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Role of clusters in automobile industry

Borodavko, B¹., Illés, B². and Bányai, Á.³

- 1- PhD student, Institute of Logistics, University of Miskolc, Hungary,
beata.borodavko@uni-miskolc.hu
- 2- professor, Institute of Logistics, University of Miskolc, Hungary, altilles@uni-
miskolc.hu
- 3- associate professor, Institute of Logistics, University of Miskolc, Hungary,
altagota@uni-miskolc.hu

Abstract: The last century brought significant changes to the automotive industry and represents a significant economic and technological force in the life of countries connected to the industry. The goal of the research is to showcase the practical functioning of the cluster organisation in Hungary and to reveal their economy-enhancing effects and advantages.

The research sets such possible models which describe the supply chains of the automotive industry using the tools of today's modern demands.

This topic can be called current because cluster-oriented politics does not look back to a great past. The practical functioning of clusters became known in Hungary close to 20 years ago, when with a pioneer role. Today the clusters already get a role in the progress and shaping the increase of competitiveness of SMEs, and these, trust-based networks may help the small enterprises utilize special resources by sharing the knowledge, and by the fact that the benefits of these can be reached with smaller costs compared to those outside the cluster.

Keywords: supply chain, automotive, supplier relationship, cluster

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convencionuclv@uclv.cu
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1. Introduction

Today, international competition and the appreciation of the life cycle of products shortened greatly affect the operation of enterprises, the fundamental objective is to meet the customer demands a higher standard of quality and a lower price [1]. In response to the requirements, downsizing and concentrating on their core business of the company. The manufacturing companies are looking for suppliers who can supply good quality raw material and components at low cost [2].

The most important sources of information of the methodology used during the writing of the thesis are the books, articles, data obtained from statistics publications, sharing boards, oral declarations (interviews), reports appearing in the media, news, primer and seconder examinations, respectively, my own 10 years old experience acquired in the automotive industry.

In Hungary, regional disparity is significant. It prevents the utilization of the resources of the country and it is also a source of social tension. In the present section of economy, the state must help the regional and network organization by supporting initiative coming from below. One of the means of regional networking is the cluster. The cluster is a geographically concentrated cooperation that includes all the enterprises and institutions which are capable of increasing added value created in the value chain. In Hungary, if we analyze the structure of the economy, we can observe that the number of the SMEs and their importance is dominant. Hence such structural changes are needed which promote the development, work, productive capacity and cooperation of SMEs.

2. Supply Chain Network model

For the small and middle enterprises, becoming a supplier is a way of maintaining or increasing the competitiveness. The various mechanical industry, electronics companies have compiled in the region a supplier need in the range of more ten billion forints

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annually. By creating and strengthening supplier networks meeting these needs is possible [3].

Network model is complemented by a well-functioning Network office and an integrator connection system they facilitate a more effective and faster flow of information. The supplier must possess a few more qualities beyond belonging to the network, among which is the supply of product and/or service of a high level, innovative capabilities, new technologies, ability to receive innovations, utilisation of adequate management, quality control systems, etc [4].

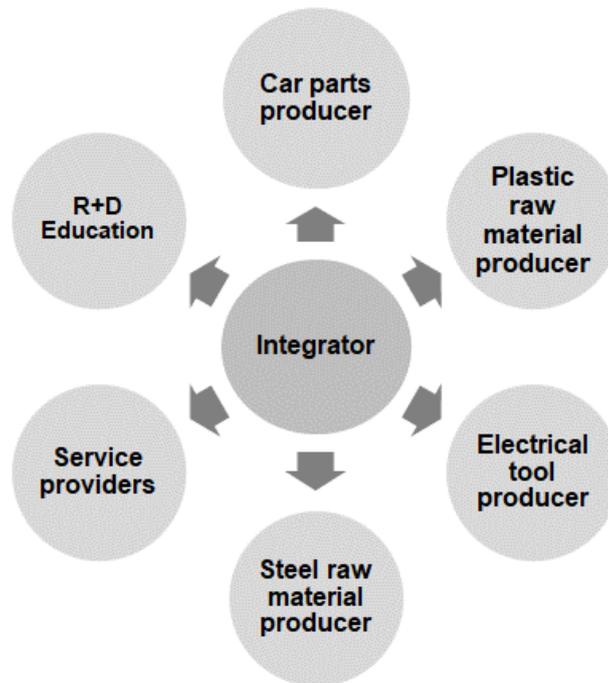


Figure 1. Network model with central integrator [4]

The figure 1. shows that with the involvement of an integrator, how the grouping and division of different tasks, services and production tasks happens. The similarity between enterprises is that they carry on their activity in the field of parts manufacturing, respectively they are members of an automotive industry supplier network [5]. But the difference lies in the fact that all companies are specialised on a certain branch of parts manufacturing. This is why there is a need for an integrator,

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which bundles the member enterprises, companies and coordinates their activity. This way they can satisfy larger market needs and they can better exploit the market niches [6, 7].

3. Cluster as an automotive supplier network model

The creation of such an automotive supplier cluster in the region, which can have as members the possible partners of the automobile factories built in Hungary and the surrounding countries. The creation of the cluster is justified by the fact that nowadays the competitiveness of a product or a service is increasingly influenced not only by the competitiveness of the company which is producing the product or the service but also by the complete supply chain which stands behind the company, namely the network of companies [8]. The fundamental goal of the cluster is that through the jointly performed innovations, the qualification conformed to the market demands, the direct and indirect flow of information within the network the companies lower the transactional costs, hence increasing the competitiveness of the enterprises in the region.

The cooperation does not touch the self-determination of the enterprises. No enterprise is situated above the other one, requests compulsory cooperation in such fields, where one or other enterprise does not want to cooperate.

But the cooperation provides an opportunity for the participating small and middle-enterprises to lower their expenses on those fields where this common solution brings an opportunity [9].

Advantages originating from the cluster for the connecting enterprises:

- Mutually completing technological investments
- Common purchasing (more discounts for the bigger quantity)
- Harmonised use of the transporting equipment's, development of a common consignment warehouse
- The common development of market relations (brochures, advertisements, participation on exhibitions)

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- Common quality formation
- Cooperation in skilled worker qualification
- Cooperation in product development

The secondary expressed goal of the Cluster founders is to consistently aid successful fulfilment of the National Strategic Reference Frame Plan’s economy developing operative program’s defined priority Supplier Program, the Small and Middle Enterprise development program, as well as the Northern Hungarian Regional Operative Program, and the pursuits of the connecting Development Pole Program of Miskolc, and to create the strong basis of the knowledge-based economy.

4. Cluster as Virtual Logistics Center

The logistics clusters play a very important role from the regional logistics network’s point of view, because they support and bundle the supplier activity. In the virtual logistics network, the logistics clusters appear as integrated elements, the construction, elements, connections of these are shown on Figure 3.

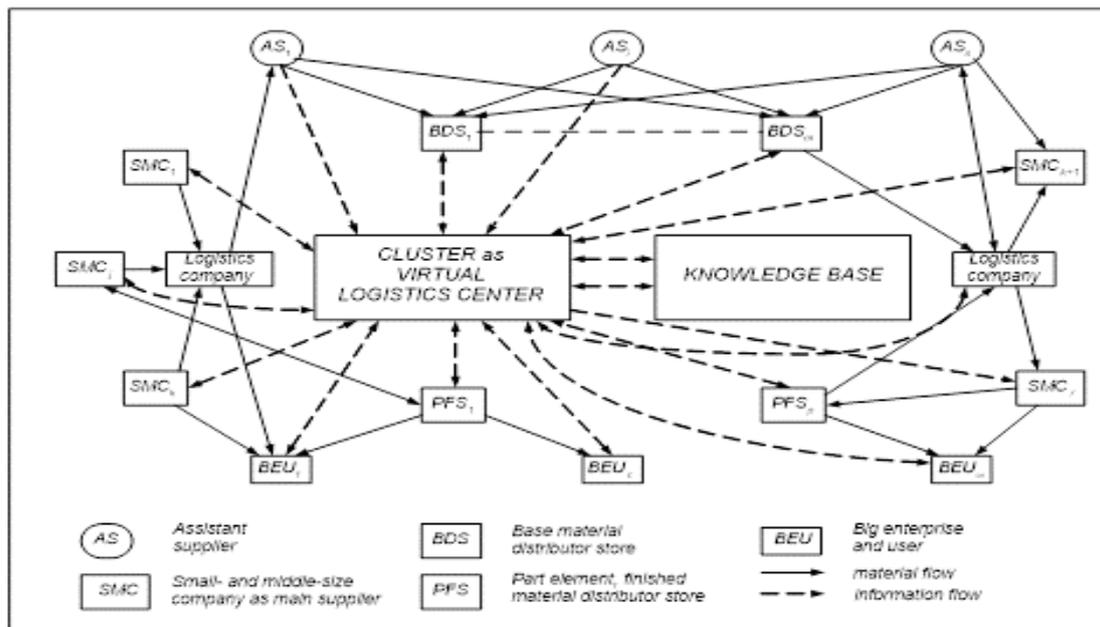


Figure 2: Cluster as a virtual logistic centre [9]

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The virtual companies and clusters help the increase of the supplier potential because [9]:

- Through the joint purchases smaller specific purchasing costs are resulted at the procurement of raw materials
- Through ordering – transactioning via the electronical way the ordering costs diminish, the purchasing of smaller quantities can be ensured economically, because smaller stock levels come into existence
- Supply of smaller quantity and of more frequency of parts can be obtained
- The ordering time of parts can be smaller, if they are requested from distribution warehouses

Main tasks of the virtual logistics center [10]:

- maintains an INTRANET between the cluster’s specified elements,
- utilizes the E-commerce, respectively the IDE,
- uses the INTERNET,
- connects to and cooperates with the Logistics Center,
- organises tele-cooperations, creates outsourcing, respectively sourcing tasks,
- provides extensive marketing activity.

Information groups between the partners in computer network [11]:

- business data of logistic service providers and companies
- data relating to logistical tasks
- characteristics and state of logistical resources

5. Conclusions

The actual progressions of the world economy indicate the upgrade of regions. It is accelerated by the practice that nowadays the enterprises rather concentrate on primary activities, and place the secondary and complementary activities – building them in regional network systems - out of the enterprise. The internal organization of the regions can be considered as a new and valuable resource. At the present status of

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research the authors considered only a general view. To show and introduce the role of network model in cluster organization authors presented two important model of logistics network. Authors are looking for the answers why the cluster has an important role in the automobile industry? How can SMU's sector follow the today's digitalization flow?

Clusters improve competitiveness by refining the service quality of joint and service industries of the region. Regional clusters improve the competitiveness of the region [12]. Clusters can significantly decrease the transaction costs of the enterprises within a region by lower expense of partner finding, faster recognition of consumer preferences, quick transfer of knowledge, and fiduciary capital.

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convencionuclv@uclv.cu
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