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DIGITAL SOCIETY: NEW CHALLENGES FOR EDUCATION

ЦИФРОВОЕ ОБЩЕСТВО: НОВЫЕ ВЫЗОВЫ ДЛЯ ОБРАЗОВАНИЯ

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RESUMO

O mundo entrou em uma nova fase de desenvolvimento - a era da sociedade digital. Sob a influência de uma nova rodada de progresso tecnológico, os mecanismos e práticas da ordem mundial assim como equipamentos e tecnologias estão mudando. Atualmente, a gama de inovações não se limita a uma ou duas indústrias; as mudanças abrangem quase tudo - setores de telecomunicações, informação e comunicação, nanotecnologia, espaço, bioengenharia, robótica, etc. O objetivo da pesquisa é estudar os processos de mudança do paradigma do desenvolvimento social sob a influência da formação de uma sociedade digital. O artigo analisa o conceito de "sociedade digital", mostra como as ferramentas da economia digital são usadas para justificar uma mudança de paradigma no desenvolvimento social da geração moderna. A metodologia de pesquisa é baseada em uma abordagem funcional sistemática e estrutural. A pesquisa é composta por métodos gerais de pesquisa científica que incluem análise, síntese, abstração, métodos de análise sistêmica, complexa, lógica, estrutural, comparativa e estatística. Como resultado da análise, são formuladas abordagens para a definição de economia digital, apresentadas as etapas do desenvolvimento da sociedade digital, identificadas as trajetórias de mudanças tecnológicas na era digital e formulados problemas que inibem o processo de digitalização.

Palavras-chave: *sociedade digital, economia digital, digitalização, tecnologias digitais, prioridades nacionais, educação.*

ABSTRACT

The world has entered a new phase of development – the era of digital society. Under the influence of a new round of technological progress, the mechanisms and practices of the world order, as well as equipment and technologies, are changing. The range of innovations today is not limited to one or two industries; changes cover almost everything – telecommunications, information and communication sectors, nanotechnology, space, bioengineering, robotics, etc. The research aims to study the processes of changing the paradigm of social development under the influence of the formation of a digital society. The article analyzes the concept of "digital society," shows how the tools of the digital economy are used to justify a paradigm shift in social development for the modern generation. The research methodology is based on a systematic and structural-functional approach. Also, methods of sociological survey and statistical processing of information were used. As a result of the analysis, plans to the definition of the digital economy are formulated, the stages of development of digital society are presented, the trajectories of technological changes in the digital era are identified, and problems that inhibit the digitalization process are formulated.

Keywords: *digital society, digital economy, digitalization, national priorities, education.*

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АННОТАЦИЯ

Мир вступил в новую фазу своего развития – эпоху цифрового общества. Под воздействием нового витка технологического прогресса меняются механизмы и порядки мироустройства, техника и технологии. Спектр нововведений сегодня не ограничивается одной или двумя отраслями, изменения охватывают практически всё что нас окружает – это отрасли телекоммуникации, информатизации и связи, нанотехнологии, космос, биоинженерия, робототехника и многое-многое другое. Целью работы является исследование процессов изменения парадигмы общественного развития под воздействием становления цифрового общества. В статье анализируется понятие "цифровое общество", показано, как используются инструменты цифровой экономики для обоснования смены парадигмы общественного развития для современного поколения. Методология исследования построена на системном и структурно-функциональном подходе. Кроме того, были использованы методы социологического опроса и статистической обработки информации. В результате анализа сформулированы подходы к определению цифровой экономики, представлены этапы развития цифрового общества, определены траектории технологических изменений в цифровую эпоху и сформулированы проблемы, препятствующие процессу цифровизации.

Ключевые слова: *цифровое общество, цифровая экономика, цифровизация, национальные приоритеты, образование.*

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1. INTRODUCTION:

The world is witnessing not just quantitative changes in the sectoral nature of economic management. In essence, there is an exponential increase in the technological, engineering, and product range, and all this is occurring in the context of ongoing globalization and an open policy of national institutions. At the same time, the subsequent gigantomania of large corporations takes place – the volume of their capital increases at a rapid pace; as a result, state institutions are leveled more and more (Abdrakhmanova *et al*., 2019; Maximov *et al*., 2019).

An essential feature of modern transformation is the period of its passing (Biserova and Shagivaleeva, 2019). If the previous ups of social and technological development spanned an extended period, for the whole of humanity (not for individual countries), continuing for centuries, then the modern technological breakthrough is a momentous change that has already occurred over a decade. The planet has not yet known in its history such an increase in scientific knowledge and its applied use (Magsumov, 2014, 2019).

For Russia, this situation is a new challenge. An economically, socially, technologically weakened state that has not recovered from the crisis events of the 1990s – early 2000s, today must accomplish the impossible – to become one of the leading countries in the race for the “digit.” The new qualitative growth of the state or its further decline depends on this. In this regard, the presented research will aim to study the processes of changing the paradigm of social development under the influence of the formation of a digital society.

2. LITERATURE REVIEW:

The widespread dissemination of research in the sphere of the digital economy has begun relatively recently. This is explained by many reasons, among which the timing of the beginning of the digital era and the unpreparedness of researchers for the processes that occur today are essential. Despite this, in the literature, there is a relatively large layer of research devoted to the problems of changing the paradigm of social development.

The modern world has come to a new stage in its development – the period of digitalization. The content of the world economy is changing; the living conditions of every person on the planet are changing (Saenko *et al*., 2019). New technologies will absorb old ones; new professions will sweep away the old and unclaimed. Gandini’s book “The reputation economy: Understanding knowledge work in a digital society” (Gandini, 2016) shows that digital technologies are not only mediators of production and organizational processes, opening up new paths to satisfy supply and demand, but they actually contribute to the spread of cultural concepts of labor and values that promise to become the new industry standard.

According to Ilie (2019), computer society is a new stage in human civilization, a new way of life of the highest quality, which involves the

intensive use of information in all spheres of human activity and existence, which has a severe economic and social impact. Information society provides its members with broad access to information, a new way of working, and knowledge, which increases the likelihood of economic globalization and increases social cohesion (Jarrah, 2019; Sycheva *et al*., 2019; Tarman, 2016). Technological support for the new society consists of the convergence of three sectors: information technology, communication technology, digital content production. Technological advances have allowed the emergence of new multimedia services and applications that combine sound, image, and text and use all means of communication (telephone, fax, television, and computers). The development of these new means of communication and information technology is an important factor in increasing the competitiveness of economic agents, opening up new prospects for better organization of work and creating new jobs (Yamova *et al*., 2019; Fedulova *et al*., 2019; Nikolaichuk *et al*., 2017). At the same time, new prospects are emerging for the modernization of public services, healthcare, environmental management, and new ways of communication between public administration institutions and citizens. Broad access to education and culture – for all social categories, regardless of age or geographical location – can also be achieved with the help of new technologies. Some scholars (Low *et al*., 2019) generally understand the digital economy as a living creature. They propose a multi-level analysis to study efforts aimed at creating a rational living society by examining the structure of the technology of environmental organizations.

At the same time, it should be noted that not all scholars accept the concept of the new digital era, and some of them criticize the conceptual apparatus that is used in science. In “Digital economy: Beautiful, but imaginary, concept” Astafyev and Sokolov (Astafyev & Sokolov, 2020; Ipatov *et al*., 2019) give their vision of digital economy and digitalization processes, and offer applied tools for researching these processes.

The problems of providing resources for the new economy are of particular interest in the academic community. Digilina and Lebedeva (2020) suggest that the role of economic resources is changing significantly. In industrial societies, the driver of economic development is predominantly human (labor) resources and financial resources, but knowledge and people are the drivers of economic progress in the digital economy. The transition to new conditions is a labor-intensive, complex, and significant process that ensures sustainable development and stimulates the competitiveness of economic entities. Technological resources are critical to the digital economy; besides, the identification and formulation of requirements that are necessary for the transition from an industrial society are of particular importance.

Many researchers (Malakhova *et al*., 2018; Popkova & Gulzat, 2020) reflect on the implications of the digital era; others argue over its legal nature (Krönke, 2019; Tarakanov *et al*., 2019; Solovykh *et al*., 2019).

A significant number of researchers attempt to conduct a comparative analysis of the process of digitalization by countries. Benčič *et al*., using developed and developing countries as leaders in their categories and occupying middle and peripheral positions, consider integrated indicators of digital competitiveness, which are highlighted and calculated by IMD as of 2018 (Benčič *et al*., 2020). The research methodology includes an analysis of variations (calculation of the direct average, standard deviation, and the coefficient of variation), forecasting, and scenario analysis. The authors concluded that in developed countries, the basis of digital competitiveness of the economy is a high level of integration of information and communication technologies and devices, and a low interest of the business in digital modernization is an obstacle to its growth. The opposite situation has occurred in developing countries – a low level of integration of information and communication technologies and devices with a high interest in digital modernization on the part of the business.

In continuation of this study, Chazhaeva *et al*. (2020) attempted to rank countries moving along the path of digitalization and highlighted the threats that impede this process (Chazhaeva *et al*., 2020). The study attempts to identify the prospects for bringing the digital economy model in line with current requirements for its sustainability and work out some recommendations for managing its threats (Zlivko *et al*., 2018; Shikhnabieva *et al*., 2019; Yemelyanov *et al*., 2018). In conclusion, the idea is formulated that the practical implementation of the digital economy model does not guarantee its sustainable development – its growth can occur according to one of three scenarios: stable (no fluctuations in GDP growth rates in stable prices, for example, in Indonesia and China); unstable development and crisis (bright fluctuations in GDP

growth rates in real terms – for example, in Venezuela and Russia); sustainable growth (the most preferred scenario, which provides for an increase in GDP growth rates in real terms – for example, in Singapore and the USA). Social and technological factors largely determine the scenario for the development of the digital economy.

A special place in the studies is devoted to the consideration of the role of states in the process of digitalization of the economy. Studies on the theoretical features of building a digital economy in Russia are particularly interesting in this regard. In "The algorithm of modern Russia's transition to a digital economy" (Shulus *et al*., 2020), an algorithm is proposed for the transition of modern Russia to a digital economy, which will overcome barriers through the joint efforts of the state, business, and society. The main attention is paid to the formation of effective demand for breakthrough digital technologies. It includes three consecutive stages: the development of information society, the formation of technological reserves, and the introduction of advance digital technologies. Kuznetsova *et al*. (2020) consider modern time a period of transformation in Russia, which is significant in the context of the development of a market efficient, innovative economy (Kuznetsova *et al*., 2020). To lead Russia out of the polysystem crisis along the path of sustainable economic growth, according to the authors, it is necessary to apply a systematic and integrated approach: entering the path of sustainable growth of the level and quality of national human capital (Aleshko *et al*., 2019); diversification of the economy and creation of an effective national innovation system and an innovative economy or a knowledge economy; decriminalization of the country (Goryushkina *et al*., 2019; Lafer and Tarman, 2019). The modernization of the traditional industries and the service sector as a result of the penetration of information technology and digitization of economic processes will create the basis for the formation of new markets and new conditions for the functioning of the Russian market, as well as new approaches to analytics, forecasting, and management decisions. An important sector in the transition to digitalization will remain the industry.

A similar study that characterizes the potential of the Russian economy during the transition to a digital economy is presented in Bezdudnaya *et al*. (2020). The study provides a quantitative assessment of the level of use of production potential in the regions of the Russian Federation over a long period of time. The authors' criteria for diagnosing the degree of development of advanced technologies are presented; general conclusions on the real level of introduction of advanced technologies at the enterprises of the Russian Federation in dynamic and spatial aspects are formulated; some prerequisites for the development of further research in the field of monitoring regional imbalances, developing additional combined indicators and studying the effectiveness of the realization of production potential in the territories during the transition of the national economic system to modernization are identified (Kolmakov, 2019; Voronkova *et al*., 2019).

In conclusion of the historiographic analysis, the authors would like to move on to studies that consider not the global processes of the impact of digitalization on the world economy or the economy of individual countries, but the worldview problems that the new era brings and the reflection of these processes on the quality of public life. In Guryanova *et al*. (2020), the problem of the individual's change in the conditions of modern society and economy is considered (Guryanova *et al*., 2020). The influence of digitalization on a person and the resulting problems of the ideological, psychological, and social nature are shown. That study also analyzes the dialectical interactions of the real and virtual worlds, the human mind and artificial intelligence, the on-line and off-line communication. Their relationships are the most complex humanitarian problem of digital society. Homo digital is characterized as a product of digitization and the owner of fundamentally new qualities and value orientations. The authors are convinced that the right human values are vital to the digital world (Dobrovolskienė *et al*., 2017). Their misinterpretation leads to the victory of consumer ideology and social degradation. Equality and humanism, by contrast, are considered the core values of modern society (Frolova *et al*., 2019; Ishchenko and Magsumov, 2019; Mullins, 2019). However, it cannot yet be called "humanistic." For this, fundamental human values must be applied in digitalization conditions. The real progress of humanity is possible based on self-improvement, development of human consciousness, intelligence, and moral qualities.

In "The impact of the digital economy on the quality of life" (Razumovsky *et al*., 2020), the issues related to the development of digital economy in current conditions, as well as the degree of impact of digitalization on the quality of public life, are examined. The main vectors and directions of the development of information and

communication technologies, as well as the prospects for using the digitalization of the economy, are presented. The main problems that impede the implementation of the digital economy in resolving the issues of public socio-economic life are identified.

3. MATERIALS AND METHODS:

In work, general scientific research methods were used: analysis and synthesis, deduction and induction, the relationship of historical and logical processes, the search for cause-effect relationships, the systemic and structural-functional approach, the laws of dialectics.

Also, a questionnaire was developed for conducting a sociological survey (table 1). The data obtained were processed using statistical research methods. The factors that have the highest impact on the digitalization process in education and the economy have been identified as objects of study, secondary general and professional educational institutions, universities, and enterprises of the real sector of the economy were considered. The questionnaire was sent to 50 schools, 10 colleges, 20 universities, 100 enterprises of the Russian Federation. 90% of the profiles were returned with answers. A total of 300 people were interviewed. The questionnaire was anonymous and did not require obtaining consent to the processing of personal data. The purpose of the study was to identify the most relevant trends in the development of digital technologies in the opinion of all members of the public: pupils, teachers, students, teachers, workers, specialists, and leaders. It was important to evaluate the general understanding of the country's population about the course of the formation of a new digital society and the necessary educational digital competencies.

As a result of statistical processing of the obtained information, the current trends in the development of the digital economy and education were identified, as well as the most important factors determining the essence and design of the new digital society were identified. The results and conclusions are presented in this article

4. RESULTS AND DISCUSSION:

4.1. The concepts of "digital economy" and "digital society"

The term "digital economy" has entered the terminology very tightly. At the same time, in the scientific literature, one can find such words with the same meaning as "diginomica," "Internet economy," and "web economy" (Teryokhin, 2018; Ziyadin *et al*., 2020).

To date, there has not been a single, well-established definition of the concept of a "digital economy". Most researchers are inclined to the idea of qualitative and quantitative growth of technologies related primarily to the spread of the Internet. For example, the digital economy is understood as "a global network of economic and social activities that are supported through platforms such as the Internet, as well as mobile and sensor networks" (Australia's Digital Economy: Future Directions, 2019), or "an economy capable of providing high-quality ICT infrastructure and mobilizing ICT capabilities for the benefit of consumers, business and the state" (Technology Isn't Working, 2019), or "activities for the creation, dissemination, and use of digital technologies and related products and services; technologies for the collection, storage, processing, search, transmission and presentation of data in electronic form" (Abdrakhmanova *et al*., 2019, 13-14).

However, the presented definitions seem to the authors not entirely accurate. Under the influence of technological changes, the structure of society, its institutions, and, ultimately, the entire state and public system are changing. The previous economic, social, and political mechanisms will be updated with new ones. This suggests that evaluating the digital economy only from a technology innovation perspective is not entirely true.

In this regard, it will be more accurate for the authors to accept a definition where the digital economy is understood as "a new way of economy based on knowledge and digital technologies, within the framework of which new digital skills and opportunities are being developed in society, business and state" (Development of digital economy in Russia, 2016).

The authors agree with the part of this definition, which speaks of a new economic structure based on knowledge and digital technologies. Transformational changes taking place in the world are modifying the entire ecosystem and leave an imprint on all spheres of human life (Nelyubina *et al*., 2018; Ziyadin *et al*., 2018; Prause and Atari, 2017). However, the second part of the definition, where the formation of digital skills is prescribed, dramatically narrows the subject field of the ongoing processes. Today, the changes in which digital competencies are

formed are only a small element of the current global events (Korableva *et al*., 2019). In the authors' opinion, it is crucial to see the digitalization of the economy from the perspective of global processes in the context of the exponential growth of technology and knowledge in the world, but not in individual countries.

This implies the broader concept of "digital society," by which the authors mean a new type of social and economic relations based on the creation and use of knowledge and digital technologies, the main form of ownership of which being the intellectual property of large corporations. It is the format of relations that is being built in the modern world.

4.2. Stages of development of the new society

A distinctive feature of the new time will be its transience and unpredictability. The growth of global knowledge and its massive introduction in the form of a high-tech product will contribute to cardinal changes in the lifestyle of the entire population of the planet.

Today the world is witnessing the first stage of the formation of a new order (Figure 1). It is associated primarily with technological changes taking place in the world. New technologies and high-tech products are being introduced into people's lives at high speed, and people get the opportunity to use them now, and not over a time lag. Just to imagine, in the old days, innovations would reach end users (by no means all) after a long period; now, the situation is different. Everyone touches the products of the new era at every moment, at one's discretion. An example is Pokemon Go game, which got 50 million players within 19 days. Against the background of cars (62 years), phones (50 years), or bank cards (28 years), 19 days is an instance (Delyukin, 2018).

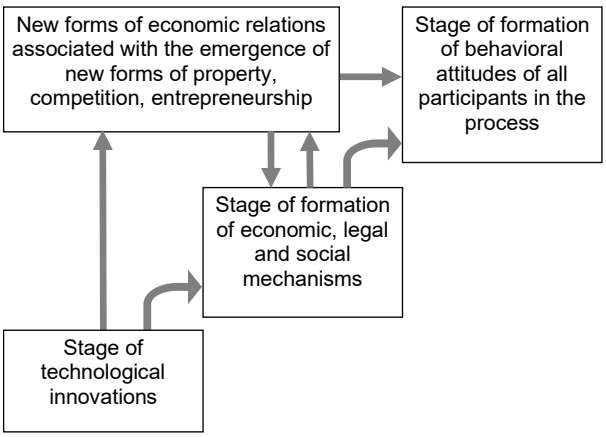

Figure 1. *The staged model of digital society formation.* *Source: Compiled by the authors.*

The appeared superstructure in the movement scheme along the stages of the formation of "digital society" explains all the inconsistency, difficulty, and unevenness of this process. New technologies are in such a way changing the traditional economic relations, regular market transactions, traditional forms of appropriation that the formation of financial and legal regulatory mechanisms is impossible without the formation of new structures of economic relations. It is impossible to convert such economical relations into the existing legal form as adequate legal forms have not yet been developed. This explains the lagging of the second stage, and especially the third stage, behind the rapid development of the first stage. Therefore, in existing academic studies of the digital economy phenomenon in relation to the prospects of the existing economic model, there is a certain impasse. It is impossible to build a model of "digital society" within the existing economic paradigm. New approaches to the organization of economic relations, a change in thinking, a transition to a new social system adequate to the nature and challenges of the digital economy are required.

Despite this progress, the world community itself and public institutions have not yet been able to rebuild. People still live in the realities and conditions of the 20th century; in the mass consciousness, there is no adequate understanding of the processes occurring. The vast majority of modern society does not understand or underestimates the events that take place in the modern world. However, this is temporary; very soon, society will plunge into the maelstrom of new epochal upheavals.

Automation of production processes, computerization, and, finally, digitalization, level human labor. Only modern, highly qualified specialists and managers are becoming in demand in modern society. As a result, the masses of people today have either lost their jobs already or will lose them in the near future. The volume of information received and transmitted increases manifold, so an average person no longer always has the opportunity to trace it and use it for its intended purpose. Many other things are also occurring that are going to change the established view of the world.

Despite this, one can already speak about the beginning of the second stage of a new way of the digital economy. In essence, this is the formulation of economic, legal, and social mechanisms for the functioning of new relations. In particular, legal institutions aimed at protecting intellectual property are being formed; in the

globalizing world, cross-border cooperation is being built between states and businesses; countries agree on common ways to combat cybercrime, etc. Why this stage is highlighted separately and, in the authors' opinion, is late, is explained very simply. Recent scientific discoveries and innovations have multiplied, in many areas, as a result of which society simply does not have the time to turn them into an appropriate legal form, to control (or even restrain) them.

Finally, the third stage, to which modern society has not yet come, in the authors' opinion, is seen in building a "frame" of the behavioral attitudes of all participants in the process. Understanding by all participants of the importance of the changes that are taking place and their involvement in this process will undoubtedly be an essential criterion for integrating national economies into the canvas of digital society.

Today it is becoming increasingly apparent that the role of national economies is gradually losing importance. This is especially evident when it comes to the economic movement of information. On this occasion, Vedin puts "...The nature of the relationship between globalization and the information economy is similar to the formation of national economic complexes in the era of the industrial revolution and the formation of the capitalist order of production. In other words, the global economy in the information era is the national economy in the era of industrial capitalism. Of course, industrial capitalism initiated the internationalization of production. But globalization and internationalization have a fundamental difference. If the internationalization of production was accompanied by an increase in the role of nation-states, then globalization means a decline in the role of the nation-state as the central subject of international economic relations" (Vedin, 2002).

With a general decline in the importance of national institutions, property institutions began to change. A new system of appropriation is emerging in society that coexists and interacts with traditional forms of ownership. The authors agree with the researchers that the institutions of ownership will change in two main directions: 1) the transformation of traditional forms of ownership as a result of the emergence of new objects and methods of appropriation (especially intellectual property); 2) the appearance of a qualitatively new property relationship between society and an individual regarding the appropriation and development of a universal (general human) productive force (Vedin, 2002). However, in the second point, the authors make some adjustment. In essence, the appearance of qualitatively new changes will occur mainly not between society and an individual, but between an organization and a corporation.

The importance of public and private property institutions in the form that operated during the 20th and beginning of the 21st century and coped with their role began to decline markedly. The strong, often uncontrolled growth of transnational corporations, a change in their role in the global economy, as well as in the political sphere, is undoubtedly changing the institutions of property. Megacorporations today are fighting for the possession of a highly intellectual product, new technologies, protecting their secrets with all their might. In many ways, this is also useful for the state – the burden of developing new products and technologies is laid on the shoulders of private companies. As a result, society is gradually approaching such a stage of its development when the importance of not already personal private property becomes the prerogative of social development, but the protection of the property of large corporations. Accordingly, state institutions themselves follow the support and protection of these forms of property.

Personal private property of individual citizens or even companies is becoming a thing of the past; obtaining and using knowledge, and subsequently, directly the product of this knowledge, is gradually becoming the prerogative of several large companies. Employees of these enterprises, as carriers of this knowledge, will have the ability to create, store (in some cases, even sell it), but these will only be "crumbs from a big pie". Talking about information at the company, Bill Gates wrote: "...so that the top management of the company realizes the importance of free dissemination of knowledge, otherwise no efforts in this direction will bring success" (Gates, 2000), but the authors emphasize – within the company, as outside the company knowledge of one employee can be immediately reset. In the context of high-tech products and technologies, it is impossible for individual scientists and engineers to have a complete understanding and knowledge of products today. It is corporations that collect this knowledge bit by bit, concentrate it and create a finished product, and, as a result, become its copyright holder.

4.3. The trajectories of technological change in the new era

Consider the critical trajectories of the

development in the new era, which reflect its modern character. These include preservation of digital national sovereignty; advantage in using national digital technologies; the presence of a single digital space; development of digital competencies of players, the formation of a unified knowledge system; free, equal and non-discriminatory access of each player to digital assets; formation and development of new digital values and culture while preserving traditional, social, national values and culture (Ageev *et al*., 2017).

All trends are somehow tied to the implementation and use of digital technology. Researchers classify as common (or through) areas the following (the authors use the report of scholars from the Institute for Statistical Studies and Economics of Knowledge of the National Research University Higher School of Economics, published in 2019):

- use of technologies for the collection, processing, and storage of structured and unstructured arrays of information based on big data;

- development and implementation of artificial intelligence, that is, a software system capable of perceiving information with a certain degree of autonomy, learning and making decisions based on the analysis of large data arrays, including imitating human behavior (Polyakova *et al*., 2019a,b);

- implementation of distributed registry technologies (blockchain) based on algorithms and protocols for decentralized storage and processing of transactions, structured as a sequence of linked blocks without any possibility of their subsequent change;

- development and application of quantum technologies based on quantum effects, which allow radically changing the methods of transmission and processing of large data arrays;

- use of new production technologies that increase the efficiency of resource use, design and manufacture of individualized items, the cost of which is comparable to the cost of mass-produced goods;

- introduction of the mass industrial Internet capable of uniting devices in the manufacturing sector, equipped with sensors and capable of interacting with each other and/or the external environment without human intervention;

- development, improvement, and implementation of components of robotics (industrial robots) with three or more degrees of mobility (freedom), built on the basis of sensors and artificial intelligence, able to perceive the environment, control their actions and adapt to its changes;

- development and implementation of wireless communication technologies based on data transmission through a standardized radio interface without using a wired network connection;

- development and use of virtual reality technologies based on computer modeling of a three-dimensional image or space, through which a person interacts with a synthetic (“virtual”) environment with subsequent sensory feedback (Abdrakhmanova *et al*., 2019, 13-14).

Meantime, it should be understood that these areas are practically not tied to any industries or sectors of the economy, which means that the scope of application of new technologies will become widespread.

4.4. Findings

The result of the study was an understanding of the inevitability of fundamental changes in both global and national ecosystems. Under the influence of digitalization, the economic, social, cultural, and even political order of states is changing.

Digitalization has embraced almost all sectors of the economy and is very quickly transforming the life of every person and society as a whole. Changes affect the technology of collection, processing, and storage of information, automation, and robotization of production processes, wireless technology, and much, much more.

At the same time, along with the processes of digitalization, the nature of public institutions is changing. The institution of property is gradually transforming, and the role and importance of states are decreasing due to the increasing role of transnational corporations.

This process is happening in three stages: the stage of technological innovations; the stage of formation of economic, legal and social mechanisms; and the stage of formation of behavioral attitudes of all participants in the process.

5. CONCLUSIONS:

The formation of a new order will require cardinal changes in the education system.

Previous tools and mechanisms in the new realities may turn out to be not only useless but also harmful. Already today, in many countries of the world, some problems are inhibiting the digitalization process. These include a lack of specialists with new digital skills and competencies; lack of educational programs that can meet the needs of the modern society. Even problems such as boredom or burnout from learning are a brake on new relationships. The national education system faces the question: how to educate children further? All this taken together defines the national educational strategies, the main requirements of which include definition of a common goal, which means understanding by all participants of the importance of ongoing processes; competitive education; compulsory continuing education; development of new units for assessing the quality of education; preservation of intellectual information; creation of existing tools for monitoring incoming and outgoing information; formation of a basic level of competence of the able-bodied population of the country in the field of foreign languages, programming, etc.

Undoubtedly, all these events should go hand in hand with the widespread digital potential that has been accumulated in the country.

Against the background of the large-scale effects of digitalization in the public space, the concept of a “digital economy” has appeared. The authors carried out a historiographic analysis of the works on the disclosure of the essence of the concepts of “digital society” and “digital economy.” It has been shown that various scientists have different approaches to the definition of these concepts, sometimes even rejecting the existing conceptual apparatus that is used in science. The role of the state in the process of digitalization has also been analyzed. Not only global digitalization processes but also worldview problems of the new era have been considered.

From the definition of the term, the authors proceeded to formulate the stages of development of digital society. A statement has been put that modern society goes through the first stage associated with technological changes and goes into the second stage – the scene of formation of economic, legal, and social mechanisms.

The key trajectories of the development in the new era have been considered: preservation of digital national sovereignty; advantage in using national digital technologies; the presence of a single digital space; development of digital competencies of players, formation of a unified knowledge system; free, equal and non-discriminatory access of each player to digital assets; formation and development of new digital values and culture while preserving traditional, social, national values and culture. The new era gives rise to new problems, the mechanisms for solving which have not yet been developed. First of all, this concerns the sphere of education, which should prepare personnel for the future digital economy, but at the given moment, it is still in the old realities. Thus, the validity of the paradigm shift in the social development of digital society has been examined.

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Table 1. *Questions for analysis of current trends in the development of the digital society, digital economy and education*

Question	Answer options
1. Personal data (age, gender)	Age: _____ Gender: _____
2. The organization in which you work / study	_____ _____
3. What do you mean by “digital economy”	1. Business based on the use of digital technologies; 2. Government and business services provided in the digital environment; 3. Promotion of digital products and services on the market Other _____
4. What do you mean by “digital education”	1. Distance learning using digital technologies 2. The use of digital technology in the educational process 3. The process of continuous learning under the influence of the development of digital technologies 4. Other _____
5. What do you mean by “digital society”	1. A society based on knowledge and new digital technologies 2. A society dominated by relationships in virtual reality and on the Internet 3. A society in which human and artificial intelligence exist 4. Other _____
6. Point out the most important characteristic of modern society	1. The speed of change 2. Innovation 3. Continuing education 4. Digitalization of all processes 5. Other _____
7. What factor, in your opinion, has a negative impact on the development of the "digital society"	1. Limited economic and financial resources 2. Low digital literacy of the population and business 3. Lack of sufficient information and technological infrastructure 4. Misunderstanding by government authorities of current development trends 5. Other _____
8. Mark the most important state task in the context of the formation of a single, global digital society	1. Preservation of national sovereignty 2. Creating conditions for free information exchange 3. Information security 4. Improving the quality of education using digital technology 5. Support for a digital business 6. Creating a new digital culture and digital values Other _____
9. Mark the most important threat to the development of digital education	1. Excessive enthusiasm for virtual reality, loss of physical activity

	2. Reducing the role of personal communication, increasing the psychological dependence on digital services 3. The decline in the quality of education due to loss of control over the educational process 4. The loss of highly qualified personnel due to the dominance of foreign educational systems in the digital environment 5. Other _____
10. Mark the most important global trend in the development of a digital society	1. Erasing national borders through a single digital space 2. Reducing the role of private property by increasing the total resource of knowledge 3. Transformation of traditional institutions into digital analogues (digital money, digital government, digital business, digital universities, digital banks) 4. The emergence of new types of fraud in the digital environment 5. Other _____