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# LEGAL SUPPORT OF ARTIFICIAL INTELLIGENCE

**Abstract.** This article examines the problems of legal qualification and status of artificial intelligence, analyzes case law and scientific approaches to the interpretation of the legal status of artificial intelligence to determine the model of legal regulation of intellectual property rights to objects created by artificial intelligence. The main directions of introduction of the process of digitalization in the field of artificial intelligence in Ukraine are revealed, attention is focused on the main features of the introduction of artificial intelligence in Ukraine and the world. Possible areas for improving the legal regulation of the status of artificial intelligence in Ukraine are identified, and also the main perspective directions of development of the legislation in the field of artificial intelligence are forecasted.

Artificial intelligence has been identified as an object of study in a number of scientific disciplines and is a rather complex technical and philosophical phenomenon, and therefore the definitions proposed in science to define the concept of artificial intelligence are very heterogeneous. Emphasis is also placed on the main characteristics of artificial intelligence: technical (software) nature, ability to self-study in data processing, automated nature of such training, autonomy in decision-making, focus on achieving results that people achieve in the process of their intellectual activity.

Given the isolated features that allow to establish the closeness of the nature of artificial intelligence to the nature of the computer program, given the dynamic and continuous development of artificial intelligence and the inadmissibility of this definition due to an exhaustive list of technologies that can lead to excessive narrowing of the term and lead to the need for its constant revision, as well as given the requirement for technological neutrality of regulatory definitions, we propose for legal purposes to define the concept of "artificial intelligence" as a computer program based on – algorithms of data analysis and algorithms of formation on the basis of such analysis of algorithms of autonomous decision-making for achievement of the certain purpose. We consider it inexpedient for the purposes of legal regulation to classify artificial intelligence into weak and strong, because the only thing that distinguishes these scientifically defined types of artificial intelligence is the functional content, which is not important in this case to determine the legal status of artificial intelligence.

***Key words:*** *digitalization, artificial intelligence, legal personality, legal regulation, legal responsibility, legal nature of artificial intelligence.*

**Бєгова Т. І. Юридичний супровід штучного інтелекту**

**Анотація.** У цій статті досліджено проблеми правової кваліфікації та статусу штучного інтелекту, проаналізовано судову практику і наукові підходи до тлумачення правового статусу штучного інтелекту задля визначення моделі правового регулювання права інтелектуальної власності на об'єкти, створені штучним інтелектом. Розкрито основні напрямки запровадження процесу діджиталізації у сфері обігу штучного інтелекту в Україні, акцентовано увагу на основних особливостях введення в обіг штучного інтелекту в Україні і світі. Визначено можливі напрямки вдосконалення правового регулювання статусу штучного інтелекту в Україні, а також спрогнозовано основні перспективні напрямки розвитку законодавства у сфері штучного інтелекту.

Визначено штучний інтелект як об'єкт дослідження низки наукових дисциплін, який є досить складним технічним і філософським явищем, а тому пропоновані в науці дефініції щодо визначення поняття «штучний інтелект» є дуже неоднорідними. Крім того, акцентовано увагу на таких основних характерних ознаках штучного інтелекту: технічний (програмний) характер; здатність до самонавчання під час оброблення даних; автоматизований характер такого навчання; автономність у прийнятті рішень; орієнтованість на досягнення результатів, які людина досягає під час своєї інтелектуальної діяльності.

З огляду на виокремлені ознаки, які дозволяють установити близькість природи штучного інтелекту до природи комп'ютерної програми, з огляду на динамічний і безперервний розвиток явища штучного інтелекту і неприпустимість через це визначення такого поняття через вичерпний перелік технологій роботи, що може призвести до надмірного звуження терміну та необхідності його постійного перегляду,

а також з огляду на вимогу до технологічної нейтральності нормативних дефініцій, ми пропонуємо в цілях правового регулювання визначити поняття «штучний інтелект» як комп'ютерну програму, в основі якої знаходяться алгоритми аналізу даних та алгоритми формування на основі такого аналізу алгоритмів автономного прийняття рішень задля досягнення визначеної мети. З метою правового регулювання ми вважаємо недоцільною класифікацію штучного інтелекту на слабкий і сильний, адже єдине, що відрізняє ці науково визначені види штучного інтелекту, – це функціональна наповненість, яка не є у цьому випадку важливою для визначення правового статусу штучного інтелекту.

***Ключові слова:*** *діджиталізація, штучний інтелект, правосуб'єктність, правове регулювання, юридична відповідальність, правова природа штучного інтелекту.*

**Introduction**. Today there is a rapid development of artificial intelligence technologies, the introduction of robotic systems in everyday life. Almost every country in the world determines the development of artificial intelligence as one of the main directions of its activity, adopts plans and strategies for steps in this direction. The first such strategy was developed in March 2017 in Canada under the name «Pan-Canadian AI Strategy», which involved investing 125 million Canadian dollars in this area, supporting researchers, creating three key centers of development and development of artificial intelligence [1].

**Article's main body**. On February 11, 2019, the White House issued an Executive Order to Accelerate America's Leadership in Artificial Intelligence, which defined US policy on the development of artificial intelligence in the following five steps: investing in research and development; expanding access to federal data and computing resources for researchers; setting management standards to increase security and public confidence; training programs for the development of new technologies; international cooperation and at the same time protection of national interests [2].

In addition, on January 13, 2020, the US government published draft rules to regulate artificial intelligence in the US, which deals with the regulation of artificial intelligence in private law and encourages the growth of innovation in the field of artificial intelligence. Regulation of private relations under this project should be based on the principles of public trust (confidence in the reliability of artificial intelligence), involving citizens in improving the rules, 34 scientific integrity, risk assessment and management, fairness and non-discrimination, security, interagency coordination [3]. As for Europe, on April 25, 2018, the Commission developed a strategy that, similar to the American strategy, focuses on supporting the development of artificial intelligence, learning and security [4].

The Commission also established a high-level expert group that developed the Guidelines for Reliable Artificial Intelligence, which were published by the Commission on 9 April 2019, among these principles: human supervision; technical reliability and safety; confidentiality and data management; transparency; diversity, non-discrimination and justice; social and environmental well-being; accountability [5]. The EU's ultimate strategy was published on 19 February 2020 under the title White Paper. Among the main areas of activity are similar steps to the American strategy, in addition, emphasizes the need to develop an industry such as data processing, as the latter are the basis for the training of artificial intelligence. Emphasis is also placed on the need to develop ethical and legal standards for the development and operation of these systems, which would protect human rights from violations, in particular, such regulation should be targeted and justified given the risks, possible material or non-material allowed [6].

With regard to Ukraine, the order of the Cabinet of Ministers of Ukraine of January 17, 2018 № 67-r approved the Concept of Development of Digital Economy and Society of Ukraine for 2018 – 2020, which aims to implement and produce digital technologies; transformation of the economy from traditional to efficient digital; identifies priority steps to implement appropriate incentives and create conditions for digitalization in the real sector of the economy, society, education, medicine, environment, etc.; aimed at understanding the existing challenges and tools for digital infrastructure development; provides for the acquisition of digital competencies by citizens, as well as identifies critical areas and projects of digitalization of the country. The integration of digital technologies into production processes is called the development of Industry 4.0 Industry 4.0 – the next stage technologies and concepts such as the Internet of Things, big data, predictive analytics, cloud and

fog computing, machine learning, machine interaction, artificial intelligence, robotics, 3D printing, augmented reality) [7].

All these strategies are purely advisory and declarative, they only pay attention to the direction in which to move for the development of artificial intelligence systems and solve problems that arise, outline the basic principles on which the development and operation of artificial intelligence should be based in order to it served exclusively for the benefit of mankind and did not violate human rights, but they do not determine the legal status of artificial intelligence. However, given the prevalence of artificial intelligence technologies, determining its legal status, determining whether it can be a full-fledged subject of legal relations, or can be considered only as an object is a very important issue.

In general, there are three approaches to the regulation of artificial intelligence: 1) regulation according to current legislation according to the general rules applicable to property; 2) settlement by analogy; 3) making changes to the legislation: either to recognize it as a subject, or to define it as a special object [8, p. 218-219]. So, before determining the legal status of artificial intelligence in intellectual property law, its ability to be an author / inventor and create protected objects, let's analyze its legal status in legal relations in general and the possibility of artificial intelligence to be their subject.

Regarding the possible variants of the legal status for artificial intelligence, given the nature of legal relations in general, the following variants can be distinguished: 1) recognition as an object; 2) recognition as a subject; 3) recognition as an object and subject depending on the content of certain legal relations. In favor of the first approach, they argue that artificial intelligence systems are exclusively an ancillary element in social relations, which could be implemented without their participation; in favor of the second – the system of artificial intelligence can act as a party in the relationship, as it can independently analyze the environment and make appropriate decisions that are unpredictable by man [9, p. 35-36].

It should be noted that the study of the legal regulation of artificial intelligence began in 1987, when the International Conference on Artificial Intelligence and Law was first held at Northeastern University, which resulted in the establishment of the Center for Computer Science and Law. four years – the International Association for Artificial Intelligence and Law [10, p. 501]. Before defining the possibility of endowing artificial intelligence with legal personality, let's clarify the meaning of the concept of legal personality. Legal personality is the ability of a person to act as a subject of law [11, p. 129] and, in turn, the subject of legal relations.

Legal personality includes the following elements: 1) legal capacity – the ability to have rights and responsibilities; 2) capacity – the ability to implement them; 3) tort – the ability to be responsible for civil offenses; 4) sanity – a condition of legal personality in criminal law [12, p. 440-445]. Agreeing with J. Bryson, M. Diyettis, T. Grant, consider three main characteristics of legal personality, which reveal its nature: 1) legal personality is fiction, because it does not necessarily relate to the nature of the individual, but only demonstrates what rights and responsibilities the legal system provides to a particular entity (as an example, the author cites a legal entity that is not inherently human, but different legal systems assign them a certain legal status); moreover, the legal status of those other entities is determined not by the nature of the person, but by the goals pursued by the state; 2) can be multilevel, because not all subjects have the same rights and responsibilities; 3) legal and factual legal personality may not coincide (there may be no actual possibility of realization of legally enshrined rights and obligations) [13, p. 277-282]. Supports the position that any legal personality is a fiction and Kelzen G., who notes that an individual is not a person in accordance with its natural reality, and the legal structure used to regulate social relations [14, p. 219]. Thus, one of the key features of legal personality is that it is determined solely by the rule of law.

The legal system of each state may provide for a different list of certain subjects of legal relations and a different list of rights and responsibilities that these subjects are endowed with and that they can exercise. Therefore, endowing artificial intelligence with legal personality and determining the scope of this legal personality is exclusively a matter of normative consolidation.

It remains only to clarify the feasibility of recognizing artificial intelligence as a subject of legal relations and the possibility of classifying it in one or another category of subject. Let's find out who are the subjects of civil law in accordance with

Ukrainian law and whether artificial intelligence can be equated to the legal personality of already statutory categories of subjects.

According to the Civil Code of Ukraine, participants in civil relations are individuals and legal entities, the state of Ukraine, the Autonomous Republic of Crimea, territorial communities, foreign states and other subjects of public law [15]. A similar approach to defining the range of legal entities today is common to virtually all developed and developing countries. Artificial intelligence does not fall into any of these categories of subjects, in addition, artificial intelligence is not directly defined as an object of civil law, and therefore the question of regulating its legal status remains open.

There is also no precedent in the jurisprudence regarding the endowment of artificial intelligence with legal personality.

Consider what approaches to determining the legal status of artificial intelligence have been developed in the doctrine. OA Baranov proposes to define artificial intelligence "the legal equivalent of an individual" [14, p. 10]. He comes to this conclusion by analyzing the procedure for determining the legal capacity of an individual.

Thus, the presence of human capacity depends on the proper functioning of its cognitive abilities, and if artificial intelligence exhibits similar cognitive abilities, it can be considered "equivalent to an individual" [9, p. 11]. Finally, he concludes that the legal personality of an individual is presumed, and the legal personality of work with artificial intelligence requires proof as the equivalent of an individual [9, p. 11].

L. Solum notes that "if artificial intelligence behaved correctly and if cognitive science confirmed that the basic processes that produce this behavior were relatively similar to the processes of the human mind, we would have very good reason to treat artificial intelligence as individuals" [17, p. 1286]. However, A.A. Vasiliev and J.I. Ibragimov rightly note that the same legal personality for humans and work is impossible due to the lack of will and emotions in robots [18, p. 52].

A. Gallon considers in his work three arguments that have emerged in science in favor of the impossibility of giving artificial intelligence a legal status equivalent to man and at the same time refutes them. The first argument is anthropocentric, according to which only a person can have rights, as a counterargument, the author draws attention to the fact that legal entities today have rights. The second is the lack of an important element in the presence of which artificial intelligence could acquire legal personality, for example, intentionality (conscious purposeful behavior (author's text)); counterargument – legal rights do not depend on the presence of a particular element, but on state policy). Third – artificial intelligence is property, because it is created by man, but in this case the question arises whether children are not the property of their parents [19, p. 48-52].

At the same time, other researchers emphasize that the legal personality of an individual is determined not by his nature, his will and emotions, but it depends on the cultural and social characteristics of a country in a given period, and it is not homogeneous for different categories of individuals. Examples include the different legal status of slaves and masters in medieval times, the different legal status of women and men (in particular, women only at the beginning of the 20th century received the right to vote in elections in some countries), different legal status for different age groups, etc. [20, p. 23-26].

E.A. Kharitonov and O.I. Kharitonova also consider this approach not very successful, but at the same time he does not deny the possibility of recognizing artificial intelligence as a subject of civil law, and in turn offers another approach: recognizing it as a quasi-subject of civil law using the category of "legal entity": recognition of its "quasi-legal entity" or "equivalent of a legal entity" [21, p. 43].

However, in this case we can not talk about the presence of this system of will equal to the will of man as a natural being. Ponomarev also disagrees with the granting of legal personality to artificial intelligence. She argues that an integral characteristic of legal entities is the ability to independently exercise their rights and responsibilities, and artificial intelligence systems, which are and should be under human control, do not have such characteristics, their activities are determined by the developer or directly by the user [21, p. 91-94].

She also notes that the subjects of law are important to have their own interests in accordance with which it acts, and this requires the presence of will, but the separation of their own interests of artificial intelligence from the interests of developers or users is impossible, because it is created to

meet human needs by setting the developer parameters and settings of its activities [21, p. 101-102]. Another way to solve the problem of determining the legal status of artificial intelligence systems is to give them the status of a special (new) entity. Thus, in the Resolution of the European Parliament of 16.02.2017 (INL) Given the development and spread of artificial intelligence, it is proposed to consider the following options to address potential problems: compulsory insurance system; creation of compensation funds; registration of certain categories of robots, as well as the development of criteria for assigning a robot to a certain category; determining the legal status of artificial intelligence as an "electronic person" who can be held accountable when the system has made decisions autonomously [22].

According to this Resolution, Azimov's Laws should be considered as aimed at developers, manufacturers and operators of robots, as these laws cannot be converted into machine code [22]. Azimov's laws are the three laws of robotics that should underlie the behavior of robotics, which Isaac Azimov formulated in 1941 in the story "I am a robot" (quoted by R. Clark): 1. "A robot can not cause his actions or inaction harm to man; 2. The robot must obey human orders, except those that contradict the first paragraph; 3. The robot must defend itself only in a way that its actions do not contradict the first and second points" [23, p. 55]. Azimov later proposed the fourth (zero) law of robotics: "a robot can not harm humanity by its actions or inaction, unless it can invent a way to prove that it is the result for the highest good of man" [23, p. 58]. In addition, the Robotics Charter was adopted, which is not mandatory, but is of a recommendatory nature and is a set of ethical norms [22].

In response to the above-mentioned Resolution, experts in artificial intelligence and robotics created an open letter of concern regarding the possibility of granting artificial intelligence the status of "electronic persons".

It should be understood that if works are given a certain legal status as a subject of legal relations, there will inevitably be situations when they violate the rights of other subjects, and therefore works must be endowed not only with rights but also with responsibilities. But a breach of duty will not have any consequences if there is no liability. Otherwise, there may be abuse. P.M. Morkhat proposes the following models for determining those responsible for the actions of artificial intelligence: – "the model of the real actor's tool, in which the unit of artificial intelligence is presented as […] a tool of the real perpetrator; – model of natural probable consequences, – model of natural probable consequences, in which it is presumed that the artificial intelligence unit implements actions that are natural, logically natural and is a probable consequence of its production / programming, and the person who created and / or programmed the machine is presumed to have committed a criminal negligence; – model of direct responsibility of the unit of artificial intelligence for its actions (or inaction); – a model of quasi-subjective responsibility (responsibility for the negligence of others) of the owner and / or operator of an artificial intelligence unit for failure to properly interpret the intentions and actions of this unit and prevent these actions" [24, p. 251-252].

Also in science you can find suggestions for identifying the legal regime of artificial intelligence by analogy with animals [16, p. 52, 94].

**Conclusions.** We consider this conclusion to be applicable to the determination of the legal personality of artificial intelligence, as it is also impossible to impose responsibility on them. All steps in the relationship related to artificial intelligence are aimed at establishing control over its development, training and operation. All the proposed standards according to which the development and implementation of artificial intelligence should take place, ethical principles are aimed exclusively at developers, testers, manufacturers, owners, users of such systems.

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