Vol. 9 No. 1, 2023
Baltic Journal of Economic Studies
DOI: https://doi.org/10.30525/2256-0742/2023-9-1-61-70

SOCIALIZATION OF ARTIFICIAL INTELLIGENCE AND TRANSHUMANISM: LEGAL AND ECONOMIC ASPECTS

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Abstract. *The article aims* to determine the promising directions for the development of legal regulation in connection with the development of technologies of artificial intelligence and transhumanism and the economic impact of this development. Dangerous forecasts of technological development require analysis of prospects of legal regulation in this area. With the help of the "task-method-provision" methodology, the perspective tasks of legal regulation are formulated in connection with the hypothesis of artificial intelligence and in the context of the technological development of transhumanism. Legal regulation should ensure maximum diversification of technological choices. Technology should not be limited but, on the contrary, should be as diverse as possible. If the law creates conditions/requirements to create as many different technological solutions as possible, this will effectively prevent the development of negative impacts. The significance of the global problem becomes a question of legal safeguards for the effective development of the information environment. Vast amounts of information accumulated by humanity in a lifetime will require new legal mechanisms. *Results*. A method of assessing the prospects of legal regulation of social relations related to the use of technologies is proposed. It consists of consistent answers to questions concerning 1) the expediency of banning or regulating certain technologies, 2) the method of regulation, and 3) the ways of ensuring the implementation of norms regulating the development of technologies. The article substantiates the following theses: the impossibility of prohibiting the development of technology, the expediency of legal incentives for the efficient use and minimization of the risks of misuse of technology, the necessity to ensure the maximum diversification of technological solutions, the change of the range of legal professions against the background of the convergence of legal and technical sciences; legal guarantees for the efficient development of the economy and the information environment.

Key words: law, transhumanism, artificial intelligence, technological neutrality, informational environment, economic impact.

JEL Classification: K1

1. Introduction

Scientific and technological progress requires solving the problems of effective integration of modern technological achievements into society. This problem is not new to lawyers. The current legislation contains a significant part of rules regulating the use of one or another technology. Some approaches have been developed to solve the typical problems of legal regulation in this area. For example, the current level of development of robotics updates the appropriate legal support issues. At the same time, the emergence of artificial intelligence is one of many hypotheses of technological development. Moreover, science is also widely presented as a hypothesis of the technology of transhumanism, the development of human capabilities due to technological changes in their bodies. Therefore, it is necessary to determine the meaning and purpose of legal regulation in terms of technological development.

The article aims to determine the promising directions for the development of legal regulation in connection with the development of technologies of artificial intelligence and transhumanism and the economic impact of this development.

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2. Hypothesis I. Artificial intelligence

Approaches to the legal regulation of robotics[1].

Any legal or scientific text must begin with a clear definition of the subject of research. However, in the case of robots (artificial intelligence), this question is more complex and pronounced. Given the relevance of the problem of organizing the scientific discourse on the socialization of artificial intelligence (robots), and the "danger" of getting caught up in the approaches to defining the concepts of "robot" and "artificial intelligence", in this paper these concepts will be used as identical.

Some researchers propose a solution in the classical system of legal coordinates. The rights and obligations of robot developers, their owners and those who operate robots are considered.

For example, the report of the Special Rapporteur of the UN Human Rights Council, Christophe Heinz, notes 1) the need for a coordinated position on the proliferation of traditional legal mechanisms for the protection of life and health in the use of remotely piloted aircraft and combat drones; 2) the expediency of considering the issue of autonomous weapons systems solely in the context of disarmament (Civil Law Rules on Robotics).

The "classical" approach is also presented in the results of the European Robolaw project.

The purpose of the project was to formulate proposals for the legislative reflection of modern achievements in robotics. The issues of legal regulation in the use of so-called autonomous vehicles, surgical robots, the use of robotics in prosthetics, social robots and care robots (D6.2 Guidelines on Regulating Robotics) were considered.

Another approach is to consider robots as subjects of law. For example, a researcher at the Massachusetts Institute of Technology, Kate Darling, believes that so-called social robots – partners that work in close contact with humans (playing with children, caring for patients, cleaning rooms, etc.) and evoke emotional attitudes – may in the future receive limited rights similar to the current legal rights of cats, dogs, and other domestic animals. (Darling, 2012) Some researchers suggest considering robots as possible full subjects of law. For example, the professor at the University of Washington, Ryan Calo, the issues of legal regulation of robotics and distinguishes two groups: "robots as objects of law" and "robots as subjects of law". (Calo, 2016) Peter Asaro explores the prospects of criminal liability for robots. (Asaro, 2007)

The multidimensional problem of artificial intelligence updates the problem of efficient organization of appropriate scientific discourse. Let us formulate critical issues of legal regulation of robotics and suggest possible approaches to their solution.

Let's imagine that one finds oneself in ancient Rome. There is slavery. Also, here in the Senate, one of the patricians says, "Dear people! I believe that enslaved people are also human beings, so we must have equal rights." Such an idea would hardly have been noticed, and the one who expressed it would most likely have been accused of a state crime and of an absolute misunderstanding of social processes and needs. It is time to sort things out, but plenty of data are available for scientific analysis of the tendencies and regularities of human history.

A similar problem exists today. The rapid development of technology has brought the issue of artificial intelligence from the fantastic level to the everyday level. A huge number of purely technical and social problems can be called the idea of "socialization of artificial intelligence". (Karchevskyi, 2012) Can a robot get rights and bear responsibilities? What are the crimes of artificial intelligence and what is the punishment for them?

How will the labor market change?

What types of work can be entrusted to robots, and what types of work (if any) will be left to humans alone? What to do with employment in conditions of population growth and projected contraction of the human labor market? What will be the training of robots? Finally, the main issue is how to protect humanity.

A prerequisite for a practical scientific discussion of the legal regulation of robot socialization is to determine the structure of the problem field and to formulate the critical issues to be analyzed in the first place. In this article, the authors try to propose one of the possible approaches to solving this problem.

The first question of legal regulation of the development of artificial intelligence concerns the expediency of prohibiting (limiting) scientific developments in this field.

Understanding the dangers of uncontrolled development of artificial intelligence, some scientists insist on banning relevant research and controlling the spread of the technology as strictly as in the case of nuclear energy. Today, the danger of weapons systems with artificial intelligence (autonomous weapons) is actively discussed. Elon Musk, Stephen Hawking, Steve Wozniak, and the world's leading

[1] It is clear that any legal-scientific text must begin with a clear definition of the subject of research. However, in the case of robots (artificial intelligence), this question is not simple and obvious. Given the relevance of the problem of organizing the scientific discourse on the socialization of artificial intelligence (robots) and the "danger" of getting tied up in the approaches to defining the concepts of "robot" and "artificial intelligence", in this paper these concepts will be used as identical.

artificial intelligence (A.I.) scientists believe that humanity may be going too far in the arms race and are calling for everything possible to be done to prevent a catastrophe. The volunteer organization Future of Life Institute has published an open letter calling for an end to the "A.I. arms race" (Autonomous Weapons: An Open Letter from A.I. & Robotics Researchers). Elon Musk sees artificial intelligence as the greatest threat to humanity: "Robots can start the war by publishing fake news and press releases, tampering with email accounts, and manipulating information. The feather is stronger than the sword." (Elon Musk on the main threat to humanity)

The relative cheapness of the development of artificial intelligence systems (due to the success of the technology) will inevitably ensure the development of not only autonomous weapons systems. As a result, the emergence of robots (including complex hardware and software complexes for the Internet) designed to commit crimes is very likely. (Dupont, Stevens, Westermann, Joyce, 2019, p. 33–37).

Other scientists think about the impossibility of stopping the development of technology. As the famous Ukrainian scientist V.I. Borisov notes, technologies, no matter how dangerous they may be, will inevitably be invented and spread regardless of one's desire and attitude towards them. In authors' opinion, this approach is more pragmatic and realistic. The ban on artificial intelligence research cannot be effective in principle. An example would be relevant to the prohibition of the development of autonomous weapons. Unlike nuclear weapons research, the development of autonomous weapons systems is cheaper and therefore more affordable. With the development of information technology, this activity will become even more accessible, and the samples of weapons obtained will become even more dangerous. In such conditions, the legislative prohibition of the development of autonomous weapons will lead to a situation where the security and law enforcement agencies will be equipped on the order of magnitude worse than criminals, terrorist organizations, etc.

Thus, the answer to the first question about the legal regulation of the socialization of artificial intelligence is that, despite the potential dangers, it is impossible to completely prohibit the development of artificial intelligence systems; legal regulation in this area should provide incentives for the socially effective use of technologies and minimize the risks of technology misuse. Amy Webb states, "We need to start having a more sophisticated and intelligent conversation about our current laws, our emerging technology, and how we can get those two to meet in the middle." (Hao, 2019)

For example, in the late 80s of the last century, Columbus-America claimed rights to the property of the sunken ship S.S. Central America. The peculiarity of the claim was whether the court admitted that the boat and the treasures found with the help of a remote-control device were human (plaintiff). Nevertheless, the court recognized the right and formulated rules for the further resolution of such lawsuits (Calo, R., 2016). Such a decision has led to the explosive development of underwater battery technology in both the commercial and defense sectors.

At the same time, mankind should control the development of technology. Therefore, the next issue of legal regulation in the socialization of artificial intelligence is how to implement the legal regulation of the use of artificial intelligence.

As already mentioned, there are two approaches in the scientific literature. First, in the classical system of legal coordinates, today there are specific solutions: the rights and obligations of developers, owners and users of robots are defined. In this way, the problems of using autonomous vehicles, so-called "social" care and surgical robots, innovative prosthetics, etc. are solved (D6.2 Guidelines on Regulating Robotics).

Another approach, which takes us back to the example of ancient Rome, is to consider robots as subjects of law. Today, such a solution may seem like science fiction with unfounded legal romanticism.

The main argument is that an artificially created robot follows a fixed program and has no freedom of choice or free will. Since the latter is an attribute of the subject, the question is supposedly closed. However, there is no doubt that at a certain stage in the development of technology and the complication of relations in the field of robotics, the decision-making process of the robot, although based on the program, becomes so complex that it can be considered an act of human behavior. In science, research has already been presented, which examines the legal subjectivity of artificial intelligence systems. (Nowik, 2021)

The approaches presented are therefore not mutually exclusive. They can be considered as different stages of legal regulation of robotics. It is clear that consideration of the issues under the classical scheme "developer-owner-user" is relevant and requires the current level of technology. Decisions proposed within this understanding can provide sufficiently effective legal support for modern military, industrial, social work, etc.

It is also clear that the complexity of the technology will require a transition to a new, more complex regulatory framework. Most likely, the legal regulation of the socialization of artificial intelligence will move from considering the robot as an object of relation to assigning its rights and responsibilities.

In this context, it is worth paying attention to the conclusions of one of Ryan Calo's studies, "Robots in American Law". In his opinion, there is a tendency

in the law to "blur the line" between understanding a robot as either a tool or a person; this concerns external characteristics, the ability to be creative, and, ultimately, the presence of free will. (Calo, 2016)

Reflecting on the presence of robot will, the author notes such a feature of modern technology as an emergence. The latter is that the properties of the system are not reduced to the sum of the properties of its components. Such properties of the system are not inherent in its elements (Calo, 2016). G.N. Andreev and L.L. Savello give an exciting example of emergence: "If any person for the first time in his life sees separate parts of a bicycle (steering wheel, wheel, saddle, transmission chain, etc.), it is unlikely that by the form (property) of each detail it will bring the main property of this set: the ability to accelerate after unification the movement of its owner; this ability is an emergence of a system called a bicycle." (Andreev, Savello, 2009) That is, although each element of a complex system of artificial intelligence is subordinated to the program and, accordingly, does not have a will, with the development of technologies, given the emergence of these systems, there will be grounds to say that there is a will in artificial intelligence.

R. Calo's arguments cannot be taken as a whole; they are somewhat controversial and more focused on the precedent of the system. However, they indicate that the "classical" legal scheme, the understanding of robots as tools, is not capable of providing a legal reflection of the entire process of the socialization of artificial intelligence.

Thus, the first issue of the legal regulation of the socialization of artificial intelligence concerned the strategic problem of the prohibition or regulation of artificial intelligence. The second issue is related to how to ensure the legal representation of the use of robots. The third, in turn, is associated with the organization of the implementation of rules governing the use of artificial intelligence. Maintaining the ability to control social processes will require humanity to create an effective legal system for robots.

When robots acquire the status of subjects of law, new areas of justice will emerge. In addition to traditional justice, one can speak of the emergence of two new types, conventionally called "mixed justice" and "justice of artificial intelligence". For mixed justice, there will be forms of resolving legal disputes between individuals, legal entities, society, and robots. The justice of artificial intelligence will include forms for resolving legal disputes between robots. In addition, the functioning of this justice system will provide countermeasures against robots that pose a threat to social development and stability.

Copying the human justice system for artificial intelligence needs to be clarified. Fundamentally different physical characteristics and needs require that such an approach be rejected a priori. However, the creation of this system is a prerequisite for humanity to be able to control the development of social processes. Most likely, the justice of artificial intelligence will be created on the basis of robots. The physical and intellectual data of a person will have to be more obvious for the effective functioning of this justice system. The creation of such a system requires the synthesis of precise algorithms of experience gained during the existence of traditional justice. Such generalization should become one of the main areas of modern legal science. It is noteworthy that there are LegalTech projects in which A.I. studies the current legal practice (McMullan, 2019). However, ensuring justice for robots requires more than creating a copy of the existing practice of traditional justice. However, the experience gained by humanity in the field of justice is an important source of information for ensuring legal regulation of the work of robots.

It is worth noting that the thesis of using the experience of traditional justice, together with the inappropriateness of creating its computerized copy, is receiving an exciting confirmation today. There is a debate on the introduction of criminal risk assessment algorithms. Some courts already use them to determine the type of punishment, the feasibility of staying in prison and the severity of the ages.

This reduces bias because judges make decisions based on data processing rather than their own, possibly subjective, beliefs. But it raises a fundamental question. Because the basis of the algorithm is a previous decision, it (the algorithm) can amplify and perpetuate bias, generating more biased data for further cycles of even more biased solutions. (Hao, 2019)

For example, if before a judge a person with a low income, the algorithm is very likely to advise the court to imprison. The next time in a similar situation, the algorithm will be even more categorical, the next – more and more the solution to the problem is not in copying or constructing a computer remake of the traditional case law approach to traditional justice. Promising here is the expansion of the number of arguments used by the court. The use of artificial intelligence technologies and big data can bring the classical legal requirements for the objectivity, completeness and comprehensiveness of the trial to a fundamentally new level. (Karchevskyi, Big Data, 2018)

3. Hypothesis II. Transhumanism

The above suggestions were supported and found some development in the work of colleagues.

Thus, O.E. Radutnyi proposes to consider artificial intelligence as a subject of law. (Radutnyi, 2018).

Katkova T.G. updates the issue of supplementing the Civil Code with norms on the peculiarities of civil liability in robotics. (Katkova, 2017) However, the formulated proposals are based on the hypothesis of the development of autonomous artificial intelligence, while in science skepticism about the reality of fully autonomous artificial intelligence is all the more noticeable.

There is even such an unconfirmed assumption that the predictions of its appearance are usually made by those who are very superficially faced with the technical side of the issue. For example, based on an empirical study of modern robots, David Mindell formulates "myths" as misconceptions about the prospects of robotics. (Mindell, 2015) The experience with the introduction of robotic technologies is far from pointing to the emergence of a fully autonomous artificial intelligence in the future, for the socialization of which the proposed proposals for legal regulation will be relevant. In the history of science, this is far from being the only case where lack of knowledge about the subject leads to the formulation of wrong conclusions.

Consequently, a systematic approach to solving the problem of legal regulation prospects in the context of development of modern technologies requires consideration of an alternative hypothesis.

Technological progress can occur through the physical integration of man and technology. How, in this case, will the legal status of a person who enhances his abilities through numerous technological implants change? How can implants with artificial intelligence be used? This question was partly studied by N.A. Savinova. (Savinova, 2012)

Researchers of the problems of transhumanism consider the complexity of these questions. By definition, according to Nick Bostrom, "Transhumanism is a way of thinking about the future based on the fact that humans in their current form are not the end of our evolution." Transhumanism is defined as "an intellectual and cultural movement that advocates the possibility and desirability of a fundamental improvement in the human condition through the application, development, and widespread access to technologies that eliminate aging and enhance human intellectual, physical, and psychological capabilities." Transhumanism can also be seen as "the study of the consequences, potential benefits, and threats of technologies that can overcome basic human limitations, and the related study of ethical issues arising from the development and use of such technologies." (Bostrom) The position of V.P. Karchevskyi and N.V. Karchevskaya is also worth mentioning: "Evolution has created a civilization of people, now it is creating a civilization of robots. The task of researchers and designers is to achieve friendly and effective coexistence of these civilizations. The emergence and development of cyborgs show the mutual influence of the human and robotic civilizations." (Karchevskyi, Karchevskaya, Trufanova, 2019)

In order to solve this task of establishing the prospects for legal regulation in the context of the development of modern technologies, the article will focus on possible social transformations caused by the use of transhumanist technologies.

According to N.O. Komlieva, the application of human technology activates the possibility of creating a fully controlled human evolution in the interests of global corporations (Komlieva, 2018). On the other hand, O.Y. Rybakov and S.V. Tykhonova pay attention to the emergence of a new form of freedom – morphological freedom. (Rybakov, Tykhonova, 2017) A. Sandberg defines such freedom as the right of every non-disabled person to change his or her body based on his or her own desires and needs, which, from a legal point of view, means the extension of the human right to one's own body, the transition from ownership to change of one's own accord. (Rybakov, Tykhonova, 2017)

The issue of natural reproductive rights, which includes both natural and technologically mediated forms of implementation (assisted reproductive technologies, surrogacy, donation of genetic material, posthumous reproduction, and designing children), is underway. (Rybakov, Tykhonova, 2017)

There is a problem of overpopulation on the planet due to the success, cheapening, and widespread technology to overcome aging (Bostrom, p. 28). One of the possible negative developments in the future is the discrimination of both ordinary people and cyborgs (individuals whose bodies contain implanted devices).

Discrimination of humans is possible, for example, in the labor market. Cyborgs may be discriminated against for security reasons (restrictions on staying in certain public places, use of certain means of transportation). It is also likely that political rights will be restricted. Both variants are dangerous because they create a strong potential for social conflicts. (Maiorov, Potapov, Volkova, 2018).

The article suggests the possibility of fundamentally new threats connected with learning in life and evolution of natural objects and human beings. A.V. Maiorov, A.D. Potapov, and A.A. Volkov distinguish two types of such interference. First, biogenetics is associated with the use of methods of nanobiotechnology. Cognitive is based on the convergence of info-cognitive and socio-humanities. The first is related to the creation of artificial living organisms with certain properties (effective medicines or weapons of selective defeat). The second is related to the effects on the psychophysical sphere of a person to control the consciousness and body. (Maiorov,

Potapov, Volkova, 2018). There are even such hypothetical scenarios of the end of the world as "gray slime" and "black slime". In the first case, uncontrolled nanobots absorb all the Earth's biomass by running a self-replication program embedded in them. In the second, nanobots are intentionally created and used to destroy biomass.

It is also clear that crimes against life and health will be committed in fundamentally new ways.

The proliferation of technologically advanced implants will make them vulnerable to technological attack by many people. Like today's cases of massive computer malfunctions caused by malicious software, massive attacks on the lives and health of people with implants will be possible.

Having recorded such dangerous predictions for the development of transhumanist technologies, consider the prospects for legal regulation in this area using the task-method-support analysis used in the previous part of the paper. With the help of this method the perspective tasks of the legal regulation formulated earlier in the context are fulfilled.

Regulation or prohibition?

The answer to this question is almost similar to the one obtained in connection with the hypothesis of autonomous artificial intelligence: prohibition is impossible, and legal regulation in the sphere of the use of technologies of transhumanism should ensure the most effective use of their advantages and minimization of negative consequences. Moreover, in view of the above-mentioned danger of corporations, legal regulation should also include limiting the destructive effects of global corporations.

What is the way of regulation? The answer to this question is to extrapolate the scientific regulations for developing reliable systems to the problems of using transhumanist technology. When developing systems to manage, for example, a nuclear reactor or a passenger plane, there is a standard safety requirement to develop multiple backup systems that perform the same functions. Suppose one of the systems fails and begins to signal an emergency (about its absence) by mistake. In this case, the rest will work adequately and the problem of safe management of the complex system will be solved. Besides, the development of backup systems should be carried out by different teams of engineers, who must use different technological solutions, different elements, etc. This principle is called diversification of design solutions to increase the reliability of backup systems. The idea of extrapolation of this principle to the sphere of legal regulation of the use of technologies of transhumanism is as follows: if the conditions/ requirements of the proper form for the creation of as many different solutions in the field of technology of transhumanism, it will ensure effective prevention of the development of negative consequences. The example of the "epidemic" of implants is simply impossible if the principle of legal regulation of the use of technology of transhumanism will be mandatory diversification of decisions. This principle is also promising for solving the problem of the destructive influence of global corporations.

A separate aspect of legal regulation should be the provision of legal safeguards for the implementation of morphological and reproductive freedom. It is clear that in order to solve this problem effectively; it is necessary to accumulate experience of possible abuse of such freedoms. However, this is a rather typical task of legal regulation – the search for a balance between the realization of the right of a particular person and the need to ensure overall security, stability and development.

The prohibitions of biogenetic and cognitive problems, socially dangerous violations of morphological or reproductive freedom, and violations of the requirements of diversification of technological decisions will become the new codes of criminal law regulation.

How to ensure the implementation of regulatory requirements? Controlling the development and use of certain technologies will require an effective monitoring system. Moreover, the analysis of the information obtained will be much more complex and will require fundamentally new professional competencies. The traditional division of tasks between lawyers and specialists will be highly ineffective. As a result, legal and technical sciences will converge and new legal professions will emerge.

At the same time, legal regulation of the use of modern technologies should be technologically neutral. For example, Part 3 of Art. 190 of the Criminal Code of Ukraine provides for liability for "fraud committed in large quantities or through illegal operations using electronic computers". At the time when the new Criminal Code of Ukraine came into force (21 years ago), the use of computer technology for committing fraud could indicate an increased social danger of the attack. However, the spread of e-commerce and remote banking services was insignificant. They were used by large corporations. Therefore, the provisions of Part 3 of Art. 190 of the Criminal Code of Ukraine clearly defined the range of acts reasonably considered to be an exceptionally qualified type of fraud, close to the degree of public danger of fraud in large volumes. However, the rapid penetration of information technology in the financial sector led to a qualitative change in this type of fraud.

Law enforcement bodies record a significant amount of such crimes related to damage, corresponding to signs of simple or sophisticated fraud (Part 1, Part 2, Article 190 of the Criminal Code of Ukraine, maximum punishment – up

to 3 years of imprisonment). Can it be considered reasonable, and this is precisely what the interpretation of the norm requires, that a criminal assessment of such actions under Part 3 of Art. 190 of the Criminal Code (maximum penalty of up to 8 years' imprisonment)? The question is rather rhetorical. In the current conditions, there is no reason to argue that the use of computers in the process of committing fraud increases the level of social danger of the offense. There is a situation where a technology-oriented legal provision (Part 3 of Article 190) loses its relevance due to the existence of provisions relating to a specific technology.

A similar example can be derived from the criminal regulation of cryptocurrencies. With a high degree of probability, it is possible to predict the appearance of proposals to supplement the Criminal Code with relevant special regulations. At the same time, a deeper analysis of the current legislation shows the possibility of legal reflection of the latest technological trends with the help of existing general norms (Karchevskyi, 2018). The speed of technological development requires the abandonment of legislative formulations that refer to specific types of technologies. Any law referring to a specific technology will have a minimal useful life.

In conclusion, it would be desirable to draw attention to the current state of affairs and the relevance of the issues raised for the Ukrainian legal field. Today, Ukraine is not a leader in the development of modern technologies (although the world's first encyclopedia of cybernetics was published in Ukrainian). Some see this as a positive thing, because the risk of new threats is supposedly much smaller.

However, this is not the case. There is a well-known problem called the "digital divide". The success of the social group, the country is directly dependent on the possibility of access to modern information technology. Social groups and countries that do not have (limited) access to the latest information technology have a very low probability of getting it in the future. Over time, the difference in the level of technology used will increase.

In addition to the obvious problems with domestic production, there is a situation where the current legislation to some extent blocks the development of modern information technologies. In particular, it concerns access to personal data and state information resources. Moreover, the scheme of legal regulation is such that it does not provide for dynamic and predictably productive implementation of projects in the modern spheres of the use of information technologies.

In such circumstances, the first thing to do in order not to be on the sad and hopeless side of the "digital divide" is to liberalize and deregulate as much as possible the activities related to the processing of personal data. This will create the basis for the rapid development of modern information technologies in Ukraine: the Internet of Things, Big Data, etc. Ambitious, innovative projects will become possible. The security of personal data, which will be highly acute, will receive new, much more effective solutions. Active use of personal data in the legal sphere will create a market necessary for the development of its processing and protection technologies.

However, the legal regime governing personal data represents only a fraction of the global legal problem.

This can be called the formation of legal guarantees for the effective development of the information environment. This is a complex issue related to the legal regulation of information technology, economy, provision of access to information and formation of information resources. At the same time, the regulation of the formation of information resources should include not only today's issues of creating databases, media activities, prevention of manipulation of public consciousness, etc. An independent aspect of the problem should be the construction of an optimal legal regime for preservation of accumulated human data and access to this resource. The creatures, which hundreds of millions of years ago observed the formation of coal seams (or themselves became their part), could hardly predict the emergence of coal industry, metallurgy, thermal power plants, etc. It is a similar process today. Mankind is accumulating huge amounts of data. How it will be used in the course of time is unknown, but it will be used. If so, it is necessary to study the possibilities (feasibility) of legal regulation of storage and use of data accumulated by mankind. Furthermore, it will be necessary to resolve the ownership of such assets, transferring them to the status of exclusive property of the people of the state (planet) or data that can be freely used by anyone.

The regime of large arrays of spent data can be organized based on the legal mechanisms used today to regulate the use of subsoil or archaeological activity.

Finally, the regulation of the information environment can be seen as the establishment of a coordinate system for the future legal assessment of both artificial intelligence and technologically advanced humans, since this area will be the overwhelming part of their socially significant activity.

4. Conclusions

To continue the discussion, the most radical view of humanity's prospects in technological development is the concept of technological

singularity. Its author, V. Vinge, believes that the speed of progress will be overwhelming after the emergence of intelligence that surpasses humans. Humanity will find itself in a "regime that is no less radically different from our past than we, humans, are different from the lower animals. Such an event will be cancelled, perhaps in an instant, by the inadequacy of all human laws. The uncorrected chain reaction will begin to develop exponentially, with no hope of regaining control of the situation." (Vinge, V. The Coming Technological Singularity) According to W. Wind, this will lead to artificial intelligence (A.I.) or intelligence augmentation technology (IAT). Thus, it can be concluded that the technological singularity is considered to be a generally negative outcome of the two hypotheses under consideration. However, despite the arguments about the inevitability of such a scenario, the analysis of prospective legal issues shows that humanity can maintain control over the situation. This refers to the issue of effective legal regulation.

The following provisions are formulated regarding the long-term tasks of legal regulation in connection with the hypothesis of the development of artificial intelligence and the hypothesis of the development of transhumanist technologies:

1. The development of technologies cannot be prohibited. Despite the risk of dangers, an absolute prohibition of the development of artificial intelligence systems or transhumanist technologies is impossible. Legal regulation in this area should provide incentives for the socially effective use of technology and minimize the risks of technology abuse. A separate task of legal regulation in this context should be to limit the destructive effects of global corporations.

2. Legal regulation should ensure maximum diversification of technological choices. Technology should not be limited but, on the contrary, should be as diverse as possible. If the right is to create conditions/requirements for the creation of as many different technological solutions as possible, this will effectively prevent the development of negative effects. For example, the known negative scenarios of the implantation epidemic (causing harm to humanity by violating the functioning of all implanted devices) will be impossible due to the guaranteed availability of alternative technological solutions.

3. The classical scheme "developer-owner-user" is urgent and widespread among modern technologies. However, the complexity of technologies will require the transition to a new, more complex scheme of legal regulation. The legal regulation of the socialization of artificial intelligence will move from considering the robot as an object of relations to the allocation of rights, duties, and responsibilities.

It will be necessary to solve the problem of the legal status of a physical person whose abilities are enhanced by the technologies of transhumanism. Hypothetically, this problem does not seem complicated and can be solved by adding certain aggravating or mitigating circumstances, restrictions on the occupation of certain positions, the performance of work, etc.

4. In addition to traditional justice, the emergence of two new types of justice – "mixed justice" and "artificial intelligence justice" – is introduced, whose functioning will confront robots that threaten social development and stability. Artificial intelligence justice will be based on robots. Such a system will provide a generalization of precise algorithms of experience gained during the existence of traditional justice.

5. Ensure legal safeguards for the implementation of morphological and reproductive freedom by balancing the exercise of the right of a particular person with the need to ensure general security, stability and development.

6. Resolution of the limits of criminal law regulation in biogenetic and cognitive problems, socially dangerous violations of morphological or reproductive freedom, and violations of the requirements of diversification of technological decisions.

7. As the development and use of certain technologies will require an effective monitoring system, the analysis of legally relevant information will become much more complex and require fundamentally new professional skills.

The traditional division of labor between lawyers and specialists will become highly ineffective. There will be a convergence of legal and technical sciences. A solution will be needed to define and develop new legal professions. In this context, the wording of new laws should be made technologically neutral. This approach will ensure the necessary stability of legal regulation in the conditions of rapid changes in the technological reality.

8. The significance of the global problem becomes a question of legal safeguards for the effective development of the information environment. The vast amounts of information that humanity has accumulated in its lifetime will require new legal mechanisms. Existing rights of ownership of information and intellectual property rights are likely to be supplemented by new institutions similar to the right to use subsoil and the right to archaeological activity. The complexity of these issues should be considered as the establishment of a coordinate system for the future legal assessment of both artificial intelligence and technologically advanced humans, since it is precisely in this area that the overwhelming part of their socially significant activity will take place.

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Received on: 17th of January, 2023
Accepted on: 26th of February, 2023
Published on: 31th of March, 2023