Implementation of Digital Technologies in the Legislative Process: Structural Approach

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Summary
The study is devoted to the analysis of the impact of digital technologies on the development of such traditional stages of the legislative process as legislative initiative, preparation of a draft law, voting, and enactment. A dialectical approach was applied, general scientific and private scientific methods of cognition and comprehension were used in carrying out this research. The purpose of the study is to consider the place and role of digital technologies at certain stages of the legislative process. It has been proved that big data technologies, blockchain, and algorithms have a high potential for application at each of these stages. The authors studied the theoretical and legal aspects of the integration of modern digital technologies into the legislative process, which allowed concluding that this process will lead to the expansion of the use of democratic procedures in the adoption of legislative acts. This article puts forward and substantiates the thesis that big data can improve the quality of legislative initiatives submitted to parliaments and contribute to the search for duplicate and contradictory provisions of the legislation. The paper shows that there are prerequisites for expanding the circle of persons involved in the process of adopting laws due to the involvement of citizens in voting organized based on blockchain technology. The authors conclude that the adoption of laws in the form of a program code will require preliminary a) identification and justification of areas of law suitable for automation b) development of a special programming language that meets strict legal and technical requirements, c) creation of a comprehensive audit system of the program code that guarantees the observance of human and civil rights and freedoms.

Keywords:
legislative process, digital technologies, the law as an algorithm, big data, blockchain, legislative initiative, voting

1. Introduction

Digitalization of the legislative process is one of the elements in the construction of a modern digital state, the formation of which is one of the stages in the development of modern statehood [1]. Therewith, this kind of transformation of legislative activity should be limited by its constitutional and legal nature. This makes it unacceptable to introduce such technological solutions that would significantly change the process of developing, discussing, and adopting laws. This requirement ensures the preservation of the principles traditionally inherent in legislative activity: transparency, democracy, the certainty of legal regulation. The legislative process is the most traditional and conservative area of law, not subject to frequent changes. This is because the activity of creating legal norms by legislative authorities is quite complex. In particular, it includes the observance of important constitutional principles, the involvement of a wide range of persons, and the need for strict compliance with the prescribed procedures. Meanwhile, we cannot ignore the fact that the qualitative development of digital technologies observed over the past decade in the world leads to a gradual transformation of the legislative process itself. Big data technologies, blockchain, and computer algorithms have a high potential to influence the transformation of the legislative process [2].

The coordinated and harmonious implementation of various digital technologies in the legislative process is an urgent task that every modern state faces. The purpose of the study is to consider the place and role of digital technologies at certain stages of the legislative process.

2. Literature Review

Many scholars and experts have been dealing with the problem of implementing digital technologies in the legislative process. Ződi Zi considered law in the era of big data. Sloot B. van der, Schendel S. van conducted a comparative legal study of big data and its impact on legislative processes. M. Kovich devoted his work to

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blockchain technology as the basis of a secure and reliable electronic voting system. R. Lenz analyzed the use of digital technologies in lawmaking, Krystyna Nizioł investigated the problems of consumer protection legislation related to the development of artificial intelligence on the example of financial services and other experts analyzed the processes of digitalization in legislative processes. However, these studies did not sufficiently investigate the theoretical and legal aspects of integration into the legislative process of modern digital technologies.

3. Methodology

A dialectical approach was applied, general scientific and private scientific methods of cognition and comprehension were used in carrying out this research, including:

- a method of analysis by which the implementation of an integrative model of the use of digital technologies is divided into separate stages of the legislative process (legislative initiative, preparation of a draft law and its discussion, voting and its entry into force) and consistently studied;
- the synthesis method made it possible to collect back the known parts of the process of the influence of technology on various stages of the legislative process and study them as a whole, complex phenomenon;
- the method of induction, using which private facts contributed to the establishment, identification, and formulation of theoretical provisions and patterns of development of the legislative process in the context of integration into the legislative process of digital technologies, as well as the establishment of the sequence and relationship of events, actions arising in practice, and their legal representation;
- the method of deduction, contributed to the formulation of particular conclusions based on general facts and the knowledge of the laws and properties of the development of legislative procedures under the influence of modern technologies;
- a method of system analysis, with the help of which the transformation of the legislative process in the context of the implementation of the integrative model of digital technologies is studied as a set of its constituent elements, taking into account their structural relationship, the latter was perceived as one of the criteria for the allocation of one or another part;
- nomothetic approach, its use allowed identifying common patterns and connections in the group of technical and legal phenomena affecting the transformation of the legislative process, as well as making assumptions about the further development and configuration of the relevant phenomena, taking into account the current level of technology development.

4. Results

The question of the limits of digitalization in the context of the development of legislative activity is extremely important and one of the determining factors in the construction of a scientifically based concept of this process [3]. Therewith, the permissible limits associated with digitalization are determined not only by the procedural boundaries (stages) of the legislative process but may also have different nature and be due to both objective reasons (for example, technological imperfection of certain decisions) and subjective ones, which may include the presence or absence of political will to implement digital technologies in the sphere of public administration [4].

It is necessary to focus on the procedural limitations that the digitalization of the legislative process may face and which lie in the plane of the stages of its implementation. In the context of the problem under consideration, it will be sufficient to understand that the presence of certain types of activities that can be automated through the introduction of appropriate digital technologies is characteristic of a particular stage.

Accordingly, the need to preserve the constitutional and legal nature of the legislative process in conjunction with objective changes in law-making activities (in terms of the transformation of its stages) forms the procedural limits of digitalization of the legislative process.

The analysis of the implementation of digital technologies in the legislative process allows drawing a number of the following conclusions:

1) The generally accepted stages of the legislative process (legislative initiative, preparation of a draft law, voting, enactment) will not undergo a significant transformation in the foreseeable future due to the implementation of an integrative model of the use of digital technologies. Therewith, this process will lead to an expansion of the possibilities of using democratic procedures at each of these stages, while their legal nature will remain unchanged [5].

2) The fundamental advantage of big data research when working on a legislative initiative is that its results will provide a meaningful and objective analysis of the current legal regulation. Currently, there are prerequisites for expanding the circle of persons participating in the selection of legislative initiatives due to the participation of citizens in voting organized based on blockchain technology. These circumstances may lead to optimization of the work of legislative authorities, as they will contribute to improving the quality of initiatives submitted to parliaments.

3) Big data has the potential to be used in the development of regulatory legal acts, in particular, it is possible to search for duplicate and conflicting norms in the current legislation with their help, which will lead to the development of a system of harmonious legislation. At the same time, at this stage, it is possible to provide for citizens voting on the blockchain on draft laws, but a prerequisite should be that

the results of such voting should not be imperative for members of legislative authorities.
4) The following tasks will first be required to adopt laws in the form of a program code: a) to determine the areas of law that can and should be automated (e-commerce, real estate transactions, "smart" transport, etc.), b) to develop a special programming language that meets strict legal and technical requirements, c) to create a comprehensive audit system of the program code that guarantees the observance of human and civil rights and freedoms.

5. Discussion

5.1 Legislative initiative

Objective information about the state of current legal regulation is important at the stage of initiating the adoption of the law. Big data can be used to analyze the effectiveness of existing regulations, to determine the feasibility of adopting new regulations, as well as to make forecasts of the consequences of regulatory changes [6]. The very possibility of using the results of the analysis of big data on the state of legal regulation will contribute to more accurate identification of the interests of subjects of public relations, which will ensure a balanced satisfaction of the interests of man, society, and the state [7]. Subjects of the right of legislative initiative in their work can, in particular, see to what extent the current norm is observed, whether it achieves its goal, which categories of the population more often violate the relevant norm, how administrative bodies operate, what court decisions are made, and many other data. The results of a comprehensive analysis of such information can become a justification for the need to take a legislative initiative and be used by parliamentarians in their work.
An example can be given from the state of Massachusetts (USA), where the fight against the growth of opioid overdoses is carried out jointly by various administrative bodies using big data. The Massachusetts General Court allowed linking data from the Department of Health and the Office of Technology Services and Security in 2015. The data used together served as the basis for identifying the correlation of overdoses and deaths from opioids in the period from 2013 to 2014. The analysis showed that the majority of opioid-related deaths were caused by their illegal receipt and that those recently released from prison were 56 times more likely to die from an overdose than other categories of citizens. In response, the State of Massachusetts passed a law in 2016 that addresses several major causes of the opioid crisis. It established a drug control program to conduct research and training for police officers, school officials and licensed opioid prescribers. In addition, the Department of Public Health began working directly with the Department of Corrections on prison release procedures and the appointment control system [8].
Blockchain technology can be used at the stage of putting forward a legislative initiative to directly take into account the opinion of the population. It means that the use of blockchain opens up new opportunities for voting among citizens on law-making issues. To date, there is extensive experience of citizens submitting initiatives in electronic form. Such mechanisms, in particular, are provided for in the USA, Great Britain, Germany, Scotland, the Russian Federation, and at the level of the European Union and are very popular. The political activity of citizens indicates that holding regular blockchain-based voting at the initiative nomination stage is appropriate and could become an additional driver of the democratization of the legislative process [9]. In addition, involving a wide range of people to work on a legislative initiative would lead to optimization of the work of legislative authorities since the initiatives would come more prepared and would have a high chance of being adopted.

The process of adopting laws may undergo significant changes in the case of the application of smart contracts in legislation [10]. In terms of regulating the procedure for introducing a legislative initiative, an important question will be in what form the subject of the right of the legislative initiative will have to submit a draft law: in textual or already in the form of ready-made program code. It seems that initiatives will be submitted in text form in the foreseeable future since the development of program code requires specialized knowledge that deputies, as a rule, do not possess and the presence of such qualifications should not be mandatory. It is possible to create specialized services in the offices of legislative authorities that will translate draft legislative initiatives into the appropriate programming language.

5.2 Preparation of the draft law and its discussion

This stage of the legislative process requires a high level of legal technique when writing a draft law. Currently, a sufficient number of startups have been created in the commercial sector that is engaged in big data research in the legal field and provide a variety of statistical data. The analysis of information when working on a draft law is important, affecting the quality of the regulatory legal act itself.

Such companies as Ravel (analyzes court decisions, including arguments contained in them, speech turns, etc.), Lex Machina (collects legal information from open sources of state bodies and analyzes it using a specially developed algorithm), Relativity (e-discovery technology: searching for information contained on digital media for use as evidence in courts) should be cited as an example of such work [11]. This kind of analysis can be useful in evaluating the proposals received on draft regulatory legal acts. The involvement of interested persons in the discussion of the concepts of normative acts will allow preventing possible

dissatisfaction of certain social groups at the very initial stage.

In the work on the draft law, in particular, during its development, the use of such information can help in the search for duplicate or conflicting provisions in the current legislation, which is especially important in the conditions of differentiation of subjects of competence into federal and regional, as well as in the presence of different levels of legislation (federal, regional and local) [12, 13]. In addition, such technology can be used when considering received feedback and proposals for draft laws from various participants in the legislative process.

As a rule, a wide range of subjects (members of Parliament, civil servants, experts, representatives of civil society, etc.) participates in the discussion of the draft law. It is possible to develop a voting mechanism based on the blockchain in which all of the above entities will participate. Therewith, the results of such a vote cannot and should not have legal significance, however, they can be taken into account by members of legislative authorities when they make decisions.

The procedure for adopting laws in the form of a program code will necessitate the development of a whole layer of requirements for this stage of the legislative process. Even though legislative procedures in different states have significant differences, several common issues should be identified that will require their resolution.

Firstly, it is advisable to identify narrow areas of law in which legal regulation can be carried out in this form. This primarily refers to the legal relations that are characterized by simplicity and lack of variability of rights and obligations of subjects, i.e. they assume one specific behavior. One of the most accessible areas of public relations for transfer is the sphere of e-commerce, real estate transactions, "smart" transport, etc.

Secondly, there is currently no single standardized programming language. For example, as for smart contracts, there are many varieties of it (Solidity, Serpent, Clarity, Viper, Lisk, Chain, etc.). National standardization will be required to ensure proper operation. In some countries, they are actively investing in the development of specialized programming languages that are most suitable for working with smart contracts. For example, the Singapore government has allocated 10.8 US Dollars Million to conduct a research program that aims to digitize various laws, regulations, and agreements in the country [14].

Thirdly, an integral condition for the introduction of smart contracts into the legislative process is a comprehensive technical audit during its development, implementation, and use. Complex algorithms are characterized by opacity and lack of the ability to reliably establish the sequence of their work [15]. The process of lawmaking should comply with the principle of openness and transparency in an environment where the work of algorithms will directly affect the rights and obligations of citizens. To this end, it is necessary to provide a system of internal and external audit of the code for reliability and protection from unauthorized interference, compliance with the current legal regulation, absence of discriminatory conditions, other illegal restrictions on the rights and freedoms of citizens. It will be necessary to check the code at all stages of the legislative process along with legal and linguistic expertise. The adoption of these measures will create an atmosphere of trust in the society for regulatory legal acts written in the form of computer code, which can significantly increase their effectiveness and reduce transaction costs.

5.3 Voting on the draft law and its enactment

The stage considered in this paragraph will not undergo significant changes due to the implementation of big data technology in the legislative process. This is because big data is relevant when analyzing either past experience or when performing predictive analytics. While voting on the draft law is already taking into account both the empirical and predictive base. Forecasting using big data can be used to track the effectiveness of an already adopted norm, and from this point of view, this technology can also be useful for legislators [16].

At this stage, it is more expedient to refer to the transformation of the legislative process in connection with the use of blockchain technology when voting on draft laws. Thus, even now the "Flux" political party (Australia) in its election program proposed the use of electronic voting on the blockchain, the essence of which was that citizens could vote for or against draft laws being considered in parliament [17]. An important feature is that the results of the vote would be binding for the deputies from the party.

It is impractical to transfer the voting of the deputies themselves to the blockchain since the very legal nature of these relations presupposes an open and transparent vote. Standard electronic voting is sufficient for these purposes, as it is now carried out in most states.

When voting on draft laws translated into a programming language, it will be necessary to provide such conditions that anyone understands the meaning and content of the adopted provisions without any special training. It seems that when deciding for subjects who have the right to vote, the project should be in two formats: in the form of text and the program code itself.

6. Conclusion

According to the results of the study, it can be concluded that big data can improve the quality of legislative initiatives submitted to parliaments and contribute to the search for duplicate and contradictory provisions of the legislation. The paper shows that there are prerequisites for expanding the circle of persons involved in the process of adopting laws due to the involvement of

citizens in voting organized based on blockchain technology.

It has been proved that the adoption of laws in the form of a program code will require preliminary a) identification and justification of areas of law suitable for automation b) development of a special programming language that meets strict legal and technical requirements, c) creation of a comprehensive audit system of the program code that guarantees the observance of human and civil rights and freedoms.

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