

Artificial Intelligence as an Object of Global Digital Governance

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The article offers the author's understanding of the essence of artificial intelligence as a phenomenon of the digital society. The features of artificial intelligence as conditions for the transformation of global digital governance are determined. The relevance of the adoption of the Global Digital Agreement within the framework of the UN as a normative step in the creation of a worldwide system of principles and mechanisms for the transparent and accountable use of artificial intelligence is highlighted. The ethical challenges of introducing artificial intelligence into global digital governance are revealed. Attention is focused on ensuring access to digital technologies and resources (including artificial intelligence) for developing countries as a direction for the development of global digital governance. It is summarized that artificial intelligence is the driving force of changes in global governance. The important role of international cooperation in the development of uniform standards, ethical principles and inclusive models of management, which should become the basis for a harmonious combination of technical progress with humanitarian values, is determined.

Keywords: governance, global cooperation, global administration, space activities, space, development, artificial intelligence.

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Introduction

The rapid development of artificial intelligence and the intensification of the implementation of artificial intelligence (hereinafter – AI) in various spheres of society (for example, autonomous vehicles, lethal weapons systems, robotics, etc.) create serious challenges for legal regulation, which should manage the scale and speed of socio-technical transitions that are happening. New applications of artificial intelligence offer opportunities to improve economic efficiency and quality of life, but they also generate unexpected and unanticipated consequences and create new forms of risk that must be addressed. To maximize the benefits of AI and minimize the downside risks, governments around the world need to better understand

the scale and depth of the emerging risks and put in place quality governance processes and structures to address these challenges (Taeihagh, 2021).

Many researchers also argue that artificial intelligence is rapidly becoming an important component of both digital communications and (most importantly) military applications of nations around the world. However, less is known about how states use artificial intelligence in their information warfare and influence operations. Major countries (notably the United States, China, etc.) are incorporating AI into their national security strategies, which has important implications for international security (Hunter et al., 2024).

In the conditions of complex security challenges, and in general, for the development of human benefits, the use of artificial intelligence is a complex process from the point of view of legal regulation. The relevant challenges in this area generate both regulatory gaps and further issues in the practical implementation of people's rights, freedoms and legitimate interests.

The essence of artificial intelligence as a phenomenon of digital society

There are still serious disputes about the definition of artificial intelligence. Controversy over the definition begins in computer science (Russell & Norvig, 2020), where the term was first introduced in a 1955 grant application. McCarthy (McCarthy et al., 1955) actually did not define this term, but only emphasized that “artificial intelligence” research must proceed on the basis of the assumption that every aspect of learning or any other feature of intelligence can in principle be so accurately described that a machine can be made to imitate it (Büthe et al., 2022).

Tim Büthe understands artificial intelligence as systems that combine means of collecting input data from the external environment with technologies for processing this input data and algorithmically linking it to previously stored data, which allows such systems to perform a wide range of tasks with some degree of autonomy, that is, without simultaneous continuous human intervention. Their ability to learn allows AI systems to solve problems and thus support, imitate or even improve human decision-making – although (at least at this stage of technological development) not holistically, but only with respect to well-defined, albeit perhaps quite complex, tasks (Büthe et al., 2022).

At the same time, vagueness due to lack of definition is costly. Many policy instruments use only partial or preliminary definitions – or refrain from providing a definition at all – creating uncertainty and encouraging conflict, including costly litigation, over the applicability of any particular measure (Büthe et al., 2022).

In our opinion, artificial intelligence as a phenomenon of the digital society is a complex digital-technological system capable of autonomously or with minimal human intervention, analyzing, algorithmically processing and adaptively using data and information in order to fulfil various tasks and goals.

Artificial intelligence, as a phenomenon of the digital society, is formed at the intersection of innovative technologies and societal challenges, contributing to the development of digital infrastructure, but at the same time generating new regulatory, ethical and legal issues that require careful analysis and management.

Artificial intelligence as a condition for the transformation of global digital governance

Now more than ever, artificial intelligence is impacting our society and lives on personal and professional levels. Although initial work on artificial intelligence began as far back as the 1950s, the year 2023 marked the AI revolution, with the technology advancing at an unprecedented pace, requiring governments, international organizations, regulators, the private sector, and all decision makers to recognize this powerful and revolutionary technology and adapt accordingly. Significant technical, legal and ethical implications affect virtually every sector, with no framework to guide and regulate decision-making processes. In this environment characterized by variability, uncertainty, complexity and ambiguity, it is imperative to build a truly effective and secure AI management model (Artificial, 2024).

Recent developments in the field of artificial intelligence show that this new technology will have a deterministic and potentially transformative impact on global governance, military power, strategic competition, and world politics in general. If left unchecked, the uncertainties and vulnerabilities created by the rapid proliferation and spread of artificial intelligence could become a major potential source of instability and great power strategic rivalry (Johnson, 2019).

At the same time, the main goal of managing artificial intelligence is not to manage the development of technology as such, but to avoid bad and achieve better results or consequences of a particular use of AI. For example, health-related data is considered particularly sensitive in many countries. AI-based analysis of such data can be used to assess personalized risk profiles, which can then be used to deny employment, health insurance or other benefits to high-risk individuals. Consequently, health and medical data are generally subject to some of the most stringent data privacy and security requirements. The collection of such data, its combination with other data and the analysis of health and medical data are strictly limited or even prohibited in many countries. However, such regulation of technology also inhibits progress in personalized medicine, delays progress in finding treatments for rare diseases, and hinders early detection and effective policy responses to public health risks and threats, such as epidemics and pandemics. Therefore, it may be much better in the public interest to relax restrictions on data and tools for analyzing it and instead focus on prohibiting denial of health insurance coverage (perhaps supplemented by government subsidies for high-risk insured individuals). Employment discrimination based on health status and other abuses – and strict enforcement of such prohibitions (Büthe et al., 2022).

International AI governance requires a flexible and multi-stakeholder approach. At the same time, artificial intelligence and other applications based on artificial intelligence are being integrated into international governance approaches. The last decade has seen the growth of AI-based applications that extend the management function (Budhwar et al., 2022).

Appropriate integration of artificial intelligence into international governance opens up new horizons for the efficiency of global processes (Global, 2024). However, such a tool cannot remain without the normative attention of the international community, because it is a direct object of influence on the model of global digital governance.

Such a normative direction was the adoption and agreement in 2024 at the level of the United Nations of the Global Digital Compact as part of the Pact for the Future, which addresses such urgent international issues as sustainable development, international peace, future generations, technology and innovation, as well as digital cooperation. The Global Digital Compact sets out

goals, principles, commitments and actions to develop an open, free and secure digital future for all, based on the benefits that digital technologies bring to humanity (The United, 2024).

The provisions of the Global Digital Compact include initiatives related to artificial intelligence. The main direction in the field of artificial intelligence is determined by the Global Digital Compact to improve the international management of artificial intelligence for the benefit of humanity (Global, 2024).

The signatories of the Global Digital Compact recognize the need for a balanced, inclusive and risk-based approach to the governance of artificial intelligence with full and equal representation of all countries, and especially developing countries. At the level of the international community, the enormous potential of artificial intelligence systems to accelerate progress on all Sustainable Development Goals has been identified (The 17, 2024). At the same time, the international community is trying to build a model of managing artificial intelligence in the public interest and ensure that the application of artificial intelligence contributes to the development of diverse cultures and languages and supports local data for the benefit of the development of countries and communities. Which includes, in particular, international cooperation to support developing countries in building the capacity of artificial intelligence, as well as efforts to address the potential negative impact of new digital technologies on work and employment and on the environment (Global, 2024).

In light of the Global Digital Compact's recognition of the need for a global, balanced and inclusive approach to AI governance, it is clear that the international community must not only recognize the potential of AI to achieve the Sustainable Development Goals, but also make efforts to build effective governance models that meet these challenges.

At the same time, given the speed, scale and uncertainty of the development of artificial intelligence, no existing AI management model is ideal. Instead, the international community should use several models of governance, forming a unified approach. This pragmatic yet optimistic path will allow humanity to maximize the benefits of AI programs and spread them as widely as possible, while minimizing harm and mitigating risks as efficiently as possible (Sepasspour, 2023).

The formation of effective AI management mechanisms should be based on a combination of a pragmatic approach, focused on achieving specific results, with inclusive cooperation at the international level. This means that, on the one hand, it is necessary to support developing countries in building their AI potential, and on the other hand, to test innovative management models that correspond to geopolitical reality and allow reducing risks from the use of new technologies. Such an approach will help not only to minimize the negative impact of AI on work, employment and the environment, but also to maximize its benefits through effective solutions to global problems within the framework of regional and multilateral groupings.

If we continue to analyze the modern model of global governance, then, in particular, the main directions of advancing international governance of artificial intelligence, defined by the provisions of the Global Digital Compact, are: assessment of future directions and consequences of artificial intelligence systems and promotion of scientific understanding; supporting interoperability and interoperability of AI management approaches by sharing best practices and promoting common understanding; helping to build capacity, especially in developing countries, to access, develop, use and manage artificial intelligence systems and channel them towards sustainable development; promoting transparency, accountability and robust human oversight of artificial intelligence systems in accordance with international law (Global, 2024).

It is artificial intelligence that currently plays a key role in the transformation of global digital governance, acting as a powerful driver of change and a condition for regulatory attention. Its integration into international governance processes opens wide opportunities for achieving the Sustainable Development Goals, contributing to solving global challenges such as the fight against poverty, climate change, and improving access to education and health care. However, the rapid development of AI requires the formation of complex legal cooperation capable of ensuring a balance between stimulating innovation and minimizing potential risks.

Therefore, as an additional form of international cooperation, states within the United Nations have committed to establish a multidisciplinary, independent international scientific commission on artificial intelligence with balanced geographic representation to promote scientific understanding through evidence-based assessments of impacts, risks and opportunities, based on to existing national, regional and international initiatives and research networks. Also in the immediate plans is the initiation within the framework of the United Nations Global Dialogue on the Management of Artificial Intelligence with the involvement of governments and all relevant stakeholders, which will take place in the fields of existing relevant UN conferences and meetings (Global, 2024).

Today, the development of international and intergovernmental partnerships to build the capacity of artificial intelligence for the development of educational and training programs, expanding access to resources, including open models and systems of artificial intelligence, open educational data and computation, facilitating training and development of artificial intelligence models, and promoting participation micro, small and medium enterprises in the digital economy. Also, the international community emphasizes the importance of increased investment, especially from the private sector and philanthropy, to increase the scale of building the potential of artificial intelligence for sustainable development (Global, 2024).

In general, the adoption of the Global Digital Compact within the framework of the UN is an important step in creating a worldwide system of principles and mechanisms for the transparent and accountable use of artificial intelligence. International cooperation should become the mainstay for the successful management of artificial intelligence. Coordinated actions of governments, international organizations, scientific institutions and the private sector will allow the exchange of best practices, the formation of joint platforms for the development of AI and the harmonization of approaches to its regulation. Given the speed and uncertainty of technology development, the implementation of multi-level and dynamic management is critically important. The use of different models and adaptive strategies will ensure an effective response to today's challenges and at the same time will allow building strategies for the future.

Ethical challenges of implementing artificial intelligence in global digital governance

In 2024, the signatories of the Global Digital Compact recognized the obligation to promote fair and inclusive approaches to harnessing the benefits of artificial intelligence and mitigating risks, fully respecting international law, including international human rights law, and taking into account other relevant frameworks, such as the Recommendations on ethics of artificial intelligence United Nations Educational, Scientific and Cultural Organization (Global, 2024; Recommendation, 2024).

Indeed, as AI technologies are proliferating around the world, international debate is increasingly focused on their implications for democracy, human rights, fundamental freedoms, security, and economic and social development. In this context, the UNESCO Recommendation on the Ethics of Artificial Intelligence, adopted in November 2021, became the first global regulatory framework for the development and implementation of AI. Tense negotiations over every detail of the document have caused numerous disputes among UNESCO member states. Drawing on a unique set of primary sources, including written positions and recorded discussions, this article explains the achievement of a global compromise on the regulation of artificial intelligence despite the multiple positions of UNESCO member states representing a variety of liberal and sovereign preferences (Natorski, 2024).

Thus, artificial intelligence is not just a technological tool, but an important element in the formation of the future digital ecosystem. Its potential to achieve sustainable development can only be realized if balanced, inclusive and adaptive models of global governance are implemented, which will meet the challenges of today and the needs of future generations.

AI as an object of global governance must be developed in compliance with ethical principles, transparency and preservation of human control. This will help prevent abuse and ensure its use is solely for the benefit of humanity. Special attention should be paid to education, which will help prepare society for effective interaction with the latest technologies, as well as promote the development of innovative ecosystems and participation in the digital economy. At the same time, it is extremely important to ensure access to technologies and resources for developing countries, to stimulate the preservation of local languages and cultures, and to create conditions for their equal participation in the global digital environment.

Possibilities of artificial intelligence for managing space activities

Artificial Intelligence provides unlimited opportunities for various spheres of society, space is no exception. Indeed, there are various possibilities of artificial intelligence for space activities, for example, the robotics of space missions. Effective robotic exploration, especially deep space, optimally requires advanced artificial intelligence. This creates ethical and social problems in interaction with people. Human exploration of deep space ideally requires the physiological improvement of future astronauts. Meanwhile, advances in space medicine, countermeasures to cosmic radiation, and artificial gravity also offer solutions for human spaceflight. Deep space mission planners must consider both advanced robotic artificial intelligence and human physiological enhancement (Szocik & Tachibana, 2019). Trends in the use of artificial intelligence for space also affect legal regulation, in particular, as some scientists pay attention to the adoption of a new European space law, which will establish common standards and rules for the national legislation of EU member states and the Community as a whole (Soroka & Danylenko, 2024).

Artificial intelligence is opening new horizons for managing space activities, promoting efficiency, safety and innovation in space exploration. Its implementation makes it possible to automate complex operations, optimize resource management and ensure accuracy in decision-making even in deep space, where human intervention is limited. At the same time, the use of AI raises the issue of ethical responsibility, the distribution of powers between autonomous systems and people, as well as the legal regulation of the interaction of these technologies with traditional management methods. The integration of AI into the governance of space activities requires the development of legal standards that will guarantee transparency, security and

compliance with the interests of all subjects of space law. This approach will contribute to the harmonious combination of technical progress with humanitarian values, ensuring sustainable development in the field of space exploration and development.

Conclusions

Artificial Intelligence is a strategic element of the modern digital society, which fundamentally affects global governance, providing new opportunities for development and solving key challenges of humanity. Thanks to its ability to autonomously analyze, process large volumes of data and perform complex tasks, AI plays an important role in achieving sustainable development, increasing the efficiency of management processes and transforming traditional approaches to global cooperation. However, its rapid development gives rise to a number of challenges, including legal, ethical and social ones, which require careful regulation and adaptive management.

Artificial Intelligence is not only a technological tool, but also an object of legal regulation, which should ensure a balance between stimulating innovation and minimizing potential risks. It is necessary to guarantee transparency in the use of AI, preservation of human control over autonomous systems, compliance with ethical principles and protection of people's rights and freedoms in the digital environment. The lack of uniform approaches at the international level can cause gaps in legal regulation and create risks for global stability.

The potential of AI in achieving the Sustainable Development Goals is unprecedented. This technology has the potential to contribute to the fight against poverty, climate change, increased access to education and health care, while preserving cultural and linguistic diversity. Ensuring equal access to technology, especially for developing countries, is a key element in creating an inclusive digital environment that will contribute to the harmonious development of society.

Overall, AI is driving change in global governance, but its effective use requires a balanced and adaptive approach. International cooperation, aimed at the development of uniform standards, ethical principles and inclusive management models, will become the basis for a harmonious combination of technical progress with humanitarian values. This approach will ensure that the benefits of AI for humanity are maximized while maintaining sustainability, transparency and responsibility in its use.

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