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AI (ARTIFICIAL INTELLIGENCE) CULTURE IN THE CONTEXT OF THE CULTURE OF WORKING SOCIETY

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L. Machulin. **AI (Artificial Intelligence) culture in the context of the culture of working society**

A problem-thematic analysis of the most important problems associated with the appearance of a chatbot with generative artificial intelligence (ChatGPT) in human life is presented. The process of formation of the ChatGPT culture over the past few years, its sources and prospects are considered. The concept of the culture of a working society is outlined — a set of values, norms, traditions and institutions that emphasize the importance of labor, production and interaction between people in many respects for the organization of society and the satisfaction of its needs. Through the lens of working society culture, the author postulates, firstly, that ChatGPT reinforces the growing trend of the end of working society. Secondly, the emergence of ChatGPT has activated the development of a culture of artificial intelligence (AI). Thirdly, the AI culture formed by man is, in fact, a counterversion to the culture of the working society formed over the last five hundred years — the culture of a "non-working society". The author comes to the conclusion about the need to rethink the utopian and communist future proposed by thinkers and philosophers.

Keywords: *artificial intelligence (AI), AI culture, ChatGPT, GenAI, working society, end of working society, non-working society, digital society paradigm, free time society.*

Л. І. Мачулін. **Культура ШІ (штучного інтелекту) в контексті культури трудового суспільства**

Представлено проблемно-тематичний аналіз найважливіших проблем, пов'язаних із появою в житті людини чатботу з генеративним штучним інтелектом (ШІ) (ChatGPT). Розглянуто процес формування культури ChatGPT за останні кілька років, її джерела й перспективи. Позначено концепт культури трудового суспільства — сукупність цінностей, норм, традицій та інститутів, які акцентують на значенні праці, виробництва й взаємодії між людьми великою мірою для організації суспільства та задоволення його потреб. Крізь призму культури трудового суспільства автор постулює: ChatGPT посилює тенденцію наростання кінця трудового суспільства; поява ChatGPT активувала формування культури штучного інтелекту (ШІ); культура ШІ, яка формується людиною, є, по суті, контрверсійною до культури трудового суспільства, сформованою за останні 500 років, — культурою нетрудового суспільства. Автор доходить висновку щодо необхідності переосмислення утопічного й комуністичного майбутнього, запропонованого мислителями та філософами.

Ключові слова: *штучний інтелект (ШІ), культура ШІ, GenAI, ChatGPT, трудове суспільство, кінець трудового суспільства, нетрудове суспільство, парадигма цифрового суспільства, суспільство вільного часу.*

Problem statement. The introduction of a chatbot with generative artificial intelligence (ChatGPT) in November 2022 caused a dramatic effect. In addition to the almost sensational public interest in its practical possibilities, ChatGPT has raised concerns in scientific circles about the theoretical consequences of its application. No less wide than the range of opportunities for the economy was the range of negative consequences for humanity from the use of ChatGPT. Despite the short period of time to study both the practical consequences and the theoretical threats, researchers have already expressed their ideas on the full spectrum of "ChatGPT vs. Humanity" relations. Much has already been said and written about this. However, all publications consider this spectrum of relations in the short-term prospects. And everyone is unanimous in the opinion that we are witnessing the beginning of the era of AI, a revolutionary era, the same as the era of steam and machines, electricity, communications, television.

At the same time, a completely unexplored side of this issue is the relationship between ChatGPT and humans in the field of work. The driving force of society from its inception has been labor; its role in the development of society has been studied by world-famous scientists[1]. And no matter what disputes accompany the scientific works of these and hundreds of other scientists, it is now de facto recognized that in the last five hundred years a working society has formed, that is, a society in which labor and production played a major role. Economics, labor organization, production and means of production formed the basis of the social structure that we have at the beginning of the XXI century.

And at the end of the first quarter of the XXI century the emergence of ChatGPT made relevant the theme of the end of the working society — a trend in the last third of the XX century. However, now we are talking not only about the labor market, which, of course, will change significantly not in favor of humanity. We are talking about the influence of ChatGPT (and AI in general) on the physiological and psychological transformation of man as an object of nature, as a product of the Universe. ChatGPT (as a prototype of AI) can be perceived as a replication of a human on a qualitatively different level. And all this can happen only because AI will take away from a person what was the meaning of his existence — work. And this is precisely the main difference between the born era of ChatGPT (AI) and its "revolutionary" predecessors — the steam engine, electricity and communications, industrialization and computerization — they could not even theoretically take away human labor. Now it becomes possible.

The study is dedicated to discussing the prospects for working society in ChatGPT and the post-ChatGPT world (AI world).

The relevance of the article. The stated purpose of ChatGPT's in society is to help people in their activities. It is impossible to deny goals that have humanitarian content. However, a year after the appearance of ChatGPT, irreversible processes began in the labor market in all countries of the world. The current Future of Jobs Report 2023, released at the World Economic Forum in January 2024, stated that "83 million jobs will be lost and 69 million created over the next five years. This would reduce global labor markets by 14 million jobs (about 2% share)" (Zini, 2023). Over the next five years, more than 75% of the 803 companies surveyed (with more than 11.3 million employees) plan to implement big data analytics, cloud computing and artificial intelligence. For companies with more than 50,000 employees, artificial intelligence and big data are the No. 1 priority.

As ChatGPT's triumphant march unfolds, neither politicians, nor managers, nor society can offer effective recipes for the unemployed market. Its growth is not denied, but it is not yet considered as an existential problem for humanity.

Analysis of the latest research and publications. Almost all ChatGPT researchers unconditionally positively assess the introduction of artificial intelligence (AI) into human life and various areas of its activity. And only some researchers express warnings about the new phenomenon. Anders Sandberg, a scientist at the Future of Humanity Institute at the University of Oxford: "Even if AI is only a tool that replaces some stages of work, it will significantly change the established order of things. If everyone became 10 times more productive, that will mean that 90% of people would be forced to do something else" (Krasnomovets, 2023).

"We need to think of these things as productivity tools, not as complete replacements for humans," reassures Madgavkar, a partner of McKinsey Global Institute (Mok & Zinkula, 2023). Accepting the unknown of how exactly chatbot with GenAI will impact the global economy and society, and suggesting that it could lead to radical changes in the global economy, the author believes that society should focus primarily on the economic side of the issue. Thus, Goldman Sachs Research believes: chatbot with GenAI could increase global GDP by 7% (or almost $7 trillion) and increase productivity growth by 1.5 percent over a 10-year period (Generative AI could raise global GDP by 7%, 2023).

[1] Auguste Comte, Karl Marx, Ferdinand Tönnies, Max Weber, Emile Durkheim, Michel Foucault, Jurgen Habermas, Jean Baudrillard, Ulrich Beck, Eric Olander, Richard Sennett, Jacque Fresco and many others.

To the question "How will ChatGPT, DALL E and other generative AI models change the labor market," the "authorized" ChatGPT itself answered with careful scrupulousness: "The exact number of jobs that can be replaced depends on many factors, such as the field of activity, type and variety of tasks and level of complexity However, some studies indicate the possibility of automating up to 45% of daily work in many areas of activity" (Krasnomovets, 2023).

About the application of ChatGPT in various fields of economy — computer programming (Surameery & Shakor, 2023), in construction and architecture (Neves, 2022), fields of science such as chemistry (Nascimento & Pimentel, 2023) or medicine (Grünebaum et al., 2023) and radiology (Currie et al., 2023), as well as in agriculture (Biswas, 2023) and in many other areas of production or society, a large amount of research has been written in such a short time. The question arises: is it natural to consider the appearance of a number of scientific articles on whether everything already described in scientific studies about the successes of chatbot with GenAI can be considered its cultural heritage? (Spennemann, 2023). But GenAI is the product of a person, programmed by a person, works under the management of a person, so the question is vexed — perhaps what GenAI made does not belong to him? And while there is heated debate on this topic, let's look at the problem of AI culture in the context of the culture of a working society.

The purpose of the article — is to study what the culture of AI (GenAI) is and how it adjusts to the culture of the working society in the context of the future for the working society.

Presentation of the main research material.

1. Types of generative artificial intelligence

The boom of generative artificial intelligence, also called the "spring of AI" (Bommasani, 2023), began at the turn of the 2020s, when OpenAI, with a grant from Microsoft, introduced the first version of the neural network to users. Already in April 2022, its new version was announced — DALL-E 2. The developers had warnings about possible ethical and security issues, so at first the network was available only to pre-registered users (Taylor, 2022).

What is generative artificial intelligence? As English Wikipedia explains: "Generative AI is artificial intelligence that can generate text, image or other media using generative models. Generative artificial intelligence models learn the patterns and structure of their input training data, and then generate new data with similar characteristics" ("Generative artificial intelligence", 2024).

Thus, GenAI is an artificial intelligence that has been taught to use the cultural heritage of humanity (texts, images, videos) and provide its own options to human culture. Currently, there are many chatbots available to users, the most popular of which are two AI models from OpenAI, one of whose co-founders is Elon Musk: Microsoft's Bing Chat and Google's Bard chatbot. The characteristics of the bots are as follows:

1. A product of the OpenAI laboratory, the DALL-E program is configured primarily for working with images. The program receives commands from any user and creates works of art according to his instructions in a few minutes. The DALL-E neural network was presented in January 2021, and already in July of the following year it began to be tested by users.

2. The second product of the American OpenAI laboratory is GPTchat; the fourth version was presented in March 2023. Just five days after its release, the chatbot received one million users. To understand society's expectations, let's compare some indicators: ChatGPT received 100 million users in a month, the former leader of the network TikTok — in 9 months, and the popular Android application Instagram — in 2.5 years (Cerullo, 2023).

3. The following bot is presented by Microsoft. It has been working on its own search engine since 2009. The boom in demand for generative artificial intelligence pushed Microsoft to accelerate, and in March 2023 the company announced the launch of Bing Chat, powered by GPT-4 from OpenAI. Considering the owners, the first three positions can hardly be called competitors.

4. Chatbot Bard from Google became available to users on March 21, 2023. Already at the start, it lost points for inaccuracy and less nuanced responses than ChatGPT and Bing, but by the end of 2023 it had almost caught up with its competitors.

It seems that little time has passed to draw definite conclusions about the impact of technological

innovations on society, but already on May 30, 2023, more than 350 leading scientists and AI developers actively responded to the threats posed by generative artificial intelligence. The importance of the document is evidenced by the fact that in addition to OpenAI head Sam Altman, the letter was signed by the CEOs of artificial intelligence companies DeepMind and Anthropic, and the heads of Microsoft and Google. Signatories included Geoffrey Hinton and Yoshua Bengio, two of the three so-called godparents of artificial intelligence, as well as professors of different higher education institutions — from Harvard to China Tsinghua University, and a large group of artificial intelligence experts (Statement on AI Risk, 2023).

The main message of the appeal, published by the non-profit Center for AI Security (CAIS), is that "reducing the risk of extinction through AI should be a global priority, along with other societal risks such as pandemics and nuclear war" (Smink, 2023).

The list of concerns (as of 2023) identified in various speeches by AI researchers is as follows:

1. Modern artificial intelligence systems have significant and fundamental limitations. It is clear that the rules for using AI are written by programmers and those who define entire systems for using artificial intelligence, train them on large examples of human behavior etc. So why not assume that artificial intelligence will not be directed against humanity by humans themselves?

2. AI researchers point to gender inequality as a moral issue — when a query does not specify gender, the model generates more images of men than women (Strickland, 2022).

3. Deepfakes, which can be freely generated using DALL-E 2 and the like, are considered an urgent problem (Taylor, 2022).

4. Technological unemployment is as worrying as deepfakes. The popularity of image chatbots could lead to technological unemployment for artists, photographers, and graphic designers (Goldman, 2022).

2. Culture of generative artificial intelligence

Along with concerns about the consequences of using chatbot with GenAI, scientists have focused their efforts on carefully studying the general culture of generative artificial intelligence. The concept of "culture of generative artificial intelligence (AI)" includes issues of ethics, technological solutions, sociocultural influence, legal and many other aspects related to the development and application of generative AI.

This culture should include:

Ethical issues — studying of the ethics of using generative AI, in particular the question of responsibility for the content created and the possible consequences of its use.

Algorithmic solutions — development and improvement of algorithms for creating creative content, such as text, music, drawings, etc.

Legal issues — regulating the ownership and rights to creativity created by generative AI systems.

Sociocultural impact — studying of how generative AI impacts culture, art, media, and communities.

Development of innovation — application of generative AI in various fields, such as creativity, advertising, education, medicine, etc.

Of course, the culture of generative artificial intelligence is just emerging. It is not created by GenAI itself, but by its collaboration with developers, lab workers, engineers, users, ethics and legal scholars, and other professionals working in related industries. It was studied quite thoroughly by Dirk H. R. Spennemann in his work "Generative artificial intelligence, human agency and the future of cultural heritage." In the last chapter of the study, the author states the fact that today GenAI and its activities are part of the cultural heritage of human society, more precisely, the sector of the cultural heritage of GenAI in the general culture of mankind. This sector includes components such as: GenAI applications as part of virtual heritage, hardware heritage (computers, keyboards, storage media, printers), digital artifacts (computer-generated artefacts, in particular paper) prints or 3D-products), virtual visual artifacts or human-perceivable virtual content on computer screens or speakers, hidden digital connections (for example, data recorded on the surface of ferromagnetic or optical media), and so on. The assessment of heritage elements depends on a person's understanding of the definition of "cultural value", classification, the role of these objects in a cultural and historical perspective, etc.

Dirk H. R. Spennemann rightly notes that the definition of human cultural heritage itself is very different depending on the ideological positions of the interpreters. At a fundamental level, cultural heritage is the intergenerational transmission of learned and meaningful behaviors and skills among individuals of the same species. It is defined as "our heritage from the past, what we live with today, and what we pass on to future generations" (Spennemann, 2023). The core of the concept is the understanding of many generations that cultural practices or works of the past have some meaning for the modern generation and that there is a desire to ensure their preservation for the future. The problem in this matter may be, in addition to nostalgia inherent in human nature, also intergenerational and intragenerational mutation of ideas about cultural heritage, as well as the epistemological base of expert evaluators raised in different family, social, educational, sociopolitical and historical contexts.

However, no matter what difficulties human society may have with the cultural heritage, it exists de facto, and in any form, the author believes, will exist in the future. To convince us, the author reflects: will carbon, silicon or other GenAI life in the future be able to form their cultural heritage independently without humans? To find the answer, he formulates the following test:

- an individual (cultural heritage evaluator) must be thoughtful, that is, capable of intellectual perception of feelings and emotions; to have consciousness, that is, to be aware of oneself, including the outside world as a whole;
- an individual must take into account cultural heritage at least at a basic level: be able to study the inherited behavior or skills of "relatives" that have not been changed by algorithms;
- since heritage is concerned with the relevance of cultural traditions of the past to the present, the individual must understand time, particularly the concept of past and future, as well as the understanding of "being" in the present;
- an individual must have a basic sense of foresight, that is, an awareness that any action or inaction may have consequences in the near future;
- in addition to basic self-awareness, an individual must be aware of his identity as an individual raised in family, community, educational, sociopolitical and historical contexts;
- an individual must understand the concept of "value" both as a clearly felt feeling of nostalgia or solastalgia, and conceptually — recognizing values as changeable, relative and conditional forms that are projected onto behavior and actions or onto material elements of the natural or built environment;
- ideally (but not as a mandatory prerequisite) the individual should also be able to initiate and conceptualize creative or exploratory ideas.

According to Dirk H. R. Spennemann, current GenAi models do not pass this test. However, considering trends and investment in innovation, he suggests that it's only a matter of time. Obviously, if the emergence of intelligent and capable of independent thinking AI systems occurs by chance, then humanity will come into conflict with reality, where the cultural heritage of GenAI will be perceived only by conceptual people. That is, multiple cultural traditions of humanity and the cultural heritage of artificial intelligence will coexist in parallel. His conclusion: humanity must be ready to sit down at the negotiating table in order to accept the "non-human cultural heritage" created by it into the "universal cultural heritage."

3. Remembering the working society

So, as of the end of 2023, humanity has, on the one hand, a steady trend in the development of artificial intelligence in the form of chatbot with GenAI. On the other hand, it is the era of GenAI that opens up a certain historical time when humanity itself will gradually lose labor as its usual means of livelihood. Such an authority in the digital world as Bill Gates assures that thanks to artificial intelligence, people will switch to a three-day work week, which will greatly simplify their lives (Hart, 2023). However, while arguing that people will no longer have to work hard because machines will produce everything they need, the AI advocate does not say how they will use the freed-up time and whether employers will be willing to pay the unemployed the same wages. Meanwhile, now there is still an immense problem of using the free time that AI will "give" to humanity. "Family life", "activities with children", "creative activities", "self-development" and other similar proposals are standard activities AFTER a regular working day or on weekends.

The speed at which AI is being introduced into society is equal to the speed at which the human labor market will decrease. Are the developed countries of the world ready for the unemployment market to increase significantly? Do they have plans and, most importantly, resources to support the unemployed, whose number is constantly increasing?

In our opinion, the working society, the end of which was much discussed in the last third of the XX century due to the emergence of "white collar" jobs, mental work and so on, is ending right now. And not only because a technological — digital — revolution is taking place, it could become one of the key ones, like the industrial revolution, which changed the methods of production and organization of labor, which caused significant changes in society. Now the situation is different: society is in a "pre-revolutionary state", because for almost five hundred years it has learned to work systematically, to value its work, and has built a certain system of ideas about the role and place of work in the life of an individual and his relationship with society. And what is the result? Today, the future of humanity appears with a prospect without labor and with the still unresolved issue of free time. The de facto AI culture emerging in front of our eyes is opposed only by the culture of the working society, which, it seems, no one is going to defend. Nouriel Roubini, a professor of economics at New York University Stern School of Business, perhaps most accurately summed up the state of future uncertainty we live in today in the title alone of his book, Megathreats (October 2022) (Rasmussen, 2022).

In the last third — quarter of the XX century scientists around the world predicted the end of the working society based on various criteria. In the last ten years, we have been talking about specific factors leading to its end. Here are some of them:

1. Automation and technological progress. Rapid development of technology can replace labor with job automation and artificial intelligence, leading to a reduction in the need for human labor.

2. Globalization. Increasing international competition is leading to the relocation of production and job losses in developed countries due to lower labor costs in other regions.

3. Changes in market conditions. Economic changes, such as the transition to a consumer economy or the development of cyber-physical systems, are changing the nature of work and creating new work models.

4. Environmental and social reasons. Environmental issues, demographic changes, and social changes affect economic performance and labor requirements.

5. Changes in labor costs. Rising labor costs or changes in labor requirements may prompt the search for alternative production models and work practices.

These and other reasons interact and have different impacts in different areas of society and in different countries of the world, taking into account technological, economic, environmental and social dimensions.

In support, here are several studies on the impact of automation and technological progress on working society in the run-up to the emergence of chatbot with GenAI (2010–2020):

1. Erik Brynjolfsson. "Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy" examines how rapid advances in computing and artificial intelligence are changing the structure of the labor market (Brynjolfsson, 2011). The authors note that many routine tasks are becoming subject to machines, which creates challenges for the workforce. Researchers identify two contradictory influences of technological progress: on the one hand, productivity increases and the economy improves. In addition, the risk of rising inequality and the loss of certain types of jobs increases. Considering these contradictions, the authors propose several strategies to cope with the challenges, namely:

- education and retraining. The authors note the importance of education and lifelong learning. The development of skills that are most difficult to automate at the first stage can strengthen the position of labor market workers;
- innovation in business. Fostering entrepreneurship and innovation can create new employment opportunities. The development of new industries and technologies contributes to the creation of new jobs;
- social policy. The authors call for the development of effective social policy that would help adapt to

changes in the labor market. This may include flexible forms of employment, social programs, support systems, etc.;
- global cooperation. Cooperation between countries and companies can help develop common strategies to manage the impact of technological progress on the global labor market;
- creation of new jobs. The government should support the creation of new types of work that require human creativity, social interaction and empathy, which can help compensate for the loss of jobs in routine areas.

According to Erik Brynjolfsson, the proposed strategies are aimed at creating a more adaptive and established working society in the context of rapid technological development. The overall conclusion is that modern society needs to embrace change and actively adapt to new labor market demands to ensure sustainability and prosperity in the era of technological revolution.

Over the past thirteen years, Erik Brynjolfsson, director of the Digital Economy Lab at Stanford Institute for Human Artificial Intelligence, has been tracking the development of AI step by step. In December 2023, he stated that while "the impact of artificial intelligence on society is now likely to be in the trillions of dollars, much more investment needs to be made in research into the economics of artificial intelligence" (Brynjolfsson & Unger, 2023). The call to refocus research priorities and develop smart policies to match the scale of breakthroughs in AI itself has been coming out of Stanford University for more than a decade. But usually, society moves from practice to theory, and not vice versa.

2. Martin Ford. The author of "The Rise of the Robots" (2015) examines the impact of robotization on the economy and labor market, warning of possible large-scale job losses. That is, the author also explores the impact of automation and robotization on society and the labor market (Ford, 2015).

Although these books are devoted to the same topic, Brynjolfsson and Ford have different views on its coverage, emphasizing different aspects and suggesting different strategies. In both cases, the authors recognize the importance of society adapting to technological change and complement each other.

Martin Ford notes the following possible consequences:
- automation and the future of work. Automation, including robots and artificial intelligence, could lead to massive job displacement. The author warns of a possible rise in unemployment and increased inequality;
- a threat to a wide range of professions. Unlike previous technological revolutions, new technologies can relate not only to routine work, but also to a wide range of professions, in particular highly skilled ones;
- economic inequalities. Automation may contribute to greater economic inequalities because owners of capital, including owners of technology, may benefit more than workers;
- universal basic income (UBI). The author proposes the introduction of a universal basic income (UBI) as one way to mitigate the social and economic consequences of automation, providing a basic income to all citizens;
- the need to consider new systems of social relations. The author argues that society must reconsider economic and social systems to adapt to rapid technological progress and ensure sustainability.

Both books highlight the importance of embracing change and developing strategies to effectively manage the impact of technological change on the future of working society. Comparing the approaches of Martin Ford and Brynjolfsson with McAfee in the study of the main trend in the development of society, we note that the latter place the main emphasis on studying the impact of technological progress and on changing the structure of the labor market; they indicate dual consequences for the economy. At the same time, Martin Ford focuses on the broader social and economic consequences of automation, including rising unemployment, threats to different professions, and growing economic inequalities.

We also see that "Race Against the Machine" is more focused on the economic aspects and opportunities that technology provides to improve productivity and well-being. In "Rise of the Robots", Ford addresses social and moral issues such as the potential for mass unemployment and the need to rethink social structures.

Different aspects of the study lead to different solutions and proposals. In "Race Against the Machine", the authors propose strategies such as preparing society for changes in education, retraining, and business innovation to cope with the challenges of technological change. Martin Ford's main idea is to introduce a universal basic income (UBI) as one of the simplest solutions to mitigate the social consequences of automation.

Therefore, it can be argued that in both books, the authors recognize the importance of society adapting to technological changes, but have different views on solving this problem, so the research is complementary to each other.

3. Ray Kurzweil. In his works, in particular "The Singularity is Near: When Humans Transcend Biology, 2005," the researcher examines the concept of "technological singularity," when rapid progress in technology can significantly change the labor market and economy (Kurzweil, 2006).

Here are the author's main opinions and conclusions (considering that the work was written almost twenty years ago):

- technological singularity. Kurzweil introduces the concept of technological singularity as a period when artificial intelligence, biotechnology and other technologies become so powerful that they change the very nature of humanity and society;
- the pace of technological progress is accelerating. The author argues that in the future innovation will occur faster and faster, opening up new prospects for the evolution of society;
- unification of man and technology. Kurzweil envisions that humans and technology will increasingly interact, including the integration of nanotechnology, artificial intelligence, and biotechnology;
- immortality and improved capabilities. The author explores the idea that the technological singularity could lead to significant improvements in human capabilities, including extending life and even achieving immortality;
- ethical and social issues. Kurzweil raises important ethical and social issues related to the technological singularity, such as issues of privacy, security, and equality.
- an optimistic view of the future. Overall, the author expresses an optimistic view of the future, suggesting that technological evolution can provide solutions to many problems and significantly improve the quality of life. Kurzweil is confident that humanity is on the verge of technological advances that will radically change our experience of existence.

It is not surprising that the author's too optimistic attitude and lack of argumentation, the lack of concrete data to support his theses, caused discussions and criticism among scientists and the public. We agree with such criticism because, first of all, we need to consider the risks and consequences of the "technological singularity". However, this work is an example of not only a worried approach to robotization, but also an optimistic one.

Let us briefly note several of the main reproaches of critics that were voiced almost twenty years ago:

- optimism and utopianism. Some scholars argue that Kurzweil is too optimistic about the technological singularity and exaggerates the speed with which technology can reach such significant levels of development;
- insufficient consideration of ethical and social aspects. Critics have noted that Kurzweil's research does not pay enough attention to the ethical and social issues surrounding the technological singularity. The author's lack of discussion of potential negative consequences is troubling;
- lack of empirical evidence. Some scientists believe that Kurzweil provides little empirical evidence and concrete data to support his predictions, making his ideas less convincing to the scientific community;
- technological limitations. Critics argue that Kurzweil does not sufficiently take into account the technological, engineering and physical limitations that prevent some of his prophecies from being realized;
- immortality and life extension. Kurzweil's (and not only his) ideas about immortality and life extension are controversial. Many scientists and philosophers doubt the realism of these concepts and point to the difficulties in their practical implementation. But, as they say: he is not the first, and he is not the last;

– lack of discussion of the social consequences of the author's vision of technological singularity. Critics also note that Kurzweil does not sufficiently consider social consequences, particularly changes in social structure and work relationships.

As we see years later, Kurzweil was too optimistic, and the critics were too conservative. There are many more examples of similar studies over the past twenty years, but scaling up their number will not significantly change the conclusions. This is the essence of singularity (Ray Kurzweil's term) — change is irreversible. So, in these several standard scientific papers, published a certain time before the advent of chatbot with GenAI, a conditional red line is predicted, beyond which rapid technological change (revolution) will begin. They will lead, relatively speaking, to radical (revolutionary) changes in the life of society. Let us conditionally designate this red line as the conditional end of labor society. What is meant by this concept in terms of the works reviewed? One scenario for the end of the working society is increased automation in various fields of work, which could lead to a decrease in the demand for manual labor and an increase in unemployment in some traditional fields. At the same time, it is predicted that retraining the workforce will be important, as these workers will need new skills to work with automated systems, artificial intelligence and other new technologies. That is, it is proposed to retrain the unemployed again for the work that they could not cope with before. It can be predicted that such retraining of a large number of the workforce will most likely ultimately mean their exclusion from the current labor market.

Another predicted scenario is a change in the definition of work itself and their role in society. In this case, the role of creativity, innovation, education and intellectual work increases, which may turn out to be more valuable in such a society. It is also possible that the role of social and other humanitarian professions, necessary for interpersonal interactions and social preservation of connections in a digital society, will grow. However, here the question arises: if a person engaged in, conditionally, manual labor does not have the ability for intellectual or creative activity, will retraining help him?

Of course, it is difficult to predict the exact consequences of these changes due to the rapid pace of technological development and the complexity of social processes. However, forecasts help to understand the direction of development of society in the face of increasing automation and the use of artificial intelligence. Of course, changes will not begin simultaneously throughout society. Developed countries are the first to undergo these changes. Figuratively speaking, transformations in the life of society may resemble the process of computerization and spread of the Internet in 1990–2010.

4. When predictions come true

The results of the past, in 2023, according to IMF Managing Director Kristalina Georgieva, indicate that the world is already on the verge of a revolution — almost 40 percent of the world's employed people are already influenced by AI (Cazzaniga et cet., 2023). The IMF analysis confirms the sad forecasts of the authors whose studies were noted above. Already, those workers who use chatbot with GenAI show higher productivity and have greater income compared to those who work without using it. Simply scaling from workplace examples to national examples confirms income polarization and rising inequality.

The impact of AI in the most developed countries is expected to be the highest, with almost 60 percent of jobs expected to experience it in the coming years. There will be a situation that Erik Brynjolfsson and Gabriel Unger call a "fork" (Brynjolfsson & Unger, 2023), that is, the impact of AI on productivity will exceed the negative effects of lower wages and hiring cuts. At the same time, in low-income countries, the impact of AI will be less — 40–26 % due to the lack of infrastructure or skilled labor to reap the benefits of AI. Over time, this technology is expected to increase inequality among nations (Figure 1).

It should be noted that in 2023, society, for the first time in world history, began to prepare for challenges, in particular those associated with the use of AI. In December, MEPs agreed on the world's first legislative rules to regulate artificial intelligence (AI) in all aspects of life.

In the 2023 analysis report, the IMF suggested that countries around the world introduce an AI Readiness Index (IRAI) to help them develop

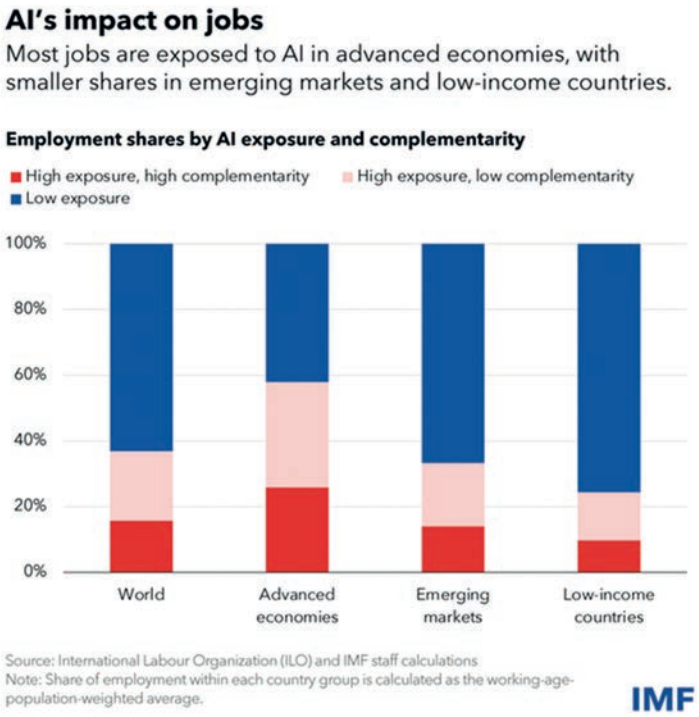

Fig. 1. The impact of AI on countries of the world with different economic levels (from the IMF analytical report for 2023) (Georgieva, 2024)

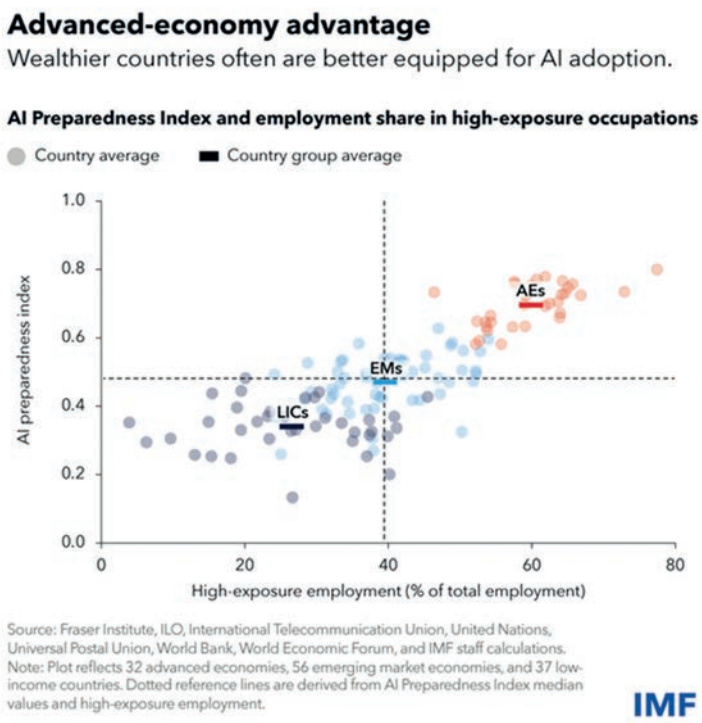

Fig. 2. Advantages of a developed economy: rich countries are better prepared to implement artificial intelligence (from the IMF analytical report for 2023) (Georgieva, 2024)

effective domestic policies. IRAI measures readiness in areas such as digital infrastructure, human capital and labor market policies, innovation and economic inclusion, and regulation and ethics.

The IRAI assessed the readiness of 125 countries to implement AI. As expected, Singapore, the US and Denmark received the highest scores in the index, given their strong performance in all four categories (Figure 2).

That is, nothing unpredicted: the rich are becoming even wealthier, the polarization of the world economy is intensifying, society is moving

further towards collapse at an ever-increasing speed. Nouriel Roubini believes that now "there is growing recognition that not only the global economy but also human survival is at risk" (Roubini, 2023).

So, society is in a state that is characterized as a crisis from the point of view of economists, sociologists, and politicians. In philosophical terms, we can define this state as the end of working society. The system of ideas about the interaction of humanity with labor, production, economics, innovation and consumption that has developed over five hundred years is subject to deep rethinking. Let us mention the main aspects of the working society paradigm:

1. The centrality of labor: the priority of labor as the main production and way of ensuring life.
2. Reward system: reward for continued work based on performance or other criteria.
3. Traditional areas of employment: division of labor into certain professions, industries and sectors.
4. Stability of labor relations: stability in the formation of the connection between labor and capital.

In view of the above, the impact of AI on all aspects in the future digital society is obvious:

1. Labor for a person in the sense of a labor society will eventually cease to be a necessary condition for life.

2. Remuneration based on the fact of birth (existence) will eventually replace the "wage" function. Already today we have similar examples: a) one-time payments associated with the birth of a child (in many countries of the world in order to increase the birth rate, for example in Saudi Arabia — the highest, $50 000), or up to a certain age (with the birth, maintenance children, the need to reduce parents' working hours, benefits for housing, education, etc.). There are so-called dividends on the sale of resources to residents of Alaska (the USA) and citizens of the UAE. The introduction of an unconditional basic income is being discussed in Finland, Switzerland, Germany, and separate provinces of Canada. Martin Ford (see above) proposes to develop the UBI in case of a rapid impact of AI on the state's economy.

3. According to analysts, in just a few years up to a hundred professions will disappear in the world due to the use of AI.

4. Labor stability began to be affected even before the advent of chatbot with GenAI due to the influence of automation of production processes. Many countries around the world have experimented with reducing the length of the working day or working week. The experiment had varying degrees of success in different areas, but the shortened day and week have caught on and are operating in several countries.

5. Digital society paradigm

Let's try to define the paradigm of a digital society, because we can't help agreeing with the inevitability of such a society. Obviously, as noted above, the transition to a robotic society will lead to changes in the structure of labor, the economic system and social dynamics. These changes can't help affecting employment, the distribution of resources, the development of new technologies and the capabilities of people. And although the scenario of these changes will vary from country to country, depending on the level of technological development, political decisions and socio-economic context, its key trends will be the following:

1. Significant increase in the use of robots and artificial intelligence in manufacturing and services, which will lead to a decrease in the number of manual jobs.
2. The emergence of new jobs related to the development, maintenance and management of robotic systems.
3. Increased productivity through automation and process improvements will have the opposite effect. At the first stage, this will lead to an increase in the income of the owners of the enterprise, at the next — to a decrease and further regulation of production depending on demand.
4. A widening gap between highly skilled workers dealing with robots and digital technologies and less skilled workers, for whom demand in the labor market will decrease.
5. The need for a new system of education and retraining of workers to perform jobs that require digital technical skills will increase significantly.
6. The decrease in the number of statistical manual jobs will become a constant source of social problems such as unemployment and income inequality. Accordingly, social unrest will increase.

7. The need for new rules and regulations to protect owners and workers, control by the state or regulatory authorities over the use of digital technologies, and regulation of the economic aspects of work will lead to the development of a legal framework.

It is highly likely that in the coming decades, the scales of "AI versus society" in employment matters will tip towards AI. However, does this mean the end of the working society — the end of the culture of the working society? Let's not forget that GenAI and AI in general are created and trained in the culture of a working society. And most importantly: until "no one has refuted the theory about the role of labor in the origin and development of man as a rational being", research in the sphere of labor and society cannot "be of an imperative nature" (Machulin, 2000). Will the employment of AI in the labor market be able to develop the work of an intelligent robot into an independent, free, intelligent robot independent of humans? It's unlikely, because it's people, not aliens, who are creating and implementing AI.

Let us also mention that labor society began to take shape after the appearance of such phenomena as "Utopia" (Thomas More, 1518) and "City of the Sun" (Tommaso Campanella, 1602). These were, relatively speaking, the image and goal of the future that society has been striving for five hundred years! Despite incredible growing pains, dozens of wars and revolutions, and millions of deaths, labor society still achieved the highest per capita GDP in its history. That is, in a civilizational sense, society has done a good job. Perhaps it makes sense to reconsider the approaches to the concepts of "utopia" and "communism", and adjust the working society to a non-working society — a society of free time?

Of course, after a large-scale social crisis.

Conclusions:

1. Working society culture is a concept that refers to a set of values, beliefs, social norms, traditions and practices related to the importance of work, production, economic relations and interaction between people in society. The culture of a working society emphasizes the role of work and economic activity in the life and functioning of society. It determines a person's attitude towards work, resource allocation, technology and other aspects related to production and the economy. The culture of a working society may vary in different cultural, historical and geographical contexts, but in general it identifies the values associated with the work process and economic relations in society.

2. The end of the working society can be seen as a concept that points to the possibility of significant changes in the nature of work and society as a result of technological innovation, automation, artificial intelligence and the development of automated systems. These changes represent a transition from an economy based on traditional types of work to a new type of economy, where the role of human labor becomes less significant, and jobs that were previously performed by people are transferred to automated systems or provided by artificial intelligence.

3. Society is in a state that is characterized as a crisis from the point of view of economists, sociologists, and politicians. In philosophical terms, we can define this state as the end of working society. The system of ideas about the interaction of humanity with labor, production, economics, innovation and consumption that has developed over five hundred years is subject to deep rethinking.

4. If in the paradigm of a working society the core is the interaction of humanity with labor, production, economy, innovation and consumption, then the paradigm of a digital society assumes the secondary importance of man in production and the uncertainty of the meaning of life, his life goals.

5. Humanity needs to prepare for fundamental changes in the triangle of state — labor — people.

6. The culture of chatbot with GenAI and AI is based on the culture of a working society. It is representatives of the working society who are engaged in the creation and implementation of AI. The goal of the developers (consciously or subconsciously) is to create a future for humanity as they imagine it in the context of the culture of the civilization in which they grew up (Western or Eastern).

Prospects for further research. The speed of introduction of AI into various spheres of life and work of society requires an equally rapid reaction to anticipate the impact of negative consequences on human everyday life. Tracking how different countries are preparing to implement AI is important.

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