

10 The Human-Digital Environment System in the Socio-Economic Paradigm of the Future

Introduction

A modern man is an active or passive participant in various environments: natural, technological, social, digital, etc. Some of them (natural and social) are designed to create conditions for human existence, others (technological and digital) are formed by a person himself to ensure his life and satisfaction of his increasing needs. An important condition for their implementation in the future will be the socio-economic human activity in the development of the digital environment.

Its emergence is associated with a new industrial revolution, called Industry 4.0 (Industrie 4.0), reflecting the introduction of fundamentally new technologies to which modern people must adapt. Among them are the following:

- cyber-physical systems and neurotechnologies with a fundamentally new mechanism of human interaction and the machine (device) created by him (Syuntyurenko, 2015)
- global industrial networks using artificial intelligence (AI) and the wide distribution of the Internet of things (Internet of things)
- introduction of services for automatic identification, collection and processing of global databases (big data)
- cloud services (cloud computing)
- smart devices and industrial facilities (smart everything)
- development of social networks and various platforms and services in the digital environment of the Internet

The search and use of new technologies is necessary not only to cover all areas of human activity, but also to substitute the traditional areas of its existence, and this is a more ambitious task – creating a new person who can not only adapt to the digital environment, but also function effectively.

Methodology

Consideration of the problem of human interaction and the digital environment suggests the rationale for the following methodological principles:

- comprehensive study of the relationships and relationships between the individual and the digital environment, involving the distinction between external and internal aspects of this relationship, the essence of which is manifested in the disclosure of form and content, chance and necessity
- self-development of human relations and the digital environment, which are aimed at finding out the source and internal logics of development between them
- a specific historical approach examines the formation and development of specific forms of relationships between a person and the digital environment
- consistency considers the interaction of man and the digital environment, which are subject to the general laws of existence and evolution of any system objects

It should be noted that in the modern scientific literature this problem has become widespread, it is sufficient to list the following works: Glazyev, S.Yu. *The Great Digital Revolution: Challenges and Prospects for the Economy of the 21st Century*, 2018 (Glazyev, 2018); Goikhman, O.Ya. *Social reality in terms of virtuality // Theses of the first Belarusian philosophical congress (October 18–20, 2017)*. – Minsk: Belarusian Science, 2017 (Goikhman, 2017); Narykov, N.V., Dementiev S.A. *Man in the Information Environment of A Modern Society: Ambivalence of the Nature and Essence of the Information Man // Philosophy of Law*, 2017. No. 1 (Narykov, 2017); *Digital transformation of the economy and industry: problems and prospects / ed. Dr. Econ. sciences, prof. A. V. Babkina*. – Spb.: Polytechnic Publishing House. Un-ta, 2017 (Babkin, 2017); *Digital society as a cultural and historical context of human development: a collection of scientific articles and materials of the international conference Digital society as a cultural and historical context of human development, February 14–17, 2018, Kolomna / by total. ed. R.V. Ershova*. – Kolomna: State Social and Humanitarian University, 2018 (Ershova, 2018); Chernyshev, A.G. *Strategy and philosophy of digitalization // Power*, 2018. No. 5 (Chernyshev, 2018); Schmidt, E. *New Digital World. How technologies change people's lives, business models and the concept of states / Eric Schmidt, Jared Cohen; per. from English Sergey Filin*. – M.: Mann, Ivanov and Ferber, 2013 (Schmidt, 2013).

Results

Any object can act as a system if it satisfies the following requirements:

- The whole is divided into interconnected and interacting parts or elements.
- Parts or elements have their own structure.
- Elements are divided into interconnected subsystems of the second and subsequent levels.

With regard to the “human – digital environment” system, these requirements can be used to analyze each element of the system separately. For example, a person can be considered as a biological and social system, have gender, national, social, professional and other differences. The digital environment can also act as a stand-alone system, including various components that perform functions and represent holistic entities. Finally, an important condition for their study is a detailed analysis of the determinants of the external environment.

Features of the Influence of the Digital Environment on the Natural (Biological, Physical, Psycho-Physiological) and Social Organization of a Person

Under the influence of digital technologies, a change in the natural (biological, physical, psycho physiological) and social human identity is carried out. Consider the directions in which the digital environment affects human identities.

The first direction is characterized by the influence of the digital environment on the human body organization. It is as follows:

- modifying the body organization under the influence of digital technologies that create new artificial bodies (avatar, robot), “managed through a neuro interface; transfer of the human brain to avatars or technical devices in the brain. The digital environment is viewed on a biological basis (as, for example, in genetic engineering); the basis of a combination of organic and inorganic – technosymbiosis (cybernetic approach); inorganic basis” (Khmelevskaya, 2018). This leads to unlimited longevity of a person, because an artificial body can be replaced with more up to date modifications (why not to recall the works of science fiction writers: Belyaev AV, Professor Dowell’s head. – Moscow: AST Publishing, 2016; Gibson, W. Neuromat – M.: LLC Publishing Group “Azbuka-Atticus”, 2015, etc.).
- empowering digital technologies in restoring lost human functions, which allows creating and implanting various devices to resume normal operation of human organs. Among these technologies, there are: exoskeletons, autonomous life support systems of the brain, personality “transplantation” into other data carriers, creation of holographic organs, etc.

- the influence of digital technology on the physical activity of a person who spends most of his time sitting in front of a computer monitor, tablet or gadget. This way of life leads to occupational diseases: organs of vision (dry eye syndrome, etc.), spine (pain in the area of the back, forearm and pelvis).

Thus, the formation of the digital environment may in the future contribute to the satisfaction of human needs for the reorganization of the world and the person himself or lead to the destruction of the natural organization of the individual, replacing it with an avatar, a robot.

The second direction is associated with the peculiarities of the impact of the digital environment on the human psyche. Computers, tablets, mobile phones acquire the features of a “psychic organ” that has been imposed outside; without them, it is impossible to imagine not only the fulfillment of the communicative function, but human existence. Digital media have a negative impact on such psychological processes of a person as: memory, attention, thinking (Mayer-Schönberger and Kukier, 2014). The consequence of their influence are errors and distortions in the perception of information, the state of psychological tension and anxiety. As an example, the emergence of such a state as “network pessimism”. It is expressed in the socio-psychological attitude of a person towards the unreliability and harmfulness of the received digital information. The digital environment can be rated by users as harmful, aggressive and negatively affecting the human psyche.

Another form of influence of the digital environment on a person is the formation of clip thinking, which is distinguished by the brightness and availability of the information received, reflected on glowing monitors. Its main purpose is to replace the fundamentals of modern knowledge with symbolic reality.

The digital environment creates the conditions for the virtualization of interpersonal contacts. This leads to the fact that live communication between people through verbal and non-verbal communications is gradually becoming a thing of the past, replaced by social networks, online games, webinars, dating sites, etc.

The third area examines the impact of the digital environment on a person’s social identity. In the modern society, the very approach to the acquisition of identity changes. If earlier it was formed under the influence of local traditions and customs, now, it is done under the influence of digital technologies. This concept is filled with new content and acquires the ability to interact with a variety of sources, i.e. takes the global form of its expression.

The interrelation of the “figures” and social anthropology is manifested in the fact that “modern forms of human self-determination are such forms as the global network and autonomous person. On the one hand, there is a new habitat for modern humans – global networks. And, on the other hand, it is possible . . . in reality such a reality as the trajectory of atomic personalities. On the one hand, . . . an atomic person . . . is only deterministic, on the other hand, a network that acts as an analog of a fundamentally open world” (Smirnov, 2019).

The proposed interrelation of the digital environment and a person helps to understand that modern social reality turns into a global web woven from various networks into which a person falls, regardless of whether he wants it or not.

The impact of the digital environment on a person's social identity can be done in the following areas:

- represents access to knowledge, ideas, thoughts and various cultural, scientific, and informational means of cognition of the surrounding world. Thanks to digital technology, a person gets access to any information in real time, that is, a paradox arises – he is everywhere and nowhere.
- unites people around websites, online games, webinars through distance, anonymity, lack of social contacts. These features are a prerequisite for being in a digital environment. The manifestation of social identity of a person in these conditions is possible only through the assimilation of the values and meanings of human existence as an active subject of the digital world.
- forms a digital workspace around a person, which contributes to the growth of labor productivity, professional development, successful user experience in the workplace. The content of the concept of “workplace” itself changes, such characteristics as design, comfort, convenient office furniture, good lighting of the room, and equipment with modern digital technologies become real.

Human in the Digital Environment: Problems of Creation, Implementation and Regulation

A modern human lives in the world created by him or the “noosphere” (Vernadsky, 1988), which represents the sphere of intelligent human activity. An important indicator of its development is the creation by man of a digital environment, which allows him to multiply his opportunities in economics, medicine, household appliances, creating electronics with minimal electricity consumption, 3D-modeling technologies and other areas. All this taken together imposes new requirements on the quality of human material, which at present and in the future will create, use, implement and manage the world of digital technologies.

Consider how a person affects the digital environment.

Having created the world of digital technology, a man released a “gin from a bottle”, which can radically change his life. In the near future, he is likely to lose his influence over the digital environment, which will interact not with the person, but with his “digital counterpart”. A person's professional and business activity also moves into the digital space, where it acquires the features of a virtual activity.

Let us put the question: “Is a modern person able to take control over his creation – the digital environment or not?”

As a response, we should note that throughout the evolution of the human race, Homo Sapiens created a huge number of technical machines and mechanisms of

different complexity, but none of them could replace a human being, his creative, extraordinary thinking, the choice of values and his determination to achieve the goals. The creation of digital technologies is necessary for a person to solve economic, social and everyday problems of not only the present, but also the future existence.

The modern economy cannot develop effectively without the introduction of digital technologies. This is because extensive production has already reached its limits, beyond which no development is possible. Therefore, in order to meet its growing needs, a person is forced to create and implement digital technologies that expand his capabilities in influencing various spheres of society (Schwab, 2016).

We define the most promising areas for the introduction of digital technologies:

- automation
- workspace
- management
- economy
- business
- industry
- education
- telecommunications
- the medicine
- army

Thus, the introduction of digital technologies is carried out in various areas of the modern society. In the future, they can push an individual out of such a humanized sphere as life, for example, a self-parking car or a refrigerator ordering the food for a household. This is no longer a fantasy, but the near future of mankind.

A person regulates the digital environment in the social and economic activities of the society by means of moral and legal norms. The legal regulation of the economic sphere is that the regulatory and organizational conditions outline the boundaries for the use of digital technologies in such innovative areas of economic activity as: finance, high-tech production, information systems management, digital platforms, digital trading platforms, etc. Human influence on the economy through the use of digital technologies contributes to the simplification of production activities, commercial activities, trade and banking operations on each phase of economic relations.

The moral regulation of digital technologies is associated with the development of the concept of human rights and the determination of its status, which must be rethought based on a new understanding of human nature in the digital environment.

The difference between the legal and moral regulation of the digital environment in social and economic activities is that legal norms are fixed in codes, acts, laws and regulations, that is, they exist as written rules, and moral norms mostly live in the public consciousness, are supported, approved or rejected by public opinion or by the person himself. It should be noted that the process of adopting

legal acts and ethical codes that would regulate the use of digital technologies in these areas is still forming.

Among the main determinants that affect the “man-digital environment” system, the following can be singled out:

- the improvement of the economic and technological spheres, where the “person – digital environment” system could function effectively
- the creation and development of a legal framework governing the interaction of man and the digital environment
- the formation of the social sphere of the modern society, contributing to the creation of such channels of social mobility, which made it possible to select the most talented and capable people to work with digital technologies
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- the development of the education system with the aim of training and retraining of diverse specialists who not only created and developed new digital technologies, but also engaged in their implementation and regulation in various fields of activity

Conclusions/Recommendations

Thus, the consideration of the problem of human interaction and the digital environment is the priority for the modern humanitarian science. This is manifested in the fact that digital technologies “capture” all new spheres of human existence, replacing, simplifying one’s life in solving economic and social problems. The place and the role of a person in this relationship is manifested in the fact that he acts as the creator of digital technologies that he introduces into various spheres of society and regulates their functioning by means of moral and legal norms.

All this taken together will contribute to the development and optimization of the “man-digital environment” system in the socio-economic paradigms of the future.

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