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## ДО ПИТАННЯ ДЕРЖАВНОГО УПРАВЛІННЯ КЛАСТЕРИЗАЦІЄЮ ПРОМИСЛОВОСТІ

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Розглянуто поняття кластеризації і підкреслена важливість державного управління нею. З метою визначення ключових аспектів, на яких ґрунтується державне управління кластеризацією (фінансове забезпечення, наукова сфера, освіта, інфраструктура (фінансова, інституційна тощо), міжнародна сфера), досліджено типи кластерної політики, її інституційне забезпечення, вивчено зарубіжну практику державного управління кластеризацією. Це окреслило необхідність розвитку нового управлінського підходу, який відповідає сучасним вимогам адміністративних моделей та характеризує те, що ступінь державного регулювання можна посилювати або послаблювати, оперативно замінити важелі впливу у разі їх негативної дії; застосовувати стимули і пільги тощо.

Запропоновано здійснювати у межах гнучкої моделі управління залежно від рівня ключових чинників: етапу кластеризації, наявності ресурсів, рівня розвитку міжнародних економічних відносин, рівня розвитку промисловості, суміжних і підтримувальних галузей, рівень інфраструктурного забезпечення.

**Ключові слова:** кластеризація, кластерна політика, державне управління, гнучка модель.

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## ON THE ISSUE OF STATE GOVERNANCE OF CLUSTERING OF INDUSTRY

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The article deals with the concept of a clustering as a process of creation of clusters and other networked structures and underlined the importance of state governance. Studied types of cluster policies as a system of relations between government and business entities to improve the competitiveness of a territory on the basis of the formation and development of clusters (depending on the software the level of clusters, according to the method of influence on cluster, depending on the level of centralization), institutional support (cluster development strategies, programs, projects and specific activities), learned foreign practice of government of clustering (Great Britain, Slovenia, Japan, Russia, EU, etc.).

On this basis defines the key aspects on which the clustering of state governance: financial support, the scientific sphere, education, infrastructure (financial, institutional, etc.), international area. That shaped the need to develop a new management approach that meets the modern requirements of administrative models and describes what degree of government regulation can strengthen or weaken promptly replaced leverage in case their negative impact; apply incentives and benefits and so on. As one, recommended the flexible governance model of

**clustering. It is proposed to implement with a flexible management model based on the level of key factors: stage clustering, availability of resources, the level of international economic relations, development of industry, related and supporting industries, the level of infrastructure support. The level of the five signs can choose three basic models of cluster policy and a number of auxiliary.**

**Key words:** clustering, cluster policy, state governance, flexible model.

Background and its relationship with important scientific and practical tasks. As you know, public administration is an integral part of the course of business. The practice of economic processes in various areas of public life proved the importance and necessity of state intervention, which must be in the nature focused, continuous, mutually agreed and consistent performance. Clustering is no exception.

Clustering should be seen as a process of creation and development of clusters and other networks. It requires appropriate management organizing influence by using executive authority, the relevant legislative initiatives, implementation of management functions within the implementation of government policy and so on. This is the practice of many foreign countries and with the clustering of the domestic economy in particular.

The importance of governance has clustering, given also the fact that often the public administration (oblast, city councils and other local governments, for example) initiate clustering and system components of the cluster. Thus, they interact with the main (industrial) business, trade, marketing, service and other organizations supporting educational, scientific and financial institutions that are also members of the cluster. This determines the necessity of defining the subject field of their activities, leading features, principles of interaction with other components and so on. The criterion of effectiveness in this context will serve life state level, regional development and welfare of citizens and others. Thus, we can expect to reduce unemployment, increase income levels and revenues to the regional budget, as the only goal of the other members of clusters is to maximize profits

Meanwhile, H. V. Popovic and E. V. Zbrodska said, governance cluster develops the sustainability of development, inter-regional connections, to create regional innovation system and infrastructure, the system of public-private partnership investment and innovation, which is also its goals functioning.

Another type of involvement of the State clustering is to implement common functions of regulatory control clustering by performing administrative tasks and making impact on all economic actors participating in the cluster. In this context it is vital to create conditions that facilitate the clustering of the economy (infrastructure development, educational development, innovation).

However, the practice of government clustering produced different approaches to implementation and types of cluster policy. The latter is defined as a system of relations between government and business entities to improve the competitiveness of a territory on the basis of the formation and development of clusters [3]. Its action is aimed at clusters of different types and forms of networking on the part of the aforementioned public authorities.

Analysis of recent research study of the problem and determine matters not met. The issue of government clustering investigated and described in detail in the works of C. Sokolenko, L. V. Kutsyn, H. V. Popovich, A. V. Zbrodskoyi, Y. V. Fedotov, M. P. Voynarenko, A. M. Bezus etc. [1–9]

Research literature of state regulation of clustering allowed to classify cluster policy based on several features:

1. Depending on the level of provision clusters.
2. By way of impact on cluster [3–9].
3. Depending on the level of centralization (the genesis)

With the first sign of distinction catalytic, supportive, directive, interventionist policies. Catalytic policy, despite the name is limited state involvement in the process of clustering, especially in terms of financial support. The main role of government is the construction of stakeholders and their involvement in cluster interaction.

Supportive policy is the development of catalytic and complements its small investments in regional infrastructure, improving education, training and marketing to promote cluster development etc.

Within the policy directive state support cluster development involves the formation and implementation of specific national and regional programs. Interventionist policy complements the directive through active monitoring of clusters, cluster development strategies definition, providing state support and more.

By way of influence on a cluster exists and conductor liberal policy. Characteristic features of the liberal policy orientation to market self-regulation processes clustering. The state's role in the process of clustering thus limited to indirect intervention and removing obstacles to their natural development. Dyrhenska policies aimed at creating new clusters in priority regions, direct state participation in the process of clustering. To do this, apply methods of direct financing, infrastructure support, development of education and science and so on.

The hierarchy of cluster policy, we may note two approaches to the formation of "top-down" (centralized) and "bottom-up" (decentralized). Centralized cluster policy initiated by central or regional governments. The decentralized model provides a consistent integration of cluster initiatives of NGOs, academic institutions and taking them into account in the formation of national and regional programs of the national economy and individual territories.

It should be noted also centralized and decentralized approach to the implementation of the cluster policy. For the first characteristic clustering process control from one control center. In this case, most of the management authority clustering retain the central government and local transferred certain functions of control and regulation of clustering. The opposite (decentralized approach) provides conflicting processes. In its implementation at each level of government can be formed its own cluster policy and strategy development, and public authorities have no right to direct intervention in the processes cluster (this approach is common in the US, Canada, etc.). In general, it should be noted that the trend towards strengthening of the decentralization of the national economy should be displayed in public administration decentralization clustering.

Integral elements of the resulting cluster policy implementation is institutional consolidation of clustering. It comes in the form of cluster development strategies, programs, projects and individual activities and more.

In the context of effective implementation of the cluster policy and, given its institutional consolidation, should include the following recommendations. L. M. Vasiliev notes that for the successful implementation of policies clustering strategy of regional development and clustering strategies to be mutually agreed upon. To achieve a state of balance and coherence should implement adaptation. It involves creating a cluster system with the assistance of a vertically integrated business groups. In addition, measures to enhance cluster development (of programs and projects designed to implement cluster policy) should develop and adopt at the national, regional and local levels [10]. As stated in the appropriate [10] This should be done on the basis of international best practices and implementation of European cluster of state policy. Consider it carefully.

In Finland and countries of North Europe carried out the deliberate choice and funding clusters. In Denmark developed a unified approach to inter-company cooperation and developed concrete measures to support clusters. Regional support centers of clusters, which are aimed at consolidating government policies, activity of universities and industry operating in Japan. National programs of clusters development designed in Slovenia, Russia, EU countries (Austria, Germany, etc.). In Kazakhstan organized competitions of regional cluster pilot projects creation within the project "Kazakhstan cluster initiative."

As for the EU, it should be noted the adoption in 2006 of the memorandum cluster policy ("Manifesto clustering in the European Union"). In the process of its implementation characteristic development of cluster within regional policy, industrial policy and innovation. Also for it characterized the formation of working groups IRE, which provide infrastructure development, transfer of knowledge in the middle of the cluster and the business environment in general. Hungary made direct and indirect financing of cluster development in the form of customs and tax privileges.

In Hungary made direct and indirect financing of cluster development in the form of customs and tax privileges. Direct funding also characteristic of the UK. In contrast, in Germany, focuses on the provision of scientific and innovation infrastructure development, for what at universities are created private

research centers (in the form of legal persons for participation professorial staff), operate coordinators of interaction clusters with research and innovation agencies and others. In the US operates Commission to develop a cluster strategy in regions and carried out by their indirect support (mainly through support or individual sectors or individual universities and research centers) [3, 11–13].

In the study, you can identify five key factors on which is based the clustering governance: financial security, the scientific sphere, education, infrastructure (financial, institutional, etc.), international scope. Their detailed description made in the table 1.

*Table 1*

**Key aspects of government clustering and their characteristics**

Key aspects of government clustering	Characteristic
1. Financing	Government administration clustering can provide direct and indirect funding clustering (tax benefits, customs benefits, subsidies, financial injections, etc.). Funding is almost one of the main aspects that characterize the direct or indirect impact on the development of clusters
2. The scientific scope	With the implementation of cluster policy its scientific support can develop without any state intervention, by creating innovative programs clustering and their financing, encouraging collaboration business environment of non-financial methods of research centers etc.
3. Sphere of education	For successful clustering can create scientific research centers, to ensure that knowledge transfer between educational and research institutions, to create special organizational forms to implement effective interaction between education, industry and research institutions, accelerating economic development based on innovation
4. Other infrastructure maintenance	Regulatory management of clustering can provide funding for large (complex) infrastructure projects; implementation of measures of organizational, financial, transport, logistics or human resources infrastructure, aimed at realization of strategic projects within the cluster development or to implement training and marketing to promote cluster development
5. The international scope and inter-regional cooperation	The conclusion of agreements about international cooperation in the field of clustering, the announcement of grants and competitions for cluster development projects, creation of working groups for comprehensive study of clusters, etc.

Therefore, approaches to governance clustering variety of different approaches and practices there is clearly a dedicated set of policy tools, techniques and methods for its implementation [11]. The research experience of regulatory management of clustering in different countries also can provide a unified approach to achieve it within the national economy. In managing the clustering of each of the investigated countries, there are certain features that are appropriate for implementation within the national economy at the present level development of the market relations. In addition, management can not form a single model that would be optimal for any change in circumstances. In this case more appropriate to form a flexible integrated model [14].

**The objectives of the article.** According to the problem in the article should be recommended a flexible approach to implement the model of public administration industry clustering.

**Presentation of main material research with the authorial scientific substantiation of the results.** Given the results of the review of the literature and practice of public administration clustering, we propose the concept of implementing a flexible approach to of public administration clustering. Justify the decision. As you know, cluster management principle of territorial and economic complex already provides for some flexibility. It provides flexibility in terms of consolidated, partnership management and regulation development and implementation of effective corporate approach to the development of the national economy [15]. A state management based on adequacy reasonable sufficiency, consistency and continuity, openness and flexibility [16]. In this flexibility means that the intervention the degree of government

regulation can strengthen or weaken promptly replaced leverage in case their negative impact; apply incentives and benefits. It should be noted that there is an urgent need to form a new management approach in the public sector rather than the current requirements of inadequate administrative models. It should be based on the following main elements:

- Giving more attention to the achievement of results and responsibility of managers;
- A departure from the principles of the classic bureaucracy in creating organizational structures;
- Clear definition of organizational and personal goals, inspection the latest using indicators of the system;
- Politically neutral service personnel;
- Flexible governmental functions, focused on the identification of potential problems in the new vision [17].

In view of the urgency, expand the content of flexible approach to of public administration clustering. Under the management of flexibility means the ability of the system to adapt to the changing conditions of the external environment. Flexibility of management is achieved by using appropriate algorithms, which are characterized by different technical and organizational measures [18].

The choice of them should be linked to the manifestation of certain factors. Based on the research of practices normative management of clustering defined: stage clustering, availability of resources, the development of international economic relations, the development of industry, related and supporting industries, the level of infrastructure support (Drawing. 1).

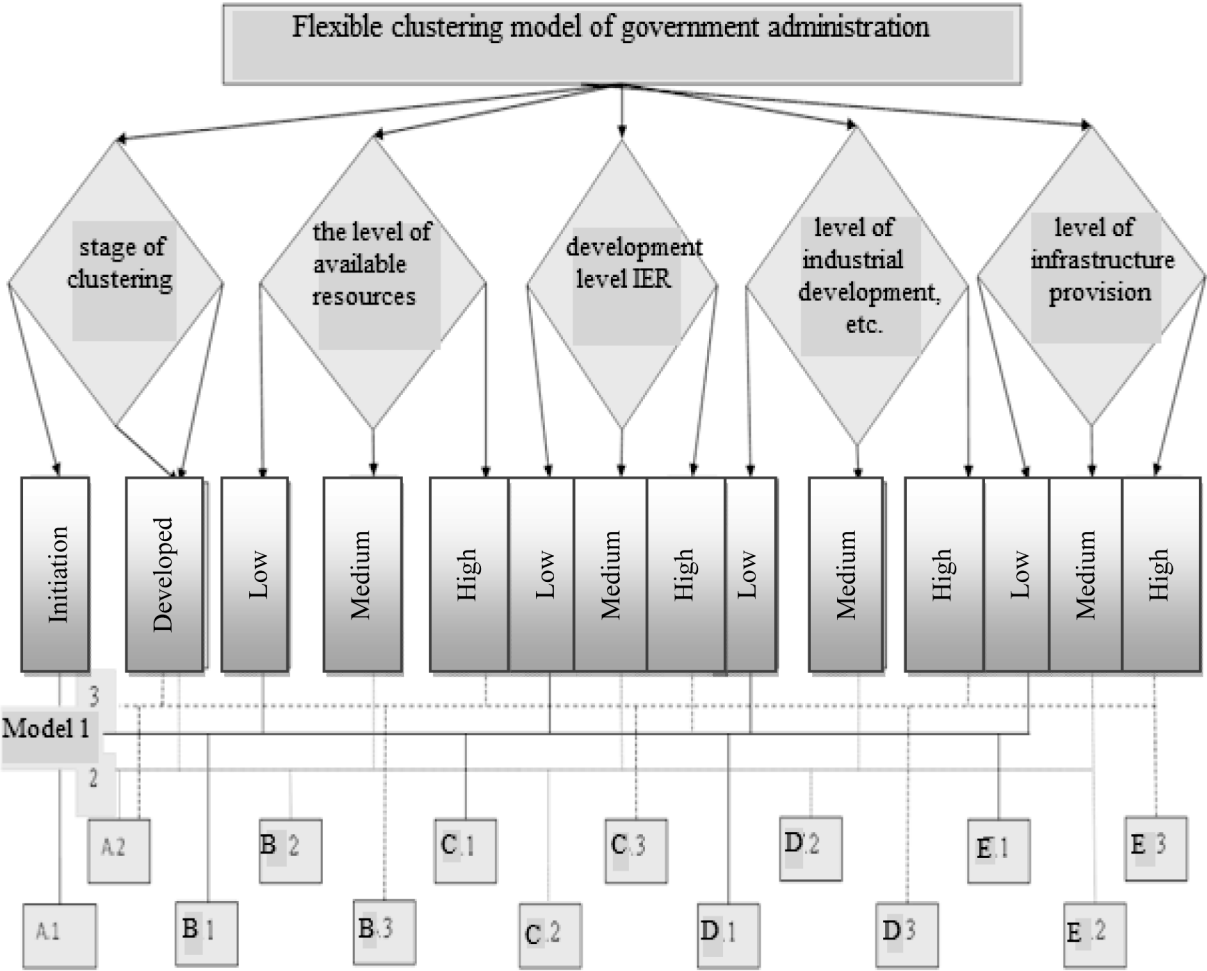


Fig. 1. Model of flexible management clustering the national economy

To determine the resulting model of government clustering according to a flexible approach we offer procedure. (Fig. 1). It shows how you can choose the type of cluster policy (the main characteristic features disclosed in Table. 1) depending on the display of selected factors.

To do this, all factors differentiated by three levels of display (high, medium, low) except stages clustering. They were proposed to differentiate in two levels: initial and developed. The initial phase of clustering corresponds to the initial level of features, all the other stages – developed level of display factor.

To facilitate interpretation of the order clustering flexible management of the national economy (Fig. 1). Take a coding key aspects of of public administration clustering (Table. 2).

Table 2

**Encryption key aspects of governance clustering within a flexible management concepts**

Key aspects of clustering	Type within a flexible policy	
A. Financing	A. 1	Direct
	A. 2	Indirect
B. The scientific scope	B. 1	Formation clustering innovation programs and their financing
	B. 2	Encouraging collaboration business environment with research centers of non-financial methods
	B. 3	Interaction without any state intervention
C. Scope Education	C. 1	Creation of scientific research centers, specific organizational forms to implement effective interaction between education, industry and research institutions, etc.
	C. 2	Providing conditions for the transfer of knowledge between educational and research institutions
	C. 3	Advisory work and to encourage educational development in the process of clustering
D. Other infrastructure maintenance	D. 1	Financing large (complex) infrastructure projects
	D. 2	Measures to develop organizational, financial, transport, logistics or human resources infrastructure
	D. 3	Training and marketing to promote cluster development
E. The international scope and interregional cooperation	E. 1	Conclusion of agreements on international cooperation in the area of clustering
	E. 2	Board grants and competitions for cluster development projects, working groups for comprehensive study of clusters
	E. 3	Co-operation in the implementation of training and marketing to promote cluster development

As can be seen from Fig. 1 expression levels on selected five features you can choose three basic models of cluster policy: 1, 2, 3. Their detailed description made in the table. 3.

Table 3

**Characteristics of the basic models of cluster policy recommended by flexibility**

Models of cluster policy	Type within a flexible policy	General characteristics
1	A. 1, B. 1, C. 1, D. 1, E. 1	This model involves direct financing of clustering that should be used for the establishment of scientific research centers, specific organizational forms of cluster development infrastructure. All this must be accompanied by the signing of agreements on international economic cooperation, which should be complemented by the creation and implementation of innovative programs clustering
2	A. 2, B.2, C. 2, D. 2, E. 2	According to this model with indirect public funding should focus attention on creating the conditions for clustering, in cooperation with the business environment research centers, development of organizational, financial , transport, logistics or human resources infrastructure. It is possible to announce grants and tenders for cluster development projects, etc.
3	A. 2, B. 3, C. 3, D. 3, E. 3	Indirect public funding may also include the promotion consulting work and promoting educational development in the clustering software training and marketing to promote cluster development etc.

It should be noted that we have identified only the basic types of cluster policy model (1, 2, 3), in practice regulatory management can be applied other.

The conclusions and recommendations for further research in this area. To ensure effective clustering, is to create clusters and other network structures should pay attention to public management.

On the basis of the practice of clustering of government in Ukraine and korndonom and highlight five key factors of security: financial security, the scientific sphere, education, infrastructure (financial, institutional, etc.), international scope, formed the concept of flexible approach to implementing regulatory control clustering. Its clid seen as a new management approach that meets the requirements of modern administration model describes what degree of government regulation can strengthen or weaken promptly replaced leverage in case their negative impact; apply incentives and benefits and so on. It is proposed to implement depending on the level of key factors: stage clustering, availability of resources, the level of international economic relations, development of industry, related and supporting industries, the level of infrastructure support.

In further studies on this issue, give examples of the practical use of the flexible elements of government policy within the national economy.

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