

ARTIFICIAL INTELLIGENCE

Article

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Artificial Intelligence and Effective Governance: Legal Framework

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Abstract: Artificial intelligence (AI) use in the state governance structures is obviously on the rise. Cognitive technologies have potential to transform the government sector — by reducing expenses, mundane chores, coping with resource limitations, making more accurate projections, and implementing AI into an array of organizational processes and systems. *Methods.* General research methods: analysis, synthesis, logical method were employed to study certain concepts and legal categories and their interrelations (artificial intelligence, artificial intelligence technologies, governance system, machine-readable law, digital state, automated decision-making, *etc.*) and develop insights into public relations amid proactive use of artificial intelligence systems and technologies in the governance system. Comparative legal research method was used to discern dynamics and further trends in legal relations, as well as to compare approaches of foreign countries to regulating AI systems and technologies. Prognostic method was applied to project the future of the Russian legislation as concerns building effective legal framework to regulate AI systems and technologies in the governance system. Technical legal (dogmatic) method helped develop legal foundation for the use of technologies and AI systems in the governance sphere. The

analysis showed promising theoretical and practical avenues of modern law development in the aspect of artificial intelligence: the concept of artificial intelligence within the conceptual legal framework was described; legal regulation of administrative processes and its specifics were defined; ethics and principles of artificial intelligence application in governance were stressed, which involves restrictions of AI use in automated decision-making; stipulating the status of informed consent in the legislation in case an automated decision is made; the procedure which allows prohibiting the use of automated decision was established, as well as the procedure of AI risk assessment in the governance system, ensuring proper data protection and independent security monitoring.

Keywords: artificial intelligence; artificial intelligence technologies; artificial intelligence system; governance; machine-readable law; profiling; automated decision-making

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I. Introduction

Technologies and systems based on artificial intelligence (AI) are currently being proactively implemented in all spheres of public life. Experts estimate these decisions will generate for the global economy in 2024 at least \$ 1 bl profits (Karmaza, 2020). There is a lot of evidence of how AI-based information products are used. In 2018 for the first time in the history of Christie's the Portrait of Edmond de Belamy made

by AI was sold for almost half a million dollars. To create the portrait AI had analyzed 15,000 portraits created for the last five centuries. Warner Music record studio signed the first contract with AI Endel, which “promised” to release a few discs in a year’s time. The USA has boasted the first cyber composer AIVA, recognized by the professional music association. In Japan AI after studying 11,000 books wrote a few novels, one of which was shortlisted for the Hoshi Shinichi Literary Award. Proceeding from the central idea, storyline and characters, the cognitive system built up a narrative that the board assessed as a coherent literary work (Karmaza, 2020). We assume the number of such cases will keep growing with every passing year, due to human activities transforming and building new forms of cooperation between man and machine.

The use of AI in the state governance system is steadily going up. Cognitive technologies have a huge potential to transform the state governance sector — boost performance, reduce expenses, cope with resource shortage, switch employees from mundane chores to more creative activities, make projections more accurate and focused, start using AI in dozens of processes and systems to benefit in the areas which call for extra efforts (Eggers, Schatsky and Viechnicki, 2017)

Khila Meer from Harvard Ash Center Technology & Democracy Fellow claims AI might prove to be effective in six types of state governance systems: labor resources management, big data analysis, specialist shortage, scenario projection based on historic data analysis, regular routine procedure management, and making general conclusions on different types of information (visual, linguistic, *etc.*).

The analysis of the legislation, the basic concepts and systematizing material called for the use of general research methods: analysis, synthesis, logical approach. These methods were used to study certain concepts and legal categories (AI, AI technologies, governance system, computer readable law digital state, computerized decision-making, *etc.*) to get a comprehensive picture of how they are related and how public relations based on AI technologies in governance are built. System approach make it possible to define the place of AI relations in the framework of overall information relations, show their specifics and

interrelations. System analysis made it possible to assess established approaches to legal regulation of AI technologies and systems overseas and view them from public relations perspective, including the Russian Federation.

The comparative legal research method was employed to discern dynamics and trends in the sphere of relations governed by law, as well as to compare approaches of foreign countries to the artificial intelligence and its use.

To see the processes of AI use legal regulation from historical perspective legal historical method was used. It helped trace the main stages of AI legislation development in foreign countries and in the foreign corporate documents.

Prognostic method was applied to define the future of the Russian legislation as concerns legal regulation of artificial intelligence system and technologies in the governance system. Technical legal method (dogmatic) helped develop legal foundation for the use of technologies and AI systems in the sphere of governance.

Nomothetic approach, based on the revealed information patterns, particularly in the sphere of AI use, allowed to discern major principles and trends in the legal regulation of public relations sphere.

II. Artificial Intelligence in Russian Juristic Doctrine

Valeriy N. Protasov (2020) thinks that the foundation of law is formed not by public relations but behavior patterns. Thus, it makes sense to discuss legal regulations of people's behavior in respect of AI systems implementation, rather than new public relations among robots. Since these systems are hierarchical, it is important to understand what system person's life belongs to, as well as person's program code, code of life.

Sergey P. Kapitsa (2014) wrote long ago that the processes of destitution and depopulation hinge on the exorbitant growth of population. There is also an assumption that the humanity might die out due to natural disasters and man-made global catastrophes. Therefore, scholar knowledge should rely on improving the humanity itself, its program code and the ecosystem we live in.

The nervous system of a living organism is comprised of nerve cells — neurons. Neurons make partnerships with different body cells and build up many connections. There are several levels of nervous system activity. The macro level involves the brain as an integral whole, sensory data that are important in decision-making and functioning of musculoskeletal system.

The second level is a mezo one, which ensures interaction of big neural groups, cognitive groups to form neural hypernetwork (neural clouds), which tends to grow with age. Connections within a single neuron make up the third level.

Neuron is a special cell with a number of inlets (dendrites) and one axon (outlet), which form many connections — up to 10–20,000. It is hardly possible to analyze a single neuron, only ensembles of neural networks. That makes human brain unique and virtually impossible to simulate in an artificial module. Still, we can simulate neural groups (100–200 neurons) with computer modeling method.

The National Strategy for the Development of Artificial Intelligence Through 2030 (hereinafter Strategy)¹ defines Artificial Intelligence as “a complex of technological decisions aimed to simulate human cognitive abilities (including the ability of self-education and search for decisions without a previously set algorithm) which can bring results comparable with human intellectual activity.

The complex of technologies involves IC (informational and communicative) technologies, software (including computer-based education), processes and services for data processing and decision searching.” Of particular importance are computer vision, natural language processing, speech recognition and synthesis, intellectual support of decision-making.

The AI development strategy emphasizes two types of AI: the first one aims at solving narrowly specialized tasks and the other is a universal one, capable of human-like reasoning, interacting and

¹ Decree of the President of the Russian Federation No. 490 dated October 10, 2019 “On the Development of Artificial Intelligence in the Russian Federation”. Collection of Legislation Acts of the Russian Federation. No. 41. Article 5700. (In Russ.). Available at: <https://www.garant.ru/products/ipo/prime/doc/72738946/> [Accessed 20.03.2022].

adapting to changing conditions. The Strategy shows AI development as a complex science and technology goal at the intersection of different avenues of scholarly knowledge: natural science, technological, social and humanitarian knowledge. Besides a positive effect on all the key human activities, steady efforts in creating AI might entail negative consequences as well, due to social and technological changes they go along with (Strategy, p. 9).

With this in mind, Oleg P. Saulyak suggested introducing the term “AI-complicated social relations” as a parallel to those relations that do exist in the international law. Another argument is the fact that numerous Internet-based relations can be of transnational and transborder character. Still, there is much to be clarified here, specifically, the ratio of the legal and the factual sides of these relations (rights, responsibilities, behavioral patterns of all the sides involved). What makes these relations different from those based on the private international law is the fact that they also might be complicated by a foreign element. A few subjects with characteristic delictual dispositive capacities and several cyber systems can enter these relations with AI on the side of one of the legal entities.

Valeriy N. Protasov (2020) states that the term “relations complicated by AI” can hardly be called perfect, as AI does not actually complicate information exchange among legal entities, but makes it easier. With this respect, it would be more correct to speak about legal regulation of social processes employing AI systems.

Petr M. Morhat (2018) in his paper “The Intellectual Property Right and Artificial Intelligence” claims that there is no need to recognize AI a copyright and patent right proprietor. He describes the following types of legal structures and models to regulate relations involving AI: machine-centered concept (AI unit is a rightful author of the created works); anthropocentric concept (AI unit is a tool a human uses in the process of creating intellectual property products); work-for-hire concept (AI unit act as a “hired worker” creating intellectual property products); hybrid authorship concept (AI unit is regarded as a human’s co-author of created intellectual property products); “disappearing” or

zero authorship concept (it relates to especially difficult situations, when investigated concepts appear to overlap in different variations).

The author assumes that legal entities and AI units, being different, have some similar, correlated features, especially if seen as subjects able to perform legally significant actions (Morhat, 2019).

At one of round tables on computer law and security issues Yuriy M. Baturin argued that AI we face with in our daily life is actually not “real” AI, but these are just elements of future AI. At present AI is based on computer software and complex intellectual property objects, which are just fragments of bigger intelligence. That gave Baturin grounds to coin the term “coherent relations” (Rassolov, 2021).

There are authors who believe that AI is not a legal subject, but an object. AI, being a complex of technological decisions imitating human reasoning, does not hinge on established algorithms, but rather in conditions of uncertainty. In future legal fiction “digital entity” should be developed and this leads to the question of whether it can become a participant of legal relations. Europe does already have an agency specializing in robot registering, regular and smart ones. We might suggest robots are likely to have their own interests in future (Chubukova, 2021).

The administrative law regards an individual within the frame of power relations either a subject or object, which depends on the nature and content of those relations. Given this fact, Rozalina V. Shagieva (Erofeeva and Shagieva, 2015, pp. 88–89; Dimitrov and Shagieva, 2020, p. 63) calls to turn to the Roman law and the legal arrangements applied to the private law subjects in order to assess the possibility of their being applied to the current environment. More specifically, she means the slave legal status, who never had the status of a legal subject, acting in some situations on their master’s behalf, as well as on their own, when pursuing their own interests. In such situations, the slave enjoyed a certain amount of choice in particular questions. In case of success, the master would share the profit with the slave; still the burden of liability for negative consequences fell only on the slaveowner.

III. Legal Regulation of IT Sphere Overseas

The survey of global rating systems and the International Federation of Robotics helped reveal the leaders in robotics and AI, which include Singapore, South Korea, Germany, Japan, Sweden, Denmark, China, the USA, the UK, France, India, Australia.

The National AI program (AI Singapore) regulates the use of AI and robotics in Singapore.² In line with the Professional Services Industry Transformation Map (2018)³ the next decade will see Singapore heading the global market of high-value specialized services. The key initiatives, outlined in the Plan, aim at stimulating innovations in the IT sphere.

Without all doubt, South Korea is among the top ten countries with automated economies. This success is down to the national legal norms regulating robotics and AI. Intelligent Robots Development and Distribution Promotion Act⁴ is the document determining the AI plan and strategy,⁵ including establishing special legal arrangements and business reliefs for innovative companies and state support. The government should develop and implement comprehensive and effective policy in the sphere of robotics and AI budgeting these expenses. The state and municipal powers have different authority to implement the reforms. The law (Development and Distribution Act) also introduces into the legal environment such terms as “smart robot,” “responsibility of state and municipal authorities for bearing expenses on developing the robotics market,” “special territories to develop robotics and smart robots,” *etc.*

² AI Singapore (2018). Strategic Communications. Available at: <https://fticommunications.com/2018/02/artificial-intelligence-race/> [Accessed 20.03.2022].

³ Launch of Professional Services Industry Transformation Map (2018). *A Singapore Government Agency Website*. Available at: <https://www.edb.gov.sg/en/about-edb/media-releases-publications/launch-of-professional-services-industry-transformation-map.html> [Accessed 20.03.2022].

⁴ Law on the Development and Smart Robots Propagation (2008). *Research Center “RoboPravo”*. (In Russ.). Available at: http://robopravo.ru/zakon_iuzhnoi_koriei_2008 [Accessed 20.03.2022].

⁵ Best practices in designing effective roadmaps for robotics information (2018). *Robohub*. Available at: <http://robohub.org/best-practices-in-designing-effective-roadmaps-for-robotics-innovation/> [Accessed 20.03.2022].

Shaping the AI regulatory environment is seen as a joint task of all the EU member-states and is part of the EU digital strategy and digital agenda. Technological dominance in key industrial sectors makes Germany another leading player in the AI regulatory sphere. The Artificial Intelligence Strategy of the German Federal Government meant for the period up to 2025 was made public in 2018. It makes clear that AI technology should be developed “on the basis of European values such as respect of human dignity, privacy and equality.” The German government works on “raising awareness of ethical and legal boundaries of AI use in developers and users, as well as on further improvement of legal foundation in this sphere.”⁶ In 2020, Germany launched the global project “Industry 4.0” aimed, among other things, to establish regulatory standards for AI use.

Sweden is another country to invest a lot into AI development.⁷ In 2018, they signed “Declaration on cooperation in AI” in order to ensure the leading role of Sweden in the area of innovative digital technologies and reinforce its competitiveness and well-being.⁸ The strategy stipulates for investing in research, higher education, joint projects in both private and state sectors of economy.

⁶ Strategie Künstliche Intelligenz der Bundesregierung [AI Strategy of the Federal Government] (2018). *Die Bundesregierung [Federal Government]*. (In Germ.). Available at: https://www.ki-strategie-deutschland.de/files/downloads/Nationale_KI-Strategie.pdf [Accessed 20.03.2022].

⁷ Meddelande om artificiell intelligens för Europa (2018). *Regeringskansliet Faktapromemoria 2017/18:FPM96*. (In Swedish). Available at: <https://data.riksdagen.se/fil/508CA833-C7F2-47D3-A33C-7DE9444057CC> [Accessed 20.03.2022]; Parliamentary Minutes referencing Wallenberg Investment (2017). *Riksdagens Protokoll 2017/18:47*. (In Swedish). Available at: http://www.riksdagen.se/sv/dokument-lagar/dokument/protokoll/protokoll-20171847-mandagen-den-11-december_H50947 [Accessed 20.03.2022].

⁸ EU Member States Sign Up to Cooperate on Artificial Intelligence (2018). Press Release, European Commission. Available at: <https://ec.europa.eu/digital-single-market/en/news/eu-member-states-sign-cooperate-artificialintelligence> [Accessed 20.03.2022]; National Approach to Artificial Intelligence (2018). Government Offices of Sweden. Available at: <https://www.regeringen.se/4aa638/contentassets/a6488ccebc6f418e9ada18bae40bb71f/national-approach-toartificial-intelligence.pdf> [Accessed 20.03.2022].

Denmark has been proactively working on AI laws and regulations since 2017. The country adopted the National AI Strategy in 2019. It sets the main goals of AI development and defines advantages for industries relying on AI. According to the plan, the priority spheres for AI implementing are healthcare, energy, production sector, agriculture and transport.

China enjoys the most extensive legal regulation base of AI-related economy sectors. The 13th Five-Year Plan For Economic and Social Development of the People's Republic of China (2016–2020)⁹ projects a break-through both in the Chinese economy and national security, making emphasis on AI efforts as well. China's New Generation Artificial Intelligence Development Plan (2017)¹⁰ accentuates the significance of legal framework that has to regulate ethical issues of AI use. This document outlines the main principles of AI development in line with the state policy in this sphere.

As concerns AI development, the USA is undoubtedly one of the global leaders. They are on top of the global technological start-ups list, says the German Economic Institute (IW) (Araya, 2019). The USA has special legislation applicable to certain AI related areas. One of such laws is John S. McCain National Defense Authorization Act for Fiscal Year 2019 based on one of Congress documents.

The law defines AI through general characteristics of intelligence systems that:

- perform different tasks in changing and unpredictable conditions without much human control; are able to learn and increase productivity while processing data;
- in a digital form manage the tasks which generally call for human perception, processing, planning, learning, communicating, and physical actions;

⁹ The 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016). *National Development and Reform Commission (NDRC) People's Republic of China*. Available at: <http://en.ndrc.gov.cn/newsrelease/201612/PO20161207645765233498.pdf> [Accessed 20.03.2022].

¹⁰ China's New Generation Artificial Intelligence Development Plan (2017). *The State Council of People's Republic of China*. (In Chinese). Available at: http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm [Accessed 20.03.2022].

— meant to think and act like a human, including cognitive architecture and neural network;

— rely on a set of techniques, including computer-assisted teaching, aimed at approximating cognitive task and meant for rational acting, using software agents and robots to perceive, plan, reason, learn, communicate, make decisions and take actions.¹¹

The US National Robotics Initiative 2.0¹² stipulates the positions of different government agencies on financing, supporting and implementing robotics and cyber physical system research.

The US road map “From the Internet to Robotics”¹³ describes a package of measures aimed to implement robot systems in different spheres of social life (production, social services, medicine, employer-employee relations and labor market, economics, *etc.*). The authors point out that the applicable legislation impedes robotics development and indicate the spheres that require legal regulation on the first-priority basis: security, insurance, protection of confidential information, *etc.*

In Italy IT technologies development is the responsibility of AI Association, established in 1988.¹⁴ The main avenues pursued are implementing AI in education, industry, building strong connections with research institutions in order to apply AI decisions in the governance structures.

In 2018, Italy set up AI and intelligence systems to support “fundamental and applied research of AI, ICT industry by providing government structures as well as entrepreneurship with the results of research.” In March 2018, the White Paper on Artificial Intelligence

¹¹ John S. McCain National Defense Authorization Act for Fiscal Year 2019 (2019). Available at: <https://www.congress.gov/115/bills/hr5515/BILLS-115hr5515enr.pdf> [Accessed 20.03.2022].

¹² National Robotics Initiative 2.0: Ubiquitous Collaborative Robots (NRI-2.0) (2020). Available at: <https://www.nsf.gov/pubs/2020/nsf20522/nsf20522.htm> [Accessed 20.03.2022].

¹³ A Roadmap for US Robotics: From Internet to Robotics (2016). Available at: <https://cra.org/ccc/wp-content/uploads/sites/2/2016/11/roadmap3-final-rs-1.pdf> [Accessed 20.03.2022].

¹⁴ The European Artificial Intelligence landscape (2018). *European Commission*. Available at: <https://ec.europa.eu/digital-single-market/en/news/european-artificial-intelligence-landscape> [Accessed 20.03.2022].

was released.¹⁵ It sets a new culture of implementing innovations into civil services, indicating AI-related problems. According to the plan on the use of IT technologies in the government structures, unveiled in 2017, it would take three years to materialize.¹⁶ The White Paper expects the AI strategies to provide citizens with effective services in education, healthcare, legal system, public security, making them faster and more efficient. At the same time the paper emphasizes the need for updating the legislative and regulatory framework for AI in Italy, reaching balance between government and individual interests, complying with the transparency principles when it comes to the use of law, privacy and copyright protection, enhancing accountability and establishing effective system of human rights control. The White Paper includes 10 recommendations for the Government to consider, namely to set up “National center of competencies and interdisciplinary center for AI,” national platform to facilitate collection of data and implement AI implementation via government institutions.

Within the frame of Pan-Canadian Artificial Intelligence Strategy (2017),¹⁷ Canada adopted the Directive on Automated Decision-Making in 2019. The aim is to provide legal grounds for automated decision-making to reduce the risks for Canadians, as well as to make this process more efficient and consistent.

The Russian Federation does not belong to the group of the leading players in this sphere yet, which makes it necessary to develop a nationally specific approach allowing for the experience of industrialized countries. This experience shows the importance of legal regulatory framework, both on the legislative and administrative regulation levels. That primarily relates to ethical standards and principles of AI use in the government structures.

¹⁵ Libro Bianco sull’Intelligenza Artificiale al servizio del cittadino (2018). (In It.). Available at: <https://ia.italia.it/assets/librobianco.pdf> [Accessed 20.03.2022].

¹⁶ Three-Year Plan for ICT in Public Administration (2017). Available at: https://docs.italia.it/italia/piano-triennale-ict/pianotriennale-ict-doc-en/en/stabile/doc/01_piano-triennale-per-informatica-nella-pa.html [Accessed 20.03.2022].

¹⁷ CIFAR Pan-Canadian Artificial Intelligence Strategy (2017). Available at: <https://www.cifar.ca/ai/pan-canadian-artificial-intelligence-strategy> [Accessed 20.03.2022].

IV. Developing Machine-Readable Law Technologies

One of the modern trends of AI use in the governance sphere is developing machine-readable law technologies, which help build applicable law in the intelligence information systems. These algorithms are employed to create new automated systems in the contract law, RegTech and SupTech; technologies of preparing and processing collected machine-readable accountability.

As a rule, decision-making for computerized contract work involve AI technologies, *e.g.*, autofill of legal documentation, form designer to develop documentation, compile relevant analytical data, search and summarize court rulings or contracts in the corporate database. RegTech traditionally involves technologies to ensure companies' compliance with the applicable regulation. RegTech technologies are also commonly used for compliance control and client identification, transaction monitoring, data protection, system audit, corporate governance, risk management, reporting practice. These technologies can facilitate and enhance the process of meeting regulatory requirements, including preparatory work on accounts; facilitate and enhance reliability of client identification procedure, transaction analysis quality, as well as ensure control over risks and counteract cyberthreats.¹⁸

The regulator employs SupTech (Supervisory Technologies) to make regulation and supervision processes over financial market players more efficient. SupTech are applicable in two major areas: systematic data collection and procession of data coming from supervised organizations; data analysis to check compliance of supervised organizations with regulatory requirements. These technologies enable to computerize and streamline administrative procedures, digitalize data and tools used for communication with citizens, improve reliance and quality of accountancy, upgrade the system of decision-making.

Apart from that, these technologies might be quite instrumental to reveal fraud schemes, shady transactions and collect evidence of

¹⁸ Issues and directions of development of regulatory and supervisory technologies (RegTech and SupTech) in the financial market in Russia. Report for public consultation (2018). (In Russ.). Available at: https://cbr.ru/Content/Document/File/50667/Consultation_Paper_181016.pdf [Accessed 20.03.2022].

commercial crime. As concerns businesses, AI technologies will support and reinforce their own systems of decision-making, risk-management and internal control processes, as well as reduce regulatory pressure due to the digital format of communication with state and local authorities.

The main aim of introducing machine-readable accountancy is to rid organizations and citizens of necessity to provide the same data to government structures for different purposes. Another benefit is reducing costs of data aggregation and analytical indicators calculation for reporting purposes. One of the impediments on the way of proactive development of machine-readable law technologies is the challenging task of converting the legal norms, written in the natural language, into the machine-readable format.

Overall, the use of these algorithms implies an obvious risk of distorting real data, which might relate to defining the circumstances to prove certain legally significant fact. In practice, it means that in case of the system's glitches and errors, an individual might find themselves wrongfully liable for offences and therefore restricted in rights. This increases the role of the algorithm as it determines which data exactly provide rationale for legal liability and how the rights of the person, who fell victim to a wrongful decision, can be protected. As a result, we need to define criteria for those legal norms that can be converted to the machine-readable form.

V. Automated Decision-Making

In general, the governance structures employ cognitive technologies when an individual in an automated mode is considered qualified for an unemployment benefit, retirement, loss of breadwinner, child birth, social insurance services (Zheng *et al.*, 2018); in case of emergence service calls classification, contagious disease management;¹⁹ civil servant support on immigration issues (Martinho-Truswell, 2018); social media monitoring for public opinion on the state policy and revealing

¹⁹ Unleashing the potential of Artificial Intelligence in the Public Sector (2017). Available at: <https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/10/ai-in-public-sector.pdf> [Accessed 20.03.2022].

emergency situations, sanitary standards violations; forecasting transport congestions, road accidents and road maintenance needs.²⁰

Government agencies all over the world use virtual assistants, who help contact with the public and facilitate access to public services.²¹ Dr. A. Witford (SPIA), while speaking at the ATARC conference (Advanced Technology Academic Research Center) in October 2019, remarked that “machines learn faster than people and manage bigger bodies of data. In other words, AI can read about a million of cases while a human can hardly manage it even during all his/her life. Thus, AI can make business of both public and private sector much more effective.”

AI technologies are becoming an inalienable part of decision-making systems in the governance sector. In many countries legislation stipulates severe requirements for the AI systems making automated decisions without human participation, with violations followed by legal or other significant consequences for individuals.

The European Data Protection Board (EDPB), independent British organization, established to protect the right to information in public interests and promote transparency of government agencies and data confidentiality for individuals, and Information Commissioner’s Office (ICO) have already made public guidelines for Automated Decision-Making (ADM).²²

The extent and quality of human interference into decision-making is the key to define whether the decision-making system is solely or partly automated. The conclusion depends on the following: whether a human checks the system’s recommendations or not; whether a human can make a decision which runs counter to an automated one; whether

²⁰ Artificial Intelligence in the public sector. Available at: <https://www.act.ipaa.org.au/brief-artificial> [Accessed 20.03.2022].

²¹ Department of Human Services Annual Report 2017-18 (2018). *Australian Government Department of Human Services*. Available at: <https://www.servicesaustralia.gov.au/sites/default/files/2018/10/8802-1810-annual-report-web-2017-2018.pdf> [Accessed 20.03.2022].

²² Guidelines on automated individual decision-making and profiling (2018). Available at: http://ec.europa.eu/newsroom/document.cfm?doc_id=47742 [Accessed 20.03.2022]; Art. 22 GDPR — Automated individual decision-making, including profiling. Available at: <https://gdpr.eu/article-22-automated-individual-decision-making/> [Accessed 20.03.2022].

only the system's conclusion is taken into account or other factors are considered as well. Along with it, researchers identify two significant AI-related risks. The first one — “inclination towards automation” shows unreasonable trust to the decisions made by AI, when a human never doubts and questions the computer-generated outcome and stops reasoning by him/herself. The second risk stems from the fact that AI technologies keep developing and become more complicated. Some of them — deep machine learning — are so sophisticated that their decisions might be difficult for a human to interpret. This is fraught with knee-jerk decisions, when machine's recommendations are accepted without reasoning. Both situations mean that the decision-making was totally automated excluding any human influence on the outcome.

Overseas experience shows that organizations should have a clear idea of the extent to which any app with AI technology is used. It is essential to inform and stipulate in the respective documents on the risk management policy whether AI will be used to enhance human decisions effectiveness or to make totally automated decisions. The documents related to AI use to support human decisions should allow for risk factors indicated earlier. Commissioners, developers, analysts and other specialists involved in these systems creation should develop requirements for the system's design that suggests information content analysis made by humans. It is vital to determine the factors that are to be taken into account by the AI system, and extra factors to be considered by experts before taking a final decision. For example, AI systems can study measurables like age, years spent in a certain employment sphere, while a human can evaluate applicants' skills that are not indicated in the questionnaire, *i.e.*, knowledge of specialist terminology, emotional stability, *etc.* If a human expert has access to and uses only the data that the AI system already uses, without considering any other additional information, such participation is inadequate and the outcome should be considered totally automated.

Thus, the system developers should identify additional factors to be taken into consideration by humans, *e.g.*, oblige people contact with the individual who the decision directly relates to. It is also relevant to leave in the AI design room for an opportunity to interpret automated

decisions, explain the system's actions and interpret to make it plain and clear for humans.

The ability to interpret is hard to gauge, describe in accurate terms when it comes to answers to such questions as:

- Can a human predict how system's output will change with different input data?

- Can an expert identify the most important input data defining a certain output?

- Can an expert say when a decision is wrong?

That is why it is of importance that the developers define and record "interpretability" and ways to gauge it in each AI system to be used. The risk management policy should make the interpretation process for each AI system reliable. At the same time, the documents have to indicate people responsible for testing and final examination of the system before its implementation. These people are to put the system into operation only if it complies with the established risk management policy.

The critical role in ensuring human participation in the system's decisions belongs to expert training. Experts should be able to:

- understand how the AI system works, what restrictions it has;
- anticipate when the system might make misleading decisions and understand why;

- avoid relying blindly on AI decisions and beware of mistakes which might occur;

- be aware of how their own experience should complement the system and know the range of factors to be considered;

- suggest well-grounded arguments to explain why a certain decision was turned down or accepted, as they are responsible for it.

To make the training effective it is important to give experts authority to redefine AI-generated results. An internal audit procedure of the automated decision-making based on the effective risk monitoring system should compliment the training system. The key part of the risk monitoring system should become the statistics of system decisions' human review: how often and why human experts turned down or accepted AI system results.

If risk monitoring reporting shows that human experts commonly agree with the AI system results and there are no signs of critical assessment, then decisions should be categorized as totally automated. An organization should have certain control mechanisms to keep risks within the target level, including, if necessary, temporary or permanent refusal from AI system in data processing.

Consequently, an individual using the AI system for automated decision-making is obliged to inform the data subject that the decision is made in an automated form, perform risk assessment, ensure data protection; introduce procedures which allow individuals to make inquiries concerning automated decision-making; implement independent monitoring system.

VI. Conclusions

The long-term tasks of modern law regarding AI use can be reduced to the following.

Firstly, we need to continue studying sensual and emotional behavior of data subjects amid new cognitive systems and technologies (brain implants, neural implants, cochlear implants).

Secondly, it is important to understand how lack of emotions and feelings affects robot's behavior.

Thirdly, it is necessary to undertake multidisciplinary research into emotions and feelings caused by the use of complex cyber and physical systems (involving psychology, medicine, physiology, psychological theory of emotions, biochemistry).

Fourthly, emphasis should be placed on the following aspects:

- the concept of artificial intelligence in the conceptual framework of the legal science;
- specific legal regulation of behavior in the government agencies employing AI;
- comparative analysis of AI systems and human behavior mechanisms in the governance sphere.

Fifthly, it is vital to put ethical norms principles of AI use in the government administration on the permanent footing;

Sixthly, legislation should describe:

- restrictions of AI use in the automated decision-making procedure;
- obligatory informed consent in case an automated decision relates to an individual;
- procedures which enable individuals to stop automated decision-making relating to them;
- risk assessment regulations for the AI use in the governance structures; ensuring data protection and independent security monitoring.

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