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the Improve Innovation, Enterprise and Benefits Development

DEVELOPMENT OF CLUSTERS AS A FORM OF REGIONAL COOPERATION AFFECTING THE IMPROVE INNOVATION, ENTERPRISE AND BENEFITS DEVELOPMENT

KATARZYNA KORZYŃSKA

Abstract: *The article presents the definitions and forms of clusters, strategic for their development, describes main methods of clustering and stages of their formation, favourable and limiting factors of their implementation. Also describes the goals, effects and benefits of the clustering.*

Key Words: *cluster, competition, concentration, cooperation, synergy*

JEL Classification: *M13, O31*

1. INTRODUCTION

Cluster means a group so the clusters are called groups of enterprises, companies and institutions co-operating closely in a small area and in a relatively narrow scope (one industry) interrelated formal and informal relationships. Cluster is defined as a network forming of cooperative companies or other specialized units whose activity is coordinated by market forces, fluctuations and feelings. Clusters arise in all sectors of the economy, both in industry and services in traditional sectors and in sectors of advanced technologies and have various levels of innovation and technological advancement, different strategies, activities and prospects. Clusters are built in various regional conditions and in areas with different technological advancement.

Goals of the companies associated in the cluster should be coherent and equivalent. The main objectives are: to promote the development of existing businesses, develop contacts and relationships between companies, to promote innovations and new technologies (striving to increase levels of innovations through the implementation of new technologies and management systems), promoting new, innovate and competitive companies, attracting new talents and businesses to the region, creating a regional brand, providing easier access to services, consulting and training, providing business support, training for managers and professionalisms, conducting market research and analysis.

The benefits for the region are: attracted investors and associated creation of new jobs, creation of a strong regional brand, infrastructure, research and development base.

The benefits for cluster members are: ensuring economic efficiency, reducing costs through common marketing activities, network of cooperation between companies and scientific institutions, providing access and collaboration in research, transferring and commercialization of new technologies, diffusion of technologies within the cluster, industry and sector development in which the cluster operates, increase the reliability of cluster members, the synergy of resources, increased innovation, diffusion of knowledge as the effect of business relationships.

2. DEFINITIONS

As the first cluster was defined by Michael E. Porter as industrial cluster – geographic concentration of competitive companies in related sectors, related to each other economically, sharing the same skills, technologies and infrastructure. Clustered large and small companies achieve far more than if they were to work alone, through a network of related companies, suppliers, services, academic institutions and manufacturers focused on the same area. Concentration supports the creation of new businesses, products and new jobs for highly skilled, well paid employees. Cluster is a geographic concentration of interrelated (formally and informally) companies, specialized suppliers, service providers, companies in related industries and associated institutions (universities, standardization units, trade associations and financial institutions) competing with each other but also cooperating with equal rights and equal responsibilities.

Another definition formulated by the Polish Information and Foreign Investment (one of the institutions supporting the initiative to create clusters in Poland) defines a cluster as a group of companies and related institutions (government, universities) that are in geographical proximity and engaged in similar activities, complementing each other.

According to the Polish Minister of Economy Decree, cluster should be understood as a spacious and sectorial concentration of organizations dedicated to economic development or innovation, and a minimum of ten enterprises engaged in economic activity in one or several neighbouring regions, competing and cooperating in the same or related industries and an extensive network of affiliated relationships with formal and informal nature, with at least half of the members within the cluster are the entrepreneurs.

Cluster is also defined as spatially concentrated groups of cooperating and supporting enterprises, mainly small and medium size of industry, usually associated with universities or other scientific research units and as a group of organizations (which includes the industry's leading companies and related industries also their suppliers, customers, business partners and other organizations located in the same area and interested in increasing the competitiveness of the industry and region, for example: administrative authorities,

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universities, financial institutions, research institutions, mass media) centred around industry and having the leading position, importance in this area (region, country, continent).

In economic literature there are many ways to define the cluster concept but all accentuate the importance of: companies concentration in the same industry, sector of activity in the defined geographical area, relationships between cluster members, coincident companies competition and cooperation by which they achieve synergy effect.

3. CONDITIONS, FAVORABLE FACTORS AND LIMITING CLUSTERS DEVELOPMENT. CLUSTER FORMS, LIFE CYCLE AND CLUSTERING METHODS

Clusters are part of the knowledge economy that is one in which a key resource is knowledge, not labour, raw materials and capital. They are networks constructed around technologies and location informally, they have no formal organizational structure, and their activities are used in the administrative structures operating in the region.

Clusters can be varied in terms of: organizational form (informal, formal, associations and joint stock companies, etc.), scope (local, regional, transregional) and the configuration of members which are involved in them (small, medium, large companies, public authorities or foreign investors).

The cluster initiatives in Poland can have one of four types of agreements: formal (agreement between entrepreneur and a representative of state authority of the region), single (an agreement ends with the achievement of the objectives), renewable formal, single informal and renewable informal.

Favourable factors for growing and developing clusters are: leader (all cluster members activities coordinator), structure (based on relationships and cluster members structures, building on the international standards, with clearly defined vision and main objectives, possibility of establishing cooperation and research and development), strong research and development regional backup, increase the competitiveness of cluster and each cluster members, better access to new technologies, know-how ready to implement, increased inflow of investors (regional and foreign) to the region, support from the region in which the cluster operates, created preferences, for example in access to financial resources (government and EU funds) or tax shelters, special economic zones, reduction of costs through common activities, the implementation of cooperative projects, the existing skilled infrastructure, specialized labour force and low labour costs.

The main factors limiting the development of cluster are: aversion to association, finance, lack of support from regional authorities, foreign investors based on their own intellectual potential, various priorities of cluster members, weak abilities of intermediary infrastructure.

3.1 Cluster forms

In Europe the number of clusters was increasing from 60 years of the nineteenth century when related small and medium companies were achieving success in Italy, Denmark and in the Netherlands, that is why in the theory of

management and economics are defined three main forms of cluster, **due to type of cooperation:**

- Italian – in the classical model of Italian cluster, there's no formal organizational and management structure and no capital connections between companies, relationships and interactions are initiate by its owners. Determinants of clustering for Italian form are: family connections, both in and between companies, strong and informal dependencies and local relationships, high level of integration with the region.

- Danish – the late nineteenth century Danish Government set up a special program aimed at support the clustering to insure small and medium companies ability to effectively compete with larges. A new solution for creating relationship between companies was the involvement of network broker, neutral person who was obligated to: initiate and facilitate contacts between partner clustering companies, help and advise in identifying and commercialization of the developed solutions to current problems and new business investments, inspire activities and coordinate cluster business activities, search for potential cluster members and opportunities for cooperation, make business plan for cluster, advise and support the cluster development, represent cluster, take dialogue with all parties interested in participating in cluster, provide access to knowledge and information. Danish cluster provides conditions to: improve broker skills, possibility of training, access to analysis tools and insure development strategy preparation and cluster development.

- Dutch – refinement of Danish form and it assumes a very close collaboration with research and development unit, what should provide better access to new technologies and innovations. The main benefit this structure is that it enables (via mutual cost sharing) to large costs reduction in new technologies implementation.

Due to **public authorities participation** clusters can be classified as: supported (first group – clusters with the leadership role of the private sector companies, leaders of business; second group - with the leadership role of the public organizations, public authorities determine which clusters to support and have a key role in cluster development strategy) and not supported (with no any public support only business leaders).

Another criterion of classification is cluster **size, scale and type of business**: mega-cluster (like aviation industry), meso-cluster (market sector), micro-cluster.

Due to **territorial scope and its importance**, cluster can be classified as: local, regional, cross-border, international.

Depending on **how it operates and who is cooperating** can be defined following clusters: network (small companies operating in the same or similar branches or services), concentric (formed around large companies, smaller companies provide services or supplies to predominant company), institutional (centred around public institutions like universities, research and development, laboratories, etc.; public institution has dominating position).

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3.2 Clustering methods

Depending on the specificity and market diversity, industry, region, area of activity, availability of intellectual capital or the level of education there are two main methods of clustering: top-down and bottom-up.

Top-down clustering method – more popular, initiative to create a cluster goes out from the authorities of the region, which form the region's development strategy, financially supporting such activities. Formed this way cluster arises due to public interest and regional strategy affecting the economic development of the region and formally takes the form of regional administrative structure. Members are included in cluster with no selection but according to specific goals of the cluster, through administrative dependency systems, because of supporting financially cluster activities of public financial (established operating budget). Decisions are coordinated centrally and subordinated to the public interest and cluster development strategy is subordinated to national or regional cluster objectives. Top-down clustering require support in: developing of new companies and attracting new investors, making and building relations involving the formal cooperation, infrastructure development, undertake projects aimed at increasing databases.

Bottom-up clustering – cluster arises from responses to a private group of companies, regardless of the administrative structures and influences the state regional policy, cluster activity is co-financed by the companies that make it up. Cluster participants go through the selection and are selected on the basis of benefits that can give to other cooperating organizations. Participation isn't associated with administrative borders and is developed based on the common interests of interested parties with no financial limits. Decisions, planning and implementation are taken in partnership under the influence of cluster members who prefer to establish cooperation with innovative participants.

3.3 Cluster development and life cycle

Cluster life cycle consists of four main phases: embryonic (agreement, mission, vision, goals, signing of a cooperation agreement and gradual gaining new members, established (stage of stabilization – stabilized and growing clusters), mature (time of stagnation, when the main objectives basically has already been achieved, cluster is stable but its further development is difficult) and declining (failing cluster – it's usually caused by inability to changes, sometimes cluster can be reborn and start new cycle of its life and renter the embryonic phase or decide to abolish the cooperation).

Main stages of cluster development are: identify the scope of basic parameters and parties interested in cooperation, stimulate contacts, initiate cooperation between interested parties, forming a group of cluster leaders, identify cluster strengths and weaknesses (SWOT analysis), cluster policy development, setting main objectives of clustering (objectives should be specific, measurable, realistic, planned date of their achievement and possible to achieve (based on available resources), create an operation plan and identify the main tasks, monitoring, evaluation and verification of the cluster strategy.

4. CONCLUSION

Underlying the success of the cluster (as cooperation between a group of organizations and associated institutions, cooperating in areas (like research and development, marketing, logistics, staff development, etc.) where they have common goals) in addition to fit the specific organizations needs are also: mutual trust, support for particular projects, focus on the results of the activities and strong skills base, high level of innovations and research and development. Successful clusters are also deeply rooted and have a strong system of interrelations, trust and well developed relationships giving a high level of social capital development.

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