DEVELOPMENTAL DIRECTIONS OF THE CLUSTERS IN HUNGARY

GÁBOR NAHLIK, ERZSÉBET NÉMETH, ZOLTÁN ANDRÁS DÁNIEL, CSABA LÁBODI, PÁL GYURIK *

ABSTRACT: Clusters are created in order for companies and institutions to exploit beneficial interrelations. This means the development of a common image, regularly organized meetings, joint planning, and the implementation of tasks. Therefore, the members of the cluster execute a contract through an Association Agreement on Co-operation that defines the rules for cooperation within the cluster. None of the members of the cluster are forced to carry out an activity that is disadvantageous for the member. Clusters can be categorized into stages according to their level of development: start-up cluster, developing cluster and accredited cluster. The paper discusses all of them in detail.

KEY WORDS: Cluster, developmental policy, SME, accreditation, Pole Programme

1. GENERAL DESCRIPTION OF CLUSTERS

Cluster as an economic conception originated in the ’90’s. From its beginnings it has become a concept in economic development. The development of the service sector is an example of cluster development as well. Less and less amounts of goods are consisting mainly of material-type costs while the rate of related services has increased. These services are not necessarily created within the enterprise, which requires relationships among separate companies. On the other hand the development of communication facilities contributes to more efficient relationship among the enterprises.

According to the study of Pappné Gáspár L. [1], because of the reasons mentioned, the process of production is strongly decentralized and at the same time the
decision making and intellectual work are concentrated regionally. This process is called a global-local paradox by Porter [2]. Although the companies work out global competitive strategies, industry leaders can be found in the same region or concentrated in the same city. The sudden advance of small and medium sized companies (SME) in parallel with decentralization of economic development is also very important. Programs of economic development initiated from above were changed by the programs of economic development organized from below. The local and regional governments have an important initiative role in this process.

The local facilities, the regional specialities, and the characteristics which cannot be copied easily, are important in the development of the economy. A single company’s activity is not sufficient to exploit all specialities efficiently, so external relationships are needed. These are clusters. The definition of cluster is supported by several arguments both in the international and in the Hungarian literature.

The English Language literature uses the term ambiguously. On the one hand it characterizes the organization itself as a terminal product of the process and on the other hand it characterizes the process of cluster development as well. The process itself can be examined geographically and economically. (Feser) [3] Geographically we have to examine the regional concentration and the positive local results of the process. Economically the most important aspect is division of labour. In this case enterprises compete with their interest in mind, while their results are influenced by their relationships with other enterprises which provide products or services at an even higher level.

We can examine four different types of clusters:

- Enterprises producing for local markets which are typical of low economic interlocking and low geographic concentration.
- Output industries which have low economic relationships and high geographical concentration (mainly because of the geographical facilities)
- Cluster in an industry in which the division of labour is significant, and its network consists of the members of a certain industry concentrated at a low level spatially.
- Regional cluster. Porter’s classic interlocking cluster, which has a high level of concentration and division of labour.

From the four categories of cluster development, we will deal with the one developed by Porter. According to Porter [2]: „A cluster is a geographically proximate group of companies and associated institutions in a particular field, linked by commonalities and complementarities”. According to this definition, clusters are concentrated cooperative networks of economic participants, non-profit institutes and other organizations connected to each other within a value chain system in the same industry. Clusters significantly contribute to the increase of competitiveness of participants in a whole region or area.

Clusters can significantly decrease transaction costs of enterprises by lowering partner search costs, faster recognition of extent market claims, faster knowledge transfer and trust capital among partners. According to Porter, clusters have the possibility to influence the market and competition in three ways. First of all it can increases the productivity of participating enterprises. Secondly, it brings innovation
and new approaches to the given area. Finally it generates new businesses in the market. The organization of business clusters is mostly a market based activity, which is based on the concentrated attachment of enterprises, subcontractors and other non-profit organizations working in a given industry.

![Figure 1. Cluster Dimensions](image)

Porter introduces the connection between value-chains and clusters. They can connect to each other vertically, horizontally and transversely. In the case of horizontal clusters, enterprises of the same industry, which are located in a given geographical area and sometimes built on the same industrial or technological bases, work in a common market and use common purchase or distribution chains. The vertical networks also contain horizontal cluster members and members of purchase-chains, like the subcontractors, consumers and suppliers are connected, also. The transverse cluster refers to the concentration of complementary and symbiotic activities, where each enterprise gives value to the other one (Braun) [5].

2. THE MOST RELEVANT MILESTONES OF ESTABLISHMENT OF CLUSTERS

The process of cluster establishment and development is relatively long, often decades. During this process of cluster development there are common development stages and patterns. The Observatory research identified six stages. The first stage is when the spin-off enterprises are established. In the second, the special environmental background and the specific background industry connected to the industry are set. The third section establishes the organization which has the role to estimate the needs of cluster enterprises and to provide services. In the fourth stage, the cluster starts to develop the environment, and the number of enterprises is connected, or willing to connect increases. Specialized labour, which is relevant for the cluster, is developing, as well. It is followed by the establishment of non-market based contact capital, which
facilitates the circle of information flow and knowledge. The final section is the section of decreasing, when the cluster stops growing, and for further improvement influential intercourse and changes are needed.

3. THE PHASES OF ECONOMIC DEVELOPMENT

In large measure the most significant change during economic development is the facilitation of cluster development. But this is not the first step of development.

<table>
<thead>
<tr>
<th>Object and Strategy</th>
<th>Setting of industry or service</th>
<th>Restructuring</th>
<th>Reorganization</th>
<th>Cluster orientated development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attraction of premises and setting new enterprises</strong></td>
<td>Workplace establishment and development of extant enterprises</td>
<td>Improving the efficiency of extant strategies</td>
<td>Global competitiveness, relieving the process of cluster development, attraction of new enterprises</td>
<td></td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Factors outside the enterprises</td>
<td>Factors inside the enterprises</td>
<td>Factors inside and outside the enterprises</td>
<td>Cooperation and interactions among enterprises</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>Special support for particular companies</td>
<td>General services for different companies</td>
<td>Improving the services and extending their effects</td>
<td>Special services for branches and clusters</td>
</tr>
<tr>
<td><strong>Partners</strong></td>
<td>Multinational and transnational large companies</td>
<td>Sector SME</td>
<td>Large companies and sector SME</td>
<td>The cooperative groups and clusters of enterprises</td>
</tr>
<tr>
<td><strong>Based on</strong></td>
<td>Exploitation of cost advantages (natural resources, labour, tax, credit, financial support)</td>
<td>labour, technology, technological infrastructure, standard of living</td>
<td>labour, technology, technological infrastructure, improvement of the level of living</td>
<td>labour, technology, technological infrastructure, and development of the level of living (according to the expectations of clusters)</td>
</tr>
<tr>
<td><strong>Monitoring</strong></td>
<td>The number of nested new companies</td>
<td>The number of preserved and established new workforces</td>
<td>The number of new qualitative workforces</td>
<td>High standard of living, income, qualitative workforces, increase of export, new companies</td>
</tr>
</tbody>
</table>

Supply oriented ↔ Demand oriented

Source: Grósz András: A klaszter alapú gazdaságpolitika külföldi tapasztalatai [7]

Figure 2. The most important stages of regional economic development
Before this can happen, several earlier developmental phases must be completed. According to Lengyel [6] we can identify four different phases:

1. **Establishment of trade or service**: in general, the help of government or local government is needed by decreasing taxes, allowing exploitation of cost advantages. For example, the efficient exploitation of natural resources and cheap labour is an important aspect.

2. **Restructuring**: the main target of this section is restructuring operations within the establishment. The main targets of governmental policy are the establishment of workplaces and qualitative labour.

3. **Reorganisation**: the aim of the government is to improve, dissociate, divide and make those services unique which are provided for the SMEs.
   
   The main indicators are the number of workplaces established which requires qualitative and high qualification.

4. **Cluster orientated improvement**: the target is to ensure global competitiveness and to facilitate cluster development in the economic branches of the country.
   
   The main indicators of this section are the standard of living, the increase of incomes, the extension of qualitative workplaces and exports.

### 4. TRADITIONAL AND CLUSTER-BASED ECONOMIC POLICY

By the end of the 90’s the OECD in a Focus Group examination analysed the cluster policy of its 15 member states. The principles of improvement and the results were summarized by Roelandt-den Hertog [8] in 1999. According to Roelandt-den Hertog the cluster-based policy firstly has to be an initiation caused and controlled by the market. The interest of the government doesn’t answer the purpose without a powerful market claim.

Cluster development can’t be forced. Governmental policy may not restrict market competition in favour of the interest of enterprises. Only indirect governmental assistance and encouragement to change will be successful. The role of government is not directional or proprietary, because these functions are supplied more successfully and efficiently by market participants.

It’s not useful to focus only on successful and established clusters. The government needs to identify, support and stimulate smaller clusters, including those not yet established.

The following table contains the main aspects of examination of traditional branch and cluster-orientated approach.
Table 1. Traditional branch and cluster-orientated approachment

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Departmental approach</th>
<th>Cluster orientated approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target of prompting</td>
<td>Groups in similar network and subcontractor positions.</td>
<td>Strategy groups often are complementary to each other and are in different network position.</td>
</tr>
<tr>
<td>Industrial emphasises of stimulation</td>
<td>Emphasis is on the industry which is producing the final product.</td>
<td>Contains consumers, subcontractors and enterprises providing services.</td>
</tr>
<tr>
<td>Role of competitors</td>
<td>Emphasis is on direct and indirect competitors.</td>
<td>The set of industries which are dependent on each other and which shares common technology, qualification, information, inputs, consumers and channels.</td>
</tr>
<tr>
<td>Willingness of competitors to cooperate</td>
<td>Unwillingness to cooperate with competitors.</td>
<td>Most of the participants are not direct contestants but they contribute to the common needs.</td>
</tr>
<tr>
<td>Role of government</td>
<td>The aim of the dialogue with government is often to reach support and to reach competition restrictive dispositions.</td>
<td>Common interest in extensive cooperation which improves productivity and contributes to the transparency of competition. More constructive and more efficient dialogue between the business sphere and the government.</td>
</tr>
<tr>
<td>Main object</td>
<td>The aim is searching for the diversification of already extant products.</td>
<td>The aim is searching for synergies and for new combinations.</td>
</tr>
</tbody>
</table>

Source: Authors editing based by Roelandt–den Hertog (1999) and Grösz (2000)

5. CLUSTERS WORLDWIDE

The clusters developed initially in areas such as information technology in Silicon Valley, media in Hollywood, finance in New York City and London, car manufacture in South Germany and Detroit, telecommunication in Stockholm and Finland and the fashion industry in North Italy.

Recently such trust-based networks are helpful for small businesses to exploit special resources by sharing knowledge and the fact that the advantages of these networks are realized at a lower cost than outside the cluster environment.

A Euro barometer survey analysed the parameters and situations of European clusters in the European Union. According to the survey, every fourth enterprise which has more than 20 employees works in cluster environment. That is to say that they are in close cooperation with other local companies. Today, however, there is a large difference among certain European countries. The new member states haven’t
recognised the significance of clusters yet. In the new states only 9% of the firms are in clusters where in the 15 older states 28% of the firms are in clusters.

The results from United Kingdom are excellent. In the examined industries 84 per cent of enterprises which have more than 20 employees fulfil cluster requirements. This rate is 67 per cent in Latvia and 64 per cent in Ireland. At the bottom of the list are the following countries: Cyprus with 3%, Poland and Czech Republic also having 4%, Greece, Estonia, Lithuania with 9%.

Looking at countries individually, the data indicates that the higher amount of networking is in the Scandinavian countries. Most of the enterprises there, which are cluster members, participates in more than two business networks. The situation in Turkey is very similar to the Scandinavian one.

Cluster policy in the member states of the European Union Sub title consistency. The European Network for SME Research* published Regional Clusters in Europe for the European Committee as the part of 8th Observatory of European SMEs, in 2002. This document and its summary table represents foreign cluster policies.[9]

In European countries cluster policy can differ significantly. There are two main causes of the difference. The first cause is the regional and national orientation of cluster policy and the decentralisation rate of political power that determinates the primary field of cluster policy. The other cause is to develop and apply the policies in different environmental, cultural and institutional frameworks as well as in political decision-making.

Most of the examples are of policies which support the regional innovation systems. The aims of the policies are, for example, to strengthen local business networks and to support innovation cooperation between enterprises and organisations and to facilitate the transfer of local knowledge and technology. Countries such as Denmark, France, Netherlands and Portugal, have a national cluster policy with different national and regional clusters. Federal states (like Austria or Germany) act in an opposite fashion.

In these states the development and implementation of cluster policy is mostly a regional role. The regional level, based on the intense difference in region, has an important role in Spain and in Belgium, also becomes more and more important in those states which have recently established a new decentralised institute system (for example in United Kingdom, Finland).

Some countries don’t have a policy in particular to develop clusters, on neither the regional, nor on national level. At the same time the facilitation of developing clusters appears as an item in their innovation and technological regional policy.

6. DEVELOPMENTAL CLUSTERS IN HUNGARY

Development policy. The Pole Programme is an economic stimulus package accepted by the Hungarian Government. The aim of the Programme, within the

---

*A European network deals with the research of SMEs. Every country attached to the European Economic Area, including Switzerland, is represented by separated institutes. From 2004 the 10 states also participate.
framework of the governmental economic development concept, is to increase international competitiveness through the support of serious clusters, which have innovation and export potential, and to increase investments which develop the business environment in pole towns.

The main aims of the Pole Programme are the followings:

- to facilitate the formation of international competitive clusters;
- the specialization of innovation activities with high added value;
- strong cooperation between enterprises and complementary institutions such as universities and governments in order to sustain long-lasting competitiveness.

A further aim is to strengthen the role of regions through the pole towns by facilitating extensive general competitiveness of poles and to improve their business environment.

The essential expectation of the Pole Programme is to reach the size which is needed for the competitiveness of enterprises at the European level through networking, clustering, and cooperation with the research and academic sphere, and to increase significantly the competitiveness of the whole Hungarian economy, through strengthening export orientated activities with high added value.

The aim is to establish 5 to 10 successful pole innovation clusters by 2013, and to have market share, which is measured on a European level, and to be connected to global trade value chains. Furthermore, the strengthening of the SME sector, its international competitiveness and the significant increase of supplier ability are important. The improvement of employment structure and strengthening of the role of regions are also very important questions.

The following operative programmes of the New Hungarian Development Plan are involved in the Pole Programme:

- Operative Programme for Economic Development
- Operative Programme for Social Infrastructure
- Operative Programme for Social Renewing
- Regional Operative Programmes

Originally the development poles were selected by the decision of Parliament (97/2005) about the National Area Development Concept. On the one hand the decree establishes a competitiveness metropolis area in Budapest by 2013 among the national regional aims. On the other hand it strengthens the development poles cities by encouraging the development of regional, and city networking systems. The parliamentary decree and the New Hungarian Development Plan based on it, also regards the development poles as real centres contributing to realistic development.

The making of development conceptions of certain poles into a formal strategy is supported with resources by the National Development Office. In 2006 pole strategies were worked out and pole offices began strategy making and to coordinate further implementation with the utilization of sources. The finished pole strategies were evaluated by the National Development Agency in 2007.

During this process it was realized that strengthening enterprise development with the development of clusters was needed. In the case of governments and academic institutes their supporting role has to been raised to facilitate cluster development.
**Horizontal economic development buttress.** The participants determining the state of development of business environment are broadly supported in the fields of horizontal economic development, general human resource development and general infrastructure development.

The grantee participants (of horizontal economic development buttress of Pole Programme) are the local governments of pole towns, higher education and research institutes, educational and researchment institutes financed by the governments and their participation in economic companies.

Educational, training and research institutes found in non-pole towns could be the advanced ones of Pole Programme in case of participation in accreditised clusters. Cultural and health institutes of pole towns mean the further target group of horizontal economic development buttress.

The aim of horizontal economic development support is to facilitate the improvement of the business environment in pole towns and cities. With the establishment of the most possible competitiveness, pole towns can attract new enterprises, help to assist the development of established enterprises and establish new ones, not only inside the region but even on a European or global level as well.

The most important fields determining the competitiveness of business environment are the quality of human resources and infrastructure facilities. The main priority of horizontal economic development is to buttress the development of these fields.

**Enterprise development buttress.** The aim of the economic development buttress of the Pole Programme is to strengthen the Hungarian SME sector through facilitating the focus on high added value and export orientated activities.

The tools of development enterprises, which have large extension potential and international expansion facilities, are the cluster development and support for innovation. Innovation can be any new or significantly improved product, service, producing method, business model, organisation resolve which lets the market basically organised clusters to bring some advance in competition.

The program’s economic developmental buttress supports the enterprises, which are participating in cluster development, mainly in the following areas:

- *acquisition of business services*: these are services facilitating cluster development, innovation, increase of added value and export;
- *direct development of human resources*: training specialists who are needed for the activity of enterprise group clusters acquisition of needed machines and arrangements for common development, producement or for other common activities;
- *development of physical infrastructure*: common infrastructure hired or built for the aim of increasing competitiveness;
- *lending repayment financial sources*: micro financement and risky capital investment for enterprises which are to be clusterized.
7. FACILITIES OF COMPETITION

Role of accreditation. The significant sources, which can be reached within the framework of enterprise development buttresses, need to filter the enterprise networks in advance which forms clusters and want to participate in the programme. The use of support within the frame of the programme needs to fulfil the strict requirements in advance. These criteria realise, firstly, in conditions of competition which were exposed within the frame of Operative Programme, and, secondly in accreditive aspect system made for the interest of filtering innovational clusters.

The allocation of certain supportation sources, which are serving common developments, will be reached for only clusters having passed the accreditation process. The aim of accreditation is that the supporter can filter out those potential competitors whose participation is not confirmed in the market.

There are four development phases of clusters which are the followings:
- Starting clusters
- Developing clusters
- Innovative clusters accredited
- Pole innovational clusters

In the early stages of development clusters obtain support from the regional government. When the clusters are accredited support is given by the National Development Agency.

Competitive proposal process. The proposal process is dependent upon the stage in the cluster life cycle.

Emerging and developing clusters. Emerging and developing clusters could submit competitive proposals - to Regional Operative Programmes – beginning in autumn 2008. In one of the components of the competition proposal participants submit a project for cluster management services, counselling and low valued assets needed for cluster management. In the other component they could compete for the common investment in clusters. Eighty per cent of the project costs come from the government and 20% from the cluster. For the second component of the proposal only 50% of costs can be funded. By 29 August 15 competitive proposals for emerging and developing cluster were submitted in the Central Transdanubian region. The participants applied for 484 797 307 Ft combined, which means 32 319 820 Ft for each applicant. The proposal were evaluated by the following criteria: [12]

The following are the most important categories in the table above based upon the interests of the grantor. The most important category is the participation of highest possible number of clusters and SMEs. The total revenue of cluster members, and especially the revenue of SMEs, are a very important criteria, also. The first 50 points are allocated to facilities and for clusters in the most important industries (for example in informatics, car industry, mechatronics and environmental industries).

The second 50 points evaluate the Cluster Development Plan using data from cluster members, schedule, allocating resources to tasks, a minimum 3-year strategy and budget. The goal of the project is to advance cooperation among enterprises, educational and R&D institutes, and local economic participants in the industrial cluster.
Table 2. Aspect of rating connected to cluster facilities

<table>
<thead>
<tr>
<th>Number</th>
<th>Aspect of rating</th>
<th>Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td><strong>Connected to cluster facilities</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>The ratio of revenue of economic companies correlated to the whole amount of the total cluster</td>
<td>15</td>
</tr>
<tr>
<td>2.</td>
<td>Number of members (mostly the number of SMEs among them)</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Representation of very important regional industries and sciences</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>Economic situation of the participant</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Economic company participating together</td>
<td>5</td>
</tr>
<tr>
<td>I. Total</td>
<td></td>
<td><strong>50</strong></td>
</tr>
<tr>
<td>II.</td>
<td><strong>Indicators connected to the project</strong></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Development conception and plan</td>
<td>25</td>
</tr>
<tr>
<td>2.</td>
<td>Financial situation and vocational consistence (?)</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Equality of chances</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Sustainability</td>
<td>5</td>
</tr>
<tr>
<td>II. Total</td>
<td></td>
<td><strong>50</strong></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Accreditation.** The objective of the proposal is [13] is to identify and accredit those clusters with the greatest potential for success based upon the qualifications and requirements mentioned previously. The most important aspect of the accreditation document is the strategy and action plan which project future estimates and not financial obligations.

After the award of the title of Accredited Innovation Cluster, clusters are not provided direct financial support. The members of accredited clusters are authorized exclusively to participate in certain request for proposals from the National Development Agency. The accreditation title lasts for two years and is renewable.

**8. CONCLUSION**

In our paper we examined the circumstances of how a cluster can be created and we gave a presentation about their history. We presented clusters all over the world. After this we dealt with clusters in Hungary especially the policy of economics and the government support of clusters. We presented the Hungarian mechanism for the cluster support system in economic policy. Finally we analyzed the development of Hungarian SME competitiveness when organized into clusters. A more important aim is the accreditation, because it opens them to financial resources that can not be reached in other ways.
REFERENCES:


[5]. Braun, P. - *The Importance of Value Chains, Networks and Co-Operation as Drivers for SMEs Growth, Performance and Competitiveness in the Tourism-Related Industries’ Conference on Global Tourism Growth: A Challenge for SMEs, 6-7 September 2005, Gwangju, Korea*


[10]. *** - Pólus klaszter kézikönyv, Budapest 2008 május


[12]. [http://www.nfu.hu/doc/1090](http://www.nfu.hu/doc/1090) - Felhívás és útmutató

[13]. [http://www.nfu.hu/doc/1049](http://www.nfu.hu/doc/1049) - Felhívás és útmutató