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LEGAL REGULATION OF ARTIFICIAL INTELLIGENCE, ROBOTS, AND ROBOTIC OBJECTS IN THE FIELD OF SOCIAL RELATIONS

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ABSTRACT

Objective: The purpose of the study was to identify the basic principles for the development of legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations. **Methods:** The study subject is international, Russian, and foreign legislation, as well as strategic documents and projects aimed at forming and developing the legal regulation. The authors used legal methods and expert, event, and structural analysis. **Results**: The article analyzes possible areas of social relations in which artificial intelligence technologies and robotic objects are already applicable; determines terminological issues that do not allow a uniform approach to the legal regulation of artificial intelligence, robots, and robotic objects; formulates proposals for the development of laws in the field of artificial intelligence technologies. **Conclusion:** The authors have concluded that due to a significant discrepancy in terms and types of artificial intelligence, robots, and robotic objects, it is necessary to develop only the basic principles of legal regulation applicable to all types of artificial intelligence and robotic objects.

Keywords: Digital economy. Legal regulation. Principles. Public administration. Technical rate setting. Weak artificial intelligence.

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RESUMO

Objetivo do estudo: Este estudo teve como objetivo identificar os princípios básicos do desenvolvimento da regulamentação legal da inteligência artificial, robôs e objetos robóticos no campo das relações sociais. **Metodologia:** O tema da pesquisa é a legislação internacional e estrangeira, legislação da Federação Russa, bem como documentos estratégicos e projetos de formação e desenvolvimento de regulamentação legal. No processo de pesquisa foram utilizados métodos legais e de análise estrutural, bem como análise especializada e de eventos. **Resultados:** O artigo apresenta uma análise de possíveis áreas de relações sociais nas quais as tecnologias de inteligência artificial e objetos robóticos já são aplicáveis, revela problemas terminológicos que não permitem uma abordagem unificada da regulamentação legal da inteligência artificial e formula propostas para o desenvolvimento de legislação no campo das tecnologias de inteligência artificial. **Conclusões:** Os autores concluem que, devido às diferenças significativas na terminologia e variedades de inteligência artificial, robôs e objetos robóticos, é necessário percorrer o caminho de desenvolver apenas princípios básicos de regulamentação legal aplicáveis a todos os tipos de inteligência artificial e objetos robóticos.

Palavras chave: Administração pública. Economía digital. Fixação de tarifas técnicas. Inteligencia artificial fraca. Principios. Regulamentação legal.

1. INTRODUCTION

The integration of modern IT technologies into the field of social relations (in particular, technologies based on artificial intelligence and robotics) is among the most exciting and difficult issues of legal theory. The digitalization of social processes fully corresponds to the spirit of the Fourth Industrial Revolution described by the founder of the World Economic Forum in Davos Klaus Schwab (2017). Many legal theorists and practitioners have already proceeded with this urgent task. Mass media covers events dedicated to the so-called legal tech (technologies aimed at automating legal processes). More Russian departments consider the need to integrate solutions based on the latest achievements of digital technologies into various spheres of social

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relations. Indeed, there are some officials and scholars who are skeptical about the robotization and integration of artificial intelligence into the activities of government agencies (Savkin, 2017).

Nevertheless, moderate scholars determine several areas of social relations where artificial intelligence and robots can contribute to the development of the information society. According to a report of the Centre for Public Impact (2017) "Destination Unknown: Exploring the Impact of Artificial Intelligence on Government", artificial intelligence can be used in the field of predictive analysis, detection, computer observation, and natural language analysis. Moreover, Dan London's article "Powering AI for government" shows that the market for various artificial intelligence systems will quadruple in the coming years. At the same time, the US government bodies continue to implement artificial intelligence systems efficiently functioning in the test Mode (London, 2018).

2. METHODOLOGY

2.1 Conceptual framework

The concepts of "artificial intelligence" and "robot" have many definitions (Morkhat, 2019) but we will adhere to the following terms within the framework of this article:

– According to the Great Russian Encyclopedia, artificial intelligence is broadly defined as "a branch of computer science that develops methods and means to let computers solve intellectual problems that had been traditionally solved by humans" (Osipov & Velichkovskii, 2004);

– According to the relevant regulatory and technical documentation:

GOST R 43.0.8-2017 and GOST R 43.0.7-2011 interpret artificial intelligence as "simulated (artificially reproduced) intellectual activity of human thinking" (Federal Agency for Technical Regulation and Metrology, 2011; Federal Agency for Technical Regulation and Metrology, 2017);

GOST R 60.0.0.2-2016 "National standard of the Russian Federation. Robots and robotic devices. Classification" referencing ISO 8373:2012 "Robots and robotic devices. Vocabulary" defines a robot as "an actuated mechanism programmable in two

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or more axes with a degree of autonomy, moving within its environment, to perform intended tasks" (Federal Agency for Technical Regulation and Metrology, 2016).

The regulatory and technical interpretations of such concepts as artificial intelligence and a robot have significant differences. The definition of artificial intelligence is based on the broad concept of computer modeling, while the term "robot" does not cover a wide range of relevant categories.

In 2017, Japan's Committee on Policies in Robotics emphasized the following varieties of new-generation robots:

(1) Industrial robots controlled by humans or working on an equal basis with humans;

(2) Service robots that perform house cleaning tasks can take care of children and other socially vulnerable citizens, serve security purposes and other types of work, and, in general, maintain the functioning of offices and households (Weng, Chen, Sun, 2007).

2.2 Approaches to the legal regulation of artificial intelligence, robots, and robotic objects

Based on the above-mentioned terms, it can be argued that approaches to the legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations can be different and have certain features depending on the specifics of their application. For this reason, it is only possible to develop the basic principles of legal regulation applicable to all types of artificial intelligence and robotics. The direct legal regulation of certain varieties of artificial intelligence and robots should be developed through technical regulation since different types of devices require different rules. EU countries applied this approach to develop their robotic industry based on the Resolution of the European Parliament (hereinafter referred to as "the Resolution") (European Parliament, 2017). The Resolution states the following features of an autonomous robot:

–The acquisition of autonomy through sensors and/or by exchanging data with its environment (inter-connectivity) and the trading and analyzing of those data;

–Self-learning from experience and by interaction (optional criterion);

–At least a minor physical support;

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–The adaptation of its behavior and actions to the environment;

–Absence of life in the biological sense.

The Resolution contains recommendations for establishing classification criteria for robots, special registration, and the obligation to equip robots with a "black box" recording data on each performed operation, including their logic of decision-making. It substantiates the development of rules for testing new robots in real-life conditions and justifies the need to introduce compulsory insurance for certain types of robots.

The EU adopted a strategy for the development and use of artificial intelligence in April 2018. From mid-2019, its member countries have been adopting national plans for developing artificial intelligence and creating funds to finance startups aimed at the development of artificial intelligence technologies. According to the current version approved by the European Parliament and the Council of the EU, the "Digital Europe" program (valid from 2021 to 2027) is funded for 9.2 billion euros, including 2.7 billion euros for high-performance computing; 2.5 billion euros for artificial intelligence; 2 billion euros for cybersecurity and cybertrust; 1.3 billion euros for the widespread use of digital technologies in economy and society; 700 million euros for improving digital skills.

The European Parliament Resolution on a Comprehensive European Industrial Policy on Artificial Intelligence and Robotics published in February 2019 sets out general advisory provisions. For example, the Resolution recommends including the study of issues on the development and implementation of artificial intelligence into the curricula of educational institutions and applying artificial intelligence technologies in the field of such social relations as transport, energy, industry, and healthcare.

An important document for the application of artificial intelligence technologies is the EU Ethics Guidelines on Artificial Intelligence. It establishes three general principles of an artificial intelligence activity: do good, do no harm, and work transparently. It is assumed that these principles ensure the sustainable development of artificial intelligence and robotics technologies. The EU management laid down general rules for the development of such technologies: they must be safe, accountable, non-discriminatory, and subject to human supervision.

The above-mentioned EU documents lay a foundation for the legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations. The initial development of legal regulation proposed by the EU member countries is natural but

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does not consider the risks arising from such activities (Lapina, 2015). Describing the advantage of artificial superintelligence, Nick Bostrom (Bostrom, 2014) in his popular science book "Superintelligence: Paths, Dangers, Strategies" warns that one should consider the risks associated with the arbitrariness of superintelligent machines that can cause irreversible damage to human civilization or even lead to the death of humanity.

3. RESULTS

3.1 Legal aspects of using artificial intelligence and robots in various social relations

The Australian scholars at the QUT Faculty of Law noted that the legal regulation of even the simplest technological innovations associated with the development and use of artificial intelligence and robotics is a very difficult task since the existing legislation can both promote and hinder the development of new technologies (Guihot, Matthew, Suzor, 2017). In this article, we try to consider the main issues and determine legal problems associated with the possible integration of technological innovations based on artificial intelligence and robotics into the field of social relations through the activities of public authorities, as well as justify the need for their legal regulation. This topic is still understudied in Russian scientific literature. In 2017, P.M. Morkhat wrote the monograph "Artificial Intelligence: Juridical View" and systematized the legal foundations of artificial intelligence technologies (Morkhat , 2017). One of the first attempts to consider the legal personality of cyber-physical systems and the foundations, content, and legal perspectives of the concept of "digital person" was made by Professor O.A. Yastrebov (2017a; 2017b). Today, it is clear that Russia has set a course for forming the information society and increasing the efficiency of its state bodies through the integration of certain achievements into the development of digital technologies and artificial intelligence.

The public administration and legal regulation of artificial intelligence and robotics (including the narrow application of these technologies in social relations) have been considered in the foreign scientific literature. It analyzed both the application of artificial intelligence and robots in various social relations and their specific

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implementation in the activities of state bodies and social services. For example, Ryan Calo (2017), an assistant professor at the University of Washington School of Law and author of "Artificial Intelligence Policy: A Primer and Roadmap", claimed that the application of artificial intelligence and robotics in government and private business is almost limitless. The scholar described how artificial intelligence can be used in the administration of justice, law enforcement, information security, and taxation. Calo's book is entitled "artificial intelligence policy" rather than "state" or "corporate" governance. He emphasized that modern scientific works on governance claim that power would or should be transferred to non-state actors (Rhodes, 1996; Brown, 2015), i.e. the so-called "networked, integrated, cooperative, partnered, disseminated, and at least partly self-organized" control.

Russian scientific and educational literature on administrative and information law considers the concept of "information society" (Lapina, 2016; Lapina & Popova, 2017) from different perspectives, including as part of society:

"This concept is the most prominent in the field of social relations between citizens and state bodies... A citizen and their legal actions in the system of public administration are regarded not as objects of management but full-fledged subjects of public relations and actors of civil society, including the sphere of public administration and local self-government" (Bachilo & Lapina, 2019).

Decree of the President of the Russian Federation of May 9, 2017 No. 203 approved the Strategy for the Development of the Information Society in the Russian Federation for 2017-2030 (Decree of the President of the Russian Federation No. 203, 2017). This Strategy aims at developing the information society, forming digital economy, ensuring national interests, and implementing strategic priorities. The formation and further development of the information society are impossible without the use of artificial intelligence and robotics in different types of social relations.

Senior government officials of Russia understand the importance of studying and implementing the latest information technologies, in particular artificial intelligence technologies, into the sphere of social relations. The annual Presidential Address to the Federal Assembly of the Russian Federation of March 1, 2018 noted that

"…as soon as possible, we need to develop a progressive legal framework and eliminate all barriers for the development and wide use of robotic equipment, artificial intelligence, unmanned vehicles, e-commerce, and Big Data processing technology.

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And this legal framework must be continuously reviewed and be based on a flexible approach to each area and technology" (The Annual Presidential Address to the Federal Assembly of the Russian Federation of March 1, 2018).

The implementation of the Presidential Address to the Federal Assembly of February 20, 2019 involved large-scale programs at the national level in the field of artificial intelligence (The Annual Presidential Address to the Federal Assembly of the Russian Federation of February 20, 2019, 2019). According to this document, a national strategy on artificial intelligence should have been developed by June 15, 2019 (Presidential Executive Office, 2019).

Foreign countries have applied technologies in this area. Thus, the project described by a team of US scholars in "A General Approach for Predicting the Behavior of the Supreme Court of the United States" demonstrates the possibility of forming an analytical and intelligent system that achieves 70% accuracy in predicting the US Supreme Court's behavior (Katz, Bommarito, Blackman, 2017). A similar system used in the field of state control over health care is described in "Artificial Intelligence Based Suicide Prediction" (Marks, 2019). This smart system analyzes and predicts an individual's behavior to identify their suicidal tendencies.

3.2 Examples of using artificial intelligence technologies and robots in the field of social relations

Artificial intelligence and robots in the field of social relations have already become a reality. Although the independence of such systems or their ability to make complex decisions cannot compete with the common idea of artificial intelligence as a panacea for all woes, the so-called "weak artificial intelligence"[1] is currently used to perform activities in the field of social relations carried out in public and corporate governance. According to a report posted by the Deloitte University Press, they are as follows:

–Collecting statistics on social media;

[1] According to a hypothesis, there are two philosophical concepts of artificial intelligence: strong artificial intelligence suggests that machines can acquire the ability to reason and recognize their own personality (in particular, comprehend their own thoughts), substantiate and solve puzzles; while weak artificial intelligence cannot do it since its functions are limited to solving one or several tasks.

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–Extracting structured information from documents;

–Autosuggestion;

–Accounting;

–Automatic email opening, etc. (Eggers, Schatsky, Viechnicki, 2017)

The most common result of applying machine learning and weak artificial intelligence technologies in the activities of state bodies in the field of social relations are projects like the one below. According to the article "Deploying nEmesis: Preventing Foodborne Illness by Data Mining Social Media" conducted by a team of authors from the University of Rochester (Sadilek, et al., 2017), the US public health agency in Clark County (Southern Nevada Health District) uses applications for message analysis and geotargeting[2] data on Twitter. In the course of the experiment, the system analyzed an average of 16,000 posts from approximately 3,600 users daily. As a result, the application made a complete list of public catering services for state inspection ranked in conformity with the rating system. The experiment concluded that if this adaptive validation was implemented using a machine learning application, the county could reduce the number of food poisoning cases by 9,000 and the number of hospitalizations by 557.

Artificial intelligence technologies are intensively used in such areas of social relations as healthcare. Medical robots of various types assist doctors (for example, the da Vinci and Hospi surgical systems). In health care, artificial intelligence technologies help diagnose and forecast diseases, collect data, determine patients at high risk of developing diseases, and develop drugs. Artificial intelligence has prospects in telemedicine and diagnostic systems (Ponkin, Ponkina, Laptev, 2014). According to some scholars, e-health has become one of the main driving forces of the entire industry (Grishchenko, 2018).

The Strategy for the Development of the Information Society in the Russian Federation for 2017-2030 highlights the need to introduce artificial intelligence and robots into the social spheres of public administration, where artificial intelligence is one of the main directions of enhancing the Russian information and communication technologies, along with the convergence of communication networks,

[2] Geotargeting in geomarketing and internet marketing is the method of determining the geolocation of a website visitor and delivering different content to that visitor based on their location.

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biotechnologies, and cloud computing (President of the Russian Federation, 2017). According to S.G. Vasin (2017), Decree No. 1632-r "On the approval of the program "Digital economy of the Russian Federation" cannot be implemented without an AI-based management system at the state level. In support of this thesis, the scholar cited the US National Artificial Intelligence Research and Development Strategic Plan and the UK Digital Economy Strategy as examples. These documents consider the use of artificial intelligence in the field of social relations and state investments into these areas of public administration. Vasin rightly noted that foreign countries have been paying attention to this issue for a long time: for instance, a comprehensive report of the National Council on Science and Technology of the United States "Preparing for the Future of Artificial Intelligence. Executive Office of the President National Science and Technology Council Committee on Technology" conducted in 2016 (Executive Office of the President of the United States, 2016). A larger part of this report focuses on the fact that programs aimed at the development of artificial intelligence in the field of social relations require state investments. This measure should ensure efficiency, reduce working hours, increase salaries, contribute to the prosperity of US companies and employees, and guarantee US domination in the creation and use of artificial intelligence (Executive Office of the President of the United States, 2016).

The main strategic programs of the Russian Federation do not give enough consideration to the state support for these technologies or the possible integration of artificial intelligence into the activities of state bodies despite all the prospects of this technology for automating public administration processes in the sphere of social relations. Moreover, some studies predict the possible use of artificial intelligence technologies in the activities of government agencies to optimize the state budget, which can save tens of billions of rubles (Eggers, Schatsky, Viechnicki, 2017).

The application of artificial intelligence in various spheres of the Russian public administration is an integral part of larger processes: attempts to implement the so-called "Platform-State" concept and transform the mechanisms and institutions of public administration using the capabilities of information technology. According to the authors of the report "State as a platform. Cyberstate for digital economy. Digital transformation" conducted by the Center for Strategic Research (2018), the digitalization of certain state control processes and public service provision will have reduced general government costs by 0.3% of GDP by 2024. They also marked the

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transition from single services to complex databases integrated into the general network of state information systems. The ecosystem of microservices based on a single data array, the creation of an IT architect position in each department accountable to a deputy premier-minister for digital transformation, and the development of a front-end and omnichannel system of public resources are regarded as possible proposals to switch government processes and infrastructures to authentic digital models. One possible solution is the AI-based algorithmization or automation of recurring and typical administrative procedures implemented in the daily activities of public authorities. There are obvious pro arguments for such an innovation: assistance in performing routine tasks and repetitive operations, allowing the human capital of civil servants to solve broader and more creative tasks; the ability to quickly process a large amount of data for predictive analysis to exercise state control; the cumulative growth of intradepartmental information exchange; the minimization of the so-called "human factor" when making managerial decisions, etc. However, these optimistic views on the possible benefits of integrating artificial intelligence into the activities of government agencies raise a huge number of theoretical and practical issues. These are as follows: the need to comprehend and form an appropriate regulatory framework; a detailed description of innovative management and control systems concerning specific departments and administrative procedures; the formation of the necessary technological basis; the creation of a state support and investment system.

It is no less important to consider abstract, philosophical, and legal issues on the possibility of artificial intelligence and robots to carry out some activities traditionally performed by people. This skepticism is revealed in the work of Hubert Dreyfus, a renowned American philosopher (Ladov, 2013). He stated the fundamental impossibility of realizing the concept of strong artificial intelligence (concerning this section of the report, the impossibility of creating a "civil servant based on artificial intelligence"). At the same time, we agree with experts from the Russian Presidential Academy of National Economy and Public Administration who prepared the scientific work "State as a platform: people and technologies" (Shklyaruk, 2019) in cooperation with the Center for Advanced Management Solutions. Today, there are technologies based on the so-called "weak artificial intelligence" (Jajal, 2018). These are systems aimed at solving a specific sectoral problem that do not have independent goal-setting, abstract thinking, and other features common to strong (universal) artificial intelligence.

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An example of weak artificial intelligence in the field of social relations is pattern recognition technologies that can be used for exercising state control (as well as control over construction) and improving the quality of management in the sphere of medicine. Thus, it is a little too soon to talk about the implementation of strong artificial intelligence or the creation of a full-fledged "artificial civil servant" in the field of social relations. However, it is scientifically expedient to consider the possibility of using smart assistants based on machine learning, neural networks, and existing technologies. The integration of weak artificial intelligence into the activities of state bodies can be exemplified by the FindFace technology used by operational investigative groups searching for criminals through surveillance cameras in Moscow. Another example is the cooperation between the Russian Federal Service for Intellectual Property and Yandex. According to Grigory Ivliev, the head of the Russian Federal Service for Intellectual Property, it is planned to use neural networks to automate responses to patenting requests submitted online (TASS, 2019).

3.3 The federal project "Digital Technologies"

The introduction of artificial intelligence technologies into the activities of public authorities was analyzed by the Government of the Russian Federation. M.A. Akimov, Deputy Prime Minister of the Russian Federation, presented his report at the meeting with the President of the Russian Federation on the development of artificial intelligence technologies held on May 30, 2019 (Presidential Executive Office, 2019). It was planned to supplement the "Digital Economy" program with a federal project charter aimed at forming industry-based artificial intelligence technologies and promoting the use of artificial intelligence among companies and public authorities no later than October 2019.

According to the federal project charter "Digital Technologies", costs for the development of "end-to-end"[3] digital technologies are planned to triple by the end of 2024. In total, this federal project will receive 451.8 billion rubles, including 282.2 billion rubles from the federal budget, from 2019 to 2024 (Ministry of Digital Development,

[3] End-to-end digital technologies comprise artificial intelligence technologies, robotics technologies, big data technologies, industrial Internet, wireless communication, virtual and augmented reality, etc.

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Communications and Mass Media of the Russian Federation, 2019). It is assumed that the project should ensure the technological independence of Russia. It requires analytical work and the formation of nine roadmaps in the sphere of end-to-end digital technologies. Within the framework of this project, the leading research centers will have been determined by 2020 (at least 18 units). By the end of 2021, at least 30 chief digital officers will have been appointed and 30 digital transformation strategies of public corporations and companies with public ownership will have been approved.

The federal project charter "The Legal Regulation of Digital Space" (Ministry of Digital Development, Communications and Mass Media of the Russian Federation, 2019) of the national program "Digital Economy of the Russian Federation" claims that the legal regulation of the digital economy should be based on a flexible approach in each area of public relations with obligatory participation of the business community. According to clause 1.8 of this project charter, it is planned to form the sectoral regulation of legal relations in the field of robotics and artificial intelligence technologies. Clause 1.12 implements a set of measures to improve standardization mechanisms, and clause 1.16 regulates the creation and functioning of special legal regimes in the digital economy ("regulatory sandboxes"). From 2019 to 2024, this federal project will be financed for 1.696 billion rubles mainly from the federal budget (1.59 billion rubles).

3.4 The role of public administration in the introduction of digital technologies

An important component of the legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations is public authorities which form state policy and then implement it. According to Resolution of the Government of the Russian Federation of March 2, 2019 No. 234 "On the system of managing the implementation of the national program "The Digital Economy of the Russian Federation" (Government of the Russian Federation, 2019), functions of the federal executive body responsible for its implementation are carried out by the Ministry of Digital Development, Communications, and Mass Media of the Russian Federation. At the same time, the autonomous non-profit organization "Analytical Center for the Government of the Russian Federation" fulfills the functions of a project office. The Ministry of Economic Development of the Russian Federation is responsible for the

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implementation of the federal project "The legal regulation of digital space". For these purposes, the Department of Digital Economy Legal Foundation of the Ministry of Economic Development of the Russian Federation was established (Ministry of Economic Development of the Russian Federation, 2019).

To ensure the fast introduction of digital technologies into the economy and social relations through the use of digital technologies and platform-based solutions in public administration, the federal project charter "Digital Public Administration" was adopted (Ministry of Digital Development, Communications and Mass Media of the Russian Federation, 2019). In particular, it aims at making all the priority public services provided without in-person visits to government agencies by the end of 2024. Indeed, the above-mentioned project charter is only the first step towards the introduction of artificial intelligence technologies into government activities and does not cover many activities that could be optimized with the existing innovations in the field of artificial intelligence and robotics. For example, S.I. Bortalevich, A.V. Lapin, and S.S. Kharitonov working at the Russian Academy of Sciences wrote the article "Artificial Intelligence in the System of Ensuring Economic Security" and revealed the absence of federal norms establishing the possibility of using artificial intelligence to ensure the economic security of the state. The authors of the article proposed to use artificial intelligence technologies as a component of Russian economic security (Bortalevich, Lapin, Kharitonov, 2019).

The integration of artificial intelligence into the public administration of social relations is also considered in the framework of government documents issued by other foreign countries. For instance, these issues are addressed in the German Federal Government's Artificial Intelligence Strategy (Die Bundesregierung, 2018), the Pan-Canadian Artificial Intelligence Strategy (CIFAR, 2018), India's National Strategy for Artificial Intelligence (NITI Aayog, 2018), Japan's Science and Technology Development Basic Plan (Council for Science, Technology and Innovation, 2015), etc.

3.5 Conceptual framework Applications of artificial intelligence technologies in social relations

What problems can artificial intelligence technologies solve in social relations? Can they optimize the administrative functions of the state? In our opinion, the digital

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economy is characterized by a large amount of publicly available information, including data on the Internet (websites). Due to the analysis and application of such information in making managerial decisions, it is possible to more effectively control the activities of digital economy actors. The existing control system has several obvious problems: an outdated document management system; no full integration and interaction of information systems from different departments; no special analytical systems used by average employees of control departments that work with big data. This opinion is also shared by authors from the Digital Transformation Laboratory for State and Society who conducted the report "Artificial Intelligence. Selecting a Strategy". According to this study, public administration is based on the collection and analysis of a large amount of information, and the use of artificial intelligence has great potential in this area (Burov, et al., 2019). The above-mentioned authors highlighted certain achievements in the field of artificial intelligence and robotics that are integrated into the activities of public authorities around the world and have already proved their efficiency:

(1) The use of chatbots by government advisory services (for example, the U.S. Citizenship and Immigration Services uses the Emma chatbot to process users' requests in multiple languages (including verbally) and advise citizens on immigration issues (U.S. Citizenship and Immigration Services, 2018); the Rammas (Government of Dubai, 2018) platform of Dubai Electricity and Water Authority powered by Google AI and processing citizens' requests; the Alex (The Australian Taxation Office, 2022) chatbot that advises on general tax issues on the official website of the Australian Taxation Office);

(2) Intelligent systems connected to centralized databases for checking vehicles and citizens, reading biometric data, and analyzing coincidences (for instance, the iBorderCtrl system that should be used at the EU's external borders) (Brzozowski, 2018);

(3) Emergency response systems, as well as the use of robotic systems and equipment in emergency recovery;

(4) Systems for analyzing the content of legal contracts, etc.

We believe that applications of artificial intelligence technologies in the field of social relations are connected with the possibility of using smart analytical systems in

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monitoring, oversight, and audit, in particular, through predictive analysis based on big data.

To exercise state control (supervision), including state financial control, over various areas of the digital economy (in particular, education, health care, culture, science, social security, and labor relations), as well as other types of control, it is necessary to create additional structures especially for the integration of artificial intelligence technologies into specific areas of government activity. This approach is exemplified by the creation of the Joint Artificial Intelligence Center under the U.S. military project, which is a special body governing the introduction of AI-based technologies into a specific area of state activity (Sheftelovich, 2019). A similar approach is used by the United Arab Emirates' Government that introduced a special post of Minister of State for Artificial Intelligence. This person oversees investments in the development of AI-based projects and their application in various social relations, such as public safety, autonomous vehicles, a high-performance innovation environment, etc (Berkana, 2017). This approach is not universal but projects for integrating artificial intelligence technologies into certain spheres of public administration should be carried out selectively with due regard to the specifics of social relations and based on the needs of a particular area.

To ensure the legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations, it is necessary to use innovative technologies for collecting and analyzing data based on the above-mentioned artificial intelligence technologies. However, the relevant scientific literature has not considered the possibility of using AI-based data analysis systems within the activities of state bodies, in particular, when exercising state control (supervision) in the field of social relations. The formation of a public administration system based on artificial intelligence and robot technologies should proceed, first of all, from the need to collect information in a particular social sphere and monitor various types of activities, including those on the Internet, which is impossible without big data analysis with the help of the aforementioned weak artificial intelligence.

Thus, the integration of weak artificial intelligence technologies into the activities of state bodies that fulfill managerial functions in the field of social relations is an inevitable process that does not have a sufficient degree of comprehension in the current rule-making and scientific literature.

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4. CONCLUSION

1) Technologies of artificial intelligence and robotics can dramatically accelerate the transition to the information society. However, the existing legal issues might hinder the application of modern artificial intelligence and robot technologies in the field of social relations;

2) The legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations is enshrined in the international, Russian, and foreign legislation, strategic documents, and development projects;

3) Due to significant discrepancies in terms relating to artificial intelligence and robots, it can be argued that approaches to the legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations can be different and have certain features depending on their specific application;

4) Since there are various terms and types of artificial intelligence, robots and robotics objects, it is necessary to develop only the basic principles of legal regulation applicable to all types of artificial intelligence and robotics;

5) The legal regulation of artificial intelligence, robots, and robotic objects in the field of social relations is based on such general principles as ensuring the development and application of artificial intelligence and robot technologies through the presumption of their social danger, compliance with safety requirements, the confidentiality and privacy of data, the identification and assessment of risks in the use of artificial intelligence technologies and robotic objects, etc.;

6) In the course of the study, it was proved that the direct legal regulation of certain types of artificial intelligence and robots should be specified with the help of technical regulation since it is necessary to develop various rules for different types of devices;

7) After analyzing scientific literature, information from periodicals and official sources, we revealed that weak artificial intelligence technologies used in the field of social relations were developed and implemented by government agencies and companies;

8) There are no full-fledged projects in the field of strong artificial intelligence and the automation of social relations but there are enough examples of their private

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use by public authorities based on machine learning for predictive analysis and working with big data;

9) The foreign experience of the legal regulation in the sphere of artificial intelligence, robots, and robotic objects demonstrates that many state policies and programs were developed and adopted to introduce artificial intelligence into the activities of state bodies, as well as establish special bodies aimed at implementing artificial intelligence in various areas of social relations;

10) It seems rational to introduce weak artificial intelligence systems into the activities of state bodies within the framework of the digital economy, in particular, into the spheres of health care, education, public security, etc. This is because social relations are associated with the existence and creation of new spatial databases where traditional performance management tools are not applicable;

11) At this stage, the possibility of using weak artificial intelligence systems in the activities of state bodies necessitates the adoption of a special state policy on the implementation of artificial intelligence technologies by the Government of the Russian Federation as a state body being at the head of other executive bodies;

12) This scientific study highlights the possibility of using foreign experience in forming special units of state executive bodies, whose main function is the introduction of artificial intelligence technologies in specific activities.

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