ДЕРЖАВНЕ УПРАВЛІННЯ

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IMPLEMENTATION AND IMPROVEMENT OF ELECTRONIC DOCUMENT MANAGEMENT IN THE GOVERNMENT ADMINISTRATION

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ВПРОВАДЖЕННЯ ТА ВДОСКОНАЛЕННЯ ЕЛЕКТРОННОГО ДОКУМЕНТООБІГУ В ДЕРЖАВНОМУ УПРАВЛІННІ

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ВНЕДРЕНИЕ И СОВЕРШЕНСТВОВАНИЯ ЭЛЕКТРОННОГО ДОКУМЕНТООБОРОТА В ГОСУДАРСТВЕННОМ УПРАВЛЕНИИ

The article focuses on the analysis of the formation and development issues of the information support of public authorities. Information processes and the types of information resource in government administration are studied. The basic approaches and ways of forming information resource are considered. The ways of implementation and improvement of Electronic Document Management in public administration are suggested.

Key words: information resources, information system, information technology, electronic document, electronic document management system.

Проведено аналіз проблем формування та розвитку інформаційного забезпечення органів державної влади. Досліджено інформаційні процеси та види інформаційного ресурсу в державному управлінні. Розглянуто основні підходи та шляхи формування інформаційного ресурсу. Запропоновано шляхи впровадження та вдосконалення електронного документообігу в державному управлінні.

Ключові слова: інформаційні ресурси, інформаційна система, інформаційні технології, електронний документ, система електронного документообігу.

Проведен анализ проблем формирования и развития информационного обеспечения органов государственной власти. Исследованы информационные процессы и виды информационного ресурса в государственном управлении. Рассмотрены основные подходы и пути формирования информационного ресурса. Предложены пути внедрения и совершенствования электронного документооборота в государственном управлении.

Ключевые слова: информационные ресурсы, информационная система, информационные технологии, электронный документ, система электронного документооборота.

Statement of the problem. Public administration system uses information as a resource for making effective management decisions. Providing required information resources for information systems that use advanced technology can significantly accelerate management processes and ensure high quality of decisions.

Information systems provide great opportunities for increasing the productivity of information processing. However they are often not used in full, that requiring more research in this area. One of these problems is to improve the functioning of the public administration through the use of qualitative information resource and modern technologies of information processing.

Analysis of recent research and publications. The issues of information support of government administration investigated in the works of national and foreign scientists: Bakaev A.A., Bersutsky J.G., Bersutsky A.J., Bryllyuen L., Wiener N., Glushkov V.M., Ashby W. Ross, England J., Kalyuzhnyy R.A., Kastler H., Kolmogorov A.M., Korogodin V.I., Lepa M.M., Martin N., Nykytov V.A., Nicolis G., Porokhnya V.M., Sytnyk V.F., Ursul A.D., Shamrai V.A., Shannon K.

Allocation of the unsolved earlier parts of the overall problem. The issues of formation of information resources in government are insufficiently studied. Therefore, the study of the problem of information support of public administration is important.

The objectives of the article. The aim of this article is to study the information resources used in government administration for making efficient decisions.

The object of the research is process of functioning government administration system.

The subject of research is theoretical approaches to the analysis of information resources in information systems of government.

The main material. Information is one of the most important resources in public administration. Information is generated through the transformation of data. In information system a clear distinction is made between data and information. Data are used for the production of information. Data is a raw fact and can take the form of a number or statement such as a date or a measurement. It is necessary for public administration to put in place procedures to ensure data are recorded. A common definition of information is that it is data that have been processed so that they are meaningful [4]. This requires a process that is used to produce information which involves collecting data and then subjecting them to a transformation process in order to create information. However, in the public administration as a raw material for information mainly used already processed data. These data are the information resources for further processing. The processed information is used to make decisions. Decision making in public administration is a process by which public servants respond to opportunities and threats by analyzing options, and making decisions about goals and courses of action [2].

Law of Ukraine "On the National Informatization Program" defines information resource as a set of documents in information systems (libraries, archives, databanks, etc.). It defines information product (products) as the documentary information prepared and intended for requirements satisfaction of users. The main types of information resources that established by law in our country defined in the law of Ukraine "On information". As to the content the information shall be split as information: on physical person; as reference and encyclopedia information; on environment (ecological information); on goods (works, services); science and technology information; tax information; legal; statistics; sociological; other types of information.

Information on physical person – ID (Identification data) data, other information or information pool about a physical person. It is not allowed to compile, store, use and disseminate the confidential information about the person without his agreement, except the law specified cases, and only in the national interests, economic welfare and human rights defense. Confidential personal ID information is: nationality, education, marital status, faith, health, address, DOB (Date of birth), POB (place of birth). Everyone has a free access to personal info except the cases set by law.

Reference and encyclopedia information – systematized, documented promulgated or otherwise disseminated information about society, social being and environment. Key sources of reference and encyclopedia information are: encyclopedias, dictionaries, guides, ad notes and advertisements, maps, e-databases and data pools, archives of information services, networks and systems, as well as certificates issued by authorized organs and self-governance, citizen associations, organizations, their staff and automated information and telecom systems. Legal regime of reference and encyclopedia information shall be specified by the laws of Ukraine and international treaties/agreements the VR Ukraine has consented to.

Information on environment (ecology info) – info/data on: Environment status and its components, including genetically modified organisms and interaction between these components; Factors that affect or may environment components (substances, energy, noise, radiation, as well as activities or events, including administrative, agreements on environment, policies, legislation, plans and programs); Status of health and personal security,

living conditions, status of objects of culture and constructions to a degree they may be affected by environment components.

Legal regime of the information on environment (ecological information) shall be specified by the law of Ukraine and international treaties/agreements the VR Ukraine has consented to. The information on environment, except the information about the location of military facilities, may not be classified as information with limited access.

Information on goods (works, services) – info/data about quantitative, qualitative and other characteristics of goods (works, services). The information about effect of a good (services, works) on life and health of people may not be classified as information with limited access. Legal regime of the information on goods (works, services) shall be specified by the laws of Ukraine and international treaties/agreements the VR Ukraine has consented to.

Science and technology information – any information and/or data about domestic and foreign achievements in science, technology and manufacturing obtained in the course of science and research, development, design and technology, production and public activities that can be recorded on material media or retrieved electronically. Legal regime of science and technology information shall be specified by the law On Science and technology information, other laws international treaties/agreements the VR Ukraine has consented to. Science and technology information is open for access if it is not stipulated otherwise by Ukraine laws.

Tax information – data pool created and obtained by the parties to information relations in the line of duty and necessary for control organs to perform under the Tax Code of Ukraine. The legal regime of the tax information shall be specified by the TCU and other laws.

Legal information – any information on law, legal system, sources, implementation, legal facts, legal relations, legal order, torts, counter measures and prevention thereof. Sources of legal information are the Constitution of Ukraine, other laws and bylaws, international treaties/agreements, international law norms and principles, legal acts, media publications, public speeches, other sources of information on legal matters. To ensure physical/legal persons' access to legislation and other normative acts the state shall ensure the publication thereof in mass print runs shortly after their enactment.

Statistics information – documented information that provides quantitative characteristics of mass events/processes that occur in the economic, social, cultural and other spheres of life. Official state statistics (OSS) information is subject to systemic promulgation. The state guarantees that parties to information relations have an open access to OSS, save the information with limited access as stipulated by law. The legal regime of the state statistics info shall be specified by the law On SS, other laws international treaties/agreements the VR Ukraine has consented to.

Sociological information – any documented information about the attitude towards some persons, developments, events, processes, facts, etc. Legal regime of sociological information shall be specified by the laws of Ukraine and international treaties/agreements the VR Ukraine has consented.

There is a relationship between the concepts of information support, information resources and information. Information resources are the subject of work being done in the administration system. Information is seen as the product of the work. Information support includes information resources, information and methods of information base. They are: classification and coding of information, methods of referenced data, creating databases and databanks. However, this approach to the definition of an information resource concerns the information base of automated information systems and ignores the fact that in addition to it there are other sources of information used in the administration system in decision-making. This is the information carriers which are the staff working in the organization and means that

are not used by the information system. For example, material objects used as examples to provide more information than what is in the documents, photographs, drawings, etc.

The system of public administration uses different kinds of information. Therefore it is reasonable to believe that all kinds of information are "information resources". Information resources have all users who are in the structure of public administration agencies. Each department of the public administration agency uses several types of information from different sources. Information is provided from global information systems, public information resources, industry, associations, organizations belonging to the sphere of influence of the public administration, information resources individual professionals. Informational resources should also include archival information that has lost its relevance, but can be used to analyze trends that occur in the processes taking place in the public administration. The System of public administration uses various types of information carriers. The most important of them are paper and electronic carriers.

The suppliers of information resources in public administration are: global, regional, corporate information networks; central government; local governments; civil servants; associations, enterprises and organizations; political formations; social community; citizens. Document is the most common form of information resource in public administration. It may be paper or electronic. Also, information is stored in the form of facts related to the special structure in the information system. Another form is the memory of people. The man is a source of expert and professional information, which is used for decision making. Therefore, for the public administration is offered as information resources consider the following types: documents, facts, people and special kinds of information resources.

Generalized scheme of the information process in public administration agency is shown in Figure 1. The scheme reflects procedures in the automated system that provides information for decision making.
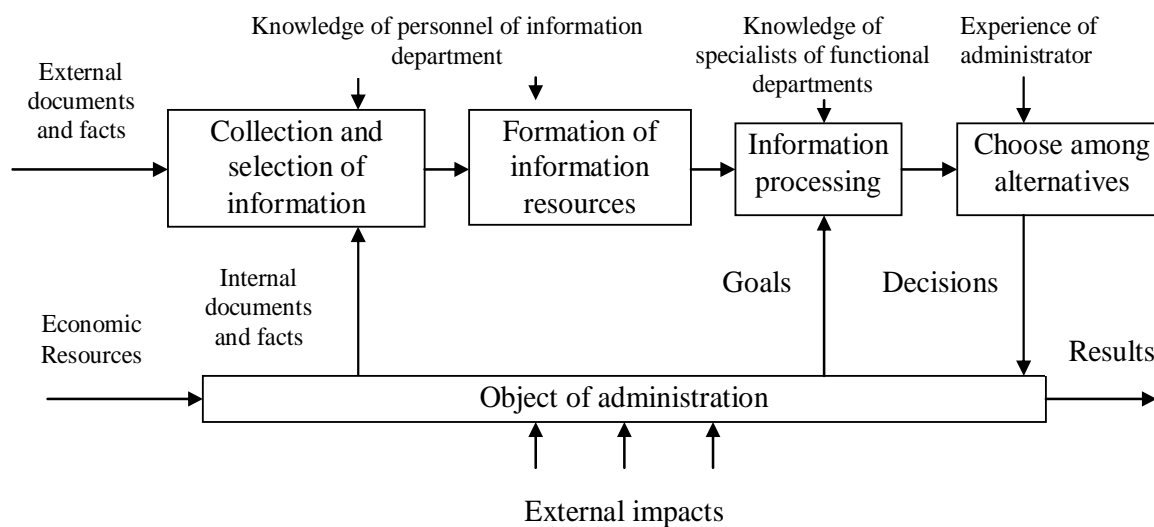

Fig. 1. Scheme of the information process in public administration agency

Information system collects information from the external and internal environment and generates an information resource. The information comes in the form of documents and facts which are selected according to the criteria of representativeness, accuracy, timeliness, relevance, adequacy, effectiveness. Selected information is used to create information resources. These operations make personnel of information department. Resources are used for the decision making. The Decision Making process includes the stages of analysis, generate alternatives, selection criteria, assess alternatives, choose among alternatives and implement the chosen alternative. The stages of generating alternatives and of choosing

selection criteria are performed by specialists of the functional departments. Information after processing by specialists in the form of alternatives and necessary additional information comes to administrator who makes decisions.

Based on preliminary analysis we can suggest definition of information resource in government administration and the principles of its formation. Information resource in government administration is an aggregate of documents, facts, knowledge, special kinds of information in information systems of public authorities, which are available for immediate use and are lawfully collected for the purpose of government administration.

To ensure effective functioning of information systems in public administration is necessary to ensure the compliance of a number of principles in forming an information resource:

- The selection principle – information resource should be formed according to the criteria of representativeness, accuracy, timeliness, relevance, adequacy and effectiveness of information;

- Principle of development – the information resource must improve in accordance with the requirements of government administration;

- The principle of permanent increasing – information resource must fill up the necessary information base for solving new administration problems;

- The principle of activeness – insufficiency of information and emergence of contradictions leads to the need of the development of resource;

- Principle of integration – the need of consolidation individual components of an information resource into a single system that provides their interrelated and interdependent interaction;

- The principle of disposable input and multiple uses – the inputting of information must be complete and sufficient for its use to all users who have the correct access rights;

- Principle of security – the presence of different levels of protection and access to information;

- The principle of flexibility – possibility to respond to changes in the environment and adapt to them;

- The principle of interaction with other resource information systems;

- The principle of decentralization of structure information resource – through the use technology of distribution information is necessary bring closer the information resources unto the places of their using.

Information resources provide processes in information systems of government that produce information for administrators, decision makers. Condition of this resource is one of the most important factors that affect the efficiency of public administration.

One of the general trends of society and state development is transfer to informational society based on wide implementation of information-communication technologies (ICT) in all man activity ranges. Among plurals of modern ICT, that determines this progress, the particular place is taken by the "electronic document" technology [3]. An electronic document is any electronic media content that is intended to be used in either an electronic form or as printed output. Information recorded in a manner that requires a computer or other electronic device to display, interpret, and process it. This includes documents (whether text, graphics, or spreadsheets) generated by a software and stored on magnetic media (disks) or optical media (CDs, DVDs), as well as electronic mail and documents transmitted in electronic data interchange (EDI) [1]. Electronic Document Management system is used for tracking, managing and storing documents. EDM (Electronic Document Management) is the management of different kinds of documents in an organization using computer programs and storage. An EDM system allows an organization and its users to create a document or capture

a hard copy in electronic form, store, edit, print, process, and otherwise manage documents in image, video, and audio, as well as in text form. An EDM system usually provides a single view of multiple databases and may include scanners for document capture, printers for creating hard copy, storage devices such as redundant array of independent disks systems, and computer server and server programs for managing the databases that contains the documents.

EDM may be needed in organizations that capture and store a large number of documents. EDM may be combined with or integrated into other applications. It may be combined with a workflow management approach. Capture may include document imaging and optical character recognition (OCR). In the context of regulatory compliance, Electronic Document Management must address the following: how long documents should be retained; where documents should be stored; how changes to documents can be traced; how documents can be recovered if a disaster should occur.

An Electronic document management software application can be used to create a single view of all an organization's documents and provide workflow tools to monitor and control modifications. In such a system, it's important that document in all formats, including multimedia, are tagged and indexed so they can be found quickly by keyword or full text search [5].

The implementation of electronic document management in public administration is the first step and foundation of implementing the concept of "electronic government". It will provide an effective document management at all stages of their life cycle - from preparation and registration before issuing resolutions, reports and submitting to the archive. Implementation of an automated process makes it possible to reduce the time to prepare the documents; reduce the movement of documents and increase the efficiency of their performance; identify the responsible for the execution of the document and determine how much time government servant needs to process the document; effectively organize search documents, including if having minimal information about it; generate reports and monitor the movement of documents and workflow management decisions based on the data of the reports; bring the document in line with national standards of Ukraine; collaborate with citizens and third parties on a "one stop shop". Implementing electronic document management provides legal significance of documents using digital signatures. The system also provides data protection.

Electronic Document Management is a form of Database Management System. An Electronic Document Management System (EDMS) – is a system that ensures the orderly creation, access management and dissemination of electronic documents, and provides control over the flow of documents in the organization. Electronic document management systems are meant to provide support throughout the life cycle of a document.

Conclusions and suggestions. System of Public administration uses information as one of the most important resources. Information system forms an information resource from the external and internal environment. Information resource can be defined as a combination of documents, facts, knowledge, people, and special kinds of information in information systems of public authorities. It is available for immediate use and lawfully collected for the purpose of providing information management. As to the content the information shall be split as information: on physical person; as reference and encyclopedia information; on environment (ecological information); on goods (works, services); science and technology information; tax information; legal; statistics; sociological; other types of information. Defined scientific principles formation of information resources in government administration such as: the selection principle, principle of development, principle of permanent increasing, principle of activeness, principle of integration and principles of disposable input and multiple uses, security, flexibility, interaction, decentralization.

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The information in government agencies is represented in various forms and combination of these forms provides a complete picture of situations and problems. The most important form is document. A document management system is a system used to track, manage and store documents. Performing of all procedures in the implementation of document management system is more effective if we use computer technology. An electronic document management system (EDMS) provides the technology and methods needed to capture, manage, share, and secure information within an organization. Benefits of electronic document management system in government administration: efficiency and productivity in business processes; compliance with regulatory, legal, and quality requirements, consistency and repeatability of business operations, faster process cycle times; elimination of paper-based costs, storage fees, and shipping; improved business continuity planning. Using EDM increases the efficiency of the government administration and ensures high quality of decisions.

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