

Modern Technologies for Ensuring Economic Security in the Context of Achieving High Efficiency of Public Administration

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Abstract

The main purpose of the article is to study the key aspects of the use of modern technologies to ensure economic security in the context of achieving high efficiency of public administration. The economic security of the country is a multi-level system, the structure of which is determined by the peculiarities of the structure and key development priorities both in the regional aspect and nationally. The fundamental role of economic security is realized through a set of goals and objectives that are achieved in the process of ensuring it, among the main ones is the effective, dynamic and progressive development of the economy, which is impossible without the development of innovations. The essence of ensuring economic security from the standpoint of innovative development lies in the development of innovations that can increase the level of competitiveness of the state-level economic system, which necessitated an analysis of the conditions and dynamics of innovation development. As a result of the study, the basic aspects of the implementation of modern technologies were analyzed in the context of achieving high efficiency in public administration.

Keywords:

Economic security, Modern technologies, Public administration, State-level economic system.

1. Introduction

Economic security is understood as the state of protection of the national economy from external and internal threats, which ensures the economic sovereignty of the country, the unity of its economic space, the conditions for the implementation of strategic national priorities.

The level of economic security depends to a greater extent on how developed the state is in terms of innovation. A scientific discovery or technical invention is the basis of innovation and it is calculated that in the future, when used, they will be profitable. Also, innovations include a scientific idea,

a scientific theory and a license. However, not all knowledge is considered innovation. It should lead to the creation of a new product or its change, both externally and internally. The classification of innovations is presented in many different ways. As you know, the population constantly has not only existing, but also new needs.

One of the classifications represents their character by satisfaction [1]:

- according to the degree of novelty: both a new scientific discovery and the improvement of a scientific discovery made earlier.

- according to the type of novelty for the market, innovations are divided into new industries for the world, for the country and for the enterprise. Innovations are also subdivided according to the time they appear on the market. Leader innovations and follower innovations are possible. The latter have less risk of being at a disadvantage in the market, since the innovations of the followers are based on what was presented by the leaders before them.

They note such signs of classifications as significance, direction, place of implementation, cause of occurrence, and others.

Some scientists identify the main distinguishing features of innovation [2]:

- either a new product enters the market, or its quality improves;

- new methods of production are introduced;

- new markets are opening up where the industry has not been represented before;

- a new source of raw materials is produced and put on the market;

— changes are being made in the organization of some industry;

According to the structure, innovations are divided into three groups [3-5]:

- innovations at the “input”;
- innovations at the “output”;
- innovations as a structure of a system that includes individual elements and interconnections between them.

2. Methodology

The theoretical and methodological part of the study is represented by a thorough theoretical analysis of modern specific scientific sources, practical and theoretical innovative concepts and developments on modern and innovative technologies for ensuring economic security in the context of achieving high public administration efficiency. To achieve the goals set, basic and specific research methods were used - abstract-logical analysis, methods of analysis and synthesis. For clarity, a graphical method was used to demonstrate the key data for the study.

3. Research Results

The modern acceleration of global economic processes, the continuous integration of countries into the world community and economic relations, as well as the deepening of market relations in the domestic and foreign economies, and, most importantly, the criminalization of society, entails the emergence of various threats, in particular economic ones.

The economic security of the country is a complex and multifaceted structure. Being a part of the national security system, it is at the same time the basis for the formation of all the elements that make up its structure: military, technological, food, environmental, etc. Experience convincingly shows that only a reliable, effective system of ensuring economic security can serve as a guarantor of the sovereignty and independence of the country, its stable and sustainable socio-economic development. To date, there are three basic groups of principles of public administration of economic security (Table 1):

Table 1: The main basic groups of principles of public administration of economic security

<i>Principles</i>	
Socio-political	Democratism, participation of the population in the administrative activities of the state; equality of persons of different nationalities; equality of all before the law; legality; openness and consideration of public opinion; objectivity
Organizational principles for building the apparatus of state administration	Sectoral, multifunctional, territorial. They are the basis for determining and distributing competences between public administration bodies, thus creating a single mechanism for public administration, which should function effectively, avoiding parallelism and duplication;
Organizational principles of functioning (activity) of the public administration apparatus	Normativity of activity, unity of command, collegiality, division of managerial work, responsibility for decisions made, operational independence). This group of principles is aimed at determining the content of the activities of specific government bodies, ensuring the effectiveness of management procedures, and the effectiveness of

Along with the division of principles into groups, their classification into types is most often proposed (Table 2).

Table 2: The main classification types of principles of public administration of economic security

<i>Classification types</i>	
System-wide	objectivity of public administration; democracy of public administration; legal orderliness of public administration; legitimacy of public administration; separation of powers in public administration; publicity of public administration;
Structural-target	consistency between the goals of public administration in terms of the main parameters; complementarity of goals, in which one goal contributes to another; subordination of private, local goals to the general goals of public administration;
Structural and functional	differentiation and fixation of functions by the method of issuing legal norms and fixing managerial functions in the competence of government bodies; sufficient diversity, which requires that the management functions in relation to a particular management object in quantity and content correspond to the various management requests of the latter; compliance of managerial influence with real requirements and requests of management objects
Structural and procedural	the correspondence of elements (methods, forms, stages) of the management activities of government bodies to their functions; concretization of management activities and personal responsibility for its results; stimulation of rational and effective management activities.

Threshold levels of economic security decline can be characterized by a system of reflective indicators of general economic and socio-economic significance [6]:

- the maximum permissible level of decline in economic activity, production volumes, investment

and financing, beyond which it is impossible for the country to develop independently on a technically modern, competitive basis, preserve the democratic foundations of the social system, maintain defense, scientific and technical, innovative, investment and educational qualifications; capacity;

- the maximum permissible decline in the level and quality of life of the bulk of the population, beyond which there is a danger of uncontrolled social, labor, interethnic and other conflicts; there is a threat of loss of the most productive part of the national "human capital" and the nation as an organic part of a civilized community;

- the maximum allowable level of cost reduction for the maintenance and reproduction of natural and ecological potential, beyond which there is a danger of irretrievable destruction of elements of the natural environment, loss of vital resource sources of economic growth, as well as significant areas of residence, production and recreation, causing irreparable damage to health. current and future generations, etc.

Exploring the problems of legal support of the economic security of the state, it is necessary to dwell in more detail on the innovative component of the modern paradigm of managing economic processes. Scientific traditions, the succession of scientific schools and a large number of research centers and institutes located on the territory of the country made it possible to form a powerful elite, which is the bearer of intellectual capital, subject to proper funding, adequate state support, including through the creation of an appropriate economic and legal support, will quickly implement the necessary programs for the renewal of fixed assets and introduce modern production of high-tech highly competitive products [7].

The importance of innovations in the context of ensuring the economic security of the state is explained by the fact that it is through their introduction that it is possible to quickly solve the problems of overcoming the consequences of an economic or financial crisis. The restructuring of production relations and the reorientation of the industrial sector, as well as the transformation of the country into an exporter of innovative technologies, will significantly increase the level of competitiveness of the economy as a whole, which in turn will lead to the stabilization of national markets due to the influx of foreign capital, not only in the

form of investments. but also through export payments. However, in order for innovative relations to really become a stabilizing factor in economic development, it is necessary to develop effective mechanisms for the economic and legal support of state regulation in this area. To understand the nature of their effective implementation, it is advisable to conduct a thorough theoretical and methodological analysis[8].

When examining the nature of innovation, two key aspects should be noted [9]:

- firstly, to date, scientists, both domestic and foreign, have not come to a common point of view regarding the nature of innovation and have not developed a single scientific definition that reflects all aspects of this phenomenon;

- secondly, innovations should be considered in two planes: legal and economic, and it is the synthesis of these two components that reveals the essence and significance of innovations and innovative relations for the country's economic system.

World economic thought considers the phenomenon of innovation, linking it very closely with investment, that is, we are talking about the synthesis of two components of the economic development of an enterprise: innovation and financing for their implementation. In fact, the Western economic paradigm sees innovation as the only possible way for the development of the manufacturing sector, since otherwise qualitative transformation of economies is impossible. At the same time, a close relationship between innovation and economic security is manifested, the stability of which depends on the corresponding level of competitiveness of the economy and the trends of market processes.

The structure of modern public administration technologies in the field of economic security includes: means, methods and techniques [10].

Ways of public administration in the field of economic security are actions that allow achieving certain results in ensuring economic security. The means of public administration in the field of economic security are the instruments through which influence is exercised in public administration in the field of economic security. Techniques of public administration in the field of economic security - the

constituent elements of the forms of implementation of management methods in the field of economic security, used in a particular situation.

Currently, the scientific justification and development of approaches to the digital transformation of public administration institutions are based on a change in the fundamental understanding of the essence of the state. In the last two decades, the problems of improving the efficiency of public administration have been the most important area of research, the results of which determine the principles for the formation of new management models. First of all, this is the paradigm of new public management, which considers the state as a system of service functions, respectively, the activities of civil servants are reduced to the provision of services. And later - good governance, offering a transition from understanding management as the performance of functions to management as a network of relationships between the state and citizens: citizens participate in management decision-making, their organizations and associations are represented in the management system.

The theoretical analysis carried out allows us to identify the following key principles and main elements of the digital government architecture.

Digital government service delivery principles [11]:

- Numeric by default
 - Platform independence and orientation to mobile devices
 - User-centric service design
 - Digital from start to finish
 - Government as a platform
- Key elements of digital government [12]:
- Single portal
 - Single data for public sector sharing
 - Interagency sharing services
 - Government shared infrastructure
 - Improved sensor networks and analytics
 - Cyber security and privacy

Thus, the development of the state “as a digital platform” is one of the key elements of the concept of public administration reforms in the field of economic security, which in turn implies the several changes (Fig.1).

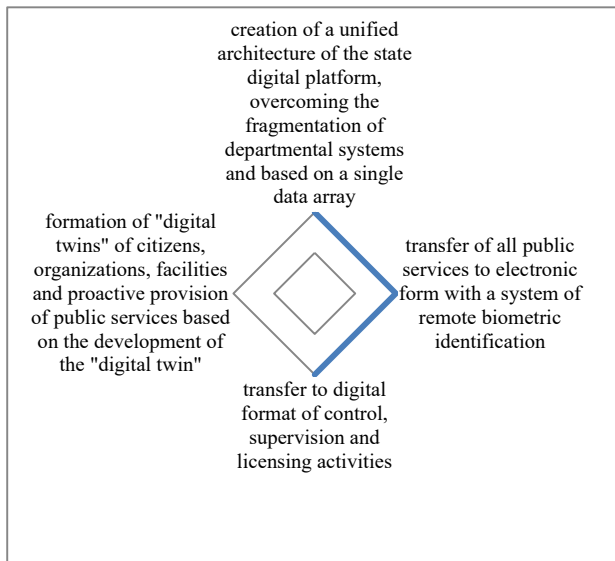


Fig. 1. Key principles of modern technologies for ensuring economic security in the context of achieving high efficiency of public administration [13]

One of the main principles for the development of digital government is a policy aimed at integrating data, information and services on one digital portal. Most digital government strategies involve creating a single government services portal that allows transactions to be made without being redirected to other government sites.

At the same time, the implementation of the model of effective interaction between state bodies in digital format on the basis of unified digital data portals is considered as one of the factors for increasing the country's competitiveness.

. For example, the *ecitizen.gov.sg* portal in Singapore is an integrated portal with search capabilities for interactive transactional services, including payment for a wide range of services and some important identity functions such as applying for passports and ID cards [14].

In general, the formation of a "digital government" requires horizontal integration and interaction of state bodies at various levels of executive power. The methodology for the formation of a digital government, in its essence, creates the prerequisites for solving national economic problems, including the tasks of strategic planning based on unified digital information platforms, which is extremely important for the Russian economy. Thus, we can talk about the formation of conditions and the possibility of transforming the "service" model of

public administration "into a model of a united government", capable of solving complex macroeconomic tasks in the context of the development of the digital economy.

4. Discussions

It should be emphasized that in the digital economy, the risks of material and moral damage from the misuse of information are sharply increasing, and data protection must be ensured, especially the protection of personal data of citizens. Experts warn of technological risks associated with the processes of standardization and dissemination of information across the country, emerging cybersecurity problems. In this regard, personal data of citizens, for example, biometric and financial data, require special regulatory and technological protection.

At the present stage, a significant barrier to the development of "digital government" is the lack of full-fledged interaction between the already created elements of the e-government infrastructure at various levels of executive authorities, which requires the modernization of state institutions as management structures. In the new conditions of the active formation of the electronic information environment, it is necessary to reform institutional forms and introduce appropriate mechanisms and management tools (process, project, contract) to implement the set strategic tasks [15].

New risks and threats arising from the transition to new management mechanisms based on the widespread introduction of modern digital technologies require fundamental comprehensive research aimed at identifying and developing emerging risks, and developing mechanisms for their hedging. With a high degree of certainty, it can be argued that the transition to a digital economy introduces fundamental changes in the sphere of public administration and the system of relations between the state, society and business.

5. Conclusions

So, from the above study, we can conclude that the main components of the mechanism of state management of ensuring economic security have a multi-level, complex and hierarchical structure, which, in turn, ensures the economic security of the country at the proper level, that is, it allows to

achieve efficiency in all important sectors of the economy, thereby increasing the well-being of the population. All elements of the public administration mechanism are a system of means through which effective management is ensured in the economic, political, social and other systems.

Modern public administration institutions are being transformed following the changing world. In 2017, the digital revolution on a global scale overcame a significant milestone - every second inhabitant of the Earth was connected to the Internet. Governments around the world are feeling double pressure. On the one hand, the demands of citizens for the quality of services are constantly growing, and they want to interact with government agencies via the Internet in the same way as with banks and online stores. On the other hand, governments need to reduce administrative costs and improve the efficiency of their programs.

Digitalization today is a mechanism for solving such problems. The creation of a modern digital system of public administration will allow online tracking of emerging problems and participating in their solution. In most economies of the countries of the world, digital approaches and technologies in the field of public administration are at the stage of active development and understanding of the first practical experience of application.

The study allows us to conclude that the organization of unified digital information platforms, the use of end-to-end digital technologies creates the conditions for achieving a new quality of public administration based on horizontal integration and effective interaction between state authorities. In general, the development of digital technologies creates the basic prerequisites for the transition from the "service management" model to the "unified government" model, which is more in line with the global challenges and risks of the development of the Russian economy.

In this regard, the strategic goal of the digital transformation of public administration institutions should be not only the fragmented introduction of technologies for improving the activities of public administration institutions (which is undoubtedly important), but also improving the quality of public administration for the effective implementation of national projects (programs) that ensure sustainable growth and competitiveness of the country's economy.

References

- [1] Maslennikova, Y., Brom, A. 2020 Methodology of Quantitative and Qualitative Evaluation of an Industrial Enterprise Digital Potential on the Example of Evaluation of the "Personnel Resources" Component. IOP Conference Series: Earth and Environmental Science, 6 October 666(6), n. 062100. <https://doi.org/10.1088/17551315/666/6/062100/pdf>.
- [2] Khanin, S., Arefieva, O., Dergaliuk, M., Popelo, O., Tulchynska, S. 2021 Concepts of the activation of intellectual and innovative determinants for the development intensification of regional economic systems introduction. *Laplace em Revista (International)*, v. 7, n.Extra E, p. 234-244. <https://laplageemrevista.editorialaar.com/index.php/lpg1/article/view/1180/1075>
- [3] Sylkin, O., Kryshchanovych, M., Bekh, Y., & Riabeka, O. 2020. Methodology of forming model for assessing the level financial security . *Management Theory and Studies for Rural Business and Infrastructure Development*, 42(3), 391–398. <https://doi.org/10.15544/mts.2020.39>
- [4] Kryshchanovych, M., Oliinyk, N., Skliaruk, T., Voityk, O., & Doronina, I. 2021. Problems of shaping the business environment in countries with economies in transition: aspects of anti-corruption. *Management Theory and Studies for Rural Business and Infrastructure Development*, 43(2), 316–327. Retrieved from <https://ejournals.vdu.lt/index.php/mtsrbid/article/view/2332>
- [5] Myroslav Kryshchanovych, Liudmyla Antonova, Borys Pohrishchuk, Yulia Mironova, Roman Storozhev. 2021. Information System of Anti-Crisis Management in the Context of Ensuring National Security. *IJCSNS International Journal of Computer Science and Network Security*, VOL.21 No.12, pp. 719-725 December 2021. <https://doi.org/10.22937/IJCSNS.2021.21.12.98>
- [6] Goncharenko L.P., & Sybachin S.A. 2019. Digitalization of national economy. *Vestnik Universiteta*, 8, pp. 32-38. <https://doi.org/10.26425/1816-4277-2019-8-32-38>

- [8] Fettig, K., Gačić, T., Köskal, A., Kühn, A., & Stuber, F. 2018. Impact of Industry 4.0 on organizational structures. In 2018 IEEE International Conference on Engineering, Technology and Innovation (ICE/ITMC) (pp. 1–8). <https://doi.org/10.1109/ICE.2018.8436284>
- [9] Kryshchanovych, M., Kryshchanovych, S., Stechkevych, O., Ivanytska, O., & Huzii, I. 2020. Prospects for the Development of Inclusive Education using Scientific and Mentoring Methods under the Conditions of Post-Pandemic Society. *Postmodern Openings*, 11(2), 73-88. <https://doi.org/10.18662/po/11.2/160>
- [10] Inglehart, R., & Welzel, C. 2009. How Development Leads to Democracy: What We Know About Modernization. *Foreign Affairs*, 88(2), 33–48. <http://www.jstor.org/stable/20699492>
- [11] Sun, P., Vorona-Slivinskaya, L., & Voskresenskaya, E. 2017. Improvement of economic security management system of municipalities with account of transportation system development: methods of assessment. *IOP Conference Series: Earth and Environmental Science*, 90, 012073. <https://doi.org/10.1088/1755-1315/90/1/012073>
- [12] Naqshbandi, M., & Garib Singh, S. 2015. Effectiveness of innovation protection mechanisms in Malaysian high-tech sector. *Management Research Review*, 38. 952-969. <https://doi.org/10.1108/MRR-01-2014-0002>
- [13] Fairbanks, J., et al. 2007. “Transparency in Government Communication”, *Journal of Public Affairs*, 7(1), 22–37.
- [14] Zachosova, N. 2019. Innovative approach in the estimatology of financial institutions economic security: possibilities of use in management and regulatory activity within the means of provision of the state financial security. *Baltic Journal of Economic Studies*, 5, 45. <https://doi.org/10.30525/2256-0742/2019-5-2-45-56>
- [15] Hood, C. 2002. “Control, Bargains, and Cheating: The Politics of Public Service Reform”, *Journal of Public Administration Research and Theory*, Vol. 12, No. 3, 309–332