



**Dr hab. Alina Yakymchuk<sup>1)</sup>  
Victoria Yaroshchuk<sup>2)</sup>**

*<sup>1)</sup>Department of Public Administration, Documentation and Information Activities, National University of Water and Environmental Engineering (Rivne, Ukraine)  
alinayakim@ukr.net  
ORCID: 0000-0002-5038-5215*

*<sup>2)</sup>Department of Public Administration, Documentation and Information Activities, National University of Water and Environmental Engineering (Rivne, Ukraine)  
vy332@ukr.net*

**INFORMATION RISK IN PUBLIC ADMINISTRATION OF UKRAINE**

**RYZYKO INFORMACYJNE W ADMINISTRACJI PUBLICZNEJ UKRAINY**

**ИНФОРМАЦИОННЫЕ РИСКИ В ГОСУДАРСТВЕННОМ УПРАВЛЕНИИ  
УКРАИНЫ**

**Abstract**

*The article defines the types of information risks, analyzes the main information risks that occur in the public administration. The main aspects of information risk assessment in information infrastructure systems of public administration institutions are also considered. Based on the analysis, the means of minimizing information risks in the public administration of Ukraine were proposed.*

**Key words:** *information risk, state administration, information security, national information space*

**Streszczenie**

*Artykuł określa typy zagrożeń informacyjnych, analizuje główne informacje o ryzyku, które występują w administracji publicznej. Zbadano również główne aspekty oceny ryzyka informacyjnego w infrastrukturze informacyjnej instytucji administracji publicznej. W oparciu o tę analizę zaproponowano środki minimalizacji ryzyka informacyjnego w administracji publicznej Ukrainy.*

**Słowa kluczowe:** *ryzyko informacyjne, zarządzanie państwem, bezpieczeństwo informacji, krajowa przestrzeń informacyjna*

**Аннотация**

*В статье определено виды информационных рисков, проанализированы основные информационные риски, что встречаются в государственном управлении. Также рассматриваются основные аспекты оценки информационных рисков в системах информационной инфраструктуры учреждений*

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государственного управления. На основе анализа, было предложено средства минимизации информационных рисков в государственном управлении Украины.

**Ключевые слова:** информационный риск, государственное управление, информационная безопасность, национальное информационное пространство

**Statement of the problem in general outlook.** The development of information society in Ukraine and introduction of new information and communication technologies in all areas of social life and activities of state and local governments are determined by one of the priority directions of state policy [1]. At the same time, the negative consequences of the risk of violating the integrity, availability and confidentiality of information are revealed in uncontrolled access to information resources of state organizations, the state of information security and low security against external and internal threats. Today we experience the complicated conditions of modern threats and negative influence on the managerial environment, information wars, the great influence of misinformation, etc. Therefore, the relevance of scientific research in the field of information risks that arise in systems of state-management information and communication support is becoming more vulnerable.

**Analysis of latest research where the solution of the problem was initiated.** Research on the problems of state-administrative information and minimization of information risks are reflected in the works of O. Korotych, J. Maksimenko, Y. Sharov, V. Lopatin, R. Sobol, D. Nowicki, A. Marushaka, etc.

However, despite the high level of scientific understanding of information security issues, the issue of threats including classification, continue to have the controversial nature, which also makes the relevance of the article.

**The purpose of the work is to** analyze the main types and features of

information risks and threats and identify the main means and measures aimed at minimizing information risks in the field of public administration.

**Exposition of main material of research with complete substantiation of obtained scientific results.** Risk in public administration is interpreted as uncertainty associated with the possibility of occurrence in the course of implementing state management of adverse situations and consequences, which manifests itself in incompleteness or inaccuracy of information, as well as related costs and negative results [2].

The main ways of implementing information threats are [3]:

- manipulation of information (misinformation, distortion of information, launch of incomplete or false information in the informational environment);
- violations of the established order of information exchange, unauthorized access and unreasonable restriction of access to information resources, illegal collection and use of information;
- destruction and use of other information resources;
- information terrorism (distribution of viruses, installation of mortgages, use of means of interception of information, illegal use or violation of the work of information and telecommunication systems, imposing false information, publishing compromising information, etc.).

Information risks of their origin are divided into three categories:

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- risks associated with loss (leakage, destruction, destruction) of information. The risk of loss of information with limited access is especially dangerous;
- risks related to the formation of an information resource (the use of incomplete, false information, lack of necessary information, misinformation): information collection risks, generalization and classification risks, information processing risks, risks of presentation;
- risks related to information influence on the activities of state institutions (reputational risks, unprofessional management elites and performers, lack of sufficient information).

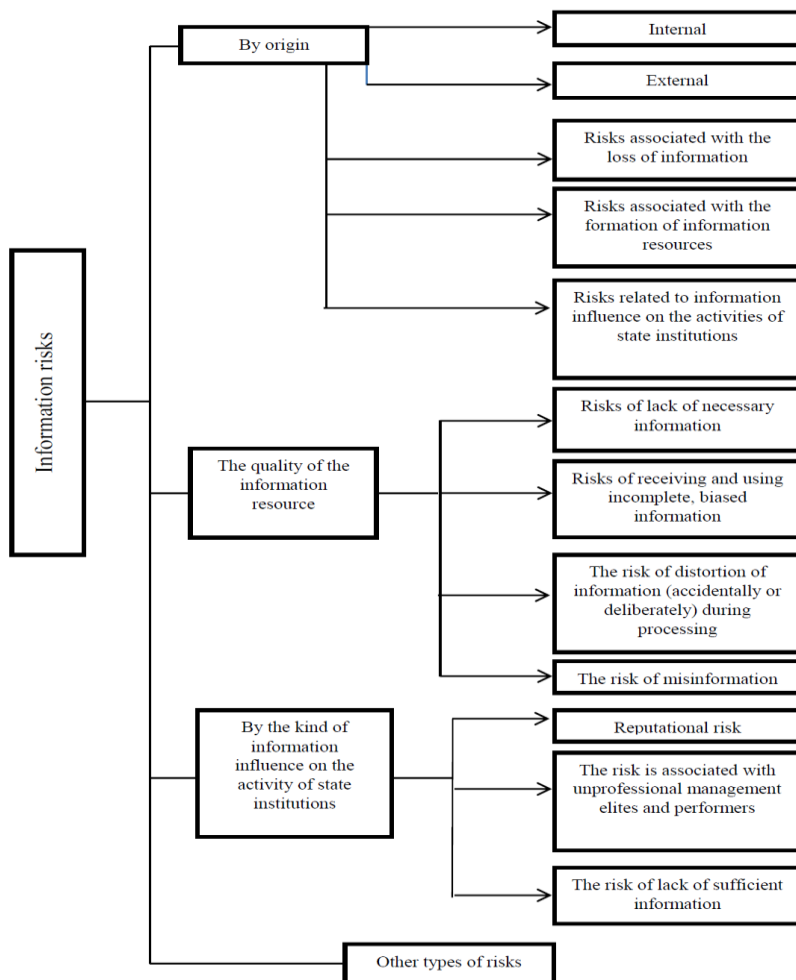


Fig. 1. Classification of information risks in the activities of state institutions.

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A more detailed classification of information risks is presented in Fig. 1. In order to minimize information risks, necessary measures are taken to protect information. Among counteracts from the sources of threats can be attributed:

- legal (laws, statutes, orders, decrees);
- Organizational (development and approval of functional duties of officials of the information security service; physical access control; development of rules for managing access to system resources; explicit and hidden control over the work of staff; conducting regular seminars, special courses for management staff and executives to ensure compliance level of knowledge to modern requirements);
- technical (it is assumed that there are methods for determining the threats and channels of information leakage and knowledge of means of extracting (deleting) information);
- engineering (ensuring that unauthorized access of third parties to the objects of protection is prevented) software and technology (methods of identification and authentication of users, user registration, means of protection against threats of unauthorized access) [4].

In addition, an important component in minimizing the occurrence of information risks in public administration is the creation of a clear mechanism of measures for rapid response and prevention of consequences. Therefore, the system of public administration in risk situations should have a strategic character and consist of elements (Fig. 2) useful for practical use, namely [5]:

- 1) monitoring risks and assuming them within the socially acceptable level;
- 2) the development of specific recommendations aimed at eliminating or minimization of possible consequences of risks;

3) identification and consideration of psychological perception of risky decisions and programs, analysis of public opinion during the preparation and selection of similar projects, systematic monitoring of socio-economic processes in the region (production and non-productive).

4) preparation and approval of legal documents that help to implement in the life of the chosen strategy of development as an alternative to risks;

5) the creation of special situational plans that allow the most effective way to act in a critical situation for management personnel who themselves can implement unpopular risk decisions for society, and this risk should be minimal.

Today, information and communication technologies (ICTs) play an important role in terms of improving the quality of life, the efficiency of doing business and public administration, emerging new forms of learning, and providing access to various types of information. ICT occupies a special position among various branches of science in the developed countries of the world. Analyzing the results of research on the use and development of ICTs in the United States, we see a positive result. Thus, in the USA, in 1995-2000, ICT provided a 78% increase in labor productivity, while in 2000-2006 it was 38% [6].

According to UN experts, the effectiveness of public administration organizations is determined by the eGovernment Development Index (EDGI), which is calculated as the averaged result of three sub-indices: the level of development of on-line services, telecommunication infrastructure and human capital. As a result of ranking in 2014, Ukraine ranked 87th among 193 countries [7]. Ukraine has significantly lagged behind the development of the e-government, both from countries close to the foreign countries, and from the countries of Central and Eastern Europe. Among

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the countries of the former USSR, Estonia became the biggest breakthrough in the transition to e-government.

According to the components of the EDGI index, Ukraine has a high indicator of the development of human capital due to the relatively high level of literacy of the population and high percentage of people entering higher education, which, however, is quite formal, since it does not reflect the effectiveness and, in particular, the quality of the education received. The worst result

Ukraine has in terms of the index of development of online services, for the calculation of which analyzes government websites of the country, including departmental health, education, social security and labor and finance. The low value indicates that the country does not actually develop electronic services, nor does state systems operate with the help of which online services should be provided [8].

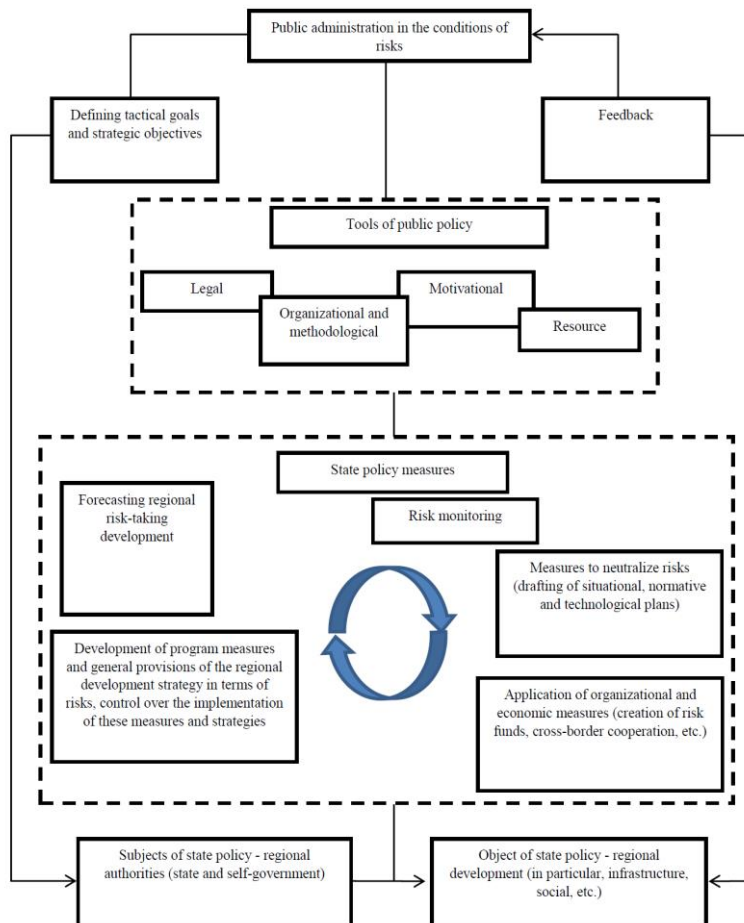


Fig. 2. State policy in the context of public risk management [5]

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The international ratings developed by the experts of the World Economic Forum (WEF), the International Telecommunication Union (ITU), etc. are used to determine the level of development of the information society of the country. The results of international ratings are used in the development of programs and strategies for socio-economic development of the country. At the same time, it is important to take into account different methodological approaches in the formation of indicators and to pay more attention to the value of the index, and not the place of the country in the rating. To analyze problems in public policy and monitor progress in the implementation of new technologies, the WEF calculates the Networked Readiness Index [9]. The index measures the level of development of ICT for 53 parameters, which are grouped into three main groups:

- availability of conditions for the devel-

opment of ICTs - the general state of business and regulatory environment for the development of ICT, the existence of healthy competition, innovative potential, the necessary infrastructure, the possibility of financing new projects, regulatory aspects, etc. ;

- readiness of citizens, business circles and state bodies to use ICT; state position on the development of information technologies; state expenditures on development of the sphere; availability of information technologies for business; level of penetration and availability of the Internet; cost of mobile communication;

- the level of ICT use in the public, commercial and public sectors - the number of personal computers, Internet users, subscribers of mobile communication, the availability of existing Internet resources of state organizations, as well as the total production and consumption of information technology in the country.

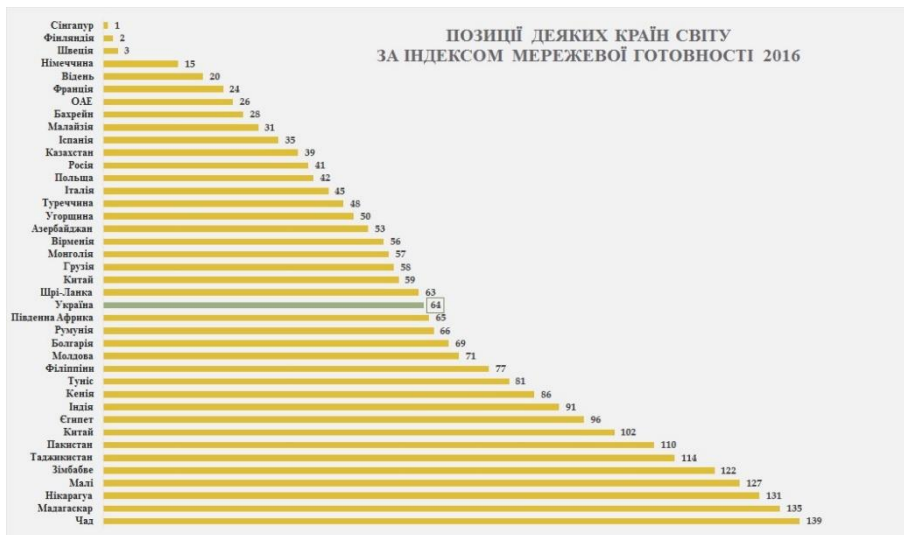


Fig. 3. Position of the world according to the 2016 readiness index [10]

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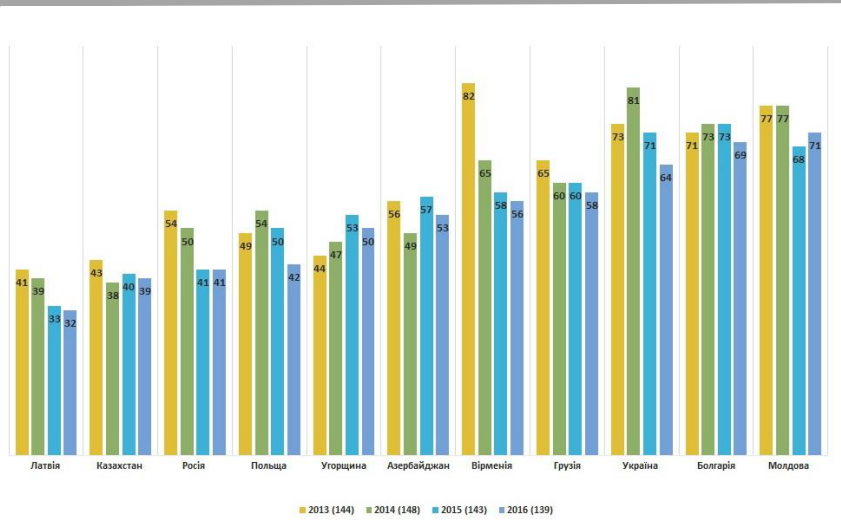


Fig. 4. Dynamics of assessment of ICT development in Ukraine and other countries [10]

Paying attention to statistics on Ukraine's position on the level of development of information and communication technologies in 2015, then in 2016 we see a positive trend, Ukraine ranked 64 among 139 countries, having improved its results by 7 points in the year. Nevertheless, despite the improvement of the indicators, Ukraine continues to yield significantly to the development of ICTs in the CIS and Eastern Europe (Fig. 3, Fig. 4).

The reason for the rather low position of Ukraine in the rating, as in the past, is the lag behind the components that characterize the political and regulatory environment - 113 positions and the low level of use of ICT by the government - 114 positions. The researchers noted the low effectiveness of our legislative bodies (120 position), the judicial system (131 position on the assessment of the independence of the courts and 123 - on the ease of appealing against government actions by private business), problems with the protection of intellectual property (120 position). The factor constraining the development of ICT in our

country is the low level of development of new technologies by business (position 100) and the low level of influence of ICT on the emergence of new business models (113 position).

The advantages of Ukraine remain the availability of ICT, which allowed it to take 6th position among 139 countries of the world, overall, improving its position by 4 points for the year. At the same time, in estimating the level of competition in the market of telecommunication services, we lost 3 points, which moved us to 80<sup>th</sup> step. In relation to the rating of the last year, the assessment of the level of use of ICTs during the interaction of enterprises was worse than the "minus" 17 points, instead of 35 points, an assessment of the extent of providing ICT with access of citizens to basic services (health care, education, financial service, etc.) . It should be noted that there is a significant improvement in the indicators that characterize the business environment. In particular, a significant reduction in the time and procedures necessary for opening a business, by which we

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advanced in the ranking of 60 and 36 points, respectively. However, as well as the previous year, Ukraine holds the best positions in terms of education and is among the top 20 high literacy countries, which represents the potential for further intellectual growth and contributes to the socio-economic development of society.

It should be emphasized that the regulatory framework in the field of regulating the development of the information society and measures for the formation of state information policy must be fully coherent with the tasks in the field of information security, the practice of ensuring the preservation of state secrets, the protection of information and telecommunication infrastructure and information resources from cyber attacks and other threats in the information space. It is important to create favorable conditions for the improvement of domestic information security systems, which becomes especially relevant in connection with the expansion of information exchange through the Internet. There is an urgent need for working out of agreed rules and procedures for the protection of Ukraine's national interests in the process of integration into international information networks.

Given the fact that state information policy has a significant impact on different aspects of public life, it is necessary to introduce an effective system of timely detection and counteraction to the danger of using new information technologies to create real and potential threats to the national security of Ukraine [11]. The strategy of building the information society of Ukraine should provide for active cooperation in this area with other states. It is advisable to implement a set of measures aimed at ensuring the country's interests in international information exchange and ensuring the security of national information re-

sources and information and telecommunication infrastructure.

1. State information policy should lay the foundations for solving the fundamental tasks of the development of society, the main of which is the formation of a single information space of Ukraine and its entry into the world information space, guaranteeing information security of the individual, society and the state [12].

2. In addition, great attention should be paid to the formation of a democratically oriented mass consciousness, the formation of the field of information services, legislative regulation of social relations, including those related to the receipt, dissemination and use of information. Thus, taking into account the above-mentioned problems in determining the basic principles of the formation and implementation of state information policy will contribute to strengthening the state's security in the political, economic and social spheres, and will become an effective means of counteracting the threats to Ukraine's national security.

3. Thus, when analyzing the activities of government agencies and risk assessment, what affecting its activities, particular attention should be paid to information risks, which undoubtedly affect the quality and completeness of information provision of state bodies, the use of which makes it possible to reduce material, financial and time resources.

4. Means for minimizing information risks remain: control of access to information, control and protection of information systems, databases, etc., from hacker and virus attacks, ensuring the uninterrupted operation of information systems, even in emergency situations (availability of additional backup servers, tools ensuring uninterrupted power supply). The standard means that work well and in the case of information risks are risk insurance, that is,

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the transfer of risk to another entity (compensation for possible losses put, say, an insurance company) or the transformation of information risk into other types of risk - with a lower level of losses [13].

5. In addition, the measures taken as a result of the identification and analysis of

information risks will make it possible to substantially minimize the risks in the activities of state bodies, as well as in general terms, will help to actively implement information and communication technologies in all spheres of society's life

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