

## ARTIFICIAL INTELLIGENCE: CHALLENGES FOR INTERNATIONAL TRADE AND LAW

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**Abstract:** The article aims to consider the trends in the development of artificial intelligence and its impact on the processes in world trade, the issues of protecting the rights to digital content created using artificial intelligence technologies and neural networks. This topic is becoming increasingly relevant with the development of technology and the expansion of its application in various areas of life. The problems of protecting developers' rights and legitimate interests have come to the fore in intellectual property law. With the help of intelligent systems, legally protected content can be created, and other data, relations regarding which are also subject to protection. In this regard, issues related to the standardization of requirements for procedures and means of storing big data used in the development, testing, and operation of artificial intelligence systems, as well as the use of blockchain technology, are of particular importance. Various options for using artificial intelligence at all links in the value chain are considered, and an assessment of the consequences of introducing such technologies is made. The analysis of the issues of regulating the issues of cross-border movement of data against the background of the aggravation of the problem of data confidentiality was carried out. Analytical assumptions about the possible impact of AI on the labor market in the future are made.

**Keywords:** Artificial intelligence, Digital economy, Intellectual property, International trade, Protection of rights.

### 1 Introduction

In recent years, a vast number of technical innovations have had a powerful impact on all areas of human activity. One of the most relevant innovations in recent years is *artificial intelligence* (AI). Intellectualization of organizational processes in various spheres of society, the introduction and accumulation of new technologies in the context of the Fourth Industrial Revolution, digitalization, and globalization lead to profound changes in economic systems and law. The emergence of high technologies significantly affects creativity and scientific thought, and scientific and technological progress does not stand still. At the same time, the creation of content using high technologies today competes in quality and relevance with the results of human intellectual activity [9]. At the same time, it seems that in the legal environment, when studying the end-to-end technology of artificial intelligence, the emphasis is on three components: a) the legal personality of robotic systems; b) the possible robotization of legal processes; c) the intellectual and legal aspects of the application of artificial intelligence technology in current conditions.

Twenty percent of companies are already using artificial intelligence on an industrial scale. However, the extent of use varies by sector. Thus, a high degree of use of AI is observed in areas such as financial technology, the automotive industry, and telecommunications. On the other hand, the average degree of use of AI is observed in retail, media, and FMCG, while a low degree is observed in healthcare, education, and tourism. Artificial intelligence is applicable at all links in the value chain: at the design stage – making accurate forecasts and plans; at the production stage – optimization of costs and production process; at the stage of product promotion – targeted marketing and market analysis; after-sales service – improving the quality of customer service and interaction with the customer [1].

Like other innovations, the introduction of AI will likely lead to an increase in the well-being of populations worldwide. However, the negative consequences may be the growth of inequality, the disappearance of several professions, and social exclusion. Despite significant progress in understanding the

algorithm itself and the features of AI, humanity is not yet aware of the consequences of using this technology on a global scale. As a result, some countries are already negotiating to regulate AI through international agreements [12]. Until now, cross-border flows of data and information have been governed by WTO rules that predate the spread of the Internet. Now the countries are striving to regulate these issues within the framework of local and bilateral agreements.

The EU is considered a leader in the regulation of the digital market. Within the union framework, there is an agreement General Data Protection Regulation. Its goal is to harmonize data privacy legislation within the integration association [62]. This agreement intersects with human rights law and security legislation, which takes the issue of data protection to a new level. At the same time, governments worldwide are allocating vast amounts of public funds to developing clusters dedicated to developing new technologies based on AI, which aim to achieve a comparative advantage in the global economy. Often this process takes place on a too large scale, and good intentions can hide devastating consequences for the worldwide economy.

At the center of discussions are the actions of the Chinese government aimed at protecting domestic IT giants, which prevent giants like Google or Amazon from entering the Chinese market. This has enabled China to make tremendous progress in commercializing artificial intelligence technologies. Examples include the Baidu search engine, the Alibaba e-commerce platform, and the WeChat messenger company, which combines the functionality of Skype, Facebook, and Apple Pay. Services are already gaining recognition abroad and are beginning to compete with existing leading companies; perhaps, shortly, they will be able to penetrate the US and EU markets [13] fully.

### 2 Materials and Methods

It is known that artificial intelligence methods are highly diverse and borrowed a lot from biology, neurophysiology, genetics, philosophy, and sociology. Sometimes this makes it possible to clarify that artificial intelligence is a property of intelligent systems to perform creative functions that are traditionally considered to be inherent only to humans [10]. However, to create machines that would approach the human brain in their capabilities, one must first understand the essence of human intelligence and reveal the mechanisms of human thinking. But S. Blakesley and J. Hawkins convincingly proved in their timeless work that attempts to create artificial intelligence have not yet reached the expected level due to discrepancies between human knowledge about the structure of the brain and the possibilities of neurobiology psychology and cybernetics.

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The most promising is the study of issues related to the definition of artificial intelligence technology as a tool for creating new knowledge, which leads to the denial of the legal personality of such systems. In turn, our experience in studying

the digitalization of educational processes in the field of training lawyers has shown that artificial intelligence cannot replace a professional [11, 15-17]. Taking into account the need to develop common approaches to understanding the digital competencies of a lawyer, it can be concluded that technologies will allow the formation of such content, which in most cases will cancel the legal routine and allow for quick and accurate decision-making, but will not lead to the creation of new objects of exclusive rights protection. All this indicates the need to study the problems of the consequences of the application of artificial intelligence technology from the standpoint of privacy and information law in order to resolve the issue of the possibility of protecting the rights and legitimate interests of the creator of a particular artificial intelligence system or the implemented task for such a system. think intelligently. Research in this area suggests otherwise [23].

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### 3 Results and Discussion

#### 3.1 Artificial Intelligence is the Main End-to-End Technology of the Digital Economy

The use of artificial intelligence technologies in the sectors of the economy is of a general nature. It contributes to creating conditions for improving efficiency and forming fundamentally new areas of activity for economic entities.

End-to-end technologies are the critical areas of the national technology initiative – a program to support the development of promising industries. These include big data, blockchain, artificial intelligence, quantum technology, robotics, wireless communications, the Industrial Internet, virtual and augmented reality, and new manufacturing technologies [8].

End-to-end technologies have become a guarantee of the successful implementation of the tasks of the digital economy. However, the concept of "end-to-end" digital technologies is not disclosed in the legislation and is also not generally recognized in science. In some cases, their existence is explained through an appeal to the scientific and innovative sphere [34-40]. And then, end-to-end digital technologies gain importance as key science and technology areas that have the most significant impact on the development of science and technology initiative markets. In this sense, as experts hope, the formation of a scientific and technological department for these groups will make it possible to create globally competitive high-tech products and services. In some cases, the emergence of the concept of end-to-end digital technologies is associated with their scale and depth of influence on society and the economy [42-45]. "End-to-end" digital technologies in this vein are understood as "technologies used for collecting, storing, processing, searching, transmitting and presenting data in electronic form, the operation of which is based on software and hardware and systems that are in demand in all sectors of the economy, creating new markets and changing business processes."

In addition, end-to-end digital technologies in technical sciences include not only big data, artificial intelligence, neural networks, and distributed registry systems, but also wireless communication technologies not mentioned in the legislation as such, technologies for controlling the properties of biological objects, etc. It turns out that the attribution of a particular technology to cross-cutting in legislation is not linked to any studies and justifications presented to the public [61]. However, obtaining such a regime affects access to budgetary injections in relevant undertakings. Such an approach can only be justified by the rapid development of technologies, which, due to their mobility, often influence the patterns of the regulatory sphere [47-50]. This is very clearly seen in the example of large-scale artificial intelligence technology.

We must not forget about the compatibility of various technologies to achieve the desired effects. For example, artificial intelligence and big data technologies are often and strongly linked in applied digital systems [52-59]. Perhaps the most important thing in choosing a strategy for the legal regulation of artificial intelligence technology is that a variety of technologies are used and developed that are based on or associated with intelligent systems but do not always fall under the concept of classical artificial intelligence. There is no common understanding of the term "artificial intelligence" in legal and other fields. Today there are many definitions of the concept of "artificial intelligence."

Artificial intelligence is a set of technological solutions that allows simulating human cognitive functions (including self-learning and searching for solutions without a predetermined algorithm) and obtaining results when performing specific tasks that are at least comparable to the results of human intellectual activity. The Encyclopedia Britannica defines artificial intelligence as "the ability of a digital computer or computer-controlled robot to perform tasks normally associated with thinking beings." As you can see, in both interpretations, an idea is given of artificial intelligence as a technology that creates something new compared to the result provided by the algorithm. It is well known that the author of the very term "artificial intelligence" is John McCarthy, the founder of functional programming [63-65]. He said, "The problem is that so far, we cannot generally determine which computational procedures we want to call intelligent. We understand some of the mechanisms of intelligence and do not understand others." Therefore, intelligence within this science is understood only as the computational component of the ability to achieve goals in the world.

On the one hand, this makes us think about the possibility of obtaining an actual result by using artificial intelligence. On the other hand, artificial intelligence technology is perceived as software that leads to the creation of results - intellectual activity or another nature, which allows making decisions based on specific generalized data. For example, we can talk about the so-called recommender systems and intelligent decision support systems. It is essential to keep this in mind to not associate the results of the application of artificial intelligence technology only with a significant impact that has originality and value in circulation, like an invention or a work of art or literature. In general, artificial intelligence technology allows you to perform actions based on calculations, including receiving and analyzing information and learning from new data.

"Artificial intelligence technologies are technologies based on the use of artificial intelligence, including computer vision, natural language processing, speech recognition, and synthesis, intelligent decision support, and advanced artificial intelligence methods." The necessary technological solutions include information and communication infrastructure and software, which also uses machine learning methods, processes, and services for data processing and decision making. Today, this technology is used in various areas of human activity (for example, in medicine, where it helps to treat or diagnose various kinds of diseases in transport by introducing Self-Driving Cars

systems, in the military sphere when making intelligent decisions, when training voice assistants, etc. [13].

For the purposes of developing adequate legal approaches to regulating the relations under consideration, it is advisable to turn to the issues of the essence of this phenomenon. From the point of view of the developers of software algorithms and intelligent systems, unlike conventional process automation systems, the main features and properties of artificial intelligence systems are as follows:

- The presence of a goal or group of goals for functioning;
- The ability to plan their actions and search for solutions to problems;
- The ability to learn and adapt behavior in the process of work;
- The ability to work in a poorly formalized environment, under conditions of uncertainty, to work with fuzzy instructions;
- The ability for self-organization and self-development;
- The ability to understand texts in natural language;
- The ability to generalize and abstract the accumulated information.

Within the technical specialties, over the past time, there have been basic approaches to how you can determine whether a particular technology is an artificial intelligence technology. Moreover, intelligent technologies have been classified into several different types depending on the functions performed and the tasks to be solved. At the same time, it is important to emphasize that artificial intelligence technology is not the only one of its kind. For example, they are now looking for a place in the technology system for quantum intelligence. An alternative to artificial intelligence today is the concept of computational intelligence (CI) technology.

As the developer of this concept, Bezdek, has shown, a system is an intelligent computing system if it: operates only with digital data; has pattern recognition components; does not use knowledge in the sense of artificial intelligence, and shows: a) computational adaptability; b) computational fault tolerance; c) error rate approximating human characteristics.

As an alternative to classical artificial intelligence based on strict logical inference, computational intelligence relies on heuristic algorithms, such as fuzzy logic, artificial neural networks, and evolutionary modeling. The basis for the development of computational algorithms is the development of algorithmic models for solving complex high-dimensional problems. This refers to the field of intelligent algorithms (intelligence algorithms) based on the simulation of biological intelligent natural systems. This direction includes the following main paradigms:

- Artificial neural networks (artificial neural networks);
- Evolutionary computation (evolutionary computation);
- Swarm intelligence (swarm intelligence);
- Fuzzy systems;
- Artificial immune systems (artificial immune systems) [14].

Together with logic and deductive inference, expert systems, machine learning, and intelligent algorithms form a general direction – "Artificial Intelligence." Each of the paradigms of computational intelligence is based on modeling the properties of natural biological systems. Thus, we see that artificial intelligence is only one of the technologies of intelligent systems. However, sometimes, in terms of their manifestations and qualities, both artificial intelligence, in the understanding of J. McCarthy and his followers, computational intelligence, and possibly other technologies are perceived by entrepreneurs, businesses, consumers, marketers, and lawyers as a general concept for this technology. This allows us to talk about the creation of a certain general approach in the legal order to solve applied and doctrinal problems.

Thus, from the view of technical sciences, artificial intelligence technologies include various intelligent systems and algorithms. The results of their use can also be different. Science and technology are not yet at that stage of their development to create a clear and stable classification in the area under study. For jurisprudence, this means that problems will appear. However, even now, some of the issues can be resolved using well-known legal mechanisms. Some are not new at all; they simply were not so relevant due to the underdevelopment and lack of widespread use of artificial intelligence technologies [20].

### 3.2 Legal Qualification of the Results of the Application of Artificial Intelligence Technology

The concept of artificial intelligence can be understood as a set of technological solutions that allow simulating human cognitive functions (including self-learning and searching for solutions without a predetermined algorithm) and obtaining results when performing specific tasks that are at least comparable to the results of human intellectual activity. From a legal point of view, all of the listed components have a different legal regime, and their application gives rise to appropriate legal consequences, which I would like to dwell on in more detail in this paper.

The concept of the result of human intellectual activity is filled with quite specific content. The results of intellectual activity are works, computer programs, databases, performances, phonograms, broadcasting or cable communication, inventions, utility models, industrial designs, selection achievements, topologies of integrated circuits, and production secrets. They are not classified as the results of intellectual activity but only equated to them are the means of individualization of legal entities, goods, works, services, and enterprises. The results of intellectual activity are provided with legal protection as objects of intellectual property. Therefore, if, as a result of applying a set of technological solutions that allow simulating human cognitive functions, we get results comparable to the results of human intellectual activity, then we will face the question of the possibility of extending the regime of intellectual property objects to such results.

Today, the business community is extremely interested in monetizing their developments in creating artificial intelligence programs and systems and earning on the results of robots [10]. The so-called superintelligent artificial intelligence is one step above the human one. Nick Bostrom describes it as follows: it is "an intelligence that is much smarter than the best human brain in almost all areas, including scientific creativity, general wisdom, and social skills." Objects created using algorithms are easier to account for, control, open access and make a profit. The development of robotics and artificial intelligence technologies is very costly. Investors are actively looking for mechanisms to protect the results of their developments in the field of artificial intelligence technology. It is no coincidence that in the report of the World Intellectual Property Organization, "Technological trends 2019: artificial intelligence," it was noted that since the 1950s. In the 20th century, when artificial intelligence systems first appeared, about 340,000 inventions related to these systems were filed, and more than 1.6 million scientific publications of patent information were posted. Currently, machine learning is the dominant technology of artificial intelligence, which is disclosed in patents and included in more than a third of all patented inventions [60].

In some countries, the legislator and society are ready to recognize the claims of interested parties. In some cases, we are talking about supporting companies that invest in intelligent robots and providing them with tax and other benefits, as in South Korea and China. In others – on the recognition of related rights to the results of the activities of artificial intelligence systems, since they do not meet the criteria for the protection of a work created exclusively by a person's creative work. At the same time, many creators of complex, intelligent systems and their owners are interested in commercializing the computer program created based on their developments and the

results of using the corresponding software. Thus, the developers of artificial intelligence systems have formed order to obtain a legal opportunity to protect the results of the activity of an artificial intelligence system. However, the process of legalizing the rights of developers and users to the results of the application of artificial intelligence technology is slow.

Researchers have stated that increasingly sophisticated self-learning systems that can produce innovative or creative results are becoming part of everyday life. It seems clear that there may be works and inventions without significant human involvement in the near future. New products are already being developed in so-called smart labs without significant human intervention, but only through self-learning programs [18, 21, 23]. A notable example in this area is the AI-enhanced Portrait of Edmond Belamy, which sold for \$432,500 at Christie's. At the same time, in the US, it was found that while smart software is an important factor in the development of American culture, half of the respondents believe that the US Copyright Office is not ready to deal with the influx of computer-generated works. This conclusion was drawn from a survey of 57 AI scientists, technology policy experts, and copyright researchers through a survey and questionnaire [51].

### 3.3 Artificial Intelligence and International Trade

There are many ways to assess the spread of AI on an international scale: by counting scientific research on this topic, the number of patents and patent applications in the region, the number of start-ups using AI, assessing and comparing the market capitalization of companies using AI (Table 1).

Table 1: Top 12 companies by market capitalization and degree of use of artificial intelligence technologies

Top 12	Company	Market capitalization (billion US dollars)	Degree of use of AI
1	Apple	754	High
2	Alphabet	579	High
3	Microsoft	509	High
4	Microsoft	423	High
5	Berkshire Hathaway	411	Growing
6	Facebook	411	High
7	ExxonMobil	340	Low
8	Johnson&Johnson	338	Growing
9	JPMorgan Chase	314	Growing
10	Wells Fargo	279	Growing
11	Tencent Holdings	272	High
12	Alibaba	269	High

The trend is that among the top companies by market capitalization in 2017, almost everyone is using AI technology to a high degree, or at least moving in this direction. Artificial intelligence is defined as "the theory and development of computer systems capable of performing creative tasks that have traditionally been performed by humans" [10]. Artificial intelligence is associated with the concept of machine learning, which allows computer systems to learn from examples and build new data processing algorithms on their own. In connection with the development of neural networks and deep learning technologies, data processing quality is increasing every year. *So how will artificial intelligence change global trade?*

1. *Logistics*. One of the most prominent areas where AI will change is in supply chains. The entire process, from the online ordering of goods to delivery to the final consumer, provides data on which machine learning technology can be applied. Such programs will be able to predict the likelihood of force majeure at certain stages of delivery and analyze consumer behavior to optimize warehouses and storage facilities. In addition, AI can build the fastest and most optimal delivery routes. In general, this technology will be able in the future to create a supply chain that is flexible and resistant to unforeseen circumstances [8].

2. *Compliance control*. One of the main tasks and problems of doing business in modern conditions is the observance of many contract terms, legislative acts, and other constantly changing regulations. Companies must keep track of all these changes and monitor the entire process of delivering goods to the end consumer. Software is used for these purposes, but it is not immune from possible errors. In this regard, it is often necessary to apply additional control by competent employees, which leads to new costs [14]. The use of AI makes it possible to increase the efficiency of such programs and eliminate the need for human control of the manufacturer's business processes.

3. *"Smart" contracts*. Trading involves the conclusion of many agreements, which requires a lot of time and money. With the introduction of AI, these cost items can be significantly reduced because the conclusion of contracts is associated with legal issues, documentation, and other parameters that AI, using machine learning, can automatically resolve and present the finished document. It is also important that the interests of both parties can be equally observed with the competent work of artificial intelligence [3]. Furthermore, this system can be integrated with the schedule of payments, deliveries, and shipments from the manufacturer and the buyer, reducing the risk of disputes and litigation.

4. *Ensuring access to trade finance*. Another area where AI can be used to its advantage is funding. Before issuing a trade credit to a company, the bank conducts several evaluation activities to analyze the solvency and financial condition of the enterprise. As a result, many do not receive loans due to non-compliance with the terms, conditions of contracts, and other problems. Banks, in turn, must maintain a whole staff of analysts and compliance control specialists to avoid the risk of default on loans. This task can be entrusted to artificial intelligence, which will reduce banks' costs and time for considering an application for companies [9].

5. *Classification of goods*. Cross-border movement of goods requires the use of goods classification systems (e.g., harmonized HS system). For tax purposes, exporters and importers must classify the product and correctly determine its code. Highly qualified specialists do this according to the description of the goods provided by the exporter. Unfortunately, this process takes quite a long time [24].

Using AI in this area can significantly reduce costs and save time on mandatory trade procedures. This technology is already in use today. Thus, the 3CE company has developed software that determines the product code according to the harmonized system HS1 from the product description. Usually, this task is performed by highly qualified specialists with a high level of wages. AI may well compete with this profession.

Some researchers of legal, social, economic, and other problems of the development and use of artificial intelligence systems have concluded that it is necessary to unify and standardize procedures in this area [41, 46]. It is required to predict and solve as accurately as possible the interconnected technological and legal problems that will arise when the use of robots becomes ubiquitous, they will be widely introduced into all spheres of society. And we believe that such an implementation will occur in the next decade. That is why issues concerning the standards of behavior of autonomous robots are closely related to the safety of their use.

We also believe that in the modern conditions of digitalization, the next stage of legal regulation of relations in the field of collecting, storing, and using big data, as well as in the field of intellectual property, is associated with the need to unify and standardize artificial intelligence systems and blockchain technology. Unification makes it possible to develop common approaches to the legal regulation of relevant relations, resulting in not only convergence of the legislation of various countries but also the improvement of law enforcement practice. The beginning of the process of establishing unified requirements for procedures and means of storing big data used in the

development, testing, and operation of artificial intelligence systems was initiated at the international level [25].

When referring to the analysis of international legal regulation in this area, it becomes obvious that since 2000, during the period of the rapid, revolutionary development of information and telecommunication technologies, acts of a general nature were adopted first of all – program documents recognizing the current stage of development of society in as an information society and fixing its main characteristics. It is no coincidence that during this period, following the results of the World Summit on the Information Society in Geneva (December 2003), as well as the meeting held in Tunisia (November 2005), very significant documents were adopted: the Okinawa Charter of the Global Information Society, Action Plan of the Tunis Commitment and others, in which the main goal facing modern society was proclaimed to accelerate the formation of post-industrial trends in all spheres of its life - economic, socio-political and spiritual.

The Declaration of Principles on the Information Society, adopted in Geneva in 2003, proclaimed the building of this society as a global challenge in the new millennium and identified the principle of increasing confidence and security in the use of information technologies as one of the key ones. The European Parliament 2017 published a Report with recommendations to the Civil Law Commission on the rules of robotics, which noted, in particular, that “the trend towards automation requires those involved in the development and commercialization of artificial intelligence applications to initially build security and ethics system, thereby recognizing that they must be prepared to accept legal responsibility for the quality of the technology they produce.” It also emphasizes the need for a balanced approach, which implies the mandatory standardization of hardware and software of artificial intelligence systems and, at the same time, the inadmissibility of creating obstacles to innovation.

As noted in the Recommendation of the Parliamentary Assembly of the Council of Europe No. 2102 of April 28, 2017, “Fusion with technology, artificial intelligence, and human rights,” it is increasingly difficult for legislators to adapt to the pace of development of science and technology and develop the necessary regulations and standards (paragraph 3), which requires the development of guidelines, in particular on the issue of automatic processing of transactions aimed at the collection, processing and use of personal data, as well as a general framework of standards. This paper draws the important conclusion that any machine, any robot, or any artificial intelligence must remain under human control.

Within the Eurasian Economic Union framework, a technical regulation “On the safety of machinery and equipment” was adopted, which, however, does not address liability issues. Over the past decade, the main provisions of the above and other strategic policy documents have been introduced into the national legislation of some countries: in particular, the UK, Germany, China, the USA, Japan, and South Korea are taking important steps towards the regulation of basic standards in the field of robotics and artificial intelligence. intelligence [16]. The Japanese Robotics Policy Committee, as a measure to solve or prevent problems associated with the functioning of new generation robots, called, among other things, the development of standards for the design and production of robots, which is supposed to determine the liability of manufacturers for harm caused by the actions of robots [10].

#### 4 Conclusion

The analysis showed that in connection with the identified and constantly changing composition of high technologies that fall under the definition of artificial intelligence, questions of different orders are emerging, which are divided into groups. A number of issues of legal regulation in this area have already been resolved and have lost their relevance for advanced legal science (legal personality of artificial intelligence technology); a number of issues can be resolved using existing legal

mechanisms (analysis of personal data and other information in the course of applying computational intelligence technology for decision-making). On the other hand, some require new approaches to legal science (development of a sui generis legal regime for the results of the activity of artificial intelligence technology, provided that an original result is obtained).

The main benefits of implementing artificial intelligence technologies are centered around reducing the cost of production and the manufacturer's costs. Another necessary consequence is simplifying general trade procedures and reducing the time required for their implementation. In addition, progress can be made in the compliance control procedure, which is one of the key issues for manufacturers, suppliers, exporters, and forwarders. It is important that all the above benefits can be achieved without the systemic risk of “human nature” errors thanks to machine learning technology and “deep learning” technologies [12].

Nevertheless, it is widely believed that the widespread introduction of AI can lead to the collapse of the labor market because machines and software will replace all existing professions. However, these ideas are often too unrealistic. There is no doubt that specific changes will take place in the labor market. Still, we are not talking about the complete displacement of a person from the labor market as such, but only about the consistent restructuring of the professional environment. Low-skilled workers will gradually leave the market, but there will be a huge demand for highly qualified professionals who can maintain and manage the new system. The tasks of the state in these conditions are to find a competitive balance in the labor market, provide support for specialists leaving the market, and establish retraining programs.

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#### Primary Paper Section: A

#### Secondary Paper Section: AE, AG, AH