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Digital Trends in Strategic Management and Existing IT-Risks

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ABSTRACT

The aim of the study is to examine the existing problems of strategic planning and management in the context of digital transformation. The authors reviewed the theoretical and legal foundations of strategic management, described the approach to management based on big data, considered the main digital trends, and justified the need for digital development of public administration. Much attention is paid to the issues of information security, taking into account geopolitical realities and the need to manage IT risks in the context of current changes. The methods of research include the content analysis of regulatory legal acts, comparative analysis and synthesis of the information obtained. The practical significance of the results lies in the theoretical justification of the need for state regulation of strategic development in order to minimize IT risks in the context of digital technological change, as well as the growing influence of digital technology.

Keywords: digital transformation; digital economy; digital public administration; strategic development; big data technology; platform approach to management; data-based management; information security; IT risk management

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INTRODUCTION

Modern economic and social realities force the state to react flexibly to various types of changes, as well as to actively use innovative methods, introducing them into the process of state and municipal administration. The value and significance of digital technologies and the approach to management through the analysis of big data (Big Data) lies in the possibility to perform predictive analytics.

State strategic management is a complex concept that covers and affects all spheres of public life in the long term.

According to the results of the authors' content analysis of the legal framework, the term "strategic management" is found only in the Federal Law of 28.06.2014 No. 172-FL "On Strategic Planning in the Russian Federation".[1] However, it is not conceptually disclosed. Contextually, strategic management can be defined as a set of measures aimed at achieving the strategic goal of development and consists of goal — setting, planning, and forecasting, as well as the implementation of measures aimed at solving the set tasks and their monitoring.

In Russia today various instruments of strategic management are being implemented, but, as a rule, they all relate to the normative process: national projects, concepts of long-term socio-economic development, forecasts and strategies, targeted integrated programmes.

PECULIARITIES OF THE REGULATORY FRAMEWORK

One of the most significant legislative limitations is the absence in any regulatory legal act (RLA) of the Russian legislation of a legal enshrinement not only of the term "strategic management", but also of the main provisions disclosing this concept, as well as of the methodology for the introduction and implementation of this type of public administration and criteria for assessing the activities carried out. Since only "strategic planning" is present in the legal field, the procedure of rulemaking is relatively well established, while the process of direct implementation of strategic management is not regulated. Such problems can also include insufficient consideration of the existing disparities in socio-economic development of the regions (and limited attention to them), which affects the quality of implementation of the federal strategy, since at the initial stage the regions' situations are different, and it is difficult to build a unified and, most importantly, uniform modernisation policy. Other issues related to the legal framework include the lack of interaction between the federal centre and administrative-territorial entities at the first and second stages of strategic management, namely at the planning stage. In some cases, federal and regional level documents lack interconnection and coherence and do not represent a coherent hierarchical management system.

ISSUES OF NECESSARY CONTINUOUS MONITORING IN THE AREA OF STRATEGIC MANAGEMENT

Within the framework of the implementation of a strategic document, there is a lack of transparency in the implementation of a regional strategy or programme; consequently, it is difficult to identify the moment when it is necessary to adjust and adapt the targets due to changes in the environment. As a rule, the inability to adapt to external conditions becomes one of the reasons for the non-implementation or ineffectiveness of some strategic documents. There is a tendency for existing strategies and programmes not to be implemented due to a lack of continuous monitoring and control, and new ones to be created when their implementation period expires.

[1] Federal Law of 28.06.2014 No. 172-FL "On Strategic Planning in the Russian Federation". URL: http://www.consultant.ru/document/cons_doc_LAW_164841/ (accessed on 12.02.2021).

METHODOLOGICAL AND ANALYTICAL CHALLENGES

To date, due to the insufficiently developed and clearly structured methodology of drafting strategic documents at the regional level, there is no single "template" for their design — they can differ radically from each other both in terms of volume, content and disclosure of the main provisions. A standardised model could contribute to more effective strategic management by providing certain evaluation criteria and transparency of reports. In the field of strategy development, there is absolute fragmentation, which, due to the lack of a unified structure of the document (e.g., a list of sections and a number of mandatory paragraphs) hinders the uniform and gradual process of modernisation of the country. Moreover, sometimes the boundary of understanding what constitutes strategic planning is blurred. Due to the lack of a defined methodology, there is a risk of substitution of concepts and transition to operational activities rather than strategic management.

In some entities, at the stage of analysing the existing socio-economic situation, there is an insufficient level of analysis of macroeconomic indicators, which distorts the understanding of the current level of development, making it difficult to build a correct system of cause-and-effect relationships and define specific quantitative targets. The presence of only qualitative factors "blurs" the boundaries of performance and complicates monitoring and evaluation of effectiveness.

Based on the analysis of foreign experience, we can formulate some recommendations to improve the strategic approach to public and governmental administration in the Russian Federation, as follows:

1. Including stakeholders in strategic planning and management

In this case, the US experience of private or expert project and budget initiation can be taken as a basis. The form of civil society feedback can increase the efficiency of public administration, as attention will be drawn directly to the most significant projects. In Russia, a country with a low (compared to European countries) level of civic activity, this recommendation will be a serious challenge not only for government structures, but also for the business community.

2. Alignment of budgeting and strategic planning cycles

Unfortunately, in the Russian Federation, as in a number of other states, there is a lack of synchronisation between strategic management documents and regional ones. An example is the Presidential Decree of 07.05.2018 No. 204 "On National Goals and Strategic Objectives of Development of the Russian Federation for the period until 2024", which became invalid in 2020,[2] and which, at the time of its promulgation, was not coordinated and linked to existing state programmes, priority projects, the current situation of the regions, etc. Accordingly, much of the efforts were aimed at synchronising the new regulatory legal act (RLA) and the existing strategic management documents.

3. Development of strategic audit

Singapore's experience in the implementation of independent expert evaluation in strategic planning is interesting. Continuous monitoring of processes and evaluation of the results of both strategic management and operational activities increases the efficiency of the former, as well as increases the responsibility of the state apparatus to the society. Participation of more independent experts from different spheres of activity in strategic planning can also increase the level of civic engagement.

[2] On national goals and strategic objectives for the development of the Russian Federation until 2024: Decree of the President of the Russian Federation of 07.05.2017 No. 204 (lost its validity. — Decree of the President of the Russian Federation of 21.07.2020 No. 474). URL: https://bazanpa.ru/prezident-rf-ukaz-n204-ot07052018-h4039057/

DIGITAL TRANSFORMATION OF PUBLIC ADMINISTRATION

According to J. Schumpeter's theory, the key aspect of economic development is the introduction of innovations [1]. In practice, in public administration this can be implemented through the optimisation of existing business processes, automation of repetitive actions (for example, the use of standard responses to citizens' appeals), as well as through the introduction of digital technologies in the production processes of different sectors of the economy. Moreover, digital transformation can become one of the tools for solving existing problems of strategic management, as it promotes transparency at different levels, as well as citizen engagement (through feedback, performance evaluation, participation in hearings and voting, etc.).

"Digital transformation", "digital economy" are phrases that are constantly heard in speeches of the country's leadership, news, contained in media materials, and in documents of various levels. In addition, society is experiencing the transition to digital industry 4.0, using smartphones, gadgets, and other digital products on a daily basis to optimise and simplify certain actions, communication methods and access to information.

Approaches to the digital economy in the scientific literature are ambiguous; there are many points of view of different researchers. The very term "digital economy" is inextricably linked with the concept of "fourth industrial revolution" or "industry 4.0", which first appeared not so long ago.

The fundamental provisions of the digital economy were formulated in the works of such scientists as D. Tapscott [2], H. Dong [3], N. Negroponte [4], H. Kagermann [5], who considered various technological aspects and consequences of the development of digital technologies that led to the formation of a "digital society". Shcherbakov A. G. [6], Valieva O.V. [7], Ivanov V.V. [8] emphasise the fact that in digital development the central place is occupied by innovation and IT industry.

There are also works of modern domestic scientific figures touching on narrower areas. For example, S.A. Izmalkova, T.A. Golovina [9] consider the significance and explain the rationality of working with big data, emphasising its relevance and role in making managerial decisions. From the point of view of microeconomic approach, Vasant Dhar [10], for example, described Big Data as the central problem of the digital economy, and Bill Gates [11] spoke about the unlimited possibilities of ensuring high profitability of business due to the achievements of digitalisation.

There is currently no unified approach to understanding the meaning of the term "digital economy", as it was first used only in 1995 at the University of Massachusetts to describe how the economy would change with the widespread introduction of information and communication technologies. The concept of digital development is therefore quite young but promising. A more detailed definition was offered in 2016 by the World Bank, which defined the **digital economy** as a new stage of development that emerged as a result of the fourth industrial revolution. This above-mentioned economic structure is based on the prevalence of intellectual property, knowledge, and digital technologies, while at the same time forming completely new skills in the population and opening up previously unknown opportunities for the development of society, private and public sectors.

In the same year 2016, Russian President V.V. Putin in his address to the Federal Assembly called the digital economy "the economy of the new technological generation",[3] and in 2017 at the SPIEF (St. Petersburg

[3] The Address of the President of the Russian Federation to the Federal Assembly of 01.12.2016. URL: http://www.consultant.ru/document/cons_doc_LAW_207978/ (accessed on 20.10.2022).

International Economic Forum) he outlined the key areas that are important to develop in our country in order to have an advantage including in the digital economy.[4] Already in 2019, the transition to it was identified as one of the main directions of Russia's strategic development until 2025. State programmes[5] and federal projects contain references to the need to implement end-to-end technologies and other digital solutions in sectors such as the economy, education, and healthcare to ensure the sustainable development of the Russian Federation.

The Decree of the President of the Russian Federation defines the tasks, first of all, to create the necessary and accessible for organisations and households sustainable and predominantly secure infrastructure for unimpeded work with large volumes of data (circulation, storage and processing).[6] The Decree also sets out the priority use of domestic specialised software by state and regional authorities, which is becoming increasingly important, including in connection with the escalating geopolitical situation. Given the different levels of socio-economic and digital development of Russian regions, it is important to prioritise the provision of equal broadband access to the Internet for them (and especially for socially important facilities) as a priority task.

The problem of digitalisation and the general trend towards digital public administration are of a strategic nature because they imply the creation of a long-term foundation for the transition to a new economic structure. The use of digital products and solutions is considered an innovative approach to development, without which, unfortunately, it is impossible to build a competitive economy. It should be considered as one of the tools to reduce the differentiation of the constituent entities of the Russian Federation.

The digital economy is characterised not only by tangible digital products. One of its directions is the modernisation of relational systems, both socio-economic and cultural. All current business processes are being reviewed and analysed for optimisation, including those related to public administration. The main goal of digital transformation in this area is to create a customer-oriented digital government [by simplifying procedures for obtaining public services, reducing administrative barriers, and reducing the distance between the state and society, involving business through consulting services in public administration processes (for example, the development and implementation of digital platforms, as well as their maintenance can be delegated to private information companies)].

PLATFORM-BASED MANAGEMENT APPROACH

A general trend in the system of digitalisation of public administration is the formation of a platform model that allows to increase the efficiency of management by creating the necessary complex information and telecommunication infrastructure for interagency interaction and accelerated service delivery. Such solutions allow to automate the process of collection and processing of statistical reporting and accelerate the procedure of its transfer to other sectoral departmental structures, contribute to reducing the burden on personnel, thereby increasing the productivity of labour in the public authority and the level of its efficiency in the system of public administration.

Digital platforms as a form of interaction between participants and/or subjects of governance are aimed at minimising different

[4] Plenary session of the St. Petersburg International Economic Forum. URL: http://www.kremlin.ru/events/president/news/54667 (accessed on 20.10.2022).

[5] Decree of the President of the Russian Federation of 07.05.2018 No. 204. URL: http://www.kremlin.ru/events/president/news/57425 (accessed on 20.10.2022).

[6] Presidential Decree No. 474 of 21.07.2020 "On the national development goals of the Russian Federation for the period up to 2030". URL: http://www.kremlin.ru/events/president/news/63728 (accessed on 20.10.2022).

types of costs. In the sphere of public administration, a gradual transition to platform solutions is already noticeable, including the Unified Portal of Public Services (Gosuslugi), the "Work of Russia" portal (developed by the Federal Service for Labour and Employment), the Public Service and Management Personnel Portal, the Unified Medical Information and Analytical System, and others.

The most appropriate example that fits the description of a digital platform is the State Information System for Public Procurement, because, in addition to collecting and processing data, it allows to make a choice in favour of the most competitive solution, while exercising control functions at all stages of bidding and procurement procedures. In this case, digitalisation not only reduces costs, but also reduces the impact of subjective factors (human factor) on the procurement process.

DIGITAL REALITY AND THE FUTURE OF PUBLIC ADMINISTRATION

Nowadays, as a result of the fourth industrial revolution, big data and methods of working with it are becoming more and more important. This is due to the need to analyse a significant flow of unstructured information when building competent and effective strategic planning and management. Big Data is important both at the stages of goal-setting and formation of end-to-end management in the development of a unified state policy; it is also important to monitor implementation and evaluate results. Data-based management will allow to:

- develop objective measures to maintain and accelerate the pace of economic development, presenting constructive solutions in an automated mode;
- at the national level, to form a single vector of strategic development in the future, taking into account regional specifics, eliminating the human factor in analyses and scenario development.

At a mature stage of development of this process, automated platform solutions are used to route data and accumulate them in the form of expert-analytical materials with the results of their processing summarised and consolidated into a single form.

The introduction of methods and tools for working with Big Data is one of the directions of such a strategic document as the national programme "Digital Economy of the Russian Federation", which includes, in particular, the following federal projects: "Digital Public Administration" (concerns the use of Big Data for a faster and more accurate response to any social changes in order to improve the efficiency of government decisions), "Digital Technologies" (involves the use of Big Data technology to develop analytical approaches at all levels of government). The process of Big Data implementation is touched upon not only in federal and national, but also in regional strategic projects.

As for the foreign experience of management based on big data, it is possible to highlight the system created to eliminate the consequences of emergency situations (e.g., the USA and Australia). State authorities use information from various video surveillance cameras, while processing a large flow of unstructured (or partially structured) data, which helps in promptly identifying the source of an emergency or an intruder, as well as facilitates the implementation of preventive measures to minimise further risk.

Another positive example is the way Big Data analytics is actively used in municipal government in Chicago: sensor detectors located on the streets of the city record and analyse data on the ecological state of the environment online, processing it on the basis of certain indicators and converting it into "analytical materials": noise level, carbon dioxide concentration, wind speed. In addition, pedestrian flows and the movement of citizens'

smartphones are tracked and analysed, which, in turn, helps synchronise information on traffic congestion and traffic light operation modes.

Various systems are also actively operating on the basis of big data, providing information on various areas at the international level. One example is the "Green Button" platform developed in the USA to monitor and manage resource consumption, which operates on the basis of smart meter data and offers an analytical report on the level and efficiency of consumption of energy and a number of other utility resources, as well as generates proposals for reducing and optimising their costs.

On the basis of the analysis of foreign experience of data-driven public administration, it can be concluded that this direction allows the transition to preventive policy and analytics based on accurate automated forecasts, and can also be useful in the framework of public service delivery due to preventive nature. To date, the procedure of service provision consists of filling out an application by a citizen, reviewing it by public authorities, approving or rejecting it, entering the data into all relevant information systems of each of the concerned public authorities and receiving the result. With data-based public administration, there is no need to fill in an application and its interdepartmental routing, and the service is provided on the basis of information continuously updated in the unified National Management System, mainly in the form of a register entry.

Unfortunately, the current level of readiness for the transition to data-driven management depends, among other things, on the professional level of the relevant specialists, which is far from being perfect. Currently, there are several training and professional development programmes for civil servants in this area, for example, the platform of the Centre for Training of Digital Transformation Leaders and Teams of the Russian Academy of National Economy and Public Administration (RANEPA).

Due to the complicated geopolitical situation, we may once again face such a problem as "staff shortage", which is caused by the "leakage" (brain drain) of qualified personnel. We can speak about it on the basis of statistical data on young people who have left abroad, the majority of whom are IT specialists. One of the reasons for this is the demand for professionals in this sector in European countries that put innovations and digital technologies at the centre of development. In this case, it is extremely important to ensure the formation of a competent state policy in the field of staffing by increasing interest in such specialities through incentive payments, formation of privileges and social guarantees.

IT RISKS: REASONS FOR THEIR OCCURRENCE AND OPPORTUNITIES TO REDUCE THE PROBABILITY OF THEIR OCCURRENCE

Due to the accelerated introduction of digital technologies and products, the issue of IT risks and their prevention is of increasing interest. According to GOST R ISO 31000, risk is the impact of uncertainty on the objectives.[7] Based on this, we will consider that IT risk is the impact of uncertainty associated with the use of information technology on the organisation's objectives.

The main IT risk is caused by the leakage of confidential data and its subsequent use for selfish purposes, and it may arise due to the following factors:

- **lack of basic email security.** Most government agencies do not use specialised tools to analyse and filter incoming electronic correspondence, which makes it easy to send a malicious file to a network folder and obtain the necessary data;

[7] GOST R ISO 31000–2019. National Standard of the Russian Federation "Risk Management. Principles and Guidelines". URL: https://docs.cntd.ru/document/1200170125 (accessed on 20.10.2022).

• **lack of timely equipment upgrades.** Because the infrastructure remains without renewal for many years, serious systemic vulnerabilities are formed:

• **the absence of secure connections.** For this reason, the data is not encrypted and can be intercepted at any location;

• **incorrect process of working with contractors, frequent turnover of information security contractors**;

• **human factors** in the form of lack of awareness of cyber hygiene and security issues.

In view of the large number of IT risks and the constant development of information technologies, important elements in information security are both the issues of eliminating the consequences of the occurrence of such risks and their impact on the activities of a public body, their minimisation, and preventive auditing of weaknesses and vulnerabilities, i.e., risk management. The purpose of this process can be defined as *increasing the level of security of IT systems specialising in the storage, processing, and transmission of information, attracting sufficient funding, and reducing the time of use of systems and equipment* (or increasing the number of inspections of the degree of their wear and tear).

In order to formulate recommendations and suggest possible steps to manage risks, it is necessary to assess the constraints that prevent risk mitigation: temporal (e.g., time to update servers and workstations) and physical (number of staff involved in the activity — the more people involved, the faster inventory and manual system updates can be carried out).

Financial constraints are related to ensuring that the optimal number of employees involved in the information security of a public body is paid, as well as the timely purchase of equipment (to replace failed equipment) and ensuring its efficient operation by monitoring system wear and tear.

Technical and operational constraints are also not always based solely on the feasibility and availability of all necessary information security components. Sometimes, in order to save money, important security components of the network are neglected and/or secure communication channels are not established.

Cultural and ethical constraints can be explained by different perceptions of the availability of information and the need to protect it, as well as the willingness of civil servants themselves to be guided in their daily routine by the principles of information security and personal "cyber hygiene".

Legal limitations are due to the recent emergence of the digital economy and insufficiently objective assessment of its importance for public administration and development; lack of consolidation in the legal framework of related concepts, rules of use and management of its specific manifestations; lack of liability for allowing cybersecurity threats and data leaks to take place, etc.

The process of successfully minimising IT risk exposures should be continuous, so their assessment, as well as the updating of risk management plans and strategies, should be carried out at certain intervals, e.g., quarterly. But of primary importance should be the analysis of key business processes to identify the most vulnerable points in the current operations of a particular public body. Business processes are any operations within the organisation that help to solve current tasks [12], and their optimisation involves improving activities to reduce the time to perform an operation (for example, responding to a citizen's appeal), increasing citizen satisfaction with the services provided, increasing the internal transparency of the organisation's activities, strengthening control over information and data. Without absolute understanding of the current situation, qualitative optimisation of work is impossible.

Next, it is necessary to identify the existing risks and carefully consider their classification to streamline and automate the process of their

identification. Also, regular recording of risk events (realised risks) occurring in IT activities allows you to identify pain points requiring special attention as accurately as possible. Taking into account the events in the past, it is possible to build more accurate forecasts of their occurrence in the future and apply the necessary response measures in a timely manner. One of the solutions for managing classified risks would be to create a typology of counteraction to emerging threats and risk events. It is also worth paying attention to the procedures for dealing with force majeure events and disseminating them among the organisation's employees.

RESULTS OF THE RESEARCH

In this article, the authors consider the issues of global trends in digital transformation of public administration and related IT risks. The authors describe the types of the latter related to the public sector.

In the course of the study, the authors concluded that one of the main ways to minimise IT risks is timely updating of equipment and systems, and adequate attention and state-of-the-art level of information security in the public sector.

In the current geopolitical environment of increasing sanctions pressure, the problems of import substitution in order to ensure information security, which mainly applies to critical information infrastructure objects, are becoming urgent. With the emergence of the Presidential Decree "On measures to ensure technological independence and security of the critical information infrastructure of the Russian Federation",[8] the topic of domestic developments in the field of information technologies and software, which, unfortunately, are currently very scarce, has gained relevance, which may also cause IT risks. One of the key problems is the lack of aspiration and capabilities of domestic IT companies to create software and hardware complexes (and their components) capable of fully replacing foreign analogues without harming the activities of the organisation and/or public authorities.

The practical significance of the results lies in the theoretical justification of the need for state regulation to minimise IT risks in the context of digital technological change, as well as the growing influence of digital technologies on strategic management. The recommendations made based on the results of the analysis can be useful in improving the strategic planning management system.

[8] Presidential Decree No. 166 of 30.03.2022 "On Measures to Ensure Technological Independence and Security of the Critical Information Infrastructure of the Russian Federation". URL: http://www.kremlin.ru/acts/bank/47688 (accessed on 20.10.2022).

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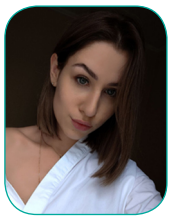

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