

# Digital technologies in management tasks

*Marina Belyaeva*<sup>1\*</sup>, *Elena Chernikova*<sup>1</sup>, *Alexey Popov*<sup>1</sup>, and *Sergey Nikitchuk*<sup>2</sup>

<sup>1</sup>Plekhanov Russian University of Economics, 36, Stremyanny Lane, 117997 Moscow, Russia

<sup>2</sup>Associate Partner LLC B1-IT, 77, Sadovnicheskaya embankment, 115035 Moscow, Russia

**Abstract.** In the context of the digital revolution, all management processes are subject to reforms and optimisation. The public sector, in terms of making managerial decisions at the state head level, as well as federal executive authorities, also forms plans for digital transformation. However, initiating the optimization process in the public sector does not immediately lead to an effective transition to new realities. There are problems slowing down managerial decision-making in the field of digital transformation of the public sector, which affects the effectiveness of achieving strategic planning goals in the state, including in the long term.

## 1 Introduction

Public administration is a multifactorial cyclical process that is influenced by political, socio-economic and cultural conditions. At the same time, to date, all these factors correlate with technological progress in parallel or linear dependence. Today, the technological process is the fourth technological order in digitalization and digital transformation in all spheres of industry, education, economics and management. Digitalization is the process of introducing digital technologies into the daily life of society in various fields of activity. Digital transformation is the reorganization or reengineering of business processes with the introduction of digital technologies with the improvement of their indicators, as well as giving rise to fundamentally new characteristics and properties. The introduction of digital technologies and digital transformation have determined their place in the issues and tasks of public administration and in the public sector [1].

Digitalization has become a new trend in the global economy. In Russia, there have recently been significant advances in many areas of digitalization: the IT technology sector, retail, financial institutions and social networks (the level of digitalization is 70-80%); branches of the real sector of the economy (industry, agriculture).

The system of public administration is understood as an information system with a wide network of databases and communication lines that ensure the reception and transmission of information to public authorities. For public administration, it is necessary to form an effective information system.

The national development goal of the Russian Federation is digital transformation, in more detail – the achievement of "digital maturity" of the main sectors of the economy and social sphere, including health and education and public administration [2-4, 8]. In the Russian Federation, at the federal level, in the field of strategic planning, the processes of

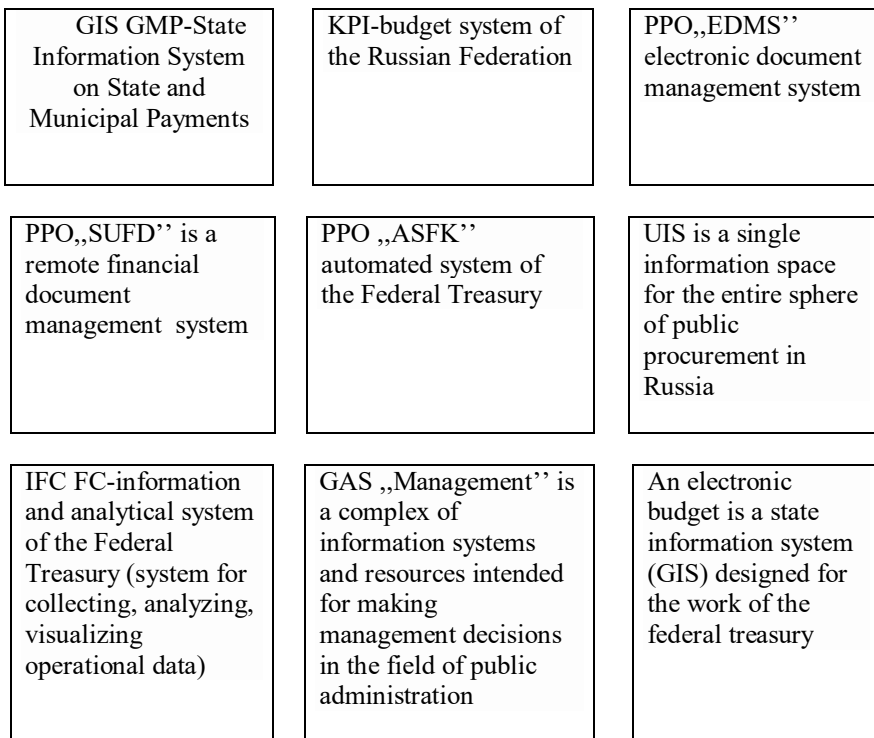
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\* Corresponding author: [Belyaeva.MA@rea.ru](mailto:Belyaeva.MA@rea.ru)

digital transformation and the development of public management of strategic planning are coordinated. The introduction of digital technologies in the public sector and in public administration processes is a long and complex story, compared to the corporate sector. The public services sector and public administration has a multifaceted, complex and powerful hierarchical structure, the interaction between its constituent enterprises and organizations, between organizations and citizens of the Russian Federation is regulated by regulatory documents.

To date, the following information and analytical systems have been introduced into public administration, which contribute to the intensification of the processes of information exchange between government agencies and citizens.

The main information systems of the Russian Federation are presented in Figure 1 [1]



**Fig. 1.** Information systems of the Russian Federation

In public administration, information technology is a periodic process for providing information to management entities, based on technology and software, which determines the effectiveness of management decision-making.

## 2 Materials and method

Benchmarking, bottleneck identification and recommendations

## 3 Results and discussion

Therefore, the introduction of information technologies in the public sector at various levels requires synchronization of their development, implementation and use in all organizations

of the system, a high level of provision, both technological and legal, in order to maintain the stability of the functioning of public administration, as well as to ensure the national security of the country in those areas where the processes of introducing advanced technologies occur with greater intensity. Academician V. Glushkov made a great contribution to the development of public administration and the prerequisites for its digitalization.

For the first time in the world, V. Glushkov developed a holistic project of the digital state and the digital economy of OGAS - the project of the National Automated System for Collecting and Processing Information for Accounting, Planning and Management of the National Economy of the USSR. V. Glushkov is the main ideologist and one of the main creators of the industry of automated control systems in the USSR, under his scientific leadership a number of large automated control systems of enterprises and large industry automated control systems were created, such as the automated control system of the Ministry of Instrument Engineering, the automated control system of the Ministry of Defense Industry, other automated control systems of nine defense ministries, the Republican automated control system in the Ukrainian SSR, the automated control system "Moscow", the automated control system "Olympiad-1980" and other systems. He was the scientific director of the interdepartmental committee and the Board of Directors of the leading institutes of the defense industries for management, economics and informatics.

V. Glushkov was the Chairman of the Scientific Council on Computer Engineering and Control Systems of the State Committee of the Council of Ministers of the USSR for Science and Technology. V. Glushkov developed artificial intelligence systems such as "eye-hand", "reading machine", "self-organizing system", decision support systems, automation systems for mathematical proofs. In 2021, in strategic planning documents, both at the federal and regional levels, it was digital transformation that began to stand out as a separate direction, and often as a separate strategy [5].

For a deep understanding of the key issues of managing the digital transformation of the public sector, key documents of strategic planning at the federal level and their individual elements are analyzed: for example, the strategic direction in the field of digital transformation of the public sector, the state program of the Russian Federation "Information Society", key expenditures of the federal budget of the Russian Federation aimed at the digital transformation of the state Sector. The State Program under consideration is a key mechanism for the development of digital public administration in the country.

In October 2021, the Government of the Russian Federation approved the Strategic Direction in the Field of Digital Transformation of Public Administration (hereinafter referred to as the Strategic Direction), which indicates the official transition of the Russian Federation to the next stage after digitalization - digital transformation.

Thus, the key areas of digital transformation of public administration at present are the creation (hereinafter referred to as the Directions): unified automated systems for collecting, processing and analyzing data (sectors of the economy and the social sphere), unified platforms for performing functions for state and municipal control (including the implementation and achievement of strategic state tasks and goals, an automated budget process) and the development of state information systems; a unified system for the provision of state and municipal services; a typical automated workplace of a civil servant based on "cloud" technologies.

At the same time, each of these areas is a promising project defined by the Strategic Direction. At the same time, the state program (in particular, the direction "Information State"), as a tool for implementing the strategic directions of the digital transformation of the public sector, and the document, which is a budget obligation, defines key objects and key activities more substantively narrowly.

Within the framework of the state program, federal budget funds are allocated for the development of mechanisms (information systems, services and mechanisms of electronic interaction) for the provision of state (municipal) and other services, including interdepartmental interaction of authorities at various levels (federal, regional and municipal). An important area is to ensure transparency, efficiency and a high level of quality of services provided in the digital circuit, to increase the reliability and protection of state information systems and services, as well as to ensure the availability and development of information and telecommunication technologies (including "end-to-end" technologies), including those aimed at managing data used by digital infrastructure platforms.

The issues of managing the digital transformation of the public sector in the first, most general approximation can be reflected in the framework of the execution of federal budget expenditures specifically on the "Information State" direction of the state program. In 2018, the main share of expenses was activities aimed at the creation, development and operation of the state system of migration and registration accounting, as well as the production, execution and control of the circulation of identity documents, the preservation, creation and implementation of modern information technologies in the field of public administration and the development and operation of e-government.

At the same time, since 2019, the share of expenditures has shifted, concentrating on the implementation of the federal projects "Digital State", "Digital Technologies" and "Information Infrastructure". Based on federal budget expenditures, it should be noted that the main focus is directly on the infrastructure and technological component. Thus, the federal project "Information Infrastructures" is aimed at ensuring the operation of the state unified cloud platform (with the connection of various departments to it), connecting access to information systems and the Internet to a single data transmission network (in relation to various socially significant objects) and ensuring the functioning of the Russian segment on the Internet (RSNet).

Separately, it is noted that within the framework of this federal project, special attention is paid to the informatization of individual departments: work is underway to form and develop situational centers of the highest state authorities of the Russian Federation and the Ministry of Digital Development of Russia, as well as the creation of digital work of the Ministry of Defense of Russia, the creation of a secure environment for audiovisual interaction between state bodies. On the other hand, within the framework of the federal project "Digital Technologies", the development of promising high-tech areas (quantum communication networks, 5G-IMT-2020 communication networks), support for domestic manufacturers of information technologies (by providing grants to various companies, projects (start-ups), generating demand through the publication and establishment of guidelines for the digital transformation of various sectors of the economy, government orders, subsidies).

The above tasks are to ensure the functioning of unified platforms for the performance of state and municipal control functions and a unified system for the provision of state and municipal services. Thus, one of the key tools of public administration is the instrument of the state program. The key indicators for assessing the effectiveness of this tool are cash execution and the implementation of the indicators established by this tool.

Financing of activities within the framework of the state program is determined annually for a three-year cycle within the framework of the Federal Law on the Federal Budget for the current year and for the planning period of the next two years. At the same time, certain articles of the Budget Code make it possible to adjust the consolidated budget list, thereby changing the total amount of funding for the areas of activity determined by the state program during the current year.

At the same time, funds were allocated for contributions to the authorized capital of RUSNANO JSC, State Transport Leasing Company JSC, which were previously not provided for by federal law; selection and support of leading companies (development, application and commercialization of "end-to-end" technologies) and programs of activities of leading research centers (development and implementation of roadmaps for the development of "end-to-end" technologies), grant and state support for projects of legal entities for the development and implementation of digital platforms and "end-to-end technologies".

Similarly, in 2020, expenses were reallocated from the development and approval of roadmaps for the development of "end-to-end" technologies, the selection and monitoring of the implementation of digital transformation projects in industries and regions, the promotion of domestic ICT and solutions, digital platforms in foreign markets and state support for leading companies (development of products, services and platform solutions based on "end-to-end" technologies) and programs of activities of leading companies (development and implementation roadmaps for the development of "end-to-end" technologies).

At the same time, funds were allocated for the creation of the state system "Registers of programs for electronic computers and databases", the implementation of the "quantum computing" roadmap, a contribution to the authorized capital of RVC, the selection and support of leading research centers (development and implementation of roadmaps for the development of "end-to-end" technologies). One of the transformations of governance in the public sector is the creation of e-government – the use by the state of technologies, in particular web applications on the Internet, to improve access to and provision of government information and services to citizens, government officials, government agencies and other actors. E-government has largely borrowed management approaches that originated in the private sector.

The history of the creation of e-government also has a long history and the prerequisites for its creation. The Federal Target Program "Electronic Government" was developed to improve the concept of e-government. Citizens gradually adopted a new form of interaction with the government. This concept is related to the national program "Digital Economy of the Russian Federation for 2018-2024", which pays great attention to the introduction of digital technologies in the economic and social spheres.

However, despite all the prerequisites, goals and strategies, there are a number of problems. First, it is a lack of trust in state governance institutions. Due to the lack of accountability and civilian control over public administration and this is seen as the cause of inefficient bureaucracy. Thanks to digitalization, it is expected to reduce corruption and the administrative burden on civil servants.

The concept is related to the program "Digital Economy of the Russian Federation for 2018-2024", which focuses on the wider introduction of digital technologies in the economic and social spheres. Another problem is the lack of reliable data and inefficient, slow data collection processes, forcing the state to respond less efficiently and slowly to various problems and appeals of citizens. The authorities are presented as intermediaries between citizens and their data, which hinder the efficiency and speed of the provision of public services.

These e-government developments are aimed at achieving several goals. The first objective is to increase efficiency and reduce the cost of public administration. In the field of e-services, e-government has had a positive impact on the interaction between citizens and the state. The e-government project also had a pronounced political and economic aspect, since one of the goals was to ensure the country's competitiveness at the international level and created attractive places for both living and doing business.

The analysis and review of two decades of digitalization of the public sector in Russia is carried out within the framework of three successive federal programs, concepts and reveals the authentic style of such reforms. Speaking about the introduction of e-government at the regional level, the reform was also considered. The introduction of e-government in Russia is characterized by a significant level of centralization and directive management of reforms. A top-down approach was built into the structure of the reform itself. The ideas came from the federal center and were later adopted by the regions.

However, the regions were given two options for the transition to e-government: to implement the proposed solutions or to develop their own. This decision led to the emergence of two separate e-government platforms – federal and regional. The transition to a model has also revealed the shortcomings of the technological approach, as the emphasis is on functional change and policy change, rather than on structural transformation.

The article shows the digital transformation in the public sector of the Russian Federation, the creation of e-government. An analysis of the introduction of digital technologies in the public administration of the Russian Federation was carried out. Despite the fact that much has been done to digitalize the public sector and to improve the lives of citizens, there are a number of problems that public administration faces to this day, issues that need to be adjusted reforms and prevent these problems. The article shows the digital transformation in the public sector of the Russian Federation, the creation of e-government. An analysis of the introduction of digital technologies in the public administration of the Russian Federation was carried out. Despite the fact that much has been done to digitalize the public sector and to improve the lives of citizens, there are a number of problems that public administration faces to this day, issues that need to be adjusted reforms and prevent these problems.

Basic information technologies used in public administration.

1. Big Data – structuring large amounts of diverse data, cleaning data for their further analysis, for example, identifies factors that affect others, helps to predict situations, identify the causes of such a situation and make decisions. This technology is promising in the following management processes: internal communications (e-mail, manager's schedule), as it helps to rationally organize the workflow, working hours; clustering in the distribution of subjects into certain categories; processing of statistical data, for example, on different objects and subjects of the Russian Federation, to identify problem areas and ways to solve them.

2. State portals are information systems that provide public services in electronic form. The main state portals, the work of which is established on the territory of the Russian Federation

3. Cloud technologies – the ability to use corporate programs of the organization from anywhere. This allows employees to access documentation on cloud storage and corporate services using any technical device. The pandemic has accelerated the implementation of these processes and confirmed the readiness to use cloud technologies. The state bodies were faced with the task of switching to electronic document management, especially since the right and possibility of transition is determined by law. The main difficulty was in the registration of electronic signatures, as a huge number of violations in their issuance were revealed. Currently, electronic document management in government is widely used in public authorities. It is worth noting that the remote format of work of civil servants is successful, which implies new digital changes [7- 13].

Improvement of the public administration system can also be carried out with the help of transformations in the information technology sphere. Attention should be paid to the introduction of information technologies, which are based on artificial intelligence, which

can replace specialists who use electronic computers to process information flows. Thus, the process of processing information will proceed much faster, which means that the state's response to a social request will be provided as soon as possible. It is also possible to robotize the government in order to eliminate the human factor, thereby corruption and other problems of managers. However, the author adheres to the point of view that people should not allow artificial intelligence to occupy a central place in public administration. Thus, the key functions of the state and the system of state and municipal administration, according to the authors, should be thought out and accepted by a person. The use of modern digital technologies in this process should remain only a tool that simplifies the process of analyzing big data and in other ways accelerates the process of making informed and optimal management decisions [13-14].

## 4 Conclusions

Thus, in order to improve digital transformation in public administration, it is necessary to determine a range of more specific tasks, indicators and results within the framework of the State Program in accordance with certain Directions, unify the goals of all strategic planning documents in the field of digitalization and digital transformation of the public sector, as well as increase control over the distribution and execution of federal budget funds to intensify problem solving management and faster implementation. The use of information technology has a positive impact on public administration. The development of state information technologies contributes to the fact that public services in electronic form allow citizens to quickly obtain the necessary information. In addition, technologies such as Big Data, cloud technologies, and government portals are widely used in public administration.

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