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PROPOSALS FOR DEVELOPMENT INFORMATION MANAGEMENT SYSTEM MINISTRY OF ECONOMIC DEVELOPMENT OF RUSSIA MAKING AND EXECUTION OF THE STATEDECISIONS

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Annotation: *The article contains an analysis of the structure and the state of information management system, operating at the Ministry of Economic Development of Russia and proposals for its development and optimization. The subject of steel tools and technology information support of decision-making and execution of government and the process of inter-agency cooperation. This government body performs the functions of public policy and legal regulation in the sphere of analysis and forecasting of socio-economic development of Russia. In this regard, the study of possibilities of information internal processes and interaction with external agencies is actual directions of scientific and practical research. The scientific significance of the results of the study is to develop and justify the tools that increase the speed and effectiveness of decision-making and execution of government. The practical significance of the proposed solutions to optimize the operation of automated information systems, software updates and support information security aimed at improving the efficiency of the Ministry. The proposed solutions are urgent and are forward looking.*

Keywords: *Information Management System; automated information system; acceptance and implementation of government decisions; Ministry of Economic Development of Russia.*

1. INTRODUCTION

The results of the research information management system for the Ministry of Economic Development of Russia (hereinafter - the Ministry of Economic Development of Russia), and proposals to increase the efficiency of decision making and execution of government decisions in key areas of the public administration body. Describing

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the composition and structure of information support of Ministry of Economic Development of Russia, it should be noted that the body is the lead federal agency of executive power in Russia, performing the functions of public policy and legal regulation in the sphere of analysis and forecasting of socio-economic development of Russia. The Ministry is also involved in the implementation of the state program of the Russian Federation "Information Society (2011-2020 years)," in his area of responsibility are areas such programs as:

- Development of automated information system "Register of the Federal government and municipal services (functions)";
- Monitoring the transition to providing state and municipal services in electronic form in the Russian Federation and the assessment of the public authorities on the transfer of services in an electronic format;
- Support and development of a number of standard solutions to the automation of processes for public services;
- Development of information-analytical system of monitoring of the quality of public services;
- Development of open data portal of the Russian Federation, methodical support of the authorities to ensure access to public data contained in their information systems;
- Development of an automated information system to ensure transparency of activities of federal executive bodies, implemented within the framework of the state programs of the Russian Federation;
- Development of information systems to support small and medium-sized enterprises;
- Development of the methodology of the state automated system "Management."

In the area of increasing information transparency Russian Ministry of Economic Development provides methodological support transition to interagency and inter-layer interaction in electronic form in the provision of public and municipal services. Among the results achieved in improving the efficiency of decision making and execution of government decisions should mention the portal "Your control» (vashkontrol.ru); the functioning of the information system "Monitoring of the quality of public services"; the functioning of the open data portal of the Russian Federation (data.gov.ru); the functioning of the portal disclosure of the preparation of the federal executive bodies of normative legal acts (regulation.gov.ru). In this context, aspects of efficiency and information security of the Information Management Ministry of Economic Development of Russia, of course, relevant and require constant monitoring. The aim of this study is to develop proposals for the development of information support of decision-making and execution of government in the competence of Ministry of Economic Development of Russia.

2. MATERIAL AND METHODS.

The Russian Ministry of Economic Development introduced modern software products to effectively automate management processes, improve quality control, to implement the principles of openness of the state and ensure that the processes of communication with the citizens and the disclosure of official information society. Currently, there are a lot of information technologies to automate the individual components of the process of adoption and implementation of government decisions and speed up the process as a whole [1, 7-11]. Expenses in the ICT sector in the Russian Ministry of Economic Development includes: the purchase of computers, telecommunication fees, fees for servicing of ICT, acquisition of software, employee training and more. In the analysis of the volume of funds allocated in the past five years, it noted that the largest amount of spending goes to pay for telecommunication services (35.9%), for the

Types of IS	*Name technologies*
IS typical activities	AIS "Unified Design Environment" (AIS ENP); GIS provides automated creation, approval, updating and publication of routings interagency cooperation (GIS TKMV); Electronic document management system Ministry of Economic Development of Russia; AIS "Personnel"; AIS "Budgetary accounting"; AIS "Budgetary accounting in foreign apparatus"; The information-analytical subsystem "Financial Management"; AIS drawing up and monitoring the implementation of the Consolidated Report on the results and main activities of the Government of the Russian Federation (AIS SD); AIS information system for the preparation and monitoring of the implementation reports on the results and main activities of the subjects of budget planning (AIS DROND SBP); AIS drawing up and monitoring the implementation of the report on the results and main activities and operational plans of the Ministry of Economic Development of the Russian Federation, its structural units and subordinate Development of Russia federal services and agencies (AIS DROND MER)
IS Special Activities	AIS program and project management Development of Russia (AIS UP); CIS, ensuring the formation of the Federal Targeted Investment Program (CIS FTIP); IAS monitoring, analysis and forecasting of foreign trade activities of the Russian Federation (IAS FEA); IS "Control Panel Action Plan, the Government of the Russian Federation on the implementation in 2009-2012 of the Basic directions of foreign policy of the Russian Federation till 2020" and "Country Panel"; IS support for public services Ministry of Economic Development of Russia (ICs Pogue); AIS monitoring market conditions and prices of commodity markets (AIS monitoring).
The components of e-government infrastructure	IAS monitor the quality of public services (IAS MKGU);AIS monitoring of electronic state and municipal services (IS MEGMU);IS support for public services Ministry of Economic Development of Russia

acquisition of ICT (25.9%) and to pay for the maintenance of the ICT (25%). To ensure the adoption and implementation of government decisions in the Russian Ministry of Economic Development operates a set of information systems (hereinafter - IS): 22 IS in the Internet and 15 internal systems. In order to study all the IS are classified as follows: Information systems typical activities of special operations, the components of e-government infrastructure (Table 1).

Under typical IS activities in this case refers to technology aimed at simplifying the documentary software, personnel management, financial management, management of tangible and intangible assets, the organization of information exchange between information management system for the Ministry. Their main purpose is to simplify and standardize the business processes of employees of the Ministry.

IS of special operations is the system, the main purpose of which is to automate any information support functions under the special authority. The group consists of systems to automate the delivery of services and performance of the main functions of the Ministry, mostly industry system designed to support the socio - economic activities of the Ministry.

The components of e-government infrastructure are an infrastructure that provides information and technological interaction IS used for providing state and municipal services in electronic form. Group is characterized by the presence of an information base for inter-agency cooperation in the delivery of public services in electronic form. These IS are used as points of access to the Unified portal of public services as well as a medium of information exchange system of interagency electronic interaction [2, 12-14].

Next will be presented results of the assessment of information exchange with the Ministry of Economic Development Russian state bodies of executive power by the SWOT-analysis. Activities of Economic Development of Russia involve constant interaction with other state bodies of executive power. This interaction is necessary for the implementation of the majority of office of the ministry, including the provision of public services. The link for this is a system of interagency electronic interaction. This system allows access to information systems and electronic services. Thus, the Russian Ministry of Economic Development to provide information is integrated with numerous federal information systems for the realization of tasks. It is important that all the integrated system is stable and do not contradict each other, interact properly with each other. In theory, previously described IP embedded in the activities of Economic Development of Russia should fully cooperate with the system of interagency electronic interaction. The following is the process and the results of a study of this hypothesis.

To evaluate the Russian Ministry of Economic Development of information interaction with the state bodies of executive power was held SWOT-analysis. The sources were open data analysis of information systems development “LANIT”, “Digital Design”, “Kaspersky Lab”, “Maykor”, “Doctor Web”, “Design practice”, «IBS IT Services», register of federal government information systems.

SWOT-analysis includes strategic analysis of the external environment and strategic analysis of internal environment ministry. The method includes defining the purpose of the need for information provision and identifying the internal and external factors that contribute to its achievement or complicating it. The method of the SWOT-analysis was used to test the following: whether the process of public decision-making comfortable, technologically advanced, and most importantly, effective? This is further to be determined: the need for the presence of a particular technology and the likelihood of complications public decision-making through the use of certain IS [3, 3-5]. The study had the following questions:

- What can the IP (its strengths and weaknesses)?
- What can the user thanks to integrated circuits (opportunities and threats of the external environment)?
- What are the expectations of third parties (intermediaries expectations)?

The result of the analysis is to present the main influencing factors of information security at government decision-making officials Russian Ministry of Economic Development to identify possible recommendations. For the analysis we identified the following quality criteria in relation with information for public decision-making:

- presence of a user's access to basic services;
- satisfaction with the functioning of the process of IS;
- the degree of comfort of the user in the IT infrastructure;
- the ability of IS to ensure continued operation of the software after the occurrence of abnormalities caused by malfunctioning hardware, errors in input data errors and services;
- the degree of simplicity and ease of obtaining and transmitting information;
- the degree of ease of making changes and additions to the IS during the operation;
- the degree of information security;
- the ability and the quality of interaction between IS enforcement authorities.

The Ministry of Economic Development responsible for the management decisions lies with the heads of departments. That they need to properly assess the performance capabilities of the information function of the accumulation and processing of information, introduction of information technologies and integrating them into the management system. They are responsible for making recommendations to improve the system of information support of government decision-making.

The analysis of IS ministry showed that all systems have a user-friendly interface, facilitate rapid learning and adaptation, not complicate the decision-making process. The review noted that the ministry has three systems of monitoring results and main activities:

- information system for drawing up and monitoring the implementation of the Consolidated Report on the results and main activities of the Government of the Russian Federation (AIS SD);
- automated information system for the preparation and monitoring of the implementation reports on the results and main activities of the subjects of budget planning (AIS DROND SBP);
- automated information system of drawing up and monitoring the implementation of the report on the results and main activities and operational plans of the Ministry of Economic Development of the Russian Federation, its structural units and subordinate Development of Russia federal services and agencies (AIS DROND MER).

These systems were put into operation at the same time, despite the different tasks, have similar functionality. In addition, all systems have a similar resource base. During the analysis it was noted that all the functions of AIS SD duplicated in the other two, and the system AIS DROND SBP includes AIS DROND MER.

Further study showed that diabetes AIS SD is not necessary in the ministry, all the necessary functions for the implementation of the tasks can be carried out AIS DROND MER and AIS DROND SBP. Its exclusion would allow the ministry to save on modernization and maintenance. Obviously, the presence of duplicate systems leads to inefficient division of labor, since it requires duplicate data entry. There are problems with the lack of efficiency of accounting processes and the lack of "priority" source of information. The absence of such sources increases the complexity, as well as the inability to obtain correct and timely information. Another disadvantage of working in redundant systems is to increase the probability of a technical malfunction of the IS. All this has a negative impact on the result of evaluating the performance of the IS.

It is necessary to take into consideration the economic component of the implementation of the tools and technologies of information security. In addition to the cost of licenses and consultancy services for the implementation, there are significant costs to adapt all management processes and costs of the operation of IS. In addition IS needs the continued support of the system, periodic technical upgrading, renewal.

The analysis and evaluation of information security IS Russian Ministry of Economic Development, noted the lack of encryption. Encryption is necessary for the preservation of information resources of the Ministry. The process of encryption is a special method of encryption (or encryption) of information in such a way that its content is only available to owners of key cryptogram. Currently, this method of protection is considered the most reliable method, as protected by the information itself, rather than access. Use of encryption in the ministry would contribute to strengthening the security of the information with the information transmitted within the organization and between other authorities. Summary results of the SWOT-analysis are presented in Table 2.

Table 2
SWOT-analysis of the information support of the Ministry of Economic Development of the Russian Federation

Strengths	*Weak sides*
• automation of functions and processes • use the latest versions of applications • unlimited shelf life information systems • the integration of information systems with those of other departments	• fast pace of obsolescence of computer hardware and software • the cost of periodic training • the cost of supporting IT-specialists • modernization of technology because of the emergence of new problems • dependence on information systems
Possibilities	*Threats*
• the development of mobile applications (for phones and tablets) • the development of cloud platforms • improving the efficiency of information through the modernization of information systems • Virtualization of IT-infrastructure	• No encryption • duplication of functions performed in the system • use of older versions of Microsoft Office (2003) • lack of technical support for Microsoft Office

3. RESULTS OF THE STUDY

According to the analysis of information interaction of Russian Economic Development Ministry has made the following conclusions:

- All the information management system of the Ministry aimed at improving efficiency in the public decision-making.
- Information systems are easy to use, have a simple interface.
- Due to the constant technical support, it is possible in a timely manner to eliminate problems.
- There is no system of cryptographic protection of information systems related to SMEV.
- The presence of duplicate IP leads to duplication of processes in the adoption and implementation of government decisions and unnecessary costs.
- The use older versions of Microsoft Windows, this leads to difficulties when working with files created in later versions.
- The Ministry currently there is no need to develop and implement new IP.
- Functioning EC fully automate the process of adoption and implementation of government decisions.

Weaknesses identified in the analysis, the source of potential problems, but most of them relate to the nature of general conditions of development of information technologies on a global scale. This not only complicates the process of making proposals to address weaknesses, but also deprives the guarantee of their occurrence over time. In general, decisions in this area are aimed at increasing the efficiency of

the order of organization and realization of functions of departments Russian Ministry of Economic Development and improvement of the quality of activities.

With respect to the identified threats presented further proposals to eliminate them and study the possibility and effectiveness of decision-making. Among the threats to the functioning of the system of information support of Economic Development of Russia marked: the lack of application of cryptographic protection of data, duplication of functions performed by the IS in the organization of inter-agency cooperation, the use of outdated equipment and a lack of software support its operation.

At this stage, there is no need to introduce new IP operating IT-projects of the ministry should be linked in the first place, with the modernization of the existing ERP-systems, as well as the decision on strengthening information security.

As already mentioned, the ministry has three IS with elements of functional overlap, that is the risk. An approach to reduce the risk is to modernize and diabetes AIS DROND MER and AIS SD by eliminating duplicate functionality in favor of AIS DROND SBP and the organization of an integrated data exchange between the three IS. Thus, it is possible the duplication of data entry, they will also be reduced costs for maintenance and technical support AIS SD and AIS DROND MER.

With regard to the risk of the use of outdated software equipment should be pointed out that leaving the situation unchanged leads to loss of time in the adoption and implementation of government decisions related to the integration and processing of documents from the IS. Also, a negative factor is the lack of support and product updates for Office 2003, which ended 8 April 2014, in particular for Office 2003 products will no longer provide technical support, rapid content updates, software updates through Microsoft Update, Update PC security that protects against viruses, spyware and other malware, and prevent leakage of confidential information.

The obvious solution to this problem is to purchase a new product suite Office. Microsoft offers a convenient package of Office 365 for Government This product is designed for government agencies with advanced IT-requirements, which need the flexibility to move to the cloud at their own pace. The advantages of this product are:

- guarantee smooth operation for 99.9% of the time;
- access to IT-support professionals over the Internet around the clock phone support to solve technical problems;
- integration with Active Directory for easy account management and user permissions;
- all updates are already included in the price of the subscription;
- safety data using solutions recognized worldwide;
- synchronization of email, calendar and contacts;

- the ability to work in Outlook, a web browser, which reduces the time for the transition from one program to another;
- meeting of the network providing access to the screen, or virtual whiteboard individual user;
- viewing and editing Office documents using Office Online, and the browser on devices running Windows Phone, iOS and Android[1].

To reduce the risk of insufficient levels of information security operation is necessary to revise the organization of the IS system to ensure information security.

Nowadays, when almost all the information is stored in electronic databases, the negative effect from the consequences of hacker attacks, virus attacks, as well as inadvertent damage safety systems. Russian Economic Development Ministry information Security Company entrusted Dr.Web. However, the study of the market of antivirus software and data-security software package platform Dr. Web Enterprise Security Suite does not meet all quality security.

To date, the Ministry for security is best suited platform developed by "Kaspersky Lab". This platform allows you to prevent attacks and virus infected workstations, mobile devices, Internet - gateways, file and mail servers. Another advantage of the platform are encryption tools and remote control of mobile devices, allows you to lock or remove confidential information from a lost device (mobile phones and tablets). Table 3 shows a comparison of the two platforms: Dr. Web Enterprise Security Suite and Kaspersky Total Security - the market leader in information security.

Table 3
Comparison of antivirus platforms from Dr. Web Enterprise Security Suite and Kaspersky Total Security

Options	*Dr. Web Enterprise Security Suite*	*Kaspersky Total Security*
Date of Update	22.07.2014	17.11.2014
Technologies	Information Security - Antivirus, Information Security - Anti-spam, Information Security - Firewalls	Information Security - Antivirus, Information Security - Anti-spam, Information Security - Firewalls, Information Security - Backup and storage of data, Information Security - encryption
Results of the test antivirus for treatment of active infection	83%	100%
Description	The complex with integrated centralized management of anti-virus protection for workstations and file servers, Windows, and Unix mail servers for businesses of all sizes.	The solution for integrated protection for corporate networks of any size and complexity from all types of Internet threats

As the table shows, the platform Dr.Web Enterprise Security Suite gives Kaspersky Total Security. Based on the analysis functionality of both platforms, it was concluded that the platform Dr.Web Enterprise Security Suite is more consistent with the requirements of the protection of home users unlike proposals Kaspersky Total Security, which focuses on powerful computers. Platform «Kaspersky Total Security» is a modern system of information security, which prevents not only the massive viral infection, but also targeted plan attacks. For this aspect of the Russian Ministry of Economic Development is highly significant, since in the activities of the ministry involved a large amount of confidential data.

It should be noted that modern antivirus software can effectively detect malicious objects, the market is saturated with suggestions of such systems integrators. According to IDC[2], "Kaspersky Lab" occupies 55.5% of the Russian market of solutions for the protection of end-user devices and corporate segments. Figure 1 presents the results of the analysis of the anti-virus products market in Russia in 2013.

The protection of their information systems, "Kaspersky Lab" was entrusted to major government and commercial organizations in Russia. Among them VGTRK,

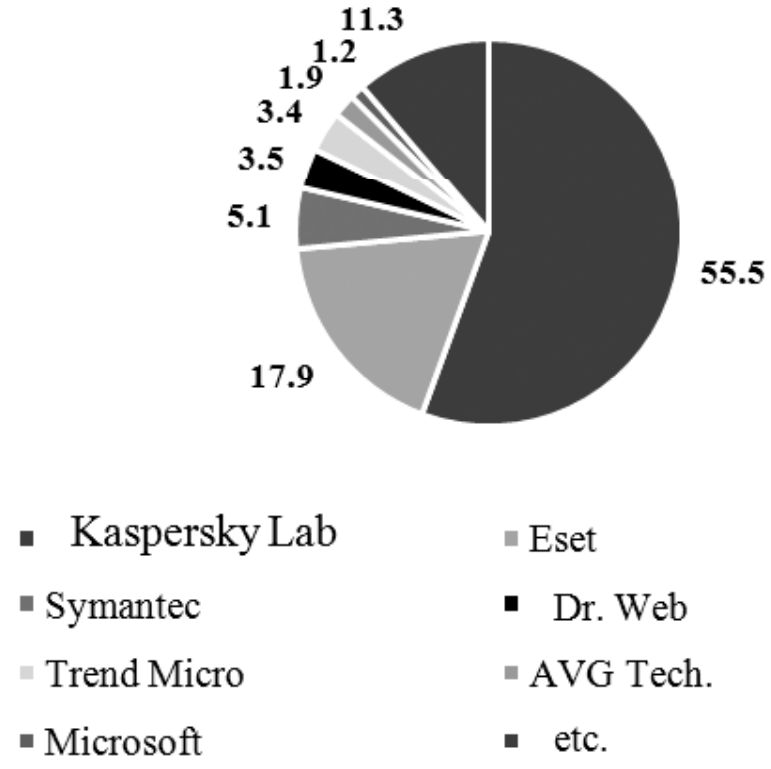

Figure 1: Shares of vendors in the Russian market products to protect end-user devices (according to IDC), a percentage[3]

Information Technology Department of Moscow Railways, Rosgosstrakh, Ministry of Defence, the Social Insurance Fund, Rosatom, Rosoboronexport, the Organizing Committee "Sochi 2014", Rosprirodnadzor, the Federal Tax Service, and others. Thus, the platform «Kaspersky Total Security» for the Ministry of Economic Development of Russia - is the best solution because it protects all components and elements of the IT- infrastructure.

Also the issue of information security is necessary to include the issue of crypto data protection. Because not all information systems of the Ministry have crypto, the question of implementation is important. Because all the IP associated with the exchange of information, particularly IP Internet, cryptography is a necessary tool to protect data from unauthorized, including random, access to them, the result of which may be a violation of their security (destruction, alteration, blocking, copying, provision, distribution of data, as well as other illegal actions).

As a guideline suggested purchase full encryption on all computers of the Ministry, this installed information systems. For federal information systems developing technologies the following companies: CB-Inform, OOO "Security Code", OOO "CRYPTO-PRO," Informational innovative companies (CPI). Company CPI developed a proposal that is best suited for the Russian Ministry of Economic Development. The company CPI - Russian manufacturer of computer hardware, system software and information security tools. New development of the CPI - «CPI Jupiter Krypto» - has certificates of Russian Federal Security Service (FSB of Russia) and the Federal Service for Technical and Export Control of Russia (FSTEC Russia). CPI Jupiter Crypto 'allows you to protect the territory of Russia are local networks of public authorities and critical infrastructure, high-risk facilities in the Russian Federation against cyber-attacks of various kinds. Another important area of application - connection over the Internet geographically remote sites, without the means encryption, a secure network of the central / regional facilities and the organization of information space. In general, the model of "CPI Jupiter Crypto" is hardware and software systems that provide cryptographic protection of confidential information transmitted over data networks between objects in accordance with the requirements of Russian legislation. All devices range "CPI Jupiter Crypto" has built-in secure containers for the connected USB-token. This allows you to increase the level of information security, as it excludes unauthorized access to USB-token without the participation of the authorized officials.

4. FINDINGS

Implementation of the recommendations, will improve the process of decision-making and execution of government in the Russian Ministry of Economic Development with the use of technology and information support. The proposed solutions are a necessary step for partial modernization of management processes, taking into account current and future business environment ministry. Despite the fact that according to the results of the study Development of Russia does not need the introduction of additional IP

and existing information provision sufficiently meets the directions of its activity, it proved the feasibility of a number of technologies, which are aimed at optimizing the process of adoption and implementation of government decisions and improve security information management system as a whole.

As a result of the SWOT-analysis revealed the following features:

- the development of mobile applications (for phones and tablets);
- the development of cloud platforms;
- virtualization of IT-infrastructure;
- improving the efficiency of information exchange by means of modernization of information systems.

Mobile applications are currently involved in the public sector and have a very high potential for further spread. Ease of use of mobile applications is to provide opportunities for the head, and for the artist to use remote access for faster decision-making and execution. Mobile applications allow you to remotely work with documents, manage business processes, to issue orders, working with reports, etc. The development of information technologies for mobile application format has a positive effect on the process of adoption and implementation of government decisions in the Ministry of Economic Development of Russia. In view of the expected expansion of the scope of the use of mobile technology, the development of free applications for mobile devices looks promising.

Another promising area of development of information technologies in the public sector is cloud computing, which is an amalgamation of all the information systems of Economic Development of Russia and its subordinate bodies. The use of this technology makes it possible to store and process data remotely, which saves money for the purchase of equipment and software, and also reduces the costs for human resources. The transition to cloud computing will increase the efficiency of the Ministry's activities in the provision of public services to citizens and organizations. Also significant projected economic impact of the introduction of cloud technologies by the general use of computing power, as well as by eliminating the duplication of individual processes and units work in different state bodies and institutions.

Another possibility is the development of new technologies, virtualization of IT-infrastructure. Virtualization - a mature technology, which is already more than 10 years. In the Russian market presents a number of different solutions for different size budgets: paid, free and shareware (such as Hyper-V, available free to all owners of Windows Server). However, in Russia and around the world, many organizations only just discovering the opportunity to significantly improve the efficiency of their existing servers and workstations.

Use virtualization to optimize the Russian Ministry of Economic Development will allow the operation of the equipment due to the simultaneous operation of multiple

operating systems and applications on a single physical server. Virtualization enables cost reductions by increasing the efficiency and utilization of existing equipment. The benefits of operating system virtualization will enable the Ministry to save on maintenance, personnel, hardware, ensuring smooth operation, data replication and disaster recovery.

Recently reviewed promising avenue to optimize decision-making and execution of government is to improve the efficiency of information exchange by means of modernization of information systems. According to the Plan of Informatization Development of Russia in 2014 and the planned 2015 and 2016, all systems are subject only operation, modernization is not provided, as well as the development of systems. The results of the study show that these measures are necessary to develop not only the information support system, but also extends the capabilities of managers.

Thus, the implementation of identified prospects of the application of new information technologies in the activities of Economic Development of Russia in the adoption and implementation of government decisions will give impetus to the development of information management system for the body. The fact that there are no perfect systems must not interfere with the realization that the development of information security to improve performance a priori, is a priority in the development of public administration.

NOTES

1. Microsoft Office 365 for state institutions. URL: https://products.office.com/ru-ru/government/office-365-web-services-for-government
2. IDC presented the results of a study of the Russian market of services in the field of information security. Research in Russia and the CIS. URL: http://idcrussia.com/ru/research/overview
3. International Data Corporation—research firm specializing in the information technology market research.

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