developing and third world countries that do not have the same resources to develop the knowledge economy.

Another issue of serious concern to the world's population is the possibility of a "digital dictatorship," which means the ability to monitor every step, purchase, and action of a person using digital technologies. It all started in 2016, when the news about the introduction of a digital dictatorship in China to fight corruption in the country and restore public trust stirred up online resources. The country launched a social rating system created using digital technologies and tied to a person's passport data. Each citizen has their own trust rating, with benefits for people with high ratings (e.g., social and economic benefits in the form of simplified administrative procedures and social

guarantees) and sanctions for people with low ratings (e.g., denial of social benefits, restrictions on the purchase of real estate, slower Internet speeds, and a ban on working in public administration) [21].

Another important problem arising from the development of the knowledge economy is unemployment, which is a very controversial issue. However, according to currently available research, the digital economy does not contribute to an increase in employment by creating new jobs in established companies, as well as in traditional sectors of the economy, creating them exclusively in companies related to the research and development of the latest technologies.

Statistical studies predict that no more than 5% of professions will lose their jobs in the future, and only in some sectors of the economy. In addition, new jobs are expected to be created in traditional sectors of the economy with low wages. The reduction in unemployment due to the development of the knowledge economy is mainly the result of automation and the replacement of people with robots and artificial intelligence [22].

Thus, when considering the innovation environment from the perspective of a systemic approach, one should take into account both its internal structure and its belonging to higher-order systems. Thus, the innovation environment as an ecosystem is an element of the structure of the mesoeconomic level, which in turn is a subsystem of the national innovation system.

The content of the innovation environment as such, where business entities interact with resources and subjects of innovation activity, is changing. In the previous phases of socio-economic development, this interaction took place within the internal environment of the business entity, since the resources available to the entity itself were sufficient to create effective innovations. But the development of the digital economy requires the use of resources that the entity does not have. The innovation environment of the digital economy should include external resources and external entities, as it becomes external to the business entity.

The most important function of the innovation environment of the digital economy is to provide access to information types of resources for innovation. The digital transformation of innovation leads to an increase in the need for external information resources for innovation and interaction with other business entities. An innovative environment that provides access to information types and resources of innovation in the context of digitalization will be conducive to the creation of effective innovations and the development of the digital economy [23].

Developed countries are characterized by the penetration of digitalization into all spheres of life, and the spread of technology at the global level is leading to a decrease in the share of the traditional economy alongside the digital economy. Despite the ambiguity in the interpretation of the digital economy, as well as the lack of a

universally recognized indicator of the digital society, it is still advisable to take into account a set of digitalization indicators at the national level to assess its impact on the development of the national economy. According to foreign experience, various means of digitalizing the economy are not only able to directly ensure economic growth, but also create a synergistic effect due to numerous externalities that extend to the economic, social, technological, intellectual and infrastructure components of development.

Digital transformation means the integration of digital technologies into all areas of business, and the annual update of the digital potential of corporate development requires timely response and adaptation of business processes through appropriate technological transformations. Ignoring global changes can lead to the loss of changes can lead to the loss of the company's market leadership and the outflow of customers who will give an innovative approach to meeting their own needs. To successfully implement your project in the era of digital transformation, it is important to gain digital experience by building your own online space.

Today, digitalization is developing rapidly, and by 2030 its share in GDP in the world's largest countries will reach 50-60%. Ukraine is not an exemplary innovator and "adopter" of digital innovations compared to other countries, but it is expected that in the near future it will be able to compete with the leading countries in the near future.

The favorable innovation environment of the digital economy is formed by developing the most important types of information resources of innovation and creating conditions for access to them. The formation of the innovation environment of the digital economy consists in the development of the most important types of information resources of innovation activity, as a result of which the list of resources and entities available to business entities is expanding [24].

That is, the innovation environment includes the capabilities of the existing environment and ensures the availability of digitalization achievements for their use in innovation. A key element of this process is a business entity that interacts with resources and entities of innovation in the external environment.

Currently, it is actually recognized that a new innovative macro-environment of relations between economic agents is being formed in the modern market economy, based on the detailed coordination of various actions for mutual benefit. In this context, specific interactions between economic agents arise, which are called concordant, integrative or coordinated interactions. In such interactions, agents cooperate on mutually beneficial terms, creating additional competitive advantages for participants in the innovation process. This necessitates a scientific analysis of the processes of interaction of economic agents in the innovation environment to develop an effective model of stimulating their interaction by state institutions, adequate to the needs and

capabilities of economic agents, as well as the interests of consumers of the products of the participants in the interaction [25].

At the same time, there is an increased direct and indirect presence of the state in the economy in the person of state-owned companies and state corporations, as well as the constant interactions of suppliers associated with them, a high share of public procurement worsen the competitiveness of the innovation environment, complicating the implementation of "open innovation" models and the optimal restructuring of value creation in favor of new innovative projects.

The formation of the innovation environment in the context of the new technological order reveals the appropriate priority of implementing measures that promote the formation of network structures with the participation of innovation-active actors, which is characterized by factor analysis and the use of the results of grouping and ranking of factors (educational process; financing; entrepreneurial activity; regulatory, economic, innovative, institutional, political factors) that determine the parameters of the development of the innovation environment in the context of digital transformation.

At the same time, the study of the problem of modifying the innovation environment in the context of digital transformation allows us to consider network development as a chain of co-creation of values by participants in the innovation environment, characterized by the allocation of several levels of innovation production (basic (HEI), sectoral (education, research and development), regional, national, global), which reveals the features (lack of dominance characteristic of hierarchical structures; coherence of interests; compliance with the requirements of the digital economy) and prospects for strategic partnership of innovation entities [26].

Conclusion. Summarizing the above, it should be noted that the innovation environment of the new economy is impossible without information interactions of a significantly larger number of market participants than in the traditional economy. A feature of innovations in the new economy is the previously unavailable speed of market evaluation of ideas as a result of the spread of market procedures at an early stage of formation of the concept of innovation.

An important source of added value is the application of knowledge not just to raw materials, equipment or labor resources, but the application of knowledge to knowledge, information and intellectual capital. Obviously, in the new economy, basic and applied sciences, knowledge, and education will be a more important potential source of added value than they were in the twentieth century. Underestimating science and technology as a unique factor of production, along with such factors of production as land, labor and capital, is tantamount to ignoring the "knowledge-based economy," a resource that is a strategic factor for development and prosperity in the twenty-first century.

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