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## INDUSTRIAL CLUSTERS AN INCENTIVE FOR A COMPETITIVE REGIONAL DEVELOPMENT A CASE STUDY OF SELECTED BULGARIAN INDUSTRIAL CLUSTERS

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### ABSTRACT

A dominating idea in current discussions about the regional development continues to be the inter-firm networking. Industry clusters, being one of the types of inter-firm networking, are recognized to play a significant role for the competitive economic development of the regions and the improvement of the quality of life of the citizens. The objective of the current paper is twofold. Firstly, to present and analyse the cluster establishment process in Bulgaria since the application of first financial instrument (Phare program) that initiated the emergence of clusters. Secondly, to conduct an analysis of the current state of selected industrial clusters and to discuss what is or could be expected to be the positive influence of the clusters on the regional development. The basis will be an analysis of selected Bulgarian clusters according to the frame outlined by quality indicators of European Cluster Excellence Initiative and following questions: What are the reasons these clusters to be established? Which are the members of the clusters? What kind of relationships could be identified among them? What are their objectives? All of these issues will help the future development, the role and importance of the clusters for the regional development to be identified.

**Key words:** Bulgarian cluster organizations, competitiveness

### INTRODUCTION

In the last two decades cluster approach attracted the attention and clusters gained a significant administrative and financial support of the EU, state and local policy makers. In fact neither cluster approach nor the clusters<sup>1</sup> are an innovation. The idea of clusters dates back to Alfred Marshal<sup>2</sup> and industrial regions.

Nowadays Michael Porter redirected the interest and attention of scientists, decision makers and practitioners towards the benefits of clusters from the current perspective. According to Porter *clusters represent a new way of thinking about national and local economies*, and they necessitate new roles for companies, government, and other institutions in enhancing competitiveness (1, p.16) as well as that ... clusters represent a new and complementary way of understanding an economy, organizing economic development thinking and practice, and setting the public

policy (1, p. 32). One of the most common perceptions about clusters is a business cooperation that aims improvement of competitiveness of the participants (2, 3, 4). Cluster, according to Porter (5, p.199) is a geographically limited critical mass (i.e., sufficient to attract specialized services, resources, and suppliers) of companies that have some type of relationship to one another - generally a complementariness or similarity in product, process, or resource. Clusters generate positive outcomes even in case some of participants are direct competitors. Another definition states that clusters are a self-organizing production system/network where the companies cooperate through horizontal and vertical linkages to each other. Trough that cooperation the cluster system and the each one of the companies-members create additional value added, strengthen the

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<sup>1</sup> In the USA such formations date from the 18<sup>th</sup> century and in West Europe even earlier.

<sup>2</sup> Principles of Economics

cooperation and partnership among the members and the result is an increase of competitiveness of companies-members, competitiveness of the industry, region and the country.

Numerous are the already *proved advantages of clusters* that affect competitiveness and *foster productivity and innovation to higher levels*. Some of them are: the easier access to specialized inputs, services, employees, information, institutions, training programs, and other public goods; perceivable innovation opportunities; encouragement of the strategic differentiation; ease of coordination and transactions across companies; spin-offs and start-ups are encouraged by the presence of other companies; visible performance comparisons and strong incentives to improve; knowledge creation; rapid diffusion of best practices (6, p.224). Therefore, the outcomes of clustering cover a broad area of influence, and *clusters could be accepted as a part of a broader political agenda and not only as a separate instrument of the economic policy*.

**The importance of clusters suggests new roles for governments at the federal, state, and local levels. (1, p. 16). But in order to be effective the economic policy should take into account the specific needs of different clusters. Regarding that idea, the economic policy of the countries should stress not on the direct interventions but on the indirect stimulation.**

The role of the state on stages of initiation, setting up and evolving of clusters is limited. These limitations refer to: (1) less decisions based on the “top - down” approach and encouragement of the companies and other organisations to enter the clusters; (2) provision of an active participation of the public authorities in the process of identification of clusters and further assistance to clusters; (3) choice of the most appropriate policy and set of political instruments.

The cluster policy nowadays presumes an active interactions among all the levels (national, local and the cluster members) and a balance between the two approaches “top-down” and “bottom – up” when decisions are taken. L. De Propriis argues that “the tension between the (micro-economic element of the) growth and jobs agenda, and the long-standing socio-economic cohesion aims cannot be solved by policies that target either sectors or regions, but can be better reconciled with renewed attention to creating, nourishing, and strengthening immobile factors of local development and competitiveness especially for lagging regions. This would imply

‘bottom-up’ cluster policies aimed at improving the welfare of socio-economic communities by creating the conditions for the systemic and integrated functioning of their socio-institutional-economic activities” (7). In the field of economic policy cluster initiatives could be regarded as an incentive the roles and the interactions among private and public sector to be redefined.

### **HISTORICAL PERSPECTIVE OF CLUSTER DEVELOPMENT IN BULGARIA**

Cluster development in Bulgaria started with a delay compared to the other European countries. The starting point was the middle of 2000s as the first cluster was set up in the second half of 2004. At that moment the Council for Economic Growth to the Government has taken a decision about four key industrial sectors appropriate for the cluster initiative. The first cluster was Bulgarian cluster for Information and Communication Technologies Foundation (ICT Cluster) and it was registered at the end of 2004 as a non-for-profit entity. Up to the first half of 2005 were registered two more clusters and at the end of 2006 the total number of clusters was fourteen. At the beginning of that process, public authorities on national and regional level gave a strong impetus and support to the cluster creation but during the next years, up to 2012-2013 the setting up of the clusters was not so intensive.

In Bulgaria, recognition exists on national level about the potential of the clusters as a driving force for the innovation and competitiveness<sup>3</sup> (8). Considerable number of strategies, programs and schemes, promote the co-operation among business, universities and research institutions, and public bodies. National level documents that aim at raising the national competitiveness and refers to the clusters in an indirect way are: National plan for development of Republic Bulgaria 2007-2013; National strategy for regional development 2005-2015; National Strategic plan for agriculture and rural development (2007-2013); Convergence programme (2009-2012); Operational programmes OPs: Environment; Transport; Administration capacity; Human resources. The other set of strategic documents forms the backbone of the overall cluster policy. They are National Innovation Strategy of the Republic of

<sup>3</sup> In their last report the experts of the Eurobank EFG state that Bulgaria has to accept a new model for its economic development the stress should be on competitiveness and export instead on foreign investments.

Bulgaria (2004); National Cluster Strategy 2007-2013 (draft, 2006)<sup>4</sup>; National strategy for the encouragement of SMEs 2007-2013; National investment strategy (2005-2010); National Reforms programme (2011-2015); OP "Regional development 2007-2013". The objectives and policy actions of the Innovation Strategy were updated and complemented by the OP "Development of the Competitiveness of the Bulgarian Economy" 2007-2013 (grant scheme Support for cluster development in Bulgaria (BG161PO003-2.4.01<sup>5</sup>), followed by the Operational program "Innovations and Competitiveness" 2014-2020.

In 2010 a new four years project "Encouragement of internationalization of Bulgarian companies" was launched by the Ministry of Economy, Energy and Tourism. It aimed at consolidation and expansion of the participation of Bulgarian companies on the European and world markets and efficient utilization of competitive advantages of Bulgarian companies. The branches selected were: food production; beverages production; manufacture of chemicals and pharmaceuticals, manufacture of textiles and textile products, apparel industry, including leathers, furniture, manufacture of machinery, equipment and appliances, manufacturing of electrical machinery and apparatus, manufacturing of motor vehicles other than cars, manufacturing of rubber and plastics, manufacturing of medical and optical apparatus and instruments, manufacturing of office machinery and computers and services in the field of computer technology. These are branches in which Bulgarian economy has already positions on the European and world markets. In some of the targeted industries clusters have been created.

## TWO WAVES OF CLUSTERS' CREATION

Two waves of the setting up of clusters can be recognized in Bulgaria. *The first wave* refers to the period 2004 – 2011 when the growth of clusters was largely enhanced at the beginning by a PHARE project that aimed at introducing an appropriate cluster approach and model. The number of registered and functioning clusters up to 2011 is 27 (9). During that period the clusters are concentrated in the region leading in terms of economic

development– Sofia, Varna, Plovdiv and Stara Zagora. As to the specialization the predominant part of them are in the industry branches.

### *Second wave covers the period 2012-2015.*

The main reason for the second wave is funding from the Operational program "Development of the Competitiveness of the Bulgarian Economy" 2007-2013 and the Operational program "Innovations and Competitiveness" 2014-2020. Both programs provide measures to support clusters – setting-up and development. After these financial interventions the result is more than 200 clusters. The number of the registered clusters in European Union (till February 2015) is 2000 (10). More than 10% of these clusters are registered in Bulgaria. In Germany and France clusters are around 100, in Serbia – 40 and in Romania - 50. Only small number are the functioning clusters and the predominant part belong to the group of the latent clusters.

## METHODOLOGICAL FRAMEWORK OF THE ANALYSIS

The main objective of the analysis presented below is to outline the current state and characteristics of selected functioning Bulgarian clusters. The selection criteria are: functioning, experienced and information secured clusters. Clusters that will be analysed and answer the research criteria are members of Association of Business Clusters and established during the first wave, namely:

Automotive Cluster Bulgaria; Bulgarian Cluster „Telecommunications“; Bulgarian Furniture Cluster; Bulgarian Industrial Cluster; Cluster for Health Tourism – Bulgaria; Cluster Mechatronics and Automation; Cluster Microelectronics and Embedded system; Cluster of Health Regions; EVIC – Electric vehicles industrial cluster; Foundation ICT Cluster; ICT Cluster Plovdiv; Marine cluster Bulgaria; National Courier Cluster; Specialized Cluster and Institute for Clothing and Textile – Dunav; Srednogie Copper Industrial Cluster.

Information about them is gathered from the websites of clusters and articles. The method is a desktop research. Clusters will be assessed according to the Quality indicators developed by European Cluster Excellence Initiative as well as one more point of view towards cluster organisations is added – the objectives that they define.

## QUALITY INDICATORS OF/FOR SUCCESSFUL CLUSTERS

Nowadays the agenda about clusters involves issues like measuring the success of the clusters. The most common features that are used to distinguish successful clusters are: transparency and openness to new members;

<sup>4</sup> Recently the intention to update that strategy was announced.

<sup>5</sup> Pursuing the cluster policy objectives set under the country's strategic documents, on 16 July 2010 was launched a call for proposals under the grant scheme Support for cluster development in Bulgaria (BG161PO003-2.4.01).

minimum 20 members<sup>6</sup> (11, p.13), financial stability, and regional concentration. On EU level, European Cluster Excellence Initiative is functioning. Its contribution is development of quality indicators and quality labeling of clusters.

Quality indicators of European Cluster Excellence Initiative to assess the clusters (12) are:

1. Structure of the Cluster
2. Typology, Governance, Co-Operation
3. Financing Cluster Organisation Management
4. Strategy, Objectives, Services
5. Achievements, Recognition

The rationale of the Quality Label is the demonstration that a cluster organisation has proven an excellent status of cluster management (in conformity with a high level regarding the European Cluster Excellence Initiative's Quality

Indicators) and a cluster organisation has implemented a comprehensive and successful process of further improvement. This indicates that being awarded with the Quality Label a cluster organisation is successfully involved in a process of continuous improvement. (12, p. 6)

#### HOW IT APPEARS TO BE WITH BULGARIAN CLUSTERS?

##### *Conformity with the quality indicators of European Cluster Excellence Initiative*

Evaluation of the selected clusters is conducted according to the 5 quality indicators of European Cluster Excellence Initiative. The conclusions are presented in the **Table 1** below.

<sup>6</sup>Lämmer-Gamp Th., H. Kergel, M. Nerger discuss that the "A minimum of 40 participants appears to be necessary to have a sufficient nurturing ground for the development of ideas and projects".

**Table 1.** *Conformity of selected Bulgarian clusters with the quality indicators of European Cluster Excellence Initiative*

Dimension	State
1. Structure of the Cluster	<p>1.1 Committed actors – membership fees and specified requirements to enter the cluster.</p> <p>1.2 Most of the organizations in the clusters are small and medium sized enterprises.</p> <p>1.3 Universities predominate compared to the other research institutions.</p> <p>1.4 Financial institutions do not present.</p> <p>1.5 Company providers of outbound marketing and PR issues present rarely</p> <p>1.6 Public administration bodies (especially municipality authorities) could be found in almost each of the clusters even when the cluster operates on national level (members of the cluster are not geographically concentrated)</p> <p>1.7 In some clusters governmental organizations also present</p> <p>1.8 Most of the clusters operate on national level and the issue of geographical concentration is under question but there are exceptions as: Srednogorie Med Industrial Cluster, Marine Cluster Bulgaria and other.</p> <p>1.9 Number of the members varies from 7 to 57 (the case of Industrial Cluster Elektromobili”).</p>
2. Typology, Governance, Co-Operation	<p>2.1 Usually clusters have a president, “cluster manager” and a board. Board members belong to the companies among the founders of the cluster.</p> <p>2.2 Cluster management team is claimed to be professionals.</p> <p>2.3 Most of the clusters cooperate in the field of innovations and have good contacts with universities in order to develop innovations. (innovations are an objective that is defined of all the studied clusters).</p> <p>2.4 Some of the clusters have their own trademark (for example, Specialized Cluster Institute for Apparel and Textile Dunav – SCIAT Dunav).</p>
3. Financing Cluster Organisation Management	<p>3.1 Most of the clusters state the importance of EU operational programs financing</p> <p>3.2 What is a weakness is that the main purpose for the setting –up of some of the registered clusters is to acquire the financial resources of the operational program.</p>

4. Strategy, Objectives, Services	<p>4.1 Clusters define mission statement and core objectives</p> <p>4.2 Most of the clusters are at the initial stage of development and it is rare that they have a strategy or other planning document</p> <p>4.3 Services and activities of the clusters: distribution of information; collaborative B2B (business to business) and C2C (customer to customer ) projects; trainings for the staff and managers(one of the main activities of the studied clusters); press releases; common activities with governmental and municipal authorities; contribution to the regional development; activities toward market internationalization</p> <p>4.4 Business services - join provisioning of raw materials, technologies, software, innovation and know-how; organizing participation in exhibitions, common promotion; assignment of rights to use intellectual and industrial cluster property; submission results of cluster projects; training courses; organizing B2B (business to business) and C2C (customer to customer) meetings, conferences and workshops; support participation in various projects, implementing and maintaining relationships with state, municipal, public organizations and institutions</p> <p>4.5 Information services - providing information about: exhibitions, conferences, workshops in the field of maritime industry, information on open calls in the OP and European programs and tenders; commercial, marketing and other economic information; compiling of contact lists and other information for companies (for example, in the maritime sector); maintaining databases (stated only by Marine Cluster Bulgaria and developed for Bulgarian maritime economy)</p> <p>4.6 Consulting services - analyses and market studies, technical assistance in the development and management of projects, in the preparation of tender documentation, assistance in recruitment</p> <p>4.7 Advertising services - publication of company information, offers and advertisements on the website, contribution to advertising on the websites of partner organizations</p>
5. Achievements, Recognition	<p>5.1 Publications, press, media</p> <p>5.2 Awards</p> <p>5.3 Presentation of the best practice projects</p>

The importance of industrial clusters for the regional development is proved on a global level. But it is not so obvious in Bulgaria, because of the presented state of clusters. The studied clusters are still at the initial stage of development, even those the ones established during the first wave. Only few of those clusters are regionally situated and correspond to the agreed definition of M. Porter about the clusters – regionally located formations. The rest may also generate some positive effects on regional economies and may influence regional development but it is not easy to be distinguished and outlined.

Beside, selected clusters offer very limited number of services to the cluster participants, what is not a good basis and predisposition for innovations<sup>7</sup>.

#### ***Objectives of clusters organisations***

Despite the quality criteria the objectives

<sup>7</sup>According to some studies service areas that encourage innovations are: information/market intelligence, matchmaking, initiation of R&D and

innovation projects, promotion of the cluster and internationalisation.

defined by the clusters organisations are an indication about their state. Objectives are accessible and publicly announced in the websites of clusters.

On the basis of the conducted analysis we can outline two groups of objectives. The first one refers to cluster organization located on national level and the second one for regionally situated.

Seven are the most common objectives that cluster organisations define:

1. Development of international market positions – most of the companies are focused on that potential benefit of the cooperation
2. Increase the capacities to export
3. New job creation (an objective is the one that supports the regional development in a direct way).
4. To reduce the final product costs
5. To assist the improvement of the competitiveness of the respective industry
6. To organize common trainings and raise the qualification of the employees

7. To improve the labour conditions (that will influence in indirect way the regional development and population of the region where the cluster is located).

A difference is identified with the objectives of the regional cluster organisations such as Association Srednogie Med Industrial Cluster; IKT Cluster Plovdiv:

1. Sustainable development and environmental protection in accordance with national and regional priorities
2. Improvement of technical and social infrastructure in the region
3. Growth of the quality and standard of living
4. Sustainable development and environmental protection in accordance with national and regional priorities
5. Improvement of technical and social infrastructure in the region
6. Growth of the quality and standard of living
7. In the case of IKT Cluster Plovdiv – to contribute to the development of an infrastructure in the region that will attract foreign investments and companies to invest in the region.

## CONCLUSIONS

At the current stage of their development clusters' the greatest attention is on their structure, staff, current and potential markets. Consequently, the attention of most of the clusters is on the development of their internal environment – especially the structure (attracting new members and establishing managing bodies), the staff, and entering the new international markets.

This means they have an impact on the regions in the dimensions and issues as:

- Environmental Protection,
- Health and safety at work
- Infrastructure and Communications
- Increasing (energy) efficiency
- Improvement of human resources
- Creation of new jobs

But clusters need stability and need to become stronger and then the positive effects and influence on the regions will be visible. Beside, no so small number of the clusters<sup>8</sup> is of the national clusters and therefore a given region cannot benefit in a big extent. The analysis of the objectives of the clusters proved that when the cluster is regional and the area where it operates is limited and specified, the objectives are better defined and more specific.

The conclusions correspond to the results of an investigation developed by Thomas Lämmer-Gamp, Helmut Kergel, Michael Nerger (11, p.13). What they outline to be a significant weakness of cluster organisations from the Central and Eastern European Member States is that most clusters feature a sub-critical number of

committed cluster participants while in two thirds of the clusters the number of participants is less than 40. Another important conclusion that refers to Bulgarian clusters also is that cluster organisations<sup>9</sup> **offer limited number of services to the cluster participants or focus only on few areas.**

Most of the clusters are at the initial stage of their development and their members have not started to benefit from these formations. Still the potential and benefits are not assimilated by cluster organisations in Bulgaria

<sup>8</sup>not only of the selected for the research

<sup>9</sup>65 percent of the cluster organisations according to (11, p.13)

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