

## CROSS-BORDER PUBLIC ADMINISTRATION: PROSPECTS FOR INTRODUCING BLOCKCHAIN JURISDICTION

### PREKOGRANIČNA JAVNA UPRAVA: PERSPEKTIVE UVOĐENJA "BLOCKCHAIN" NADLEŽNOSTI

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#### *Abstract*

Institutional, teleological and consensual blockchain jurisdiction manifestations have been articulated in the activities of the public administration concerning interventional, contributory, protective, delegated, executive and efficient public administration. The authors have revealed the service format of functioning and synergy of the cross-border interaction of public administration within horizontal and vertical relations with the subjects of public and private law. Legitimacy of transformational remodelling of power, as well as the specifics of the values intercourse in information and traditional societies in the framework of implementing the powers of cross-border public administration through the simulation category. The paper highlights the functioning dynamics of cross-border public administration in the external and internal dimension in terms of using such instruments of public administration, as regulatory and administrative acts, acts-plans, acts-actions, administrative contracts. Fundamental influence of technological innovations on the public service activities of public administration has been proved in a transboundary perspective to achieve the rule of law, the maximum legal certainty of streamlining the process of public governance. Institutionalization of the synergetic paradigm has been established for using the tools of public administration within the blockchain jurisdiction to properly implement the cross-border competence of public administration, which will contribute to the adaptation

#### *Sažetak*

Institucionalne, teleološke i konsenzualne manifestacije blokovskih nadležnosti artikulirane su u aktivnostima javne uprave koje se odnose na intervencijsku, doprinosnu, zaštitnu, delegiranu, izvršnu i učinkovitu javnu upravu. Autori su otkrili format usluge funkcioniranja i sinergiju prekogranične interakcije javne uprave u horizontalnim i vertikalnim odnosima s subjektima javnog i privatnog prava. Legitimitet transformacijskog preoblikovanja moći, kao i specifičnosti odnosa vrijednosti u informacijskim i tradicionalnim društvima u okviru provedbe ovlasti prekogranične javne uprave kroz simulacijsku kategoriju. U radu se ističe dinamika funkcioniranja prekogranične javne uprave u vanjskoj i unutarnjoj dimenziji u smislu korištenja takvih instrumenata javne uprave, kao regulatornih i upravnih akata, akata-planova, akata-akcija, administrativnih ugovora. Temeljni utjecaj tehnoloških inovacija na javne usluge javne uprave pokazao se u prekograničnoj perspektivi kako bi se postigla vladavina prava, maksimalna pravna sigurnost usmjeravanja procesa javne uprave. Uspostavljena je institucionalizacija sinergijske paradigme za korištenje alata javne uprave u nadležnosti blockchaina za pravilno provođenje prekogranične kompetencije javne uprave, što će pridonijeti prilagodbi nacionalnog prava nadnacionalnom pravnom okviru. Autori su naveli da uz pravilnu provedbu nadležnosti prekogranične javne uprave u okviru jurisdikcije blokova, postoji 'samohodni' sustav s mjerljivim brojem varijabli za institucionalizaciju

of national law to the supranational legal framework. The authors have specified that, with proper implementation of the competence of cross-border public administration within the blockchain jurisdiction, there is a 'self-propelled' system with a measurable number of variables for institutionalization of such an organizational structure, which could be self-reproducible in the presence of corresponding internal and external links with the allocation of order parameters.

### 1. Introduction

According to the Declaration of principles "Building the Information Society: a Global Challenge in the New Millennium" (hereinafter – the Declaration), institutionalization of a cross-border public administration taking into account blockchain jurisdiction could be considered as a component of the information society focused on the interests of people, open to all and aimed at capacity development /1/. It is important that the subjects of these relations in the Declaration are as follows: "everyone" (people, i.e. citizens, the stateless), individuals (obviously referring to both natural and legal entities, the state represented by the public administration), communities and peoples /1/. Accordingly, it is necessary to proceed from the modernization of the institutional activities dimension of the public administration in a transboundary dimension. An important issue is to update the activities characteristics content of the public administration, taking into account the blockchain jurisdiction.

Thus, the content of relations under the Declaration, in particular, is creation, access, use and exchange of information and knowledge /1/. The Declaration also defines the limits of these powers exercise: "in accordance with the purposes and principles of the Charter of the United Nations and in full compliance with and support for the Universal Declaration of Human Rights" /1/. In general, the substance of such relationships is to be considered through a prism of categories of the information society. Use of this conventionally defined category reveals the level of human intercourse with the latest technologies of creation, transmission, receipt, storage of information /2/. Moreover, the

takve organizacijske strukture, koja bi mogla biti samo-ponovljiva u prisutnosti odgovarajućih unutarnjih i vanjskih veza s dodjelom parametara naloga.

global goal is to be perceived to improve the quality of life. The aim of the first order in this context should be the exercise of potential by all subjects of public and private law in relations with cross-border public administration. In fact, the realization of human potential, personal development is the goal of the first order. However, the appropriate goal of the second order should be the promotion of sustainable development. Of course, it would be more appropriate to talk about the process of development of a discrete and progressive/regressive character /3/. In fact, the promotion of social development is a second-order goal.

On the basis of the above, the fundamental influence of technological innovations on the process of establishing the cross-border public administration taking into account the blockchain jurisdiction is clearly traced. By the way, now we are talking about the conflict between the values of information and traditional societies in the context of scientific and technological progress in the institutionalization of the transboundary public administration. In this regard, the values of traditional society are more related to the result of the activities of the public administration (commodity form). It is also appropriate to take into account the transcendental dimension of public administration. This category is essential for the organization of communication structures and proper public governance. At the same time, there is a virtualization of modern society associated with the possibility of using the characteristics of the virtual world to describe it. These processes influence the mechanism of coordinating a cross-border format of public administration with national

traditions (reference points) of public governance. Among the characteristics of the virtual world that affect this process, D. Ivanov highlights the arbitrariness of the parameters (variables and artificial objects); the immateriality of the impact (depicted object simulating the spatial-temporal behaviour characteristics of a physical object); ephemerality (freedom of entry/exit provides the possibility of interruption and renewal of existence) /4/.

This paradox of the interaction of the information and traditional societies' values in the framework of the formation and evolution of the cross-border public administration, taking into account the blockchain jurisdiction, could be illustrated by the category of simulation introduced by J. Baudrillard. The latter deals with sign-image and the referent-reality, being inseparable from each other within the four successive phases of the relationship between signs and reality: the image is a reflection of the true reality; it masks and distorts the true reality; it masks the absence of the true reality; it has no connection with any reality /5/. The current state of institutionalization of public administration acts as a time of transition to the attitude of the third and fourth orders. Simulation of reality begins to emerge. Instead, social institutions cease to be a purely social reality and acquire virtual rice.

Of great importance is the timeless nature of justice as a fundamental principle of the cross-border public administration functioning, taking into account the blockchain jurisdiction. Convenient in this sense is the position of S. Romashkin about the fact that justice applies to all mankind, given the common affinity of its representatives, which appears from the outside in a form such as the treaty /6/. For public administration, such an agreement with representatives of civil society will be public and shall reflect the will and interests of public administration and private law entities. On this basis, it becomes possible to develop an organic system of public administration, which focuses on the reference points of the previous legal framework and takes into account the latest national trends in political, socio-economic and cultural development, resulting from the use of scientific and technological progress in this area.

The quintessence of the process of institutionalizing the cross-border public administration is to be noted, taking into account the blockchain jurisdiction, regarding the idea of achieving the maximum legal certainty of the regulatory framework to streamline the process of public governance and self-regulation of relations. Thus, quantum communication could be used in cryptography, satellite communications and earth stations to provide high-speed communication /7/. The potential of Li-Fi technology is even greater for the modernization of public administration. It enables the circulation of information within the daylight, under the water surface and within air transport, including to ensure fast and accurate navigation /8/. The use of such technologies might resolve the lack of radio frequency resource, increase information security, widespread placement of terminals for free and quick access to information.

Moreover, the transition to the above-described format of cross-border activities of public administration should be based on interrelated organizational, legal, political, socio-economic, scientific, technical, production processes aimed at creating conditions for meeting the information needs of citizens and society through the creation, development and use of information systems, networks, resources and information technologies. The latter are to be based on the use of modern computer and communication technologies. In essence, during such digitalization of modern society, a complex of organizational, legal, economic, political, industrial and other processes begins to operate related to the creation, implementation, application and development of electronic communications to meet information needs, public interest of the state and society.

In addition, it is necessary to take into account the significant potential of electronics as a factor for modernization of the public administration, taking into account the blockchain jurisdiction. This is primarily due to the latest technologies, such as quantum communication, Li-Fi, which could radically update the standards of transactions taking into account the blockchain jurisdiction between public and private law entities. The current state of affairs in this area of public relations acts as a time of transition to the ratio

of orders. Actually, simulation of reality begins to manifest itself. Social institution, including the public administration, cease to be a purely social reality and acquire virtual features, transforming into images-simulacra.

In order to optimize the activities of public administration, as rightly pointed out by Ya. Bykova, it is necessary to find the optimal relationship between the "constant", "general" and "variable", "relative" moments in the law /9/. That is, it is advisable to harmonize the regulatory universal framework and specific legal institutions with the current level of prerequisites for the transformation of public administration into a cross-border format. Along the way, it is important to take into account the features of the preliminary, current and potential socio-economic level of national development, the practice of public governance at each specific historical stage. The basis for this should be the teleological dimension of the institutionalization of the cross-border public administration, taking into account the blockchain jurisdiction. Thus, according to the classical and modernized concept of the historical school of law, one must refer to the goals concerning the means of its implementation /10/ and the reasons /11/. These categories have an impact on the ontological dimension of the functioning of the transboundary public administration and help to solve sociological issues on defining the fundamental postulates for formation and development of this legal entity, taking into account the blockchain jurisdiction. On their basis, we could talk about the complex, multi-level and holistic nature of public administration with specific national regulations, based on a number of social phenomena, such as politics, economics, culture and the like.

**Research methodology.** In methodological and methodical terms, the process of institutionalizing the cross-border public administration, taking into account blockchain jurisdiction, should be focused on creating conditions for harmonization of national public governance practice with the requirements of international law, supranational law of the European Union, as well as taking into account the motives, needs and interests of all subjects of public and private

law. At the general philosophical level, we are addressing dialectics and metaphysics tools of public administration, intuitive, phenomenological, hermeneutical, activity and other methods at the stage of postmodern legal research. Among the general research methods, it is necessary to distinguish empirical (observation, description, measurement, experiment, comparison), universal-logical (analysis and synthesis, induction and deduction, abstraction and generalization, analogy) and theoretical methods (formalization, idealization, ascent from the abstract to the concrete, axiomatic and hypothetical-deductive methods, modelling, the unity of historical and logical). Specific research methods have a clearly expressed sectoral nature and primarily cover formal-legal, comparative legal, systemic-structural (structural-functional), specific-historical and specific-sociological methods. As for special methods, they are interdisciplinary and are formed on the basis of theories (systemic, probabilistic-statistical methods).

## **2. Public Service Governance Measuring for Functioning of Transnational Public Administration**

Presented in the doctrine, the artificial division of administrative and legal relations on managerial (power) and public-service (non-power) within the traditional approach to understanding the subject of administrative law does not properly ensure the implementation of innovations into the practice of public administration. Therefore, in the context of formation and development of cross-border public administration, taking into account the blockchain jurisdiction, all corresponding public relations, which are regulated by the rules of administrative law, should be perceived as managerial, that is, arising in the field of public governance. Such public governance is one of the main activity forms of subjects of public law /12/, which is carried out through the application (use) of both compulsory (deprivation of licence, application of a fine, etc.), and non-compulsory (administrative agreement, granting permission, etc.) tools.

Given this, there is no reason to view public administration as a phenomenon incompatible with modern administrative law, a democratic and legal state, and to separate the latter (and its relations) from other activities of representatives of the cross-border public administration. As for the distinction between different types of activities of public administration in their orientation and attitude to human rights and freedoms, it should be done in the context of the analysis of public administration's tools /13/. At the same time, the relations arising in the process of using various tools of public administration, in particular, taking into account the blockchain jurisdiction, remain the same, i.e. administrative-legal (managerial). Besides, the establishment of the transboundary public administration ensures the institutionalization of the system prerequisites for the development of law, taking into account the functional orientation of the relevant homogeneous groups of social relations and the independence and autonomy of the corresponding legal provisions /14/. Hence, it is possible to identify the axiological features of the corresponding modernization process for the public administration. In this sense, it is advisable to focus on ensuring the effectiveness of the procedure /15/. In particular, in case of compliance with this criterion, the institutionalization of the cross-border public administration taking into account the blockchain jurisdiction will be carried out on the principles of mutual compliance of legal systems, introduction of unified standards and service oriented public administration, and will allow to update the regulatory framework in response to demands from private law entities.

An important issue of the institutional dimension of the cross-border public administration, taking into account the blockchain jurisdiction, is the focus on the service nature of the functions of the key actors involved in this process. This service concept determines that it is advisable to switch to the format and level of public administration, as close as possible to consumers; to give the latter the opportunity to choose the services they need, and those who make them qualitatively; to introduce the principle of competition; to invest in the results, not intentions; to focus on the client, that is, to put the

needs and wishes of the person as a consumer of public services; to introduce market-oriented mechanisms and result-oriented budgeting; to implement the decentralization of power /16/, /17/. The view that the cross-border dimension of public administration should be based on institutional, teleological and consensual factors is fair in the context of the stated positions /18/. It is about legitimizing democratic reforms and ensuring the functioning of cross-border public administration, taking into account the blockchain jurisdiction as focused on the public interest to achieve the rule of law and meet the needs of private law subjects, provided the current practice of public governance is updated and consensus is reached on representing the interests of society. Thus, we could draw an intermediate conclusion that in the process of modernization of public administration's activities taking into account the blockchain jurisdiction, the public law entities are to focus on the implementation of the service function regarding legal, social, psychological, moral and ethical characteristics. Along the way, it is necessary to create conditions for interaction between the subjects of public and private law, in particular, expert discussion, submission of proposals, evaluation, comment and feedback on the current and developing array of legal regulations, including legal monitoring.

Developments of the theory of "soft projects" could be applied in terms of service-oriented process of institutionalizing the cross-border public administration, taking into account the blockchain jurisdiction. In this context, Al Atum Mohammad holds the view that it is necessary to proceed from three elements (scheme, system, service) /19/. Service model is revealed in the potential value, functions and product as such. This is achieved through the implementation of competence as a management category, i.e. the criterion of quality (compliance of planned works with the values of consumers of the product), time and resources /19/. To modernize the practice of public administration taking into account the blockchain jurisdiction, this economic and managerial postulate is to be interpreted through the prism of axiology. The public administration should be guided by the values and public interest of representatives of

international institutions and organizations, civil society and other private law entities. At the same time, the functions of cross-border public administration are to take into account the optimal allocation of time and resources in the process of such activities, with due participation of all these actors /20/.

At the same time, it is necessary to consider that efficiency of functioning of the cross-border public administration taking into account blockchain jurisdiction could be provided on condition of combination of technical, legal and practical activity issues. In this context, it is necessary to rely on appropriate software packages. The format of relations should be updated in the following areas: legal (document circulation order and implementation of effective international activities in the legitimate process), communicative (social networks and websites for reduction of obstacles to free communication), technological (evolution of technologies, modernization of information services), interactive (improvement of institutional and functional parameters of interaction, strengthening of direct participation, introduction of integration) /21/. Hence, the position of O. Laba might be applied regarding not merely the introduction of a modernized legal framework, but primarily about the formation of the foundations and vectors of reform at the national level. It might be achieved through the implementation of international obligations; strengthening of competitiveness; democratization of social reforms regarding the formation and development of fundamental milestones of private law entities /22/. Therefore, ensuring mutual compliance of national and cross-border service vectors of the public administration activities will help to implement public governance in a transparent and efficient manner, taking into account the specifics of the blockchain jurisdiction.

### **3. Institutionalization of Blockchain Jurisdiction in the Activities of Public Administration**

Modern society has been living for years with the problem of non-fulfilment by politicians, civil servants, et al. of their obligations to the

full, as well as the discrepancy between the subjects of public administration and the status of the team created for the proper implementation of the policy. Therefore, it is important to legitimize the format of relations between public authorities, including the transboundary public administration, and private law entities. In addition, the institutionalization of the process of formation and development of the cross-border public administration, taking into account the blockchain jurisdiction, is directly related to obtaining a mandate from members of civil society, who delegated the right to the subjects of power to exercise public governance in the interests of the country and the people. This aspect of legitimation depends on factors such as the sovereignty of the state and the democratic nature of power. Furthermore, these categories should not be perceived as an abstraction or ephemeral principles. This refers to the specific legal framework for the content of the activities of the cross-border public administration, taking into account the blockchain jurisdiction, displayed in the results of the use of the mandate to exercise the relevant competence in public governance.

The legal format for implementing public governance competence by the cross-border public administration is related to legal, social, psychological, moral and ethical characteristics. Thus, psychological and legal issues are to be focused on. K. Havrylovska implies by legitimation the psychological mechanism of functioning in the system of legal regulations of the state, through which the legal provisions acquire psychological legitimacy, that is, the state, which highlights the compliance aspects of a particular legal regulation with the attitudes, expectations and life plans of the individual, including such categories as correctness, justification, expediency /23/. At the same time, V. Dudchenko on the basis of legal, moral and ethical characteristics considers the category of legitimation to supplement the moral and ethical values with the formal requirements of justice /24/. At first glance, it seems that there is little in common between the two approaches, but this statement is erroneous.

Firstly, it is clearly seen that the framework for legitimacy creates a legal framework for the

functioning of the cross-border public administration, taking into account blockchain jurisdiction. In the supranational dimension, coordinate system of the primary and secondary international law (for example, of the European Union) is to be counted on. At the national level, legal customs and traditions, preliminary legal regulation, the current legal framework (core), draft law development in the long term are to be applied /25/. Based on the above, it is necessary to estimate the legal characteristics of supranational law, taking into account the rule of law and legality. Secondly, the framework for legitimizing the process of transformation of the public administration paradigm in a cross-border format should cover the content of the elements endowed with social, psychological, moral and ethical characteristics. This means that the requirements of social justice and compliance with legal regulations arising in the process of such public governance of the cross-border public administration, taking into account the blockchain jurisdiction.

In the current realities, we should talk about the legitimacy of the transformation of power. To this end, the interaction of subjects of public and private law in the implementation of public transboundary governance should speak about the legitimacy of the modernization of public administration, taking into account the blockchain jurisdiction, the attitudes and expectations of members of civil society, which are key in the interaction of the people and individual representatives with the state, including the provision of the mandate of public authorities at the highest level for the implementation of competence. At the same time, the legislation is a core of rights for the policy of public governance in terms of promoting the functioning of an open and transparent cross-border format of public administration. In this regard, the blockchain appears as a digital register, in which all transactions in the network are chronologically and publicly taken into account /26/, which serves as a distributed and decentralized database formed by the participants of the system, where it is impossible to falsify data through a chronological record and public confirmation by all participants of the transaction network, as

well as full control of the participant of the system of the digital asset referring to the technology of the distribution register or LTD (distributed ledger technologies) /27/. We are talking about a decentralized structure for collective decision-making by cross-border public administration, which does not require a lot of time resources, with reliable verification of transactions, the use of qualified electronic signatures within the exclusive combined type of management in terms of open (liberal) and closed (controlling) characteristics of technoecosystems. The relevant process of public governance based on the blockchain is influenced by the subjects of public power in the formation of policy in a particular branch (sub-branch) of law, as well as the public administration that implements the policy. In this sense, it is possible to learn the real problems in practice and relevant proposals, as well as feedback from members of civil society. This allows the cross-border public administration to take into account the public interest.

By the way, the blockchain is a technology that forms a backbone for enhanced security and privacy, including the IOT (Internet of Things) technology system /28/. In parallel, it is necessary to take into account such components of the described public technology: transactional, in which a separate block is an implemented action initiated by the participant of the relationship; block, as for data that records the transaction and other related data, such as the correct sequence, time stamps, and the like. It is important that information on the process and results of activities of cross-border public administration, taking into account the blockchain jurisdiction, remains public. At the same time, the data in the blocks are unchanged and updated without additional changes and encrypted with a private key. We will emphasize that in the activities of the cross-border public administration it is rational to use a private blockchain that restricts access to selected trusted participants in order to keep hidden user data. At the same time, for certain public governance activities of the cross-border public administration, it makes sense to use a public blockchain, with clearly defined locks for reading and writing records. Let's clarify that all previous blocks are public

and distributed, so a priori you can not change or view. All of these actions to ensure the security of the technoecosystems should be decentralized in the sense that. No data storage device (transactions and related blocks) is needed, since they are distributed among the participants in the entire network that supports the blockchain. It is only allowed to add new blocks via checking by all participants in the technoecosystems regarding the new transaction when it is added to the existing block. Transactions by the cross-border public administration are to be based on considerable trust in order to reach consensus among all participants in the technoecosystems.

As for the legitimization of the transboundary formation of public administration taking into account the blockchain jurisdiction, it is necessary to count on the real state of the political, socio-economic and cultural situation at the supranational and national levels. As a result, the policy of public administration is implemented in promoting efficiency, openness and transparency of public governance. Therefore, it is possible to create conditions for the fulfilment of international obligations, strengthening of state security, increasing the possibility of interconnection of electronic communication networks, development of competition. On the basis of the above, special attention should be paid to the legitimization of democratic changes in the process of reforming public administration in accordance with supranational trends. To this end, it is necessary to focus in an existential perspective on ensuring interaction and cooperation with all subjects of public and private law. We must make a remark that such activity appears as an open non-linear system based on rationalistic principles of public administration. In this sense, there is a fair position on the value-normative legitimization of the formation and development of the cross-border public administration, taking into account the blockchain jurisdiction. In this regard, the primary source of values is the sphere of direct communication with its pre-reflexive value and regulatory systems. On this basis, functioning of political institutions is determined or established and the legislation is being created /29/. Thus, the cur-

rent model of interaction between public administration and subjects of private law is manifested in the unequal provision of declared rights and freedoms, taking into account the "letter" essence of national legislation /30/. As a result, the individual existence of the cross-border public administration, taking into account the blockchain jurisdiction, is consistent with its social role within the limits of human existence, primarily the exercise of human rights and legitimate interests. We should note that now there is an insufficient consideration of the social nature of law as regards to ensure the right to privacy, access to the Internet and the like. In addition, it should be noted that, as M. Heidegger points out, such a model of public governance activity can not be brought to the end /31/. This is due to the extremely rapid technological development that affects the behaviour of the cross-border public administration, taking into account blockade jurisdiction. In the context of political behaviourism, an existential dimension of the activity of public administration is formed, which could be implemented through the formation and regulatory orientation of the existence of public administration. According to F. Heinemann, particular attention should be paid in this regard to the choice of subjects through the existence which is being formed and self-regulated /32/. The existential nature of the public governance makes it possible to ensure its transcendental orientation. In this sense, it is understood that the intersubjective nature of the activity of the cross-border public administration, taking into account the blockchain jurisdiction, creates conditions for the coordination of the interests of public and private law entities with public interest. In this way, the rules of conduct are streamlined through the prism of "specific natural law", in account with not only the external conditions, but also the internal motives, needs and interests of public officials of the public administration.

At the same time, on the world level, technological innovations are implemented, as a rule, through the activities of private law entities. Subjects of public administration then take into account this existential process. Consequently,

it becomes possible for such a cross-border format of public administration that corresponds to the concept of a digital leap in a transboundary perspective. In this coordinate system, the cross-border public administration should act as an intermediary in the reform processes, with the consent of the interests. The specified process should be rationally conditioned. Proposals for updating the format of relations between public administration and private law entities are to be initiated by the public. In the future, the formal and procedural process of implementing the competence of the transboundary public administration, taking into account blockchain jurisdiction, should take into account national political and legal traditions, as well as the basic level of institutionalization of public governance activities.

##### **5. Synergetic Paradigm of the Cross-Border Public Administration Taking into Account Blockchain Jurisdiction**

Proper institutional support for institutionalizing the cross-border public administration, taking into account the blockchain jurisdiction, could lead to increased opportunities to improve the efficiency of public administration, to the development of competition, provision of public (primarily administrative) services of appropriate and sufficient range, quantity and quality. As N. Lebed points out, it is advisable to focus on maintaining the quality of the law, namely, meaningful characteristics and the ability to meet social requirements and private interests through legal provisions /33/. The position of K. Bieliakov is to be observed on the possibility of ensuring the dynamics of legal regulation with the help of the legal technique of model lawmaking for creating a unified consolidated system, in particular, through the lawframe with the ability to make adjustments to the single text also relevant in this context /34/. In this regard, at the doctrinal level, as a rule, emphasis is placed on theoretical and applied nature of the relevant legal modelling, based on the needs of practice on the accumulated knowledge of mankind /35/.

At the same time, the blockchain and other information and communication technologies

should be used as an object of public relations, which serve as a substantive basis for the modernization of public administration, updating existing procedures and processes in terms of increasing the openness of the activities of the transboundary public administration, ensuring the implementation of its statutory powers on the principles of the rule of law, transparency, accessibility and accountability of activities. This functional dimension could be fully established within the synergetic paradigm. Synergetic methodology has considerable potential in implementing mechanisms and patterns of self-organization in the conditions of self-movement of legal matter /36/, /37/. This process is influenced by such factors as random significant events, the parameter of order in the national legal system. Accordingly, from a synergetic perspective, the institutionalization of the cross-border public administration, taking into account the blockchain jurisdiction, determines the self-organized and dissipative nature of public governance, which is characterized by active metabolism, intensive interaction of components, a combination of positive and negative feedbacks, relationship of variability, heredity and selection, alternation of attractors and homeostasis /38/.

Hence, the reasons for the synergetic methodology application in the formation and development of the cross-border public administration, taking into account the blockchain jurisdiction, depend on the unstable nature, evolution and co-evolution of actual social relations. Accordingly, the forms of public administration cover spontaneous transition of the relations system to a new state and self-organization, accumulation (in particular, avalanche-like) of constant changes (fluctuations), phase transitions on the way to achieving equilibrium (bifurcation point). The synergetic paradigm at the post-modern stage allows choosing legally significant technical innovations in the institutionalization of the transboundary public administration taking into account the blockchain jurisdiction and to predict the corresponding trends of its functioning. From the positions of synergetics, the described development, as explained by L. Korunchak, appears as an open, non-linear, dynamic, multivariate, discrete process /39/.

Nevertheless, it should be assumed that the institutionalization of the cross-border public administration is an irreversible process and tends to the emergence of “order parameters” in the organizational structure of law.

It is also necessary to ensure the empirical orientation of the activities of the cross-border public administration, taking into account the blockchain jurisdiction. In this sense, Ye. Yevhrafova is convinced that an empirical knowledge of social phenomena reflects various manifestations of law as a carrier of socially important information, regulator of social relations and means of rights protection /40/. Thus, the empirical basis for transboundary activities of the public administration covers the research of public administration practices and the formation of adequate legal regulators using the corresponding techniques of law-making techniques and methods of establishing the effectiveness of existing rules of law. Along the way, legal activity of public authorities of the highest level should include lawmaking and legal implementation, taking into account the objective legal consciousness of persons involved in the process of public governance, taking into account the blockchain jurisdiction.

In this respect, the blockchain becomes an intelligent system with built-in analytics and integration of data from chains and offline to ensure information security in terms of confidentiality and information leakage prevention /41/. Let us clarify that the blockchain is a “repository” of transactions, so for analytics based on these blocks it is necessary to provide access, processing, integration and use of data using parallel processing systems. Thus, data storage, in particular, created in the era of the Internet of things, is affected by the state of availability of blocks for transactions. In fact, when a new piece of data appears, it is important that the blockchain system could understand the input data, check for compliance and compatibility, potentially accept and store them in an identical block diagram. It is important to eliminate the possibility of excessive data storage and calculation at later stages. Instead, information integration is to be based on shared data associated with the processes of registries interoperability,

including legacy systems of record. In particular, since the blockchain operates independently of legacy systems, the cross-border public administration in most cases will have to integrate data from the blockchain blocks with existing (often outdated) national information recording systems. This does not exclude the risk of duplication or conflicting data. Therefore, the development of new tools for handling, processing and use of big data, covering information from blocks and outside the network, has a significant potential in the activities of the cross-border public administration, taking into account the blockchain jurisdiction.

In view of the foregoing, an empirical measure of the cross-border activities of the public administration taking into account the blockchain jurisdiction should be based on the need to create conditions for interaction of these bodies with other public and private law entities through the creation of technical possibilities for structuring the process of cooperation, in particular, regarding technical solutions and corresponding implementation in social terms (concerning the expert discussions, proposals, evaluations, comments and feedback responses about current and initiated practice of public governance). At present, the technological solution for such participation is the introduction of multifunctional platforms taking into account the blockchain jurisdiction. In addition, the mechanism of involvement of civil society in articulation of a clear public request in the field of public administration should be focused on the development of optimal algorithms for solving existing topical issues (primarily, providing information privacy).

It is also necessary to draw attention to the fact that the above-mentioned interaction could be provided for legal monitoring of the public governance process. Among the definitions of legal monitoring, one could distinguish a steady approach to its interpretation as a process of development of law /42/, systematic, integrated activities of public administration, academics and representatives of civil society /43/, which begins at the stage of origin of the idea concerning legal regulation of public relations and extends to the process of adoption and implementation of regulations /42/ in terms of analysis,

evaluation and synthesis of the results of legal regulation, formulation of development forecasts for the legal framework /43/. For cross-border activities of the public administration, taking into account the blockchain jurisdiction, legal monitoring, first of all, could allow effective interaction between public authorities of the highest level and private law entities in terms of monitoring the system of law: identification of legal conflicts, gaps in law, non-compliance with the standards of supranational law, defects in legal regulation, etc.

It should be noted that in the countries of Romano-German and Anglo-American law (including Australia, the Netherlands, Germany, the United Kingdom of Great Britain and Northern Ireland), this practice has been used since the 1970s-1980s. In the countries of the European Union, which are now undergoing fundamental changes (in particular, Bulgaria, Estonia, Croatia), legal monitoring is one of the objectives of legal policy /44/. In Australia, the supreme executive body adopts a schedule of legislative reviews to take stock of existing regulations according to the criterion of appropriateness /45/. As a matter of fact, at the global level, legal monitoring is an established tool for influencing the evolution of law and identifying potential vectors of its development.

Therefore, it is important to elaborate a definition and create clear legal criteria for understanding legal monitoring and the procedure for its implementation in the public governance of the cross-border public administration, taking into account the blockchain jurisdiction. Consequently, in case of formulation of a clear algorithm and matrix of implementing the legal monitoring, a framework will be provided for interaction between the public administration with other subjects of public and private law in the direction of evaluating the current regulatory array. This process should be set to compliance with the expected result of public governance, the degree of implementation of rights and legitimate interests of subjects of law, elimination of duplication, legal conflicts and gaps in the law, determination of ways to systematically update and develop the regulatory frame-

work, forecasting and planning of legislative activities to bring the provisions of national law in line with international standards.

#### **6. The Impact of Blockchain Jurisdiction on the Instrumental Measurement of Functioning of Cross-Border Public Administration**

In the sectoral methodological and methodological context, the dynamics of institutionalizing the cross-border public administration, taking into account the blockchain jurisdiction, brings forth legal relations in the area of public governance. The object of the latter appears as material and spiritual benefits. The content is formed by relevant subjective rights and obligations taking into account the cross-border dimension of relations. These relations of interest, which is implemented, appear as power /46/, which could be classified on "internal" and "external" according to the criterion of the legal status of the subjects, legal regulation, legal consequences /47/. Thus, public governance manifests itself in the external relations of the subjects of public administration with other public authorities, as well as private law entities. As for organizational activities of cross-border public administration, the internal ones could be addressed to as internal governance.

It would be appropriate to pay attention to the specifics of the blockchain, which allows for cross-border public administration to use public databases with distributed and unchangeable nature on the basis of an open source protocol, secure online identity authentication with a guarantee of recognition of worldwide legal certainty /48/. It is worth noting that in this sense, we are talking about the perspective on using the latest technologies in the institutionalization of the cross-border public administration, taking into account the blockchain jurisdiction. At the same time, the public governance is an externally oriented activity of authorized entities associated with the implementation of political decisions and of the provisions of the Constitution and the laws. This complex activity in the external and internal dimensions is carried out by numerous means, which entail

various legal consequences for the objects of administrative influence /49/. Given this, it is necessary to distinguish on purpose – interventional, contributory and protective public administration; taking into account the peculiarities of implementation and the nature of competence – executive and regulatory, as well as delegated public administration /50/, namely:

– interventional public administration associated with the restriction of rights, freedoms and legitimate interests of private law entities, which is manifested in the assignment of duties or encumbrances to them;

– contributory public administration that facilitates private entities in exercise of their rights, freedoms and legitimate interests by all subjects of cross-border public administration services, permits, subsidies, certificates etc;

– protective public administration that is connected with ensuring normal (full) existence of private law entities by providing the population with water, electricity, gas; rendering information, educational services, etc.; development of infrastructure objects, in particular, main roads, parks, sports facilities, etc;

– executive public administration carried out within the framework of practical implementation of legal regulations by the cross-border public administration in order to satisfy the public interest;

– regulatory public administration, which is implemented by using the tools of public administration, primarily, the publication of by-laws in the absence of relevant laws or their insufficiency for the full regulation of relevant public relations in order to form the legal basis for the activities of cross-border public administration, taking into account the blockchain jurisdiction in accordance with the principles of democracy, social and legal state, the rule of law;

– delegated public administration, which is implemented in those areas where there is a transfer of cross-border competence of the public administration to perform the relevant functions by the private law entities within the framework of the contributory and protective governance, and the interventional one in some cases, for example, with the citizens' participation in the protection of public order and the state border.

Service orientation of public governance on the part of the cross-border public administration, taking into account the blockchain jurisdiction, simultaneously provides an instrumental measurement of the activities of public administration. According to I. Paterylo, it is an issue about the value perspective of law, presented in different levels of legal phenomena according to the needs of legal practice, political, economic or social objectives /51/. Therefore, it could be stated that the instruments of public administration, through which the impact of the law is carried out on legal relations in axiological and pragmatic terms, create the foundation for satisfaction of the public interest. Through these legal instruments, the regulatory role of law is implemented and pragmatic objectives are achieved in terms of improving the quality, efficiency and effectiveness of public administration.

Thus, in the regulatory and procedural dimension, the instruments of public administration play an organizational and structurally-supporting role in establishing rules of conduct of a cross-border nature. In this perspective, and as noted by I. Shopina, we are talking about the public legal impact on public relations with the use of specific legal means, in particular, of regulatory and organizational influence due to legal phenomena /52/. Such instruments of public administration are presented as mandatory and discretionary procedures and means of public legal impact on the matter of law in order to optimize its regulatory characteristics in the global (supranational) dimension and reduce conflicts and other negative institutional and functional factors in regulating the legal relationship with the participation of the cross-border public administration, taking into account the blockchain jurisdiction.

Detailing the system of the aforementioned instruments of public administration, it is necessary to point to such varieties as normative regulations /53/, administrative acts /54/, acts-plans /54/, acts-actions /54/, administrative contracts /53/, /54/. Considering normative regulations as a tool of public administration, it is necessary to rely on their legal nature. There and then, these are the official written documents applied re-

peatedly /55/ in legal acts of the public administration /56/ with general or local character /55/, establishing, changing or cancelling legal regulations /55/, /56/. In fact, legal rules of such acts are the basis for implementing rules of law. They provide the "statics" of the following legal formation and influence the essential content of other auxiliary tools of public administration. Instead, administrative acts embody regulatory trends in cross-border activities of the public administration, which are further strengthened by the provisions of acts-actions and acts-plans. Thus, acts-plans appear as a kind of management decision with organizational results of application /57/. For example, this could be an action plan for measures to implement the fourth generation mobile communication. For preference, acts-actions are auxiliary legal acts in the form of intellectual-volitional and physical (verbal) actions /58/, /59/. In fact, all supporting instruments of public administration allow further consistency in the application of legal regulations and guarantee the practicality and legality of law enforcement.

The given state of affairs implies the need to create conditions for ensuring the quality, efficiency and effectiveness of the dynamic measurement of the cross-border activities of public administration, taking into account the blockchain jurisdiction. This could be achieved by implementing the rule of law through the unity of form and content /60/. In this sense, I. Pogrebnoy's position it to be supported regarding such legal relations as marked by "two-dimensionality" through the process of implementing substantive legal regulations and the result of their practical implementation in procedures and processes /61/. At the same time, the integrative nature of the interactions is revealed considering regulatory support, relevant tools of public administration and relations between the subjects of public and private law. According to V. Dudchenko, in this regard, we are referring to the integrative legal concept as a synthesis of the spirit and matter of law through normative and descriptive approaches, legitimacy and legality /62/. In addition, it is necessary to rely on the principle of SMART (i.e. specific, measurable, attainable, relevant, time-bound) when the operation of components is

based on categories such as specificity, measurability, achievability, relevance and timeliness (maturity) /63/. For example, in Bavaria, a public administration was introduced on the basis of blockchain jurisdiction, taking into account the aforementioned criteria /64/, /65/. The above thesis means that normative and descriptive features should be integrated in terms of the transcendental synthesis of existing legal regulations and ensured ethics and fairness. Hence, in the ontology of functioning of the cross-border public administration, taking into account the blockchain jurisdiction, the complementary nature of the ideological dimension of law (metaphysics), factual circumstances (positivism) and the evaluation vector (axiology) is guaranteed. It also allows taking into account the supranational level of meta-legal values of law on the basis of causal-natural circumstances of moral law.

## 7. Conclusions

As a general conclusion, from a synergetic perspective, in the institutionalization of the cross-border public administration, taking into account the blockchain jurisdiction, the technologically determined autopoiesis (self-actualization, self-reproduction) of information objects (media communications, individually oriented Internet networks, stock markets) inevitably gives rise to unforeseen social risks, prevention, identification and neutralization of which should be ensured by legal means, including intervention. Therefore, with the proper implementation of public governance, there is a self-movement of the system of legal regulations with a measurable number of variables to the institutionalization of such an organizational structure, which could be self-reproducing with the existence of appropriate internal and external relations with the allocation of order parameters. The described self-development is possible only as a result of the joint action of all subjects of public and private law through the repetition of organizational structures on an enlarged scale (fractals), that is, the harmonization of legal provisions both in the national and supranational dimension.

Moreover, the transition to the transboundary public administration, taking into account the blockchain jurisdiction, is to be based on inter-related organizational, legal, political, socio-economic, scientific, technical, production processes aimed at creating conditions for effective and efficient public governance, meeting information needs through the creation, development and use of information systems, networks, resources and information technologies, which are based on the application of modern computing and communication technology. In fact, during this process, a complex of organizational, legal, economic, political, industrial and other processes should operate related to the creation, implementation, application and development of electronic communications to meet the public interest of the state, society, specific private law entities.

In addition, it is necessary to take into account the significant potential of electrification as a significant factor in the formation and development of the cross-border public administration, taking into account the blockchain jurisdiction. This is primarily due to the latest technologies, such as quantum communication, Li-Fi, which could drastically update transactions standards. At this time, the caution is shifted to the relation of orders, when the simulation of reality begins to emerge. Social institutions, including the transboundary public administration, cease to be a purely social reality and acquire virtual features.

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