

## Clusters – Romania's real development alternative?

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**Abstract:** Among the well-known factors which influence the national economic growth at area level other aggregate measures are taken on, adopted and encouraged by national and international authorities, measures through which the enhancing of a region's competitive character is pursued.

According to the theory of polarized development, most concepts that support spontaneous reduction of disparities in regional economic development - as the process becomes more and more generalized - tend to base their theoretical support in the various formulations of this theory. Thus, a special place is allocated to clustering („cluster development” or „cluster initiative”). Their followers aptly consider registering specific economies of scale, known as economies of agglomerations. However, they must be carefully regulated and coordinated; otherwise they may cause even the deepening of the intraregional economic and social disparities.

**JEL classification: R11, O11**

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### 1. INTRODUCTION

The concept of cluster has been issued and promoted by Michael E. Porter and relates to the way and factors that contribute to increasing competitiveness at local, regional, national, global level and it represents, ultimately, a way by which a region / country may face the fierce competition in the current period.

The term cluster comes from the English language and in translation it has the meaning of “bunch” or “group”. There are several definitions of clusters, differing among themselves and there is a large typology of them in all areas.<sup>1</sup> A business cluster is a group or an agglomeration of potentially competitive organizations in a specific target market.

The definition provided by Porter, the promoter of the concept, will often be used, this having the possibility of being regarded as the standard version: “clusters are geographic concentrations of interconnected companies and institutions, in particular fields. Clusters comprise a group of related industries and other entities which are important in terms of competition. These include, for example, suppliers of specialized

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<sup>1</sup>Popa H. L. Iovescu Menuța – *Clustere. Caracterizare, clasificare, modele, Manualul 1*, Conferința „Clustere naturale în regiunea transfrontalieră” în cadrul „Programului de Vecinătate România – Serbia 2004- 2006”, Timișoara, 5 mai 2009, p. 1

inputs such as components, machinery and services, or providers of specialized infrastructure. Often, clusters extend downstreams to different channels and customers, and laterally to manufacturers of complementary products and the industries related by training, technologies or common inputs. Finally, some clusters include governmental institutions and institutions of other type - such as universities, standards agencies, think tanks, vocational training providers and employers - providing specialized training, education, information, research and technical support.”<sup>2</sup>

Similarly, according to the Official Journal of the European Union, the cluster is a “geographical concentration of firms specialized in a certain sector, in connection with specific suppliers and other companies in related sectors, which are competing, though collaborating at the same time.”<sup>3</sup>

From these definitions we can figure out the fact that the cluster is a geographical concentration of *companies that compete but also cooperate, of suppliers of goods and services and their associated institutions*. There is a tendency, widely shared by some, to achieve a spacial grouping as industrial parks, small or large cities, etc.

## 2. CHARACTERISTICS OF CLUSTERS

The concept of *clustering* (“cluster development” or “cluster initiatives”) is understood as the setting up and development of business and innovation clusters in the economy. This facilitates and accelerates coompetition (Cooperation & competition), the integrative innovation in all areas (from resources to the organizational culture) and thereby increases competitiveness and ensures the welfare of the direct participants in cluster formation, but also of the region(s) where they are being set up. In the view of the above presented facts, we can say that all this is done by providing and concentrating all available resources, by strengthening cooperation, trust and appreciation between people and partner organizations, by encouraging knowledge and cooperation that comes to be put into practice, but also by disseminating knowledge, skills and culture of competitiveness in cluster systems.

In these circumstances *benefits of scale* are obtained (by increasing the quantities of goods / services produced and sold the long-term average cost will decrease) with regard to a number of *network benefits* (by increasing the traffic density of the goods produced and designed for sale), plus *the benefits of learning and experience* that lead to enhanced learning and experience effects (provided they are not shared to third parties through various channels) having implications in reducing the average unit cost.

Clusters arise and develop naturally or planned within the geographical or administrative regions, and thus by the assistance of the public administration any town, well defined, inhabited territory, represents a codeterminant factor of the establishment of such clusters belonging to some different economic branches/sectors.

Also, clustering leads to the creation and development of international networks of cooperation, but also to the maintenance of internal and external environment stability of clusters, of the regions.

Following the above presented facts observed can be that, regarding the cluster’s structure, customers should also be taken into account (stating that payers are not always

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<sup>2</sup>Porter M. E., *Clusters and the new economics of competition*, Harvard Business Review; Boston; Nov/Dec 1998; Porter M., "Clusters and Competition: New Agendas for Companies, Governments, and Institutions", în Porter M., *On Competition*. Boston: A Harvard Business Review Book, 1998, p 197, 288;

<sup>3</sup> \*\*\* - *Avizul Comitetului Regiunilor privind clustererele și politica privind clustererele*, C257/p.77, 9.10.2008,eur-lex.europa.eu, data accesării 11.05.2009

consumers as well), the existence and demand of who ultimately justify the existence and development of the productive activity of this type of system.

Clusters and clustering have complex traits/characteristics. They are as follows:

1. Identity, geographical location, and thus their boundaries which are dynamic, and in this context they have ramifications in the regional, national and international geographical space;
2. Are potentially sustainably competitive on the regional, national and international market, within a certain field;
3. are continually competing, both as regards its economic ties with the competition and its internal and external relations of cooperation;
4. they ensure a more effective response to the development and turbulences of the external environments;
5. they sustain the development of the competitive character and of the organizations', regions' and even the nations' welfare.

An important action is exerted upon clusters by the culture of cooperation and competitiveness of individuals and companies, by strategies, by the dynamics and performance of the businesses that act as their components, but also by the local, regional and national institutions' behavior and training ability within strong public - private partnerships.

Therefore, the development of clusters is supported by the culture and skills (entrepreneurial, competitive, innovative and learning), the external conjunctural situations at micro, macro and even mondoeconomic level and their internal and external resources.

The main elements that can justify the establishment of this type of organization focus on the following:

1. the access to specialized factors (highly skilled labor force, specific professional services, components, equipment) is often more efficient than vertical integration;
2. the access to information (within the cluster much useful information is accumulated - marketing, technical specifications) that is relatively quickly disseminated by consultants, staff turnover, etc. ;
3. Complementarities: the performance of a sector positively affects also the performance of other sectors that it is in a relationship with;
4. the access to public institutions and goods: according to the importance of the cluster, public investments become significant and induce beneficial effects towards its component companies, such as subsidized training programs.
5. The general peculiarities of clustering focus on at least three aspects:
6. Is limited within certain sectors / related industries, usually related to science and research institutions (universities, centres for research and innovation, etc.);
7. It represents the vertical links of production, narrow sectors, niches in which the common interconnected stages form the core of the cluster (the chain "supplier - manufacturer - dealer - customer");
8. it takes place at a high level of aggregation (e.g., the cluster in the field of chemistry or agriculture-industry).

A cluster is not to be reduced to a concentration of firms in the same field of business; more emphasis is placed on the inouts of the highly specialized economy. Under these conditions the structure of such a productive construction consists of three levels:

1. The *fundamental level* consists of fundamental economic factors, such as human resources (specialized work) and financial resources, technology, economic and infrastructure regulations;

2. The *secondary level* consists of all that regards suppliers and customers (raw materials, distribution, sales and other related services);
3. The *higher level* regards the industries and export capacity and thus the cluster is interconnected to the global economic process.

Clusters are a component of location theories that have their foundation in the theory of the competitive advantage. In these conditions clusters affect the competitive advantage of a territory, mainly, through: increasing the productivity of their constituent companies, promoting innovation capacity (the competition generated by the companies included in a cluster forces firms to innovate and develop, stimulates research and introduces new forms of economic development), stimulating the arrival of new business in the cluster. All these result from the access to specialized factors, specific professional services, from the access to information, from the access to public institutions and goods. However, innovation is stimulated also by facilitating market testing or by the marketing of new products.

The *key benefits* identified as a succession of adopting the model of organization in clusters are *increased productivity* (with the increasing of employment and thus wage levels), the *regional specificity* (by creating a conducive and productive business environment, which leads to attracting many specialized companies in the field within that territory) and the *increased mobility of information* (due to the interactive system which these types of structures involve), while the major *risks* regarding clusterization take into consideration increased specialization allowing for its promotion and sustaining it. Thus, an excessive concentration of the cluster portfolio in a region may become vulnerable. In addition, the cluster can often not be the answer to increasing the competitiveness of a region, the source may come from elsewhere.

### 3. LOCATION AND DEVELOPMENT OF CLUSTERS

For clusters to show their benefits for the local/regional economy they must be as dynamic as possible. According to the “consulting group at higher level of clusters”, coordinated by Pierre Lafite, they established within the Center for Strategy and Competitiveness in Stockholm characteristics that must be met for such clusters:<sup>4</sup>

1. be a key element of innovation and prosperity, supporting the construction of unique profiles in the area, able to strengthen their role as active and attractive partners in the conditions of economic globalization;
2. to develop by themselves in competitive markets (obviously, government policy can contribute to strengthening competitiveness), where there is strong competitiveness;
3. reflect the presence of ties and cooperation across institutional boundaries;
4. to have strong links with similar clusters in other regions or countries and thus becoming more attractive and visible on the economic map of the country.

World practice has shown that the state often intervened in supporting such projects. These opportunities for regional growth/development, the concentration of economic activities, are closer than oligopolistic structures, growing apart from the market with pure and perfect competition (the ideal situation, therefore, desired) and there is the question of the period for which these ways of achieving sustainable development are for long and very long term. In this respect the presence of an authority is binding (either

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<sup>4</sup> \*\*\* - The European Cluster Memorandum, pe <http://www.clusterobservatory.eu>, consultat în 10 februarie 2010;

national or supranational) powerful and effective which should follow closely the activities undertaken by these programs. Even if the composition of the clusters also includes the state, which by its main functions should ensure efficient resource allocation and redistribution according to the private and social needs, as well as to ensure the adjustment of economic mechanisms for ensuring the stability of society.

Clusters are formed in some areas in which large savings will be focused, but as the area is larger, more economically and socially advanced than the other, there may be compensatory de-savings increasingly significant. They certainly attract a large number of people from less developed areas, keen to provide their workforce. The effects of any additional population, in addition to traffic, and time spent with the moving about, in addition to noise and dust, and the impact of this increased pressure on public health and satisfaction are not taken into consideration by trade and industry. They are important, but difficult to measure. In the absence of relevant legislation, incentives for companies that are expanding are practically nonexistent to be taken into account.

As a result of the increase in the number of cars, suburbs extend towards the periphery, in an attempt of the people to "get rid of all". It thus creates an environment in which, while it becomes increasingly difficult to travel, a personal car becomes essential for many. The existence of a personal car encourages the geographical dispersion of houses, shops or places for entertainment and a variety of services for consumers, who are spreading, increasing the need for private cars (in many cases they are necessary).

So, the state's intervention and control is required. Clustering is in an inseparable connection with the government policy. The state has intervened many times in such actions. And these exercises were not aimed so much at the direct creation of these processes, but rather in regulating the operation of their networks, of the mutual relations established, of other factors with direct or indirect action to influence the activity of clusters. Governments have promoted a policy of continuous innovation in many cases succeeding concrete and viable models to predict regional economic growth by strengthening the competitiveness of organizations forming the cluster.

There are several criteria for the classification of clusters. After the way they are structured, industrial clusters are *vertically integrated*, *horizontal* and *emerging clusters* (clusters in the training and development process), and according to the nature of their work, we can distinguish between *so-called industrial clusters* and *innovative clusters*, the latter playing a role in getting a sustainable competitive advantage at local, regional level by the relations which they have with the research and development sector.

*Proto-clusters* or the *developing clusters on horizontal structures* in Romania are to be found in the software industry (Bucharest, Timisoara, Cluj and Iasi) and in the porcelain industry (Alba Iulia). *Full-vertical clusters* exist in an incipient form in our country and work in the auto industry (the supplier-manufacturer relationship), chemicals, clothing, hardware, furniture, and the horizontal ones – in the light industry (clothing, footwear) fashion, the media, software, bio - tech.

At the level of our country the Group of Applied Economics has identified four major areas in the textile sector, each with specific features:

1. **The Western area** with the cluster Timis - Arad - Bihor due to the influence of foreign companies (particularly the Italian ones, that have brought in the Italian cluster model – “the Industrial District”);
2. **The North-East area** with the cluster Iași - Bacău, the origin of which started several decades ago, during the communist period, when the production of synthetic fibers was also developed in the area.

3. **The Center** of the country, with the Brasov – Sibiu area, is based on the craft history and traditions of the area (the famous guilds of weavers, the tailors) and external links with Germany through the emigration of Germans ethnic in particular who maintained links with this area after leaving the country.
4. **The Bucharest area**, based on the fact that in our country there is usual for business to develop in and have powerful links to the capital of the country.

In the U.S.A., since 2001 a policy of constant innovation has been promoted to form and strengthen clusters by: (1) direct budgetary support of the development and implementation of new technologies and products; (2) an indirect support through tax and administrative measures; (3) strong investment in education, (4) the support of critical elements of the communitarian infrastructure necessary to accelerate the innovative processes. Thus more than half of these companies function following this model.<sup>5</sup>

In *Canada* we can notice a concerted activity of the authorities regarding the capitalization of the naturally existing potential, and so the piscicultural clusters in the northern part of the country have monopolised in a very short time the salmon market.

*The Dutch economy* is grouped into ten “megaclusters” in relation to innovation policies - priorities of the state (setting/assembling, chemistry, energy, agro-industry, construction, media, health, trade and services, non-commercial services, transportation).

In *Germany* aimed is, since 1995, the establishing and encouraging of biotech clusters as a sub-domain of alternative energies for which the state takes full responsibility, while in the *UK* the government identified and analyzed potential regions around Edinburg, Oxford and the South-East of England for the location and development of biotechnology firms.

In *Finland* the state has developed the "forest industry cluster" which also incorporated the production of timber and the adjoining ones, and in *Norway* is stimulated the activity of the “Maritime household” cluster, and in *Italy*, attention turned to the creation of the cluster in the field of mechanics, located near Modena.

In *Asia* we have examples like South Korea (the “Kumi area”), Japan (“Tehnopolis”) that operate in the electronic field.

Globally there is a wide range of incentives offered by the authorities (central and local) to encourage SMEs in the creation of such groups in innovative areas:

1. Direct funding (up to 50%) of the expenditure required by their setting up (France, USA);
2. Crediting, even without interest (Sweden), grants and strategic grants for scientific and research works (in all developed countries);
3. the creation of funds to implement innovations taking into consideration the potential commercial risk (England, Germany, France, the Netherlands, Switzerland);
4. to postpone, extend the period of payment or exemption from taxes if the invention is achieved in the energy sector (Austria), etc.

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<sup>5</sup>Popa H. L. Iovescu Menuța – *Clustere. Caracterizare, clasificare, modele, Manualul 1*, Conferința „Clustere naturale în regiunea transfrontalieră” în cadrul „Programului de Vecinătate România – Serbia 2004- 2006”, Timișoara, 5 mai 2009

The development of clusters involves going through four stages<sup>6</sup>:

- Mobilization – which means finding interested companies and which uses economic changes as opportunities for raising also the interest of economic agents;
- Diagnosis – involving the analysis of the economic environment and of the infrastructure that can support its implementation;
- The development strategy – that requires regular meetings of the interested parties to identify common priorities and actions;
- Implementation – which refers to the creation of a management strategy of the process, identifying financial resources for future activities, and also monitoring the results and performances.

The main advantages that encouraged and supported the cluster-type policy take the following into consideration: increase in productivity through specialized inputs, access to information and the development of cooperation within companies in the same field of activity, the development of new products; an increase in the demand for goods and companies within the cluster; an increase regarding the skills of the workforce; rapid innovation accompanied by an improvement in the technological capacity of firms due to the involvement of research activities and of more and more intense competition; increase in the efficient use of resources, improving access to local and international markets, as well as new business development.

Geographical, cultural and institutional proximity allows the access to and the development of special relationships, better information, important incentives to which other benefits can be added, related to productivity growth, which are difficult to obtain from a considerable distance. This way, in a cluster, the whole is greater than the sum of its parts.

## 5. CONCLUSIONS

Clusters represent a new and complementary way of understanding an economy, the organization of a thinking pattern within the economic theory and practice. Clusters represent a new and complementary way of understanding an economy, the organization of a thinking pattern within the economic theory and practice

For the success of the clustering action necessary will be the increasing of these initiatives through an active involvement of the local administration, and centrally – of the educational structures and of R & D institutions, along with sector or cross-sector firms.

The economic policies based on clusters may lead to the development of existing industries, as well as to attracting foreign investments. The existence of a cluster can determine the location of an economic agent, important nationally or internationally, and in these circumstances it may allow to easier overcome by the community the difficult moments caused by the global economic depression (crisis) in this period.

Competitiveness is the basis for success in a global market and this can be very well supported by clustering if it is well regulated and supported. In this regard a structure can be accepted and established for the certification of such clusters to give a sense of reality to this action. The European trend is obvious and is based on the French experience that positively influenced the decision-makers. At EU level clusters are allowed to receive from authorities the same importance as economic development policies at national level.

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<sup>6</sup> \*\*\* , - *Dezvoltarea economică bazată pe clustere – cheia pentru competitivitate la nivel regional*, Information Design Associates & ICF Kaisen International, octombrie 1997, p. 2

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