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The Use of Artificial Intelligence to Combat Corruption

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Abstract

The article analyzes the conceptual and institutional aspects of the use of new digital technologies in combating corruption, examines the regulatory and methodological approaches to using artificial intelligence and neural networks to predict and identify corrupt ties and relationships. It is substantiated that the digitalization of public administration and justice helps the society and the state to reach a new level of the fight against corruption. At the same time, the authors record the emergence of new types of corruption, previously unknown to legal science, due to the growing influence of specialists in the field of information technology on various socially significant spheres of public life, management and everyday life. It is shown that modern digital tools are used to develop such a phenomenon as "cyber corruption" and it is proved that currently it is necessary to create adequate social and legal forms of social, political and legal prevention of the development of corruption in the new digital environment and to improve anti-corruption legal policy.

Keywords: artificial intelligence, digitalization of law, justice, corruption, cybersecurity, law, illegal acts, anti-legal corruption policy, digital technologies.

1. Introduction

The basic means of fighting corruption in Russia are traditionally considered prohibitive and punitive measures, the effectiveness of which, even in the countries with much stricter legal sanctions than those used in the Russian Federation, is well known. In recent years, the reform of anti-corruption legislation has taken the path of increasing the means and methods of combating corruption, significantly expanding the spectral approach to methods of combating corruption. The concept of the stage preceding a corruption crime (conflict of interest) was introduced, attention was paid to the procedures for identifying and stopping corruption risks, the first rudiments of the creation of anti-corruption institutional conditions appeared, in which the manifestation of corruption becomes either economically unprofitable, or technically impossible, or extremely risky. It is the system of a fundamentally new worldview approach, which takes into account the peculiarities of the formation of Russia's legal policy on combating corruption, based on understanding of the deep economic, social, and political reasons for its emergence and development, that created a promising paradigmatic shift in jurisprudence.

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At the same time, recently the potentialities of the new model of anti-corruption approach have been exhausted, the old tools available to law enforcement agencies are no longer able to effectively ensure the fight against corruption. Accordingly, the search for new effective tools within the framework of the indicated paradigm of institutional counteraction to corruption is becoming the key task of the modern Russian state, which is gradually abandoning punitive and repressive mechanisms as the main ways of fighting corruption.

3. Materials and methods

Our research is based on a number of activities carried out aimed at organizing the media environment in the framework of anti-corruption education through the creation of various communities:

- methodological association of lawyers who have developed a model for organizing project activities in the field of media education and anti-corruption education;
- scientific and creative community of students as a form of integration of basic and additional education in order to create a media environment and anti-corruption education;
- interdisciplinary, universal media projects aimed at the formation of anti-corruption behavior.

We used the following techniques to collect empirical information,

- the technique of prolonged pedagogical observation; method of expert assessments (expert scales developed on the basis of the diagnostic complex of V.A. Levin);
- methodology for assessing the psychological atmosphere in the team of A.F. Fiedler;
- methodology for analyzing the ratio of the significance of events held in an educational organization for the year and the degree of their representation in the formed media environment within the framework of anti-corruption education
- methodology for analyzing information content, etc.

Research problem

One of such promising tools of smart technologies for combating corruption is the development in the field of artificial intelligence based on neural network technologies (self-learning cognitive systems).

The starting point of the systemic policy of state support for the development of artificial intelligence technologies (hereinafter AI) is the Decree of the President of the Russian Federation "On the Development of Artificial Intelligence in the Russian Federation" (Decree, 2019). The designated document established the goals, objectives and principles of the conceptual foundations of state policy for the development of AI technologies.

Obviously, the outlined prospects for the use of artificial intelligence should be realized through conceptual developments of an integrated nature, taking into account technological, economic, legal, political and other risks. Also, the legal policy on anti-corruption in the field of using high-tech tools should use system tools, building a unified integrated design for identifying corruption risks, an interdisciplinary methodology for preventing corruption, the causes and conditions that contribute to corruption.

It should be noted that the application of AI technology in the anti-corruption system has certain restrictions, determined by the key principles of the development of AI technology. In particular, the use of AI technologies cannot violate human rights and freedoms; AI technologies must guarantee data security; AI technology developers should ensure transparency of their analytical algorithms and prevent the creation of conditions of competition violation.

Artificial intelligence, as innovative digital technology reveals a wide potential in the field of not only exposing and suppressing crimes, including corruption, but also their subsequent solving, and, more importantly, allows preventing violations of the law (Sukhodolov, 2007: 753-766), predicting corruption risks using neural network technologies (López-Iturriaga, Sanz, 2018: 975-998), the creation of a system of conditions under which corruption relations become technically impossible (replacing a person with automation processes).

However, the use of these technologies should comply with certain principles that set the limits for the usage of AI anti-corruption technology, which are determined by the nature of artificial intelligence and its accompanying technological solutions. Thus, AI anti-corruption technology can be conditionally divided into blocks: identification of the causes and conditions of corruption; identification of corruption risks, including prediction of corrupt acts in the future; identification of signs of preparation for the commission of a corruption offense (systemic

anomalies); identification of committed corruption offences. Each block involves working with certain information sources, the legal mode of access to which should be strictly regulated – access to personal data, commercial information, information associated with state secrets, public information, etc.

Another aspect of the use of AI is the formation of information infrastructure of official data that can be used both by AI to expose crimes that have a criminal system and for a preliminary assessment of the conditions for creating an anti-corruption policy within organizations and public authorities. For example, AI technology, combined with the legal obligation to publish relevant information on web resources, allows monitoring anti-corruption documents of both public authorities and private organizations and analyzing the anti-corruption standards presented in them for compliance with current legislation and methodological recommendations. The next logical step is the smart monitoring of measures taken to resolve conflicts of interest in organizations, institutions, and authorities. At the same time, it is necessary to take into account the results of intelligent machine analysis not only for subsequent legal response measures but also for the development of institutional anti-corruption technologies. This principle should also be used as the basis for the anti-corruption concept.

Separate steps have already been taken to create an appropriate information infrastructure for Internet resources. The development of common standards for the content of websites in terms of organization's anti-corruption policy allows to analyze the anti-corruption policy implemented by authorities and organizations, identify systemic patterns, and evaluate the actual corporate policy for resolving conflicts of interest and preventing corruption offences. A similar basis for the work of AI was created by establishing the procedure for competitive procurement in electronic form based on an electronic platform. These electronic forms allow you to use AI technology to detect economic anomalies in government contracts (price, quality deviations, etc.), signs of formal competition, etc. Starting from January 1, 2021, the cryptocurrency will be recognized as an object of anti-corruption monitoring. Meanwhile, the next logical step should be to work out the issue of legal access regimes for anti-corruption monitoring programs to the above mentioned data.

In implementing the anti-corruption policy through AI technologies, it is also necessary to take into account that the AI technology itself is based on several related technological solutions, the development of which is inextricably linked with the neural network technology itself, including small and big data technology, and blockchain technology.

4. Discussion

Technological solutions in the field of anti-corruption through AI technology are already being used very intensively by leading powers and economically developed states. The developments in this area allow for anti-corruption monitoring of big data, digital documents, video and audio material, and economic transactions. For example, in the United States, there is an online platform project called Digital Democracy ([Digital Democracy, 2017](#)). Automated technologies for processing large amounts of data allow you to work with unstructured network information, identify and classify information that has signs of corruption and corruption risks. The ability to compare a set of data related to specific officials allows you to determine not only violations of the proportion of income and expenditure, making personnel decisions concerning the persons who have family and social ties with the official, but also to identify corruption signs when interpreting legally significant decisions made by the official.

In turn, blockchain technology guarantees the immutability of data for any digital actions and acts as a promising basis for the formation of digital document flow in government agencies and state corporations. It allows neural networks to detect trace characteristics of legally significant decisions and transactions that are not deleted, thus increasing the probability of detecting signs of corruption offenses and the provability of corruption acts. In the future, blockchain technology allows you to create systems for fixing the business reputation of officials (history of corruption), taking it into account in personnel policy ([Marinkin, Plotnikov, 2019](#)).

The introduction of AI systems in the anti-corruption process, however, has certain risks that must be taken into account when developing conceptual provisions for the use of high technologies in anti-corruption policies. Thus, the living social fabric of society is largely based on compensatory mechanisms of informal relations, including the corruption component, as an alternative to the ineffective but legal system of distribution of benefits. In this sense, highly effective anti-corruption AI implemented on a systemic scale creates risks of law enforcement and political crises in those

States and societies where the level of corruption is high. For example, China abandoned the "Zero Trust" anti-corruption AI system that was in effect since 2012 because of its real effectiveness (Chen, 2019).

The impact of media culture in the fight against corruption is primarily aimed at the broad masses of society (Caron, Caronia, 2007; Gálik, 2019; 2020; Gálik, Gáliková Tolnaiová, 2015; Kačínová, 2018; Mihailidis, Thevenin, 2013; Petranová et al., 2017; Silverblatt, 2016; 2018; Šupšáková, 2016; Wilson et al., 2011 and others). Mass communication media can and should perform certain functions to prevent corruption processes, such as informing the population about the ways of existence and functioning of public life without corruption; increasing the degree of openness of state bodies; popularizing favorable experience of anti-corruption policy; participation in various ways in conducting research in the formation of anti-corruption measures and highlighting the positive results of research; promotion of a negative attitude to corruption.

An important issue is originate the results of the analysis of corruption carried out by AI, as the designated technology with the interpretation of large data sets, operate a probability of indicators, and not solely the indisputable evidence of guilt of the inspected persons. It is obvious that neural network technologies are only an auxiliary tool designed to reduce the mechanical work of controlling entities, but not to replace them when making personnel, law enforcement and other decisions. Therefore, it seems necessary to fix restrictions on the use of AI results exclusively for operational and preventive purposes, without giving them the status of self-sufficient procedural evidence.

The introduction of digital technologies sets the modern state the task of fundamentally changing the ideological foundations of the law enforcement function by the Executive authorities. Such fundamental changes are caused by the need to form a new structure of the high-tech economy, where preventive measures should come to the fore. It means that the results of neural network analysis should become, first of all, not a punitive tool of the law enforcement system, but a real, previously almost inaccessible, preventive tool for combating corruption. In part, this understanding of law enforcement blurs the boundaries not only between the classical branches of law, but also generates an interdisciplinary approach to solving this problem. For example, the analysis of corruption risks can reveal a system of heterogeneous conditions for the occurrence of corruption transactions, such as economic, political, legal, cultural and spiritual, etc. Effective pre-emptive resolution should be based on the elimination of all conditions that exist not only in the area of legally significant actions.

The concept of digitalization of judicial processes involves several directions of development of digital technologies in this area, and consequently the preparation of a legal framework that defines technical, procedural and other legal standards for digital justice.

As the priority of e-justice development, it is necessary to specify electronic document flow in the judicial system, which was provided by the infrastructure system of GAS "Justice" and its subsystems, as well as to provide the control by a number of regulations (Biryukova, 2017) and internal court documents (Order..., 2019). To date, this is the only systemically developed area of digitalization of justice in Russia, although it has a number of potential points of further development.

The second direction is the virtualization of justice, which has received an accelerating impetus for practical development and detailed regulation within the judicial system in connection with the Covid19 pandemic, which has prompted the courts to actively use the Institute of remote justice, although the procedural basis for this form of legal proceedings was introduced several years ago. It is obvious that the transfer of the trial to the digital environment in full, on the one hand, can contribute to strict compliance with judicial procedures and deadlines for the consideration of court cases. On the other hand, the legal reality of legal proceedings today rests on an objective restriction of the judicial staff, violation of reasonable standards of work of judges, uneven workload, etc. Today, countries find a solution to this problem in the development of technologies of auxiliary artificial intelligence for justice.

The third direction is to minimize the human factor in the judicial decision-making system (excluding the human factor and judicial errors) (Polyakov, Smolin, 2018: 245-249). Today, this task is being worked out in Russia conceptually and is based on artificial intelligence technology, which allows conducting a preliminary information analysis of court cases, giving a preliminary legal assessment of evidence and circumstances of the case, and forming drafts of standard court decisions.

Meanwhile, all these areas of digitalization of justice depend on solving the most important problem in digitalization processes – ensuring information security and the need to identify risks and threats caused by e-corruption (Truntsevsky, 2019: 42-28). One of the aspects of cybersecurity is the adaptation of corruption to the conditions of the electronic environment. Vulnerable elements of e-justice are all areas of digitalization that can be affected remotely or locally by the third parties, including program operators, specialists who maintain the functionality of e-justice software and communications. A striking example of the vulnerability of the digital environment, which does not have appropriate software solutions for protection and monitoring, is the practical problems of illegal modification of Rosreestr (Federal Service for State Registration, Cadastre and Cartography) records (Loktionov, 2017).

In addition to the problem of changing the records of databases of public authorities, corruption risks emerge caused by electronic document management of courts (substitution or destruction of electronic documents); substitution or destruction of evidence presented in electronic form; loss or distortion of virtual traces; substitution of persons involved in the case, etc.; risks associated with corruption impact on specialists who support the functioning of judicial databases and communications.

Today different countries develop technologies that can detect any digital action, documents intact, for example the Blockchain technology allows you to protect information transmitted via communication channels (e.g. when voting judges) (Supreme..., 2020) and the organization of the remote trial and the database of the courts (Bertovsky, 2016: 226-230). It is obvious that such technologies today require their consolidation in the form of technical standards for the software of the judicial system, a legislative ban on the use of the software that does not meet such standards by the court apparatus.

Returning to the assessment of potential threats in the field of corruption impact on the judicial decision-making process through high technologies, it should be noted that, for example, in China, AI secretaries were introduced in the courts, allowing them to process lawsuits, compare the testimony of parties, etc., reducing the likelihood of an unfair court decision (Chen, 2019). Meanwhile, although the augmented intelligence technology does not at first glance replace the intellectual and volitional nature of the judge, but acts as an auxiliary technology, it replicates certain classical risks in the digital environment. Thus, through informational influence on self-learning AI (indirect influence) or direct software intervention in digital AI algorithms, a selective selection of intermediate decisions (evaluation of evidence, etc.) is possible, which leads the decisions of a human judge to an incorrect decision in the interests of a certain party in the case.

However, the issues of direct software intervention can be reduced by centralized maintenance of the ship's software coverage, implemented using cloud technologies. The development of cloud technologies in the information infrastructure of Executive bodies of state power is currently being implemented through the Concept of creating a state unified cloud platform and is evaluated by specialized specialists as a source of new threats. It is necessary to study the issue of creating a similar, centralized system of cloud technologies for courts of all levels, with the establishment of an appropriate information center at the Supreme Court of the Russian Federation.

To reflect on the state of the media environment and media culture in the framework of forming a sustainable response to corruption, we will consider the position of well-known scientists. Among the main approaches presented in modern scientific research on the fight against corruption through the media environment and media culture, the most prominent is the fundamental approach.

R. Kroiz emphasizes that the media, as an expanding system of mass communications, helps the communicative content of media culture to influence the life of society and human consciousness, notes the complex and contradictory nature of this influence, which is reflected in all social phenomena and processes of society, including in practice, countering corruption.

The works of scientists D. Zinnbauer and V. Chetverikov are devoted to anti-corruption multimedia tools and their application for understanding the importance of implementing information and communication technologies in government activities.

Revision of the conceptual foundations (B. Zimmerman, K. de Swardt, E. Dimant, etc.) allows us to summarize with a certain degree of conditionality that in various theoretical approaches, the authors update the system-wide aspects of identifying scientifically based factors and conditions for the effectiveness of digital, multimedia anti-corruption policy and its implementation in the

practical sphere, which makes it possible to create an effective system for preventing and combating corruption in Russia.

5. Results

Summarizing the above, the following key aspects should be noted. Digitalization processes that promote systematic control over the adoption of legally significant decisions can be used not only to detect corruption but also, on the contrary, for corrupt control. Digital technologies are only a tool in the implementation of state tasks, but their use is exclusively instrumental. Hence, there is a need not only for legal regulation of the use of technological innovations to ensure justice, but also for technical regulation of the cybersecurity of neural networks, Big data, communications, etc. used by the judicial system.

There are several ways to prevent corruption in the e-justice system: 1. Using technologies for digital recording of all procedural actions in the digital environment using distributed ledger technologies (DLT); 2. Ensuring the security of databases of court documents; 3. Using secure communication channels for conducting trials and interdepartmental exchange of electronic documents; 4. Using cloud technologies for software centralization and bringing information resources to a separate division under the Supreme Court of the Russian Federation; 5. Limited use of AI technologies in legal decision-making procedures.

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