

## Development and Challenges in Front of Clusters in Bulgaria

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**Abstract.** The importance of clusters for economic development, competitiveness and innovation is growing, and the diverse nature of cluster initiatives is becoming a popular approach to their creation, validation and development in sectors where both resources and opportunities are available. The elaboration presents the development of the clusters and their role for the modern Bulgarian economy, the conducted national policy in the sphere, the applied instruments in the context of the EU policy. The aim is to present the development of clusters in Bulgaria, highlighting the specificity of the implemented cluster initiatives and defining some challenges for their future development. Increasing competitiveness through cluster development is seen as a key strategic tool for achieving socio-economic development. It is emphasised that the success of cluster initiatives depends on companies and Bulgarian producers, striving through joint efforts to achieve higher competitiveness.

**Keywords:** *clusters, cluster initiatives, business environment, competitiveness, innovation.*

### Introduction

#### *Relevance of the article*

In times of international globalisation, cooperation is becoming increasingly important. Compared to individual experience, it should provide greater opportunities to achieve the set goals. A voluntary association of enterprises in clusters provides an opportunity to implement new production solutions and develop their potential, which leads to increased innovation, productivity, increased added value, access to markets, and hence increase the competitiveness of participating companies and expanding their export capacity.

#### *Level of problem investigation*

The word “cluster” has English origins and means aggregation, a concentrated whole (Pavlova, 2007). Today, cluster theory is based on the ideas of Alfred Marshall, who defined “cluster” as “the concentration of specialized industries in specific locations” (Marshall, 1920). In his work “Principles of Economics” Marshall analyses the advantage and prerequisites for choosing a location in specific areas of specialised production. His ideas for successful positioning in the realisation of production, and subsequently in marketing, are presented by other researchers (Perroux, 1950; Boudeville, 1966).

In the late 1930s, the term “cluster” first appeared in the exact sciences as a mathematical concept, used in database analysis and grouping

In economics and management, the term “cluster” began to be used actively in 1970. Economists use it to define “groups of enterprises in the economic space” or as “a description of the processes of concentration of production” (Chernova, 2014).

The development of cluster theory continued in the 90s of the XX century with the works of M. Porter. These studies become the basis for a new approach to economic development (Porter, 2004), (Delgado et al., 2010), (Delgado et al., 2014). “The cluster is an economic phenomenon that is placed in a competitive context in which many businesses simultaneously compete and collaborate to gain different economic advantages” (Boja, 2011).

#### *Scientific problem*

“Cluster” means: “a geographically distinct group of interconnected firms and associated institutions in a specific area, linked by similar and complementary characteristics” (Porter, M., 2000). According to Morosini, a cluster is “a socio-economic unit characterised by a social community of people and a set of economic agents located in close proximity to a particular geographical region” (Morosini, 2004). “Clusters are not seen as fixed flows of goods and services, but rather as dynamic arrangements based on knowledge creation, increasing returns and innovation in a broad sense” (Krugman, 1991). The creation of a cluster leads to a significant reduction in the costs of each participant in the cluster. What

is important: is not only the greater financial opportunities provided by the cluster but also the shared knowledge and experience, which in turn constitute the “knowledge economy” – a hallmark of today’s emerging market. Clusters stimulate investment policy because, on the one hand, they have a large flow of information, which is the main generator of ideas, and on the other hand – in each cluster, there is a separate unit directly linked to innovation. Despite these advantages, this type of structure does not spread at the desired speed in Bulgaria.

**Object of the article** are clusters, their state and their role in national and regional economic development. Increasing competitiveness through cluster development is seen as a key strategic tool for achieving socio-economic development.

**Aim of the article** is to present the development of clusters in Bulgaria, highlighting the specificity of the implemented cluster initiatives and defining some challenges for their future development. To achieve the presented goal, the following tasks are set:

1. Presentation of the state of the clusters in the development and the structure, as a prerequisite for improving the national competitiveness;
2. Highlighting the specificity of the initiatives that the clusters in Bulgaria implement, as well as the opportunities to accelerate their development and competitiveness through the implemented cluster activities and initiatives;
3. Identification and presentation of the prerequisites and challenges for the future development of cluster initiatives in Bulgaria.

Achieving the set goals and objectives predetermine the sequence of the research and the *methods* used – review, identify and present species diversity, structure and policies applied to clusters.

### **Characteristics and types diversity of the clusters**

**The cluster is** a specific network of interconnected but remaining competitors in the market companies, specialised providers, companies and organisations providing services, and related administrative authorities and other non-governmental institutions in a given area (region). The participants in the cluster organise around a unifying product or service and create a network that will be attractive to local and foreign investors.

**The cluster** approach used in developed economies leads to the creation of networks of interested and technologically connected companies in order to achieve a more efficient concentration of resources to improve competitiveness in as many areas of activity as possible. This approach is particularly important for small and medium-sized enterprises, which usually cannot rely on the full range of resources and developed components of production systems available to large companies.

Clusters have the following characteristics:

- The competitiveness of a cluster is not a mechanical sum of the number of its members. The comparative advantages of the cluster arise from the possibility of cooperation and partnership in the network and the generalised effect that can be obtained in it;
- Clusters include companies (manufacturers, customers, suppliers and companies from other industrial sectors) and organisations that have a supporting function (training and qualification, services related to the introduction of innovations in industry, advertising and promotion organisations, research institutes, administration);
- Relationships in clusters are based on cooperation and interdependence in a market economy;
- The regional concentration of the participants in the clusters and the relative proximity of other economic entities suggest the emergence of additional effects such as more efficient use of skilled labour in a given region, multiplication of already won market positions in a particular industry.

**The cluster is** a self-organising production system. In it, companies cooperate in *vertical or horizontal “chains”* to gain additional added value and increase their competitiveness. They are usually a group of companies that have experience in cooperating with each other. The merger may also be present in cases where the individual entities operate in different sectors. This is the case with *vertical clusters*, which unite individuals and legal entities with different levels of production and financing,

while with *horizontal clusters* there is equality. There are also sectoral clusters that comprehensively develop an industry. This is achieved on the basis of *mutual assistance, cooperation and collaboration*. The individual measures they take are at the service of companies and are aimed at cooperation in terms of *innovation, quality, design, product development, and marketing*. The most important thing that clusters achieve is the practical step towards business cooperation and an incentive for the development of assets, technologies, infrastructure and joint investments, effects that cannot be achieved by a single company.

The creation of a cluster leads to a significant reduction in costs for network members, which is considered to be ***beneficial for the application of the cluster approach***, and is expressed in:

- facilitated access to raw materials, improved infrastructure and communications;
- opportunities to increase the volume of production;
- offering new products and services;
- availability of intermediate products and goods, the production of which will be stimulated through the creation of the cluster;
- geographically concentrated multiplier effect;
- effective organisation in the development, implementation and distribution of innovative products;
- internally effective organisation in the development, implementation and distribution of innovative products;
- internal cooperation with training and research and production organisations.

A factor for the success of cluster formations is also their “openness” to their environment. Clusters that are open to accepting new members and new ideas are much more successful than inaccessible and inflexible formations. They can help their members, make them stronger, however, they do not automatically help to develop new technologies and innovations. An “innovative” cluster would have to reach different participants in order to reach a critical mass. Of course, the main “actors” are companies, but other expert and institutional resources such as universities, research centres, investors and intermediary agencies are also needed. The extreme “openness” of the cluster concept is at the same time its weakness. The extent to which the already established clusters actually support the improvement of social capital and the organisational aspects of innovation varies considerably. In the context of the need for Europe to focus on growth and modernisation, EU countries recognise the central importance of industry for job creation and growth, and among the European Commission’s innovation priorities is to support the development and cooperation of clusters to stimulate SME innovation (Zlateva, R., 2019).

In addition to the obvious benefits of clusters, there are some ***disadvantages*** in their operation that not only do not stimulate innovation but also suppress it. For example, one of the real dangers is “closing” in the framework of the cluster. In this case, the interconnected companies in the network deal primarily with themselves, lose sight of the market and technological development outside the cluster and thus allow their competitors to overtake them. ***The negative consequences would be the following:***

- chain dependence of the participants in the clusters during crises – this danger is higher for some of the companies in the vertical clusters;
- growing into cartels – in the case of horizontal clusters, the relations between the companies may change to the detriment of the competitors on the market in the absence of effective state regulation.

It should be noted that the Bulgarian legislation lacks an explicit legal framework regarding clusters. However, it is mentioned that the cluster must be publicly “recognisable” and therefore should be registered in Bulgaria in the form of a company (within the meaning of the Law on Obligations and Contracts), an association for private benefit (under the Law on Legal non-profit persons), a cooperative (under the Cooperatives Act), as well as a commercial company under the Commercial Act.

***The cluster*** can be compared to a cooperative. Established as an association of individuals who through mutual assistance and cooperation carry out commercial activities, and has a certain legal framework, the cooperative is distinguished by its functional distinctiveness, determined by the subject of economic activity (Stoyanova, S., 2019). By joining forces voluntarily, small producers collaborate to increase production, reduce operating costs and risk in running small businesses. Cooperatives are a

successful model in Bulgarian practice, as the economic benefit has been successfully preserved within the community. The contribution of cooperatives in dealing with problems related to work and employment in the changing world of labour is also growing (Stoyanova, S., 2020).

From the point of view of the possibilities for European funding under operational programmes and other schemes, which in many cases is the main one, the terms “*cluster*”, “*consortium*” and “*cooperative*” are symbols of network organisation, set of participants and synergy of research and knowledge transfer in practice. In this regard, the following definition is also important: the cluster can be defined in a broad sense as a group of companies, related economic actors and institutions that are in close proximity and have reached a sufficient size in order to provide experience, specialisation, resources, providers and skills (Nonaka, I., Konno, N., 1998).

There are different cluster organisational configurations:

- clusters, as objects of traditional sectoral policies, aimed at sectors that will develop intensively in the future;
- private strategic alliances between a limited number of companies with a temporary or longer temporal nature in order to reach a “critical mass” for developing projects that would not be accessible to individual companies, and the merger could take the form of consortia for joint research applied projects, joint development of new products or services, etc.;
- agreements of lesser strategic importance between interconnected enterprises in terms of production, carried out with the participation of intermediaries (for example chambers of industry), which aim to share resources in different areas: joint promotion of export strategies, joint training actions, provision of common equipment or logistics, creation of common strategies for purchasing materials and raw materials, etc.;
- joint activities with research centres and possible pooling of resources in order to achieve the necessary expert and institutional potential for the management of large innovation projects;
- development of training programmes by large companies and their dissemination among the participating small and medium enterprises;
- geographical concentration in a network of enterprises included in one sector or in a vertical production chain;
- links between enterprises in the form of national or international alliances, with an “anchor” in a particular region;
- creation of industrial zones, including networks of enterprises, developing “hard” business connections along the value chain, which lead to greater internationalisation of the entire network of enterprises and for the region as a whole;
- strengthening significant links between interconnected sectors, for example, agriculture, food industry, tourism, etc., which have a decisive share in the regional or national economy and which are competitive on foreign markets.

In the current financial, economic and market conditions, the cluster approach is considered as a ***priority strategy for increasing the competitiveness of Bulgarian companies***. In this regard, the emphasis should be placed on creating appropriate conditions for the formation, effective development and prosperity of cluster associations in Bulgaria, in order to turn them into stable economic entities.

### **Clusters in Bulgaria**

“The national economy contains a combination of clusters whose structure and sources of competitive advantage (or disadvantage) reflect economic development” (Porter, 2004). Despite the supposed homogenising effects of globalisation, countries and regions continue to show large differences in terms of specialisation, competitiveness and industrial dynamics. Successful industries and industrial clusters in a country or region often retain their leading advantage for long periods of time, despite attempts by others to mimic their success. Sustainable competitive advantage is created by a combination of internal and external resources existing in the national and local business environment, where strategic decisions are made and entrepreneurial activity is formed.

Bulgaria has a strategic framework and institutions that work in the field of clusters and are responsible for their development. The existing framework of national strategic documents covers National Strategy for Clusters, National Strategy for Regional Development, National Concept for Spatial Development of the Republic of Bulgaria (2013–2025), Municipal Development Plans. The Ministry of Economy is responsible for the development of clusters at the national level.

The institutionalisation (official court registration as a legal entity) of groups of interconnected enterprises in the form of clusters in our country started with a Decision of the Council for Economic Growth at the Council of Ministers in the spring of 2004. It identifies key industrial sectors in which to work on initiating and encouraging the establishment of such associations in Bulgaria. By the end of 2005, the first phase of the initiation of the three pilot clusters set out in this decision has been completed.

From a chronological point of view, the first is the institutionalisation of the cluster “Information and Communication Technologies” (ICT cluster) in December 2004, followed by the two industrial clusters – “Srednogie Med” in the region of Panagyurishte and Pirdop, in January 2005, and “The Energy Heart of Bulgaria” in the region of the Maritza East complex in March 2005. In 2006, two more clusters were institutionalised: “The Unique Bulgarian Products – on the European Table” in Stara Zagora and “Agricultural Machinery” in Ruse. In the course of the PHARE project “Introduction to the Cluster Approach and Creation of a Pilot Cluster Model”, methodological and financial support from the international team was provided to two pilot clusters: “Made in Troyan” – in the field of furniture production and in the field of tourism in Smolyan. The second phase of this project, which started in the second half of 2007, supports the project ideas and the institutional strengthening of 12–14 clusters and thus encourages the more widespread application of the cluster approach in the Bulgarian economy. Cluster initiatives of various kinds continue to develop, and at the present stage, the number of registered “clusters” in the country is over 200.

The institutionalised clusters in Bulgaria unite a diverse range of organisations: *industrial and service companies, non-governmental organisations and representatives of the local administration* noting the active role of non-governmental structures in the face of national, regional and specialised branch associations. With regard to the activities set out in the cluster work programmes, it is noteworthy that they all have formulated development strategies, which are detailed in the *short, medium and long term*. The industrial clusters primarily develop activities related to corporate, regional and logistics activities, as well as the implementation of a package of basic and auxiliary information services for the participants. Funding is provided under the Scheme “Support for the Development of Clusters in Bulgaria” from the Operational Programme “Competitiveness”, however, their role goes far beyond this scheme. The participation of companies in such business associations helps to better manage the processes in them and facilitates their access to new technologies and markets.

An important advantage of such associations is the sharing of knowledge. Priority is also given to the protection of the environment, as well as the introduction of innovations. *Innovations* penetrate clusters at every stage of their existence, and their ability to generate innovations in *products, processes, design, marketing, logistics and management* are linked to their innovative capacity. In this direction, two aspects are of interest, namely: the technological innovations embedded in the activities of the cluster and the innovation capacity of the companies included in the networks. An advantage for the participants in the cluster is the opportunity and the expert capacity to maintain a modern structure for cooperation and increase the competitiveness of the participants in the network.

The cluster approach in Bulgaria is considered as an essential element of the economic policy in our country, aimed at the new conditions of the world and European economy, based on knowledge, and EU membership. Clusters have certain advantages that have the potential to achieve future competitive advantages. Through them, it is possible to promote the natural and cultural landmarks, life and traditions of people from different settlements, as well as combining cultural wealth with people’s livelihood and creating new, modern and interesting forms of business, helping to solve one of the problems. problems in recent years, namely – increasing the welfare of the population.

The current practice in our country shows that the main difficulties in initiating and creating clusters are the *lack of entrepreneurial culture, strategic thinking and trust*. The construction of clusters cannot be successful without mutual trust between the participants. The main reason for this is that initiating and building the network is a process of continuous “taking” and “giving”. It is obvious that the participants in the network must first of all give part of their sovereignty, part of their information database, to share their strategic views on development, to financially support the start of the cluster.

A prerequisite for achieving the high competitiveness of clusters is the availability of a highly qualified and experienced workforce. The potential of a cluster can be measured by the quality and capabilities of the workforce it has. This can be considered as an opportunity to expand the scope and activities of cluster associations. The creation and maintenance of effective cooperation between education and business, forms prerequisites for obtaining quality, practically oriented education and qualification of the workforce. Opportunities are created for joint projects in which companies and an educational institution can participate together, uniting theory and practice in one.

## Conclusions

Economists have been studying the spatial concentration of companies for more than a century. Cluster theory is evolving. There are changes in terms of the main accents; initially, the focus is on enterprises as the main building block of each cluster. Subsequent research proves that in order for the cluster to exist as such, the interaction between the different participants is important. Successful clusters arise as a result of a combination of the existing competitive advantages in a certain region, the action of market forces, as well as difficult to determine and unpredictable factors. Well-organised cluster-type associations can undoubtedly be an effective prerequisite for economic growth and the generation of benefits. This is especially important for the processes of restructuring the Bulgarian economy, attracting foreign investment and withstanding in the short and medium-term the competitive pressure on European and world markets. State support at the national and regional level creates the right framework conditions and stimulates enterprises to achieve competitive advantages. In the rapidly changing global economic situation, the chances of Bulgarian companies to position themselves on the international market go through their association in the form of clusters so as to use common resources of production, research, development, service, and marketing. The cluster approach provides an opportunity to create networks of interested, interconnected innovative technology companies, research organisations and regional business structures.

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