ARTIFICIAL INTELLIGENCE: IMPORTANCE FOR THE ECONOMY AND RISKS FOR THE SOCIAL STRUCTURE OF SOCIETY

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Abstract: *This article examines the potential impact of artificial intelligence (AI) on the social structure of societies in the most economically developed countries of the world. Despite the fact that at present the notion of "artificial intelligence" is quite controversial, artificial intelligence is already widely used in various sectors of the economy, state and municipal administration, and the social sphere. Experts expect the international artificial intelligence trading to show very strong growth momentum in the coming years, with generative artificial intelligence receiving special attention. This is a type of AI that is capable of creating intellectual products similar to the results of human creativity. The use of artificial intelligence makes various production, logistics, and management processes more efficient and cheaper. For a long time, it was believed that current information and communication technologies would not be able to remove people from the sphere of creative and highly skilled labour. However, the development of generative artificial intelligence largely refutes this statement. This has already led to people losing their jobs and social status in the most developed countries in the world. In this context, it is necessary to establish mechanisms that allow people to live with dignity. One of them could be a universal basic income.*

Keywords: *artificial intelligence; AI; generative artificial intelligence; transformation of the social structure of society; unconditional basic income.*

JEL Classification: *O33; J24; D63; I31; O31.*

1. Introduction

Philosophers and scientists became interested in the problem of creating a "thinking" machine at the beginning of the New Age. However, it was possible to successfully solve it only thanks to the achievements of the scientific and technological revolution of the second half of the 20th century. The use of artificial

intelligence (AI) has already become an integral part of everyday life in modern society.

The first attempts to create programs and systems capable of imitating human intelligence were undertaken as early as the 1940s and 1950s. The term "artificial intelligence" was introduced into wide scientific circulation by John McCarthy in 1956, at a conference at Dartmouth College (USA) (Morhat, 2017).

Artificial intelligence works using technologies such as machine learning, neural networks, genetic algorithms and expert systems. AI is already widely used in various fields of activity: in production, transport, security, trade, medicine, management, including state and municipal, etc.

The capabilities of artificial intelligence include object, image and speech recognition, automatic translation, processing and analysis of various data, decision-making and much more. Artificial intelligence can also be applied to the creation of automated systems and robots that can perform complex tasks and interact with the environment. However, despite all the benefits of artificial intelligence, a discussion has already arisen in society about the ethics of using artificial intelligence and the social consequences of its development.

2. Results

The purpose of this study is to analyze artificial intelligence technology as a factor of economic activity and its impact on the social structure of modern society. The main assumption of the study is that artificial intelligence is capable of replacing people in all spheres of work and, therefore, significantly transforming the system of social hierarchy, increasing the number of representatives of the lower social strata and the marginalized.

Currently, the issue of a clear definition of AI remains controversial. “And despite the fact that many developments are underway in this area, researchers note that, in general, there is currently no universally agreed (generally accepted conventional) definition of the concept of artificial intelligence; there is not the notion of artificial intelligence that would be recognized by all practicing specialists” (Emmert-Streib, et al. (2020).

In this paper, to understand the essence of artificial intelligence, we will use the definition given on the website of the International Organization for Standardization (ISO):” In essence, artificial intelligence is the ability of a machine or computer system to perform tasks that would normally require human intelligence. It involves programming systems to analyze data, learn from experience, and make intelligent decisions” (ISO, 2023).

There is huge potential for the utilization of artificial intelligence in all areas of life and the economy.

Specifically, artificial intelligence has been applied in the business sector to solve the following problems:

- Artificial intelligence is widely used in enterprises and organizations to automate routine and repetitive tasks such as data processing and analysis, information collection and transmission, resource control and accounting, etc. This allows

optimizing production processes within companies, reducing the number of scraps, defects and errors in work, reducing various types of costs and, therefore, increasing overall operational efficiency.

- AI can serve to analyze large volumes of heterogeneous data, revealing hidden patterns and trends in them. This, in turn, makes it possible to make more informed management decisions based on objective facts, as well as anticipate the development of various events and processes.
- Artificial intelligence is widely used in the operation of various services. For example, chatbots, call centres, systems for recommending the most suitable products and customer services.
- Artificial intelligence can serve to identify various business risks and threats, fraudulent and corrupt schemes. This allows companies to increase the level of safety of all operations and production processes.
- Artificial intelligence can analyze historical data on the demand for goods and services and can also take into account the impact of other factors such as weather, inflation, consumer demographics, etc., on the promotion of goods, products, and services.

These are only a few examples of AI applications in business. Almost all manufacturing and service industries have the potential to use AI to optimize business processes, make smarter management decisions, and improve business efficiency.

The implementation of artificial intelligence in the social sphere can also bring significant benefits to society.

- Artificial intelligence can serve to analyze medical data and diagnose various diseases. It can help doctors make more accurate decisions, suggest effective treatments, and predict risks for patients.
- Artificial intelligence can serve to improve educational processes and individualize learning. It can adapt training programs to the personal requirements and needs of each student.
- Artificial intelligence can serve to identify the most vulnerable groups in the population and develop programs and practices to support them. For example, it can help determine the criteria for granting social assistance and independently oversee the provision of different types of social services.
- Artificial intelligence can help detect and prevent various crimes and crimes, especially if there are digital traces or data obtained through digital devices. Big Data analysis allows us to determine the level of crime in a particular area, as well as profile criminals.
- Artificial intelligence can serve to analyze data on environmental and social issues at the municipal, regional, national, and international levels, as well as the availability of certain resources important to society and the economy. It can help in the development of plans, strategies, projects, development programs, optimizing the use of resources and making decisions taking into account environmental and social factors.

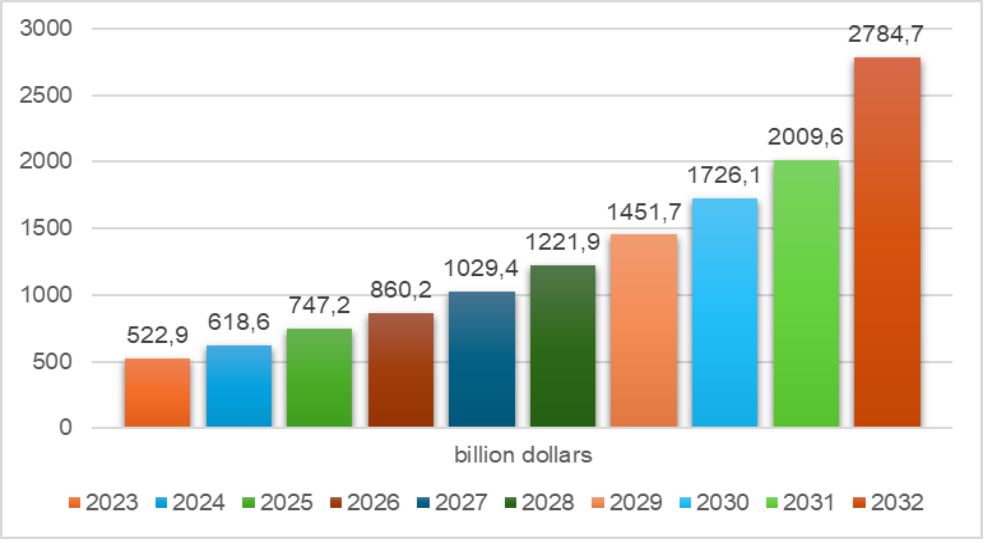
The implementation of artificial intelligence in the social sphere can improve people's quality of life and help solve complex social problems.

Currently, AI is already widely used in the practice of state and municipal administration. It helps to solve the following problems:

- Data analysis and forecasting: Artificial intelligence makes it possible to analyze large amounts of information collected by government agencies and identify hidden trends and trends. This makes it possible to predict socio-economic and political processes and events, which, in turn, allows for more informed management decisions.
- Process automation: AI can help to automate routine tasks and processes in public and municipal administration. For example, it can help for automatic document processing, classification and analysis of citizen inquiries and complaints, and for the creation of electronic monitoring and management systems.
- Digitalization of public services: AI can help to develop intelligent systems that serve citizens. For example, citizens can get information about government and municipal services, fill out applications, or seek advice without leaving their homes. This improves the availability and quality of services provided by public authorities.
- Fighting corruption: AI can help to detect and prevent corruption in state and local government systems. It can analyze data on state and municipal contracts and budget expenditures, identify anomalies and discrepancies in the use of state and municipal funds, and assist in the development of control and monitoring systems.

According to expert estimates, in 2023, global spending on application and the putting into execution of artificial intelligence amounted to more than 500 billion US dollars. Over the next decade, the global AI market will grow steadily. Data on this is presented in the following figure (Figure 1).

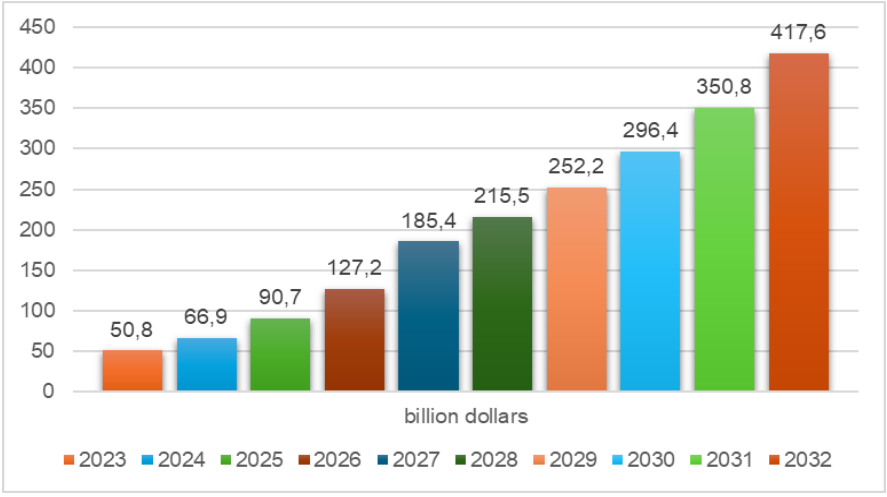
Figure 1. Dynamics of changes in the volume of the global artificial intelligence market



Source: compiled by the authors based on data (Martynov, 2024).

It is noted that more and more funds will be invested in the development of the so-called generative artificial intelligence (Generative AI) - this is a type of artificial intelligence that is capable of creating products that resemble the result of human creative work: unique texts, drawings, music, videos. Generative artificial intelligence is widely used in creative fields: advertising, entertainment, media, marketing, etc. Changes in the volume of the generative AI market is shown in the figure below (Figure 2).

Figure 2. Dynamics of changes in the volume of the global generative AI market



Source: compiled by the authors based on data (Martynov, 2024).

Despite the undoubted advantages of using AI in modern production and management practices, its use also has certain negative effects for modern society, especially for the most developed socio-economic states.

The widespread use of machines, robots and current information and communication technologies has made it possible to largely eliminate people from the industrial production process. Due to this, the service sector has grown significantly in quantity and quality. In some countries, it accounts for about 70% of total GDP. Millions of people are employed in the service economy. The development of such a trend led to the creation in the second half of the 20th century of the concept of "post-industrial societies" based on the valorization of scientific knowledge, innovation, creativity, and a constant increase in the level of human capital due to improved education.

It was assumed that a person, after leaving an industrial or agricultural enterprise, would be able to realize himself professionally in activities related to science, creativity, inventions, and communications with other people.

However, the pace of AI development is currently such that, even in such activities, it is difficult for humans to compete with machines.

It is quite possible that the social structure of the most developed countries will undergo significant changes as a result of the progress of modern information and communication technologies. A computer with the appropriate software can already replace a salesman, security guard, translator, teacher, bank clerk, travel agent, etc. It will probably not be long before a large number of actors, directors, journalists, artists, marketers, PR people, lawyers, doctors and even engineers (i.e. whose work requires a sufficiently high level of education, creative skills and the ability to interact with other people).

In June 2024, LEAP 71 reported that it had developed a liquid rocket engine design in less than 2 weeks using its Noyron computational model. It took several more days to physically manufacture its components and assemble them. According to the company, the engine started the first time and demonstrated high performance characteristics. According to LEAP 71 CEO Josephine Lissner, a traditional design office of human engineers would need months, if not years, to develop such an engine (LEAP, 2024).

Recently, the media has quite often published publications about AI performing quite complex surgical operations without human participation.

The world of medicine could be on the verge of a revolution after a team of scientists from the International Institute of Neuroscience and Technology announced that artificial intelligence (AI) has independently performed the most complex neurosurgery on the human brain for the first time. News of the discovery has sparked a furious response among experts and could herald a new era in the treatment of neurological diseases.

An AI surgeon developed by scientists was used to remove a tumour from the deep layers of the brain. The operation lasted more than four hours and was performed completely autonomously using robotic instruments controlled by artificial intelligence. The main feature of this discovery is the absence of the need for human touch, which significantly reduces the risk of infections and human error.

The AI software has been trained on thousands of hours of real-world transaction records and millions of data points, allowing it to analyze and make complex decisions in real time. By skillfully manipulating surgical instruments, the AI demonstrates a precision and consistency previously unattainable by a human surgeon.

The patient on whom the experiment was conducted is in stable condition and is already seeing an improvement in his well-being. Doctors plan to monitor his recovery for several months to be completely sure that the procedure was successful. If the results are confirmed, AI surgeons could become a common sight in operating rooms around the world (MKOMOV, 2024).

Society has already reached the point where representatives of the middle social class, including its upper part, may lose their positions, losing the fight for jobs in favour of AI. In particular, in the countries of the Organization for Economic Cooperation and Development (OECD), the middle class comprises 50% to 70% of the population (Hannon, 2019). These are people who are accustomed to a certain stable income and an appropriate lifestyle. Unemployment due to the use of current information and communication technologies, including artificial intelligence, will

increase the number of people at the bottom of society. This leads to the emergence of various sociopolitical conflicts, rising crime rates, a decline in the purchasing power of the population, a shortening of life expectancy, and cultural decline.

According to a study by the International Monetary Fund published in 2024, approximately 60% of workers in advanced economies are exposed to some risk due to the introduction of AI (Cazzaniga, et al. 2024). For some countries, this figure is even higher. The distribution of workers by risk of exposure to AI in the United Kingdom is shown in the following figure (Figure 3).

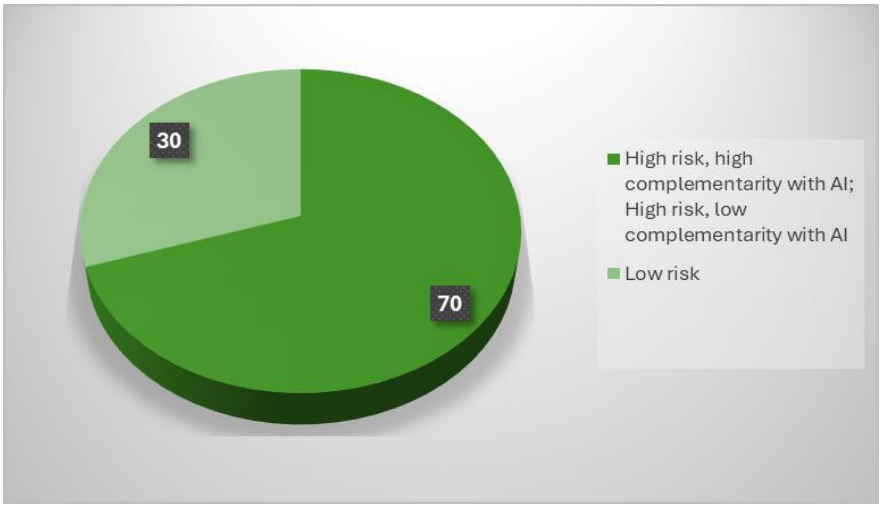


Figure 3. The degree of risk of the impact of AI on those employed in the economy (Great Britain)
Source: compiled by the authors based on data (Cazzaniga, et al. 2024)

According to the McKinsey Global Institute, by 2030, due to automation (including as a result of the use of AI), between 375 (at the minimum estimate) and 800 million jobs could be eliminated (Lyalkova, et al. 2023).

According to reports from global media outlets such as CBS, in 2024 technology corporations (Google, SAP) plan to lay off hundreds of workers due to the improvement of technologies related to artificial intelligence (Cerullo, 2024).

It must be said that the political elites of the most developed countries in the world seem to foresee such negative trends and are working on creating instruments that would avoid a sharp decline in the level of social well-being.

In particular, one such instrument is the unconditional basic income. “An unconditional basic income is an income paid by a political community to all its members individually, without means testing or work requirements” (Kvashnin, 2019). At the beginning of the 21st century, the issue of introducing an unconditional basic income was widely discussed in a number of European countries: Hungary, Germany, Italy, the Netherlands, Switzerland, Finland and a number of others. In Finland, this idea has reached the stage of a fairly large-scale experiment: “The

pilot program in Finland, conducted in 2017–2018, received the most publicity. The National Social Insurance Institution (KELA). Over two years, a basic income of 560 euros was allocated to two thousand randomly selected unemployed people aged 25 to 58. The specified amount was paid regardless of whether they had additional sources of income and whether they managed to find a job during the experiment. Simultaneously, program participants were deprived of traditional benefits, including unemployment benefits, social assistance, housing subsidies, student scholarships, etc. However, to ensure that no one ended up "in the red", if the previous payments that a citizen could count on exceeded the amount of the basic income, the state compensated him for the lost amount" (Kvashnin, 2019). In 2016, Switzerland held a referendum on the introduction of an unconditional basic income, but for several reasons, including the fact that the bill was not well thought out by its authors, the idea was supported by just over 20% of the Swiss.

3. In conclusion

The paradox of modern economics is that the economic system of society, like other social systems, was created by people and for people. The rapid progress of science and technology, which set themselves quite noble goals, including ensuring the comfort and safety of human life, at the beginning of the 21st century led to the fact that a person is deprived of a place in the system of production and distribution of resources, is deprived of the opportunity for self- realization and self-identification through labour activity, is deprived of the opportunity to occupy a worthy place of social mobility in the vertical social hierarchy.

Robots, machines, computers, neural networks have no need, no desire to consume. The displacement of people from the economy may lead to another crisis of overproduction, when the goods, products and services produced will not be consumed because the majority of society members will not have the necessary means to do so.

Therefore, politicians and managers should really think about solving this problem. What will it be like: the creation of new areas of human activity, professions, and jobs, but where are the guarantees that robots, machines and AI will not come there too? Unconditional basic income — is it enough to ensure a sufficiently high standard of living? Or should we return to the scientific heritage of K. Marx and nationalize the production means? But private ownership of the means of production is one of the cornerstones of modern Western civilization; will corporate owners agree with this? Now we can say that the outlines of the future problem have already appeared, but there is no adequate solution yet.

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