

Nataliia Pasenko

*PhD student of the Public Administration and local Self-government Department in the ORIPA NAPA under the President of Ukraine
ORCID ID 0000-0003-2556-7372*

INFORMATION TECHNOLOGIES TO PROVIDE SOCIAL EFFECTIVENESS OF MANAGEMENT DECISIONS IN MULTILEVEL GOVERNANCE SYSTEM

The article examines the possibilities to use modern IT mechanisms in the process of preparation, making and implementation of management decisions in multilevel governance system, clarifies the definition of «social effectiveness of management decisions», presents options for the use of IT mechanisms at the stages of preparation, making and implementation of management decisions with appropriate quality indicators of the decisions.

Key words: *effectiveness; social effectiveness; management decisions; quality of management decisions; IT mechanism; multilevel governance.*

Наталія Пасенко

*аспірантка кафедри публічного управління та регіоналістики
ОРІДУ НАДУ при Президентові України
ORCID ID 0000-0003-2556-7372*

ІНФОРМАЦІЙНІ ТЕХНОЛОГІЇ В ЗАБЕЗПЕЧЕННІ СОЦІАЛЬНОЇ ЕФЕКТИВНОСТІ УПРАВЛІНСЬКИХ РІШЕНЬ У СИСТЕМІ MULTILEVEL GOVERNANCE

Актуальність теми обумовлюється, з одного боку, нагальною потребою впровадження засад multilevel governance у систему публічного управління, що є черговим перспективним кроком на шляху демократизації та підвищення соціальної ефективності системи управління в Україні, з іншого боку – вимогами реалізації державної політики широкої інформатизації суспільства. Усе це вимагає зміни підходів до забезпечення ефективності системи публічного управління в цілому із застосуванням дієвих механізмів інформаційних технологій, які довели свою результативність в усіх сферах управління.

Не зважаючи на те, що проблемам впровадження та реалізації засад multilevel governance в системі публічного управління присвячено чимало досліджень, питання застосування механізмів інформаційних технологій саме з позицій забезпечення соціальної ефективності управління досі висвітлено недостатньо. Це обумовило необхідність систематизації механізмів інформаційних технологій для забезпечення соціальної ефективності управлінських рішень в системі multilevel governance.

Для реалізації цієї мети узагальнено основні засади впровадження підходу multilevel governance у процесі підготовки, прийняття та реалізації управлінських рішень; досліджено можливості сучасних механізмів інформаційних технологій; уточнено визначення поняття «соціальна ефективність управлінських рішень» в системі multilevel governance; визначено варіанти застосування та адаптовано механізми інформаційних технологій для забезпечення соціальної ефективності управлінських рішень в системі multilevel governance.

Визначення системи multilevel governance розкривається як системна композиція інноваційних управлінських підходів, спрямованих на підтримку балансу між її складовими включаючи обов'язкове зменшення ролі держави. Виділено шість управлінських рівнів підготовки та прийняття рішень: наднаціональний, національний, регіональний, субрегіональний, місцевий, локальний. Застосування ІТ-механізмів розглянуто на трьох стадіях життєвого циклу управлінського рішення: підготовки, прийняття та реалізації.

Сучасні механізми інформаційних технологій розглянуто за цільовим та функціональним призначенням, а також за ступенем централізації. Детально аналізуються можливості сучасних ІТ-механізмів, визначаються їх роль та значення у процесі забезпечення соціальної ефективності управлінських рішень в системі multilevel governance. На основі розробленої систематизації стадій та етапів життєвого циклу управлінських рішень пропонуються можливі варіанти застосування механізмів інформаційних технологій на кожному із цих етапів.

Доведено, що комплексне поєднання усіх розглянутих механізмів є необхідною умовою забезпечення соціальної ефективності управлінських рішень в системі multilevel governance, що підтверджує важливість поставлених в даній роботі науково-практичних завдань та наглядно демонструє актуальність адаптації механізмів інформаційних технологій для цих цілей.

Ключові слова: *ефективність; соціальна ефективність; управлінське рішення; якість управлінських рішень; ІТ-механізм; multilevel governance.*

Постановка проблеми

Systematization as well as further use of information technology mechanisms (IT mechanisms) to provide the social effectiveness of management decisions is becoming an increasingly important scientific and practical task. This is due to need to radically reform the public management within the state in accordance with public requests taking into account the peculiarities of multilevel governance system (MLG) and each of its levels.

This statement is based on the following:

- in modern conditions of radical restructuring of all with no exception areas of public life within the state, a process of radical reformation of public management is being carried out. Herewith, since the proclamation of independence of Ukraine, a process of overall change in the governance paradigm as well as a shift of priorities from authoritarian to democratic ones have been taking place. However, such a process still cannot be considered as successfully completed. Introduction of MLG principles to public management is another challenging step towards democratization and enhancing the social effectiveness of the governance system in Ukraine;
- the issues of providing social effectiveness of management decisions are undoubtedly the key factor for effectiveness of public management system as a whole. At the same time, today's challenges as well as systematic informatization of society require changes in approaches to provide such effectiveness using proper IT mechanisms, that have shown their progress in all areas of management.

The aforesaid confirms the relevance of the study as well as the research direction.

Аналіз останніх досліджень і публікацій

As of today, many scientists and practitioners devoted their studies to current problems of introduction and implementation of MLG principles into the public management system. Among them such Ukrainian scientists as: Solovykh V.P. [11], Ponkin I.V. [8], Kolodiy A. [3], Strezhneva M.V. [12], Nysnevych Yu.A. [6], Smorhunov L.V. [10], Delia O.V. [2] as well as foreign: Rosenau J. N. [19], Hill M. [14], Hoopes P. [14] and others.

At the same time, according to analysis of existing studies in this field, the issue of use of IT mechanisms from the point of view of providing social effectiveness of management is poorly covered in scientific and professional literature, which outlined the purpose of this article.

The purpose of the article is to systemize the IT mechanisms for providing the social effectiveness of management decisions in MLG system.

In order to achieve this goal, the following tasks are to be solved:

- to summarize the basic principles of introduction

of MLG approach in the process of preparation, making and implementation of management decisions;

- to study the capabilities of modern IT mechanisms;
- to clarify the definition of «social effectiveness of management decisions» in MLG system;
- to identify application options of and to adapt IT mechanisms to provide the social effectiveness of management decisions in MLG system.

Вклад основного матеріалу

Based on the definition of «governance» given by Delia O. [2], and developing it, we can define MLG as an approach, which represents a systematic composition of innovative management approaches aimed at providing the balance between its components: private sector, public sector and civil society within the organizational structure of the state. Moreover, a prerequisite for effectiveness of MLG approach is reducing of participation of the state and increasing of number and participation of interested parties [2].

Operation of multilevel governance model in the European Union is based on three levels of preparation and making of decisions: supranational, national and regional [13]. Under the conditions of our country this model is supplemented by subregional (district), city and local levels. At all levels, the MLG model assumes making the agreed decisions by public institutions involving the non-state participants.

The European practice of making and implementation of management decisions in MLG system involves three types of decision-making procedures: consultation procedure, approval procedure and joint decision-making procedure [13]. In fact, multilevel governance involves not just simple distribution of powers between different decision-making levels, but rather making the agreed decisions by multilevel non-hierarchical institutions, in particular involving non-state participants.

Based on the statements above, the basic principles of implementing the MLG approach in the processes of preparation, making and implementation of management decisions can be presented as follows (Fig. 1):

At the same time, the subject of this study is to consider the content of IT mechanism. Thus, the IT mechanism refers to the unity of methods, ways and techniques designed to collect, receive, search, process, encode, transmit and store different types of information, as well

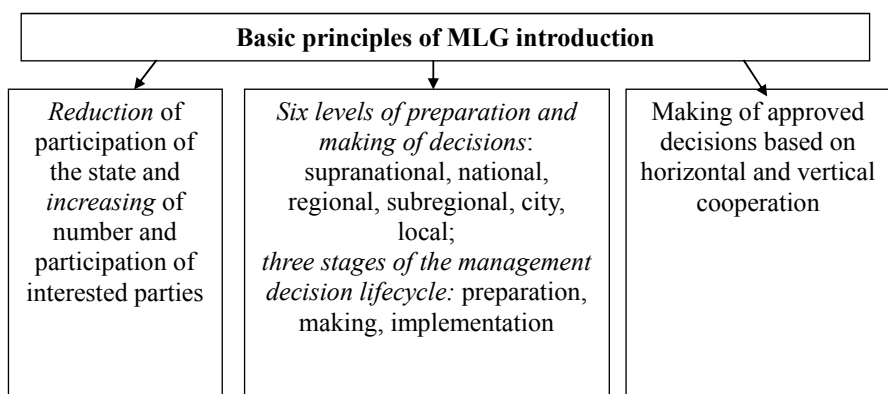


Fig. 1. Basic principles of MLG introduction

as to ensure the communication process in order to meet the needs of users. The whole set of such components is actually an IT mechanism [8].

Classification of modern IT mechanisms is provided in Table 1:

Table 1

Classification of modern IT mechanisms

Criteria	Type
According to the purpose	Mechanisms of openness and transparency; mechanisms of participation; mechanisms of intersectoral cooperation between government, business and public in the process of preparation, making and implementation of management decisions
According to the function	To receive and transmit messages, data, information; to process text and/or numerical information; to process the audio, video and graphic information; to storage the information; to search for information; to provide proper communication between authorities and their employees; to ensure access of public to public information of public authorities; to cooperate with media; to provide services to population, etc.
According to the degree of process centralization	Centralized, decentralized and mixed

The role and importance of modern IT mechanisms in the process of providing social effectiveness of management decisions in MLG system are represented by the advantages that these mechanisms ensure. See Figure 2.

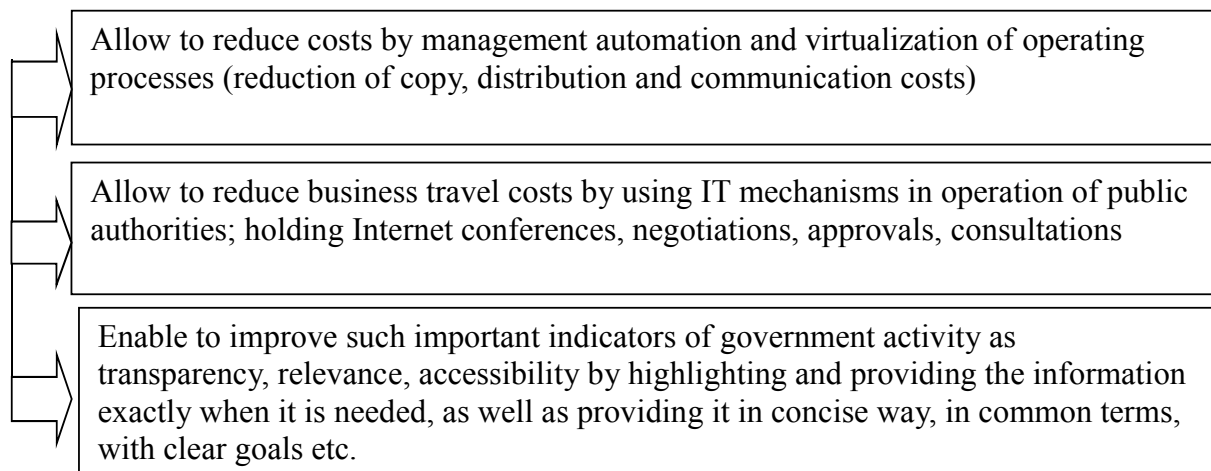


Fig. 2. The role and importance of modern IT mechanisms in the process of providing the social effectiveness of management decisions in multilevel governance system

In the context of this study, the concept of social effectiveness of management decisions is crucial. The term «effectiveness» (from lat. effectivus) in the broadest sense means the ability to produce the target results [1].

In our opinion, the content of effectiveness directly depends on what the term is applied to. From our point of view, the effectiveness of local public authorities should be considered within three aspects, with each of the following specifying the concept of the previous one:

- effectiveness of activity (local authorities, their structural units);
- effectiveness of management system (local authority's systems in relation to the object of management: branch, field, type of activity, territory, etc.);
- effectiveness of management decisions made and implemented by the authority.

Thus, within the first aspect effectiveness reflects the success of activity of the authority as an organization, the

conformity degree of activity results to the initial tasks. In this regard, the effectiveness in the first aspect can be divided into internal (management of own resources and possibilities) and external (use of external resources and possibilities) [7].

In both variants, activity can be defined as the ratio of the results achieved (activity performance) and the resources expended.

As for the public authorities, the activity results of relevant authorities are to be evidenced by improvement of quality and standard of living of population, reduction of mortality, rise in births and increase of real incomes of population, improvement of development indicators of object of management.

Resources spent on achieving these results should be considered as budget public authority costs, human and administrative resources, other resources used to provide state (municipal) services [4].

Within the second aspect, management effectiveness is meant as the «result of management».

Many authors believe that the effectiveness of management is the «performance of organization management», which is in turn a consequence of ability of authority leaders to achieve the goals.

A number of economists also believe that management effectiveness is a function of two variables: administrative costs and results of management activity, that are reflected in changes of indicator values by which the status of the object of management is estimated.

Within the third aspect the level of effectiveness is the most important quality characteristic of management decisions made by authority. When evaluating the effectiveness of management decisions, it is necessary to provide the synthesis of economic and social aspects, which is especially important for public authorities [4]. Herewith, the evaluation of management decisions effectiveness is not the purpose itself, but the method to identify the background for improving the effectiveness of management in general.

Therefore, it can be stated that effectiveness in broad context, in particular the context of this study, can be interpreted as the degree of compliance of activity results with the targeted task. However, when it comes to social effectiveness of local authorities, these details provide for certain features:

- first, a clear focus on meeting the needs of society;
- secondly, it is about the tasks entitled to local authorities;
- third, it is worth to reflect the activity results by not only quantity indicators of activity but also by quality ones, that reflect the satisfaction degree of population basic needs resulted from activity of local authorities.

Taking into account mentioned above, we can determine the following indicators of the effectiveness of management decisions in the multilevel governance system: level of their scientific validity; the best local and foreign experience; economic costs associated with the development of decisions; number of professionals involved in the development and implementation of decisions; degree of risk by achieving the result of management decision. As a result, the conformity of authorities activity results with the assigned task is evaluated.

It should be noted that this list of indicators covers various forms of effectiveness in MLG system.

Let's consider IT mechanisms that should be used to provide the social effectiveness of management decisions, taking into account operation peculiarities of each MLG level. This takes into account such basic principles of MLG as reducing participation of the state and increasing the number and role of interested parties involved in all levels of preparation, making and implementation of management decisions.

Based on systematization of phases and stages of management decisions lifecycle, suggested by A. Krupnik [5], we propose the following applications of IT mechanisms at each of the stages (Table. 2).

ВИСНОВКИ

Another subject of research is the reconciliation of interests of parties involved, who make decisions at different levels of MLG system by

means of modern IT mechanisms, both horizontally and vertically. In general terms, in order to provide the social effectiveness of management decisions in MLG system the IT mechanism includes the following components:

1. Information and communication environment, the main task of which is to create and support the activities of external and internal communication routes as well as to provide the access to information resources.

2. Monitoring of problematic situations based on both objective and subjective information, that resulted from input information analysis and the main task of which is to identify the priority problems.

3. Information and documentation services aimed at ensuring the sufficient quality level of decisions made by means of: recording, analyzing and providing the management entity with actual information in a proper format regarding the current, target and forecast status of management objects and environment; obtaining and providing management with analytical, regulatory and scientific-methodological documents; providing access to documentary databases.

At each level of management decision, the IT mechanism may have different functions that can be summarized as follows:

1. Situation and system analysis. Provides the necessary quality level of decisions made by means of extension of analytical and prognostic procedures while processing the information related to situations in external and internal environment as well as assessment of consequences of decisions made.

2. Support for preparation process of management decision. Provides the necessary quality level of decisions made by supplying the information on similar problems solving cases and analytical processing of information, support for comprehensive expertise of management decisions.

3. Support for decision-making process. Provides the necessary level of decisions background as well as conformity of decisions through the application of procedural and content aspects of panel discussion and decision-making.

4. Support for activity management of the authority itself. Provides the necessary level of summary indicators of public authority effectiveness by means of information service for internal management functions and by means of automation of internal management basic procedures.

A complex combination of all mechanisms considered is a prerequisite for ensuring the social effectiveness of management decisions in MLG system, which confirms the importance of scientific and practical tasks set out in this study and clearly demonstrates the relevance of adapting of IT mechanisms for these purposes.

Potential directions for further research in this area are:

- substantiation and development of recommendations for implementation of modern IT mechanisms in MLG system in order to align interests at different MLG levels and establishing of horizontal and vertical cooperation between them in order to increase the total social effectiveness of management solutions;
- development of procedures and criteria for calculation of quality indicators of management decisions based on assessment of their scientific

Application of IT mechanisms at stages of preparation, making and implementation of management decisions

Levels of management decisions						
Supranational		National	Regional	Subregional	City	Local
Phase	Stage	Name of stage	Examples of IT mechanisms used			
I. PREPARATION	1	Problem detection and diagnostics	Automated analytical and communication systems (AACS) for analysis of citizens' appeals («Elektronny kontakt tsentr»), geographic information systems («Mapa zvernen», «Informer», «Tsilodobova varta»), «Elektronni petytsii», online surveys that allow to identify and diagnose possible problems			
	2	Formulating restrictions and criteria	Data AACS (“Registry of Regulatory Documents - Vidkryti dani «Open data”, Opendabot System, ProZorro, Automated Resources Management System), that allow to explore the legal framework, to evaluate the resource potential, to get the structured information according to different search criteria			
	3	Identification of alternative ways	Management Decision Making Support Systems (MDMSS), that allow to make the analytical processing of input information depending on the desired final result and to offer several alternative decisions			
II. DECISION-MAKING	4	Evaluation of alternative ways	MDMSS, that by different mathematical methods (forecast method, regression method, etc.) and by certain criteria allow to evaluate alternatives			
	5	Choosing the best option	MDMSS, based on comparison of alternatives allow to choose the optimal solution for particular conditions, minimizing the biased influence of decision-makers			
	6	Drawing up of decision	Electronic Document Management Systems (EDMS), that by means of preparation of document templates and developed rational procedures, provide the opportunity to draw up, agree, discuss in public, propose for consideration and make decisions (collectively or individually), register the decision			
III. IMPLEMENTATION	7	Administration of decision	EDMS, which provides for the publication of management decisions and address delivery to executors; communication systems with the public (official sites, informers, etc.) that provide awareness of executors about the decision in order to take appropriate actions, including counseling and training			
	8	Control (internal/ external)	EDMS, geographical information systems («Mapa zvernen», «Tsilodobova varta»), systems for managing interaction with executors and residents, together with services quality evaluation systems, that provide external and internal control both on the implementation of decision itself and consequences of its implementation			
	9	Evaluation of decision effectiveness	Management systems for cooperation with residents including services quality evaluation system; SPPURs that provide feedback and by means of key criteria and indicators allow to analyze the impact, social and economic effectiveness of management decision			
	10	Adjustments	MDMSS, EDMS that allow to review the target goal achievement ways; to adjust the alternatives, criteria and indicators; to set new goal, to prove new solutions			

validity, commitment to use the best local and foreign experience, costs associated with the development of decisions, the number of specialists involved in development of decisions, the degree of risk by achieving the result of management decisions and, ultimately, on assessment of their social effectiveness.

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