

## The Effect of the Digital Economy on the Formation of the State Control System

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### Abstract

*The article is devoted to assessing the impact of the digital economy on the formation of the state control system. Russia is on the path of creating e-government, through launching the necessary relevant services. Launching the open data portal has improved the country's position in prestigious international rankings. It is proved that special attention should be paid to software manufacturers, who should receive benefits when developing these systems. It is revealed that the existing problem of analyzing the performance effectiveness of the regional institutions' network and corporations, as well as the spending of the allocated budget funds, can be solved by creating a coordinating body at the highest level.*

**Keywords:** Automation, Technology, Analysis, Effectiveness, Optimization, Business.

### 1. Introduction

Currently, in the context of the focus of the state policy on strengthening the growth rates of digital economies, and the development of digital technologies in various economy sectors, the issue of implementing these technologies in the field of state control is being raised. At the same time, the digitalization of state control is very important for the country's breakthrough development. It contributes to the optimization and effective implementation of the state's interaction not only with citizens in terms of providing public services and ensuring transparency in the activities of state bodies but also with the business by reducing the administrative burden on business.

Besides, digitalization is a form of information management, and its characteristic feature is the involvement of various actors in innovation activities. Digitization provides for the development of the digital environment of the state, namely, creating necessary information infrastructure and digital technologies based on developments of the Russian Federation, providing appropriate regulation and adequate level of information security, training of specialists in the field of information, and implementation of digital technologies in the state control.

Particularly important attention should be paid exactly to the development of digital technologies, which will help to develop the digital environment of state control. This concerns end-to-end technologies, such as big data, neurotechnology, artificial intelligence, and the distributed ledger system. Therefore, the issue of state financial control as a functional element of public administration becomes particularly important in the context of the digitalization of the country's economy.

The issues of developing the state control system were considered in detail in the works of E.A. Barmina (2019), T.A. Vartanyants (2019), N.A. Gadzhieva (2020), I.N. Maslak (2020), L.I. Pronyaeva (2019), V.A. Yudin (2020), et al. At the same time, scientific publications do not fully disclose the impact of the digital economy on the formation of the state control system, and the essence of innovative changes occurring in the digital environment.

## **2. Methods**

The theoretical and methodological basis of the research includes an abstract-logical method, methods of induction, deduction, analysis, synthesis, and systematization, used to justify approaches to the development of state control in the digital economy, as well as graphic method, employed to study the level and trends in the state control parameters.

The information base of the article includes the data of state bodies, legislative and regulatory documents governing state control in the digital economy, as well as the results of scientific studies (Kosevich et al.: 2018; Shelygov et al.: 2019; Zavalko et al.: 2017).

In the course of the research, it is planned to systematize the state financial control aspects, develop measures for coordinating activities among the main participants of public administration, and justify the development paths of innovative activities in state administration.

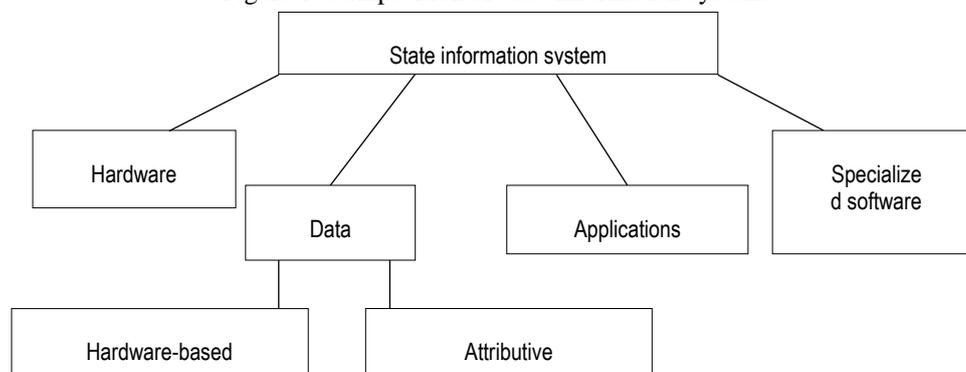
## **3. Results**

Practice shows that digitalization minimizes face-to-face interaction between the controller and the person under auditing within the framework of control activities by authorized state authorities, that is, it simplifies the control activities of the state, as well as increases its efficiency

and responsiveness. In this case, the Federal Treasury of the Russian Federation, as an internal control body performs control functions in the financial and budgetary sphere, as well as controls operations of state financial control objects using budget funds.

This agency can get permanent access to state information systems to exercise its powers in the field of internal state financial control. Implementation of this authority will allow broadening the use of state information systems (Fig. 1).

Figure 1. Composition of state information systems



However, with the increasing pace of digitalization of the economy, and based on data from information systems, it is possible to move to a new paradigm of control, i.e. from a competitive model, which is marked by greater significance of checks and less importance of monitoring, to a partner model, where monitoring becomes the basis of control activities, while checks are minimized.

The main principle of this model is implementing the precautionary and operational nature of activities to ensure maximum efficiency of using budget funds. In this case, due to contemporary technical capabilities for embedding control tools in information systems, control bodies become part of business processes, where every step of the objects of verification, as well as officials authorized to perform any financial transactions, is immediately checked at the time of the transaction and, thus, the objects of verification are warned about the possible occurrence of the risk. If the violation cannot be prevented, which is a negative point in the risk-based approach, then the appropriate sanctions are applied to the objects of verification in an automated mode, and the same mode is used for the informatization of verification subjects.

Besides, with the development of digital technologies and the ever-increasing amount of data on the objects of verification, as well as data on their activities, which are contained in information systems, various ways to collect and analyze this information are developed. In other words, one can already talk about digital profiles of objects of verification, which allows quickly identifying violations and reducing the number of checks at times by monitoring the activities of monitored

objects. In addition to the digital profile of the object of verification, the digital profile of the very controller-auditor has been implemented, which contains complete information about the results of the control activities.

Therefore, at this development stage of the state financial control, the controller helps the object of verification to improve both its activities and its results. Currently, measures, such as punishing executed violations and preventing violations are being implemented. At that, all measures are related to violations. A higher form of assistance to the object of verification is to help to achieve its targets, i.e. to help the object of verification to be effective.

Due to digitalization and the fact that a digital double of the object of verification is now implemented, it is possible to build ratings that show the current state of the analyzed objects. In this case, the rating system must show to the object of verification its rank, as well as the elements, which need to be worked on. These ratings are constantly available to managers of the objects of verification and provide them an opportunity to improve their activities.

The experience of implementing platform-based solutions in the field of internal state financial control of the Main Control Department of the city of Moscow is quite interesting. The framework of the platform-based solution integrates information systems, such as "Moscow portal of suppliers", "Unified automated trading information system", "Information-analytical system for monitoring the integrated development of the city of Moscow", "Automated resource consumption accounting system", and "Automating public financial management systems".

Besides, to achieve efficiency in terms of the eventual outcome and expenditure of funds, these systems are linked to each other through their initial construction in a single architecture with common requirements for the rapid integration of these systems to exchange information between them, and with the corresponding control blocks that permanently monitor bottlenecks in various areas.

For example, the purchasing system of the city of Moscow, where various systems are linked which allow creating an order from the beginning of planning, when the departmental system of the city industry needs a certain purchase, by forming an application by a particular specialist. This purchasing order is automatically included in the purchasing system, where standard pre-prepared documentation is automatically linked to the order according to a certain logic, and places bid.

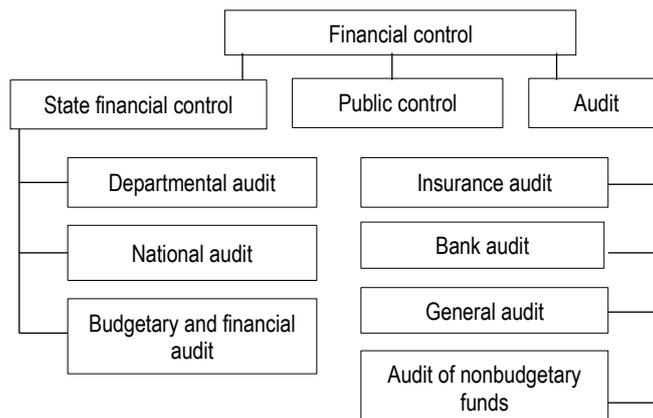
Since this system is connected with accounting, it is constantly monitored by certain control points, such as timing, price, and evaluation of the result in terms of implementation of state programs. The procurement process is simplified multiple times, minimizing human factor, which

allows reducing the number of various violations, labor costs, and speeds up the operation of the authorities.

At the same time, during the operation of the platform, certain problematic issues were identified in the organization of control activities, namely, departmental disunity. It concerns created information systems that are located within the department in a closed format and according to their own rules and criteria that do not allow for proper interaction with other information systems. At that, the information systems are disconnected, written in different program languages, and designed on different platforms. This makes it impossible to organize a single platform and combine information, which calls into question the usefulness of such information systems for interdepartmental interaction and improving the effectiveness of control activities.

Also, customers and services that build an information system do not pay due attention to the integration of control tools within the functioning framework of this system. In other words, the controller must take part in the formation of the information system and embed the corresponding control points. These problems can be solved by introducing common standards or techniques for building information systems to bring them to a single architecture. Besides, the financial control system continues developing towards state financial control, public control, and audit (Fig. 2).

Figure 2. Financial control system



In this case, there are various digital technologies used by the control authorities in the implementation of control activities in the financial and budgetary sphere. The solution to existing problematic issues will improve the efficiency and error-free functioning of both existing and future information systems.

Research has shown that the digitalization of production and communications was the most significant consequence of the transition to a post-industrial society, which led to the emergence and development of a digital economy characterized by global coverage. It is worth noting that the

purposeful actions of the main world powers have largely prepared the ground for its formation. The main work streams of the authorities' on the way to the information society were formed. These included economic and social reforms aimed at creating the most favorable conditions for the use of information technologies in all spheres of life.

The measures taken resulted in a sharp reduction in the cost of broadband technologies, the spread of desktop computers and mobile devices, which provided access to the Internet for most of humanity. As a result, even the population of poor African countries is now able to use the global network resources through cheap mobile devices although at the same time cannot eat a whole food diet and provide basic life needs.

To date, the developed digital economy represents a multicomponent digital eco-environment that operates based on a high-quality digital infrastructure that meets the needs of consumers, businesses, and the state, as well as their interaction with each other. In this case, the growth of e-Commerce turnover, the increase in the amount of cryptocurrencies, digital medicine, and much more are the defining parameters and components of the digital economy.

However, the transformation of the world economy under the influence of digital processes actualizes the tasks of changing the traditional mechanisms of state control over the new realities of the digital environment. After all, the digital eco-environment is a trigger for constant changes in the formats of the functioning of complex socio-economic systems, which have traditionally been objects of state control. Therefore, the development of digital technologies and the new opportunities that they provide to the business, lead to an increase in the variety of forms of management objects, and their constant change.

This creates new challenges for management systems since one of the fundamental cybernetic principles is the requirement for the subject of management to have the same adaptability and diversity of functioning as the controlled object. In this case, the increase in information flow and the quantity and quality of ways to analyze it are the main drivers of the transformation of management mechanisms and forecasting models in business structures.

However, big data analytics can significantly increase the efficiency of management in commercial structures and allow them to reduce production costs. Besides, access to large amounts of data gives great advantages to businesses around the world in terms of predicting consumer behavior. Therefore, the ability to create a digital portrait of any person and the formation of open data databases on this basis significantly increase the resources of private capital.

Besides, new algorithms for working with geodatabases have created the potential to combine spatial geographical and weather data with business analytics, which also gives advantages to various corporations in terms of forecasting demand for a particular product under different weather and geographical conditions. Also, the growth of companies' profits due to the use of new processing algorithms for big data will strengthen the already strong lobbying positions of private capital, while new managerial methods based on the synthesis of classical and network schemes will optimize management processes.

One consequence of such strengthening of the commercial sector in the digital environment is the formation of imbalances in the functioning of established hierarchical models of public administration, which entails additional risks from the standpoint of sustainable economic development and national security. At the same time, the use of information technology by the commercial sector creates the potential for decentralization in state-managed socio-economic systems, especially given the often insufficient infrastructure development in the regions.

This situation is characteristic for all states, regardless of their development level. However, the analysis of digital economy development strategies adopted in different countries suggests that the vast majority of advanced countries that pay attention to the development of this industry focus their efforts on creating favorable conditions for doing business and supporting digital infrastructure, strengthening the concept of e-government, providing public services to the population in digital form, and maintaining large open databases.

In other words, the digital environment increases the advantages of the private sector over the state sector. In this case, the digital economy sector is becoming a new field in which state control is giving way to business priorities. Besides, the emergence and development of breakthrough digital technologies, including information processing, increase the speed of business response to various scenarios, which exacerbates the uncertainty factor when managing complex socio-economic systems.

However, in the context of increasing information flows, incomplete observability of processes occurring in complex economic systems is not a problem for large corporations, given the presence of regional networks of information centers. This becomes a negative factor in terms of forecasting and strategic decision-making by traditional state hierarchical structures. At the same time, this situation does not develop everywhere. Along with the task of creating a favorable investment climate, many states use new digital technologies to strengthen their control over political and economic processes both in their territory and in other countries.

#### **4. Discussion**

The reliability of the presented approaches is confirmed by the fact that digital algorithms enable public authorities to use big data analytics to predict socio-economic phenomena and respond to it properly. Using digital algorithms can be considered the result of employing big data analytics by state authorities in terms of improving the quality of control over socio-economic processes (Lebedev et al.: 2018; Nikolskaya et al.: 2018; Shishanova et al.: 2020).

The use of big data analytics makes it possible to forecast interest rate fluctuations, build various models for maintaining an acceptable level of return on capital, assets, and investments in the managed funds, as well as predict future cash flows. However, special attention should be paid to the development of software and analytical systems that need to be installed in federal authorities that will allow conducting rapid analysis and making the necessary strategic decisions.

At the same time, in a digital environment, a state with strong central power will get new tools to control the processes that take place within the complex socio-economic systems under management. This will help to strengthen national sovereignty. In this case, the digital environment provides great opportunities for the progressive development of the economy, contributes to the emergence of new growth points, and increases the effectiveness of state control.

However, in the new conditions, geopolitical contradictions among the leading states are becoming one of the main risks in terms of ensuring national security issues. The digital environment is perceived by these states as a new and main field of struggle against the main geopolitical opponents. Therefore, the latest technologies, primarily in the form of algorithms for processing big data and working with large amounts of information in general, are at the forefront of countries' search for new mechanisms of geopolitical influence on their opponents.

#### **5. Conclusion**

Summing up, it can be noted that Russia is on the path of creating e-government through launching the necessary relevant services. Thus, launching the open data portal of the Russian Federation has improved the country's position in prestigious international rankings. Further efforts in this direction can be stepped up by more active development and implementation of national decision support systems. Special attention should be paid to Russian software manufacturers, who should receive benefits when developing these systems.

This would increase the efficiency of managing complex socio-economic systems on the part of existing and planned coordinating bodies at the state level, which would involve the created

automated control systems. Intensifying relevant work with the regions of the Russian Federation, including issues of Internet development seems to be quite important. At the same time, the existing problem of analyzing the effectiveness of the network of regional institutions and development corporations, as well as the expenditure of allocated budget funds, can be solved by creating a coordinating body at the highest level, which could quickly analyze information by launching an appropriate automated information support network. Such a system would allow not only increasing the effectiveness of control over the regional development institutions network but also carrying out operational monitoring of socio-economic activity in the regions.

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