

# New paradigms and challenges of social life in the information and digital era

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**Abstract.** The information-digital era has led to the emergence in our social life of a number of new paradigms - social standards and patterns of behavior, new values and beliefs that are implemented in all spheres of society. The paper aims to analyze the emerging paradigms regarding the changes they introduce in our social lives and threats brought about by these changes. The authors analyze such paradigms as a new attitude to information, the introduction of digital technologies, changes in the qualification level of the workforce, new features of the lifestyle, and a change in spatial behavior. It is concluded that each paradigm introduces behavioral standard modifications to social life and makes social activity easier in terms of physical costs. At the same time, each new paradigm simultaneously generates new challenges for a person: problems of selecting information and assessing its reliability, arising information inequality, underdevelopment of digital culture, a shortage of relevant specialists, and the disappearance of a number of professions. Overall, the authors view these challenges as inevitable consequences of growth that humanity must explore and learn to overcome.

## 1 Introduction

We are entering a new phase of the information age called digital era. This phase is characterized by the emergence of the digital economy and digital society. There can be observed a rapid introduction of digital technologies in all spheres of society. The paradigms of social life are changing. By historical standards, changes are occurring rapidly, many of them can be measured in years rather than decades. All of them qualitatively change our life and require from a person not only quick acquaintance with the new reality, but also social flexibility and adaptive behavior. New challenges are emerging that should be explored and learned to overcome.

A new world order generated by the information age, turned out to be contradictory, pluralistic, volatile and full of information opportunities and risks both for states, nations, and for the individual. Accordingly, research efforts are required in order to assess these information threats, as well as predict the emergence of new trends and opportunities. At the moment, Russia's entry into the information-digital era is defined as strategic directions of development and is enshrined in the Industry 4.0 and Digital Economy of the Russian Federation programs.

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## **2 Materials and methods**

The empirical basis is made up of studies conducted under the guidance and with the participation of the authors in the period from 2015 to 2019: “Information culture of the population of the Sverdlovsk region: settlement and socio-demographic aspects” (2015). The general population included residents of the Sverdlovsk region from 16 to 75 years old. The sample size was 1,130 people; “Distance learning: students' opinion” (n = 703 in 2015 and (n = 830 in 2016); in 2018 “Entrepreneurial activity of youth in the Sverdlovsk region” (n = 555); in 2019 “Small towns in the state policy of spatial development of Russia: social modeling of regional strategies and practices” (three focus groups with representatives of business and the public, 30 questionnaires and in-depth interviews with experts - heads of the embassy staff, heads and deputy heads of cities, active representatives of business and the public). We also use official statistics, research results from other scientists.

The methodological basis of this work is based on the paradigm conceptual approach and the theory of social life. The foundations of the paradigmatic theory were laid in the works of T. Kuhn [1], and it is also presented in the works of A. Arnio, C. Vargi, G. Mind, R. Rorty, J. Habermas and others. In domestic science, the paradigmatic concept is studied by many researchers. A paradigm is a well-established, customary point of view, a certain standard, a model in solving research and practical problems. These are beliefs and values inherent in certain practices [2]. Social life is viewed as a process of purposeful preservation, reproduction and development of individuals and communities [3].

## **3 Results and discussions**

We are witnessing a rapid historical change in the paradigms of social life. Without pretending to comprehensively consider this topic, we can note a number of the most prominent trends that occur both in society as a whole and in its individual spheres.

The most obvious change can be called a change in the paradigm of interaction with information (Table 1).

Today we are witnessing such a rapid flurry of information that it has been referred to as the information explosion in the literature. At the beginning of the mankind development other personalities acted as a source of information for a person, then information recorded in printed publications was added to this source. Special media institutes (newspapers, magazines, radio, television) were engaged in its dissemination. At the same time, a person had to undertake certain efforts to extract the required information: it was necessary to find a book or article (buy or borrow from the library, etc.). A person who possessed a large amount of information obtained from printed sources was considered an expert in one area or another.

Currently, we see a change in trend - from information recorded in printed sources, society is moving to information enshrined in electronic sources, the Internet has replaced television. Over the past 12 years, the number of Internet users has grown from 1.6 to 4.1 billion, and the number of smartphones used in the world has reached 3.2 billion [4]. Information has become easily available. And this is a new standard for our social life.

**Table 1.** Outgoing and emerging paradigms of social life.

<b>Paradigm</b>	<b>Outgoing age</b>	<b>Emerging trends in the digital age</b>
1. Interaction with information	Information is limited. It is presented in print media and distributed through the media (television, radio, etc.)	Information is easily available. Information is presented in electronic media
Issues of paradigm 1	Information search	Information selection. Assessment of information reliability. Information inequality
2. Introduction of digital technologies	Personal computers, automation of production progress	Internet as a basic technology. Implementation of robotics, vertical and horizontal networking. Cloud services. Growing demand for IT specialists
Issues of paradigm 2	Financial and organizational problems brought about by the new technologies' introduction	Underdeveloped digital culture. Lack of relevant specialists. The disappearance of some professions
3. The workforce qualification level	Labor was divided into physical and mental. <u>It required one-time training</u>	The role of mental labor is increasing. It requires lifelong learning throughout life
Issues of paradigm 3	Access to higher education is limited. Assimilation of information by a person is required	Access to education is unlimited. Information source is transferred to electronic resources
4. Lifestyle	Collectivism is the dominant trend. Direct contacts with people	The growth of individualism. Virtual communication. Computer addiction.
Issues of paradigm 4	Conflicts between an individual and a team in the event of a mismatch in values	Loneliness in the crowd. Alienation
5. Spatial behavior	Direct personal presence in any act of social behavior	Online activity in most types of social life
Issues of paradigm 5	Traveling is time consuming and expensive	Lack of "live" communication. Feedback problems with interlocutors. Security threat. Electronic fraud

Humanity has faced new challenges. Among the key ones is the need to select information. Many electronic sources offer a large amount of diverse information, while this stream contains both reliable, truthful information, and distorted, erroneous, and sometimes deliberately falsified. Additional efforts are required to verify the accuracy of information by comparing various information sources, referring to experts.

A new type of inequality has emerged - information inequality. P. Norris [5] defines information inequality as a global digital divide at the state level (for example, between developed and developing countries); social - as a gap between those who have and do not have access to ICT within the same country; democratic - as the difference between those who actively use and, conversely, do not use ICT to participate in public and political life. Information inequality is often analyzed in terms of digital divide. M. Hilbert [6] formulated four variables, various combinations of which lead to a combinatorial set of definitions for the term "digital divide". The first variable characterizes the subject with access to technology (individual, organization, country, etc.), the second variable - what characteristics this subject has (income, geography, age, etc.), then - how access is performed (easy access or effective implementation of technologies) and, finally, what technology is freely available (Internet, digital television, etc.). In current literature authors also tend to analyze the digital divide at three levels [7].

Information inequality is characterized, firstly, by unequal access to information due to a number of reasons (lack of the Internet in the territory of the settlement, lack of financial opportunities to buy modern gadgets, poor educational training). Secondly, the information inequality means different degrees of mastering new skills in the use of information technologies (most have them at the level of ordinary users, while others are the creators of

programs and their curators). This means that in the world, when most social practices are in one way or another associated with knowledge and the ability to use new information and digital technologies, the country's population has an unequal level of involvement in social life, new types of work (online work), shopping are available to them to varying degrees. through the Internet, payment for services through websites and ATMs, etc. In addition, the information inequality is manifested in the fact that new elite groups are being created. These are those who not only perfectly mastered modern computer technologies, but also are the authors, designers, creators of new systems. Programmers and hackers are two new professions that are gaining momentum. French researcher R. Debray [8] proposed the term "mediocracy" to refer to the owners of information resources. They determine political trends, fashion, lifestyles, social prestige, directions of everyday consumer policy.

The second paradigm is the introduction of information technology into all types of social practices. The previous phase of development was characterized by the widespread use of computers; at present, they have been replaced by the Internet as a new technology for storing, processing and transmitting information. Today it is difficult to imagine the work of any enterprise without the fact that it is carried out without the use of the Internet. Vertical and horizontal networking is spreading in the banking system, transport, trade, tourism, etc. Simple automation of production is being replaced by more complex robotic mechanisms, robots are gradually replacing first simple physical labor, and then mental labor. Thanks to the emergence of cloud services capable of collecting, systematizing, processing large amounts of information, opportunities have increased in cognition of many phenomena of social life (analysis of the preferences of ordinary consumers, drawing up its value-motivational profile, deeper diagnostics in medicine, biology, etc.). As a result, the society has increased the need for specialists in the information profile, the country's universities are actively developing it and related areas of training. In this regard, the society solves new problems, it faces new challenges. Research shows that the main difficulty in introducing digital technologies is the underdevelopment of the digital culture and the lack of specialists with sufficient qualifications to work in the new environment [9].

In addition, the process of disappearance of a number of professions is outlined. 50% of professions dominated by physical labor will disappear in the next 10-20 years [10]. So, it is assumed that such professions as accountant, copywriter, librarian, archivist, travel agent, tester, notary, guide, translator, ticket clerk, call center operator, train driver, seamstress, etc. are expected to disappear soon. there will be professions in such areas as IT medicine, systems biotechnology, engineering of robotic systems, architecture of virtuality, etc. The disappearance of a profession does not occur immediately, it takes 30-40 years [11].

The third of the paradigms we identify is the change in the requirements for the qualifications of the workforce. In the recent past labor was subdivided into physical and mental, sometimes a combination of them was required. Today, due to the digital technologies, the role of mental labor is increasing, moreover – creative labor. In the past it was enough to get a good education after studying for five years at a university, today the educational paradigm is changing dramatically: there is an awareness of the need for lifelong education. Lifelong learning has already become a priority in a number of countries [12].

During the Soviet era, there was a serious competition for admission to a university, it was required to prove the availability of appropriate educational training. At the end of each discipline, a student had to pass a test or an exam, while it was required to demonstrate the presence of knowledge, cheating was not encouraged and severely punished. Today, almost everyone has access to higher education, which is mainly limited by the financial condition of the family. The abundance of information and the ease of obtaining it led to a shift in emphasis in obtaining knowledge: for some students it is important not what you know, but the knowledge of where you can get information [13].

The way of life is changing. Lifestyle is a multifaceted concept that means typical forms of life and conditions for this life. Just a few points to note. One of them is the shift of social life from the dominance of collective forms to a more individualized existence. A single social reality is fragmented, and society breaks up into separate segments, living their own lives and poorly correlated with each other [14].

Communication occupies an essential place in the way of life. In the past, it was difficult to imagine communication outside direct contacts, today the majority of citizens of developed countries prefer virtual communication (via smartphones, social networks, etc.). Definitely, such communication can be assessed in many ways as positive (ease of access, the ability to correct the transmitted information, create the desired image, etc.). However, new challenges arise again: the experience of direct “live” communication is lost, simulacra appear [15].

Modern information technologies provide a person with the ability to perceive information dynamically, colorfully, fragmentarily, create the illusion of being in virtual reality as if it were alive. This led to the fact that people began to spend more time in games and computer entertainment, which led to the emergence of such a phenomenon as computer addiction. We also need a game. In it we develop, the game allows us to experience vivid emotions, excitement, it virtually expands a person's capabilities, takes him beyond the framework of his usual social roles, pushes the boundaries, possibly, leads to other worlds. This is a kind of creative laboratory where the creative abilities of a person can be revealed and incredible and bold ideas, unrealizable and unclaimed in real life, can be realized. At the same time, a long-term stay at the game leads to computer addiction, the signs of which are symptoms such as rapid mood swings, fatigue, irritability, withdrawal, secrecy, aggressiveness, violation of the daily routine, reduction of real communication with comrades. A person experiences a feeling of emotional uplift only during the game.

Another new paradigm is a new pattern of spatial behavior. In the recent past, all types of social activity (work, study, rest, entertainment) could be realized exclusively in the actual space - it was necessary to come to work or to a university building, visit a cinema or a stadium, etc. Today, all these activities are, to one degree or another, permeated with computer technologies and allow them to be realized remotely. The practice of social life includes online work, distance learning, online shopping, online viewing of cultural and entertainment programs, sports training with a virtual trainer, remote medical consultations, etc. as one of their main advantages, saving money and time on the way to work [16].

And if earlier the main problem of spatial behavior was the problem of movement, which sometimes took a lot of time, today it again rests on the absence of real contacts with the interlocutor. In such communication, there is no exchange of energies - an important component explaining the fact that, for example, with wide access to virtual forms of social activity - watching a concert via the Internet, people still value direct communication with an artist more highly and continue to attend concerts.

In recent years, electronic fraud has become widespread. According to some reports, only from March to October 2020, Russians on average lost 20 thousand rubles due to Internet fraud [17]. Fraudsters are following emergency resources: where digital technologies penetrate, fraudsters also penetrate there. Especially numerous cases of fraud are observed in those areas where people manipulate money (buying goods, keeping money in accounts, online commerce, etc.). In addition, digital technologies make it possible to falsify a person's personal data or use it for threats and extortion.

## **4 Conclusion**

There were identified a number of paradigms characteristic of the current stage of social life development, including a new attitude to information, the introduction of digital technologies, changes in the qualification level of the workforce, new features of the way of life, and a

change in spatial behavior. These examples by no means exhaust all the paradigms of social life in the information-digital era - new standards and models, beliefs and values in the practical activities of a modern person. However, they eloquently signal the dramatic changes that are taking place in society right now. These changes bring a lot of positive things into our life, make it more comfortable and easier. At the same time, they bring new problems, which should be regarded as new challenges to overcome. The key issues involve selecting information and assessing its reliability, arising information inequality, underdevelopment of digital culture, a growing shortage of relevant specialists, and the disappearance of a number of professions. These issues need to be addressed by all stakeholders, yet they should be viewed as evidence of growth rather than an excuse to abandon new behaviors.

Increasingly, the role of mental labor will grow and there is a need for continuous education throughout life. More and more emphasis should be placed not on one's own knowledge, but on the ability to quickly find the necessary information on the Internet. The growth of individualism, the dominance of virtual communication over face-to-face contacts, computer addiction, loneliness in the crowd, alienation, security threats, and electronic fraud can also be named as emerging challenges. All of these challenges are viewed by the authors as inevitable consequences of growth that humanity must explore and overcome.

## References

1. T. Kuhn, *The structure of scientific revolutions* (University of Chicago, Chicago, 1962)
2. M. Foucault, *The archaeology of knowledge* (Vintage Books, New York, 2010)
3. V.Y. Fetisov, *Sociol. Res.*, **6**, 28 (2007)
4. Digital technologies and cybersecurity in the context of the spread of COVID-19, <https://ach.gov.ru/>
5. P. Norris, *The digital divide* (Routledge, London, 2020)
6. M. Hilbert, *Telecommunications policy*, **35**, 715 (2011)
7. J. Van Dijk, *Poetics*, **34**, 221 (2006)
8. R. Debray, *Transmitting culture* (Columbia University Press, New York, 2004)
9. Global Digital Operations Study 2018, <https://www.pwc.ie/>
10. C.B. Frey, M.A. Osborne, *Technol. Forecasting Soc. Change*, **114**, 254 (2017)
11. Professions-retirees, <https://atlas100.ru/>
12. I.V. Pervukhina, Development of the system of continuing education in the context of Industry 4.0, **1**, 149 (2019)
13. S.N. Golubchikov, *Bul. Environ. Educ. Russia*, **3**, 22 (2015)
14. G.V. Osipov, S.V. Klimovitskiy, *Human., Socio-Econ. Soc. Sci.*, **5**, 54 (2018)
15. J. Baudrillard, *Simulacra and simulation* (University of Michigan, Ann Arbor, 1994)
16. E.A. Kamarova, Development of the system of continuing education in the context of Industry 4.0, **1**, 79 (2019)
17. The amount that Russians lost in a pandemic due to fraudsters is named, <https://ria.ru/>