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## DEVELOPMENT OF E-GOVERNANCE IN TERMS OF DECENTRALIZATION OF POWER IN UKRAINE

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## РОЗВИТОК ЕЛЕКТРОННОГО УРЯДУВАННЯ В УМОВАХ ДЕЦЕНТРАЛІЗАЦІЇ ВЛАДИ В УКРАЇНІ

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## РАЗВИТИЕ ЭЛЕКТРОННОГО ПРАВИТЕЛЬСТВА В УСЛОВИЯХ ДЕЦЕНТРАЛИЗАЦИИ ВЛАСТИ В УКРАИНЕ

*The article analyzes the functioning of public administration and local government in the context of the introduction and development of e-Governance. Theoretical foundations of e-Governance, the level of development of information and communication technologies in public administration and local government and local government, the state of e-Governance are examined. The comparative analysis of both the functional and process approaches to governance is fulfilled, identified their main advantages and disadvantages. The process approach in the local government in accordance with the international standard ISO 18091: 2014 is suggested. A scheme of the relationship between local governments is proposed.*

**Key words:** e-Government, network readiness, information, information technology, electronic document management, process approach, Internet-based information systems

*У статті проведено аналіз функціонування системи державного управління та місцевого самоврядування в контексті впровадження і розвитку е-урядування. Розглянуто теоретичні основи електронного урядування, рівень розвитку інформаційних і комунікаційних технологій в органах державного управління та місцевого самоврядування, стан електронного урядування. Проведено порівняльний аналіз функціонального і процесного підходів до управління, визначені їх основні переваги та недоліки. Пропонується використання процесного підходу в місцевому самоврядуванні відповідно до міжнародного стандарту ISO 18091: 2014. Запропоновано схему взаємозв'язку між місцевими органами влади.*

**Ключові слова:** електронний уряд, мережева готовність, інформація, інформаційні технології, електронний документообіг, процесний підхід, інформаційні системи на основі мережі Internet.

*В статье проведен анализ функционирования системы государственного управления и местного самоуправления в контексте внедрения и развития электронного правительства. Рассмотрены теоретические основы электронного правительства, уровень развития информационных и коммуникационных технологий в органах государственной власти и местного самоуправления, состояние электронного управления. Проведен сравнительный анализ функционального и процессного подходов к управлению, определены их основные преимущества и недостатки. Предлагается использование процессного подхода в местном самоуправлении в соответствии с международным стандартом ISO 18091: 2014. Предложена схема взаимосвязи между местными органами власти.*

**Ключевые слова:** электронное правительство, сетевая готовность, информация, информационные технологии, электронный документооборот, процессный подход, информационные системы на основе сети Internet.

**Problem statement.** Nowadays the processes of increasing the efficiency of local government are associated with the use of modern information technology. The development of public administration and local government in Ukraine is accompanied by a significant increase in information flows related to the exchange of information necessary to make effective management decisions. The task of improving the efficiency of local government defined by the ability to analyze information and prepare it for decisions making and monitoring their implementation. In this regard, implementation of the model of "electronic government" should be seen as a tool to transition to a new quality of public administration and local government.

**Analysis of recent research and publications.** Issues of information support of public administration and local government are studied in the works: Bakaev A.A., Bersutskoho J.G., Bersutskoho A.J., Glushkov V.M., Kalyuzhnyy R.A., Korogodin V.I., Lepa M.M., Porokhnyya V.M., Sytnyk V.F., Shamrai V.O. etc.

**Allocation of the unsolved earlier parts of the overall problem.** In spite of thorough researches information support of local government, the processes of formation of e-Government insufficiently studied. Therefore, problems of its implementation, operation and development in the state and local authorities are particularly relevant.

**The objectives of the article.** The aim of this work is to study the functioning of public administration and local government in the context of their readiness for the introduction of e-Governance. The object of this work is to study the process of formation of e-Government in local government. The subject of research is theoretical concepts and practical approaches to the introduction of e-Governance in local government.

**The main results of the study.** Information is an important resource for organizations. The data collected by organizations is growing in volume and complexity. As such, they are abandoning traditional methods and relying more heavily on information systems to aid in the analysis and utilization of time-sensitive data and organizational knowledge. Information systems are popular in the government administration and local government. They improve effectiveness and efficiency afforded by real-time decision support. Information technologies, including Internet-based information systems, are playing vital and expanding roles in public administration. Information technology can help all kinds of government systems improve decision making, and workgroup collaboration. Information technologies and systems are an essential ingredient for success in today's dynamic global environment [9].

Today every stage of development of society is determined by the degree of information technologies. The important stage of development of these technologies is the information society. The distinguishing characteristic of the information society is the freedom of access to information and freedom of its dissemination. This contributes to the improvement of democratic procedures, increase business activity, development of fair competition, ensuring consumer rights. It also prevents the threat of "oligarchization" of economy, bureaucracy and inefficiency monopolistic structures, poses a barrier to the degradation of the economy and corruption. There is also a determination that the information society is a society, in which the crucial roles play: the acquisition, processing, storage, transmission, dissemination, use knowledge and information, including through technical capabilities that are constantly being improved.

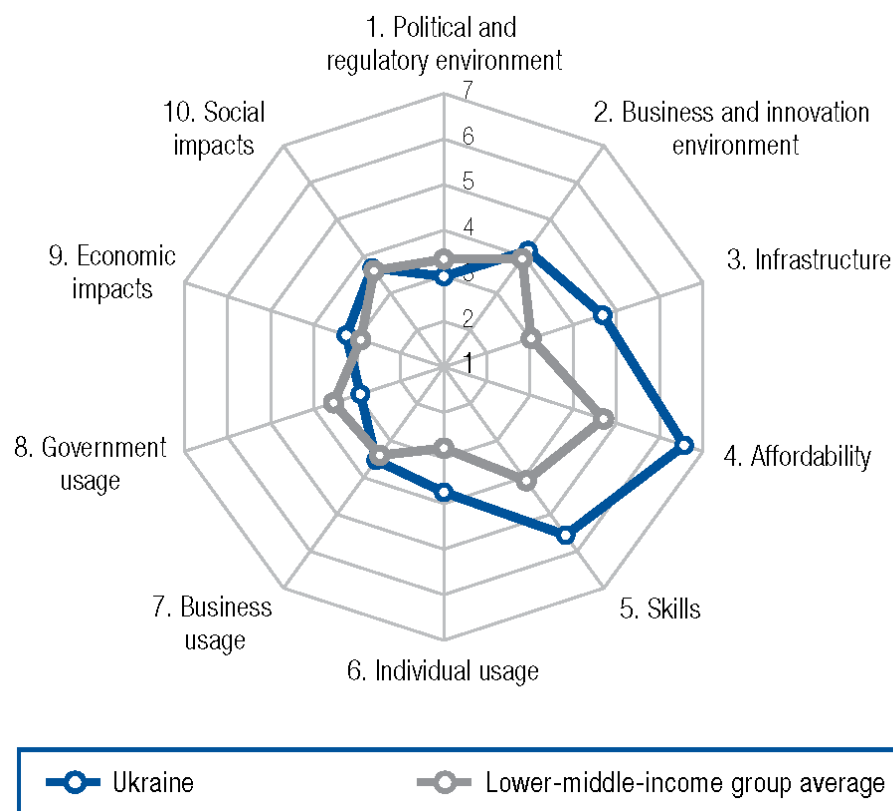
Public administration and local government are characterized by the use of modern computer technologies that ensure timeliness, accuracy, relevance and reliability of management information. Development of public administration and local government systems is realized in the direction of knowledge-intensive administrative work. It imposes special requirements to civil servants in the development of modern management, the use of information technology. Information is a resource without which we cannot use modern management techniques [3]. This requires continuous improvement of information systems in public administration. Results of information technology can be strategic and tactical. Tactical can reduce costs of management process. Reduced costs associated with reducing the complexity of information processing, reduction of consumables, storage and working space. Also is reduced the interaction of government and citizens. Strategic results, which associated with improving the quality of management decisions, raise the public confidence to the government and reduce costs for maintenance of power. This is the strategic objectives and the core of e-Government. Information system of public administration is seen as open to cooperation with other information systems.

The traditional model of governance is based on the principle of hierarchy, but the transition to an information society leads to a radical rethinking of the role and structure of public administration. In addition, globalization leads to the fact that the state authorities of various countries often interact on multiple levels from local to higher. In many countries the responsibility for services to the public transmitted from the central authorities to the local and regional level [1]. The tool of solving many problems caused by the use of hierarchical model of public administration is e-Government. E-Government is seen as a new trend of using the Internet and is the main way of spreading information

technology and realization of ideas of information society. The introduction of e-Government requires analysis of situation with all its components, and analyzing the readiness of the public administration and local government to use modern information technologies in their work [7].

Analysts of World Economic Forum (WEF) published a report on the development of the information society in the world (The Global Information Technology Report 2015). The report describes recent changes in Networked Readiness Index for different countries, have been assessed the factors, policies and institutions that allow countries to make full use of information and communication technologies (ICT) to improve the competitiveness and prosperity. According to the Networked Readiness Index for 2015, in dozen of leading countries with the most effective use of information technology included Singapore, Finland, Sweden, the Netherlands, Norway, Switzerland, USA, United Kingdom, Luxembourg, Japan. Ukraine now stands at the 71 position. Its closest neighbors are Moldova - 68, Romania - 63, Slovakia - 59, Hungary - 53, Poland - 50.

The Networked Readiness Index determines the level of ICT development in the world. It consists of subindexes such as Environment, Readiness, Usage and Impact. They describe the roles of government, business and society in shaping the environment for ICT. Figure 1 shows a chart that displays the key indicators of ICT development in Ukraine [12].



*Fig.1. Main indicators of ICT development in Ukraine*

The structure of the indicators of ICT development include: 1) political and regulatory environment, 2) business and innovation environment, 3) infrastructure, 4) affordability, 5) skills, 6) individual usage, 7) business usage, 8) Government usage, 9) economic impacts, 10) social impacts. The blue line on the graph represents the state of ICT in Ukraine, gray line - the status for the group of countries with below average incomes. Chart shows that in Ukraine the highest value of these indicators are: affordability and skills related to the information systems and technologies. The worst situation with the indicators that characterize: political and regulatory environment, business usage, government usage, the economy and social impacts.

Ukraine showed the highest ranking position of the Networked Readiness Index in 2009 (position 62). Then over the next two years were lost 28 points, so that in 2011 our country has moved to the 90

position among 138 countries. In recent years, given the expansion of the countries participating in the rating, Ukraine is included in seventh dozen countries and concedes CIS countries and Eastern Europe.

The foundation of implementing the concept of "e-Government" is a document management system for regional government. In Ukraine the effectiveness of vertical and horizontal cooperation between authorities plays a huge role in the effectiveness of the regional authorities. The implementing of document management systems and document archives will improve the document management and decision making in regional government, transparency and control of administrative decisions as a whole [2].

For study the flow of government documents are used the scheme of information flows that take into account the main sources of information that comes to the organization as well as consumers of information. The sources which send information from local governments are: Cabinet of Ministers of Ukraine, Presidential Administration, Verkhovna Rada of Ukraine (Parliament), Central Executive Authorities, Regional and City State Administrations, other local governments, organizations, enterprises and citizens. The consumers of information are the same agencies, organizations, central and local authorities, citizens.

Research results in the public administration and local government for few years show that the number of processed documents is increased. During the period from 2010 to 2014, this number increased 1.7 times. Research conducted in the Local authorities in 2001 - 2009 years show an increase in the number of documents in 2 - 2.2 times, corresponding growth rate fixed in subsequent periods [5].

Studies show that against the background of preservation quantitative composition of civil servants we can see steady growth in the number of documents processed by the system of public administration and local government. Using of powerful computer systems offsets the high workload for staff. However, a quantitative increase in the documents flow does not improve the quality of decisions made. The state of government system and the need of its improvement indicate that the system "mechanically" increases quantitative performance, but not the quality of management decisions.

Under Article 133 of the Draft Law on Amendments to the Constitution of Ukraine (concerning the decentralization of power) № 2217 from 01.07.2015 g. Administrative and territorial structure of Ukraine consists of administrative units, communities, districts, regions. The territory of Ukraine is divided into communities. The community is the primary unit in the system of administrative and territorial structure of Ukraine. Some communities make up the area. Article 140 states that the local community executes local government both directly and through local governments through self-regulation of public affairs of local significance and management within the Constitution and laws of Ukraine. Community council is an executive representative body of local government. The executive bodies of local self-government communities are controlled and accountable to community council [6]. Decentralization of power requires the use of new management methods using modern information technology. A new approach to governance also requires improved mechanisms for its implementation. The main feature of the new system of government is that it decreases the management influence from the national level. At the same time there is a problem of coordination of executive bodies in the system of local government that do not create a hierarchical structure consisting of administrative units.

The current system of state and local governments based on the principles of functional (hierarchical) management approach associated with delegation of authority and responsibility through the functions. The function is seen as a subsystem of an organization allocated on the basis of similarity of work. It is a system of delegation of authority and accountability that permeates the entire organization. However, horizontal links between structural units are weak, and vertical - are strong. The civil servant doing his job and he is responsible for his functions. He is not interested in the functions and results of the work of parallel departments. The main disadvantage of this approach is the isolation departments from one another, which leads to monopolization of decisions; to high specialization of workers, that does not allow them to see emerging problems in general; the criteria of

performance for functional department are chief's assessments, not the results of the business process; the inefficiency of information support of life cycle processes and etc.

The weakening of the hierarchy in the system of government requires the use of other methods of control in organizations that would coordinate the activities and use horizontal integration without subordination to each other. In this case, the most appropriate is a process approach to management, which is associated with delegation of authority and responsibility through business processes where business process is stable (repetitive) activity, which transforms resources (inputs) into results (outputs) [4]. The advantage of this approach is that the technology business process description ensures transparency of all operations and allows analyzing the possible consequences of failures at some stage of work, time to find and fix the error. Another advantage of the technology is possibility to manage operating costs. Process approach to management allows managers to identify and manage key processes in the performance of the organization to integrate disparate actions of functional departments and their efforts to obtain the overall result. The main provisions and advantages of the process approach set out in the international quality standard ISO 9000.

In 2014 was issued a new standard ISO 18091: 2014 "Quality management systems — Guidelines for the application of ISO 9001:2008 in local government", which explains how the quality management system is implemented in public administration and local government. According this standard the typical examples of local government processes are: strategic management processes to determine the role of the local government in the socio-economic environment; provision of resources and the capacity to provide the product/service of local government; processes needed to maintain the work environment; preparation, revision and updating of development plans and work programs; monitoring and measurement of the product/service provision process; f) transparent internal and external communication processes; processes to address emergency preparedness and response to crises [8].

The process approach is a management strategy. When managers use a process approach, it means that they manage and control the processes that make up their organizations, the interactions between these processes, and the inputs and outputs that tie these processes together. It also means that they manage these process interactions as a system. Using of a process approach within a single organization provides allocation of horizontal processes (business processes) and their participants, the appointment of one of the participants as a process owner, the delegation of authority and responsibility. In this case, a matrix organizational structure is used. The matrix organizational structure is one of the primary forms of structures that are adopted by organizations to carry forth their work. In this, a structure is adopted that groups employees according to the functions and products. A matrix organizational structure combines two types of organizational structures namely the product organizational structure and the pure functional structure to create a unique blend of work environment. This structure and design is most useful for when the assignments are project driven, because in this, several professionals with distinct functioning powers will be hired to carry forth the functions. Participants of horizontal process are subordinate to both functional managers and owners of the process. It is associated with the use of two simultaneous approaches to managing regular activities - functional and process. Coordination of several organizations activity requires availability of governing body on functional basis, which could serve as a functional manager. This body may be a management system of electronic government (e-Government) is based on computer technology that will allow realize management process within the powers granted to authorities at the national level.

Compared with the functional approach, according to which the organization is divided into departments that are responsible for a specific function, process approach integrates these functions on the basis of the concept of "creating value for the consumer." There are essentially three types of processes: individual process which individual employee performs; functional or vertical process, reflecting the organization vertical; business-process, or horizontal process that crosses the horizontal system of organizational activity and represents a set of interrelated processes, providing the final results.

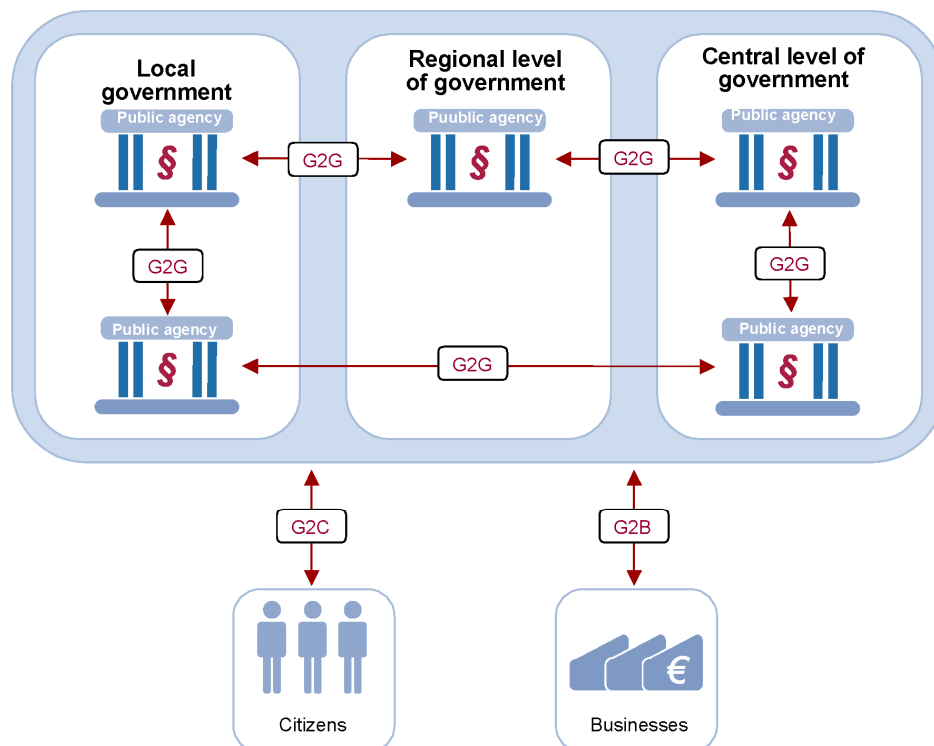
The integrated processes chain represents the internal customers, and each subsequent integrated process (and its separate operation) specifies the requirements for the previous one. The system of government can be represented as a network of interrelated processes; functional processes are linked with business-processes, each process consists of other subprocesses up to the individual servant. The success of the government system depends on how consumers of different processes are identified in the network and how well and efficiently they are satisfied. For efficient operation of system which represented as a network of relationships "consumer - suppliers" is necessary that the supplier be respectful to the customer requirements.

Experience shows that such a management structure is most effective. It provides process management team which consists of all the leaders of integrated processes who included in the cross-functional processes. Focus on process means that the main factor is prevention, not correction of errors. The impact on the process, not the outcome of the process, is the basic concept of process management. This can be done, given that the process converts inputs into outputs of the system. For implementing e-Government as a coordinating body it is necessary to create architecture model for e-Government applications. By the term electronic government, we understand the e-Government simplification and execution of information, communication, and interchange processes within and between governmental institutions, and also between the governmental institutions and citizens or organizations. The focus is put on electronic governmental services and all public transactions directed at citizens (taxation, social facilities, employment service, social security, official ID cards, health services, etc.) and at companies (taxes, company start-ups, statistical offices, customs declaration, environmental performance, public procurement, etc.) [10].

The implementation of e-Government is bound by organizational requirements which must be taken into consideration: cross-administration interaction - when implementing e-Government, Ukraine must face the problems of a de-centralized administration structure because the de-centralized administrative units are largely independent of central government; optimization of administrative processes - the successful introduction and implementation of e-Government calls for the examination of grown processes, existing rules, processes and structures must be adapted and simplified in a suitable manner taking technical and legal circumstances into consideration; qualification of staff - the use and updating of standards, along with the development, operation and correct handling of IT-supported systems, calls for the continuous exchange of information and training; involvement of users - the use of e-Government is strongly dependent on customer acceptance of the services offered, full utilization of the savings potential of e-Government is contingent upon the online services provided being accepted and used by potential users [11].

Interaction relations: the different partners involved in e-Government can be distinguished: Government to citizen (G2C) - this situation refers to the electronic interaction between citizens and administrations, this area also covers non-profit and non-governmental organizations; Government to business (G2B) - this term covers electronic relations between administrations and business; Government to government (G2G) - this application covers the vast field of electronic relations between different public agencies and institutions of the public administration sector.

Services are rendered to citizens, business and other administrations. The focus in this case is on the G2C and G2B interaction relations. A scheme of the relationship between local governments (G2G) is handled within the framework of the relevant transaction services between administrations and citizens and/or business (Fig.2).



*Fig.2. A scheme of the relationship between local governments*

The users of e-Government services usually do not differentiate between the central, regional levels of government and local government. Instead, companies and citizens tend to expect standardized and consistent e-Government services.

**Conclusions and suggestions.** The introduction of e-Governing in Ukraine at this stage allows to reach the level of enhanced web presence in development of e-Government and provide services to organizations and population using information and communication technologies; introduce information and communication technology in many areas of public administration and local government, such as interaction in the local government system, with organizations and individuals; start the transformation of the system of government, where information and communication technologies contribute to the transformation of the public sector. At the same time there are a number of unresolved issues in legal, organizational and technical support. Informational sphere develops slowly and not systemically, leading to the loss of Ukraine's position in the world rankings. This requires the formulation and implementation of a single and coherent public policy. For quality improvement and acceleration of development of e-Government in Ukraine needs to develop a long-term model of its implementing to the provision a detailed schedule for all responsible authorities for the implementation of tasks assigned to them; ensure cooperation between the executive authorities, local governments and civil society through the use of new information and communication technologies; to ensure the development and implementation of model pilot projects on introduction of e-Governance at regional level; ensure the functioning elements of e-Government, to create long-term budget planning and funding in the area of e-Governance; to use foreign experience for development of e-Government.

However, the most significant challenge is the improvement of the system of government by implementing of new management techniques that would allow effective use of modern information and communication technologies. One such method is the use of a process approach that involves the use of a system of processes within an organization, together with the identification and interactions and managing them to obtain the desired result. Process approach proposed as the basic approach in international quality standards ISO 9000, particularly for the authorities at the local level in ISO 18091: 2014. Implementation of process approach in the public administration and local government with the

involvement of the opportunities and benefits of e-Government will improve the efficiency of government administration in Ukraine to ensure the implementation of ideas of information society.

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