
Effect of Clustering Activities to Competitive Power in Terms of SME's Innovative Management Approach

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Abstract: *This paper included that the researches and workings which have been done before about clustering, innovation and the management of innovation. The paper also included that the importance of the cluster, as well as the effects on SMEs' competitive advantages and innovative approaches to management. In the paper, the SMEs' that has a very important place for the economies of developing countries to survive in the economy, growth, and what they can do in order to gain a competitive advantage over their competitors with new approaches and solutions also includes. The paper, presents some concrete recommendations can be applied to the SME managers, interest with in both individual and organizational change, innovation and development.*

Keywords: *Cluster, Clustering, the Management of Inovation, SME, Competition*

1. Introduction

Severe competition in global economy forces world economies to several pursuits to survive in this competitive environment. In this point clustering comes into play as a system both to protect SMEs to be excluded from competitive environment and to reduce higher costs and waste of sources of large companies.

National innovation systems and especially SMEs those will gain effective communication and interaction with global innovation system besides clustering having a structure to establish a ground for formation of regional and sectoral

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innovation systems to increase SMEs' efficiencies and to manage them in a dynamic manner has a vital importance. Because regional and sectoral innovation systems those will form within the framework of national innovation system will undertake major functions to solve specific problems of regions and sectors and to trigger regional development.

The objective of this study is to manifest new approaches and solution proposals for the effect of clustering and innovation management to competitive power of SMEs by moving ahead from previously done researches and studies about the subject matter. This paper is aimed to guide people to perform site survey relevant to the subject matter.

2. Clustering

Clustering as a concept based on researches specified by Alfred Marshal in his book called "Principles of Economy" he wrote in 1890 and also researches made for enterprises continuing their activities in United Kingdom. According to Marshall, there are some acquisitions obtained by enterprises having similar characteristics about the position of place of their foundation and also some acquisitions for the increasing of competitive levels of small scaled enterprises. Approach specific to that period which he characterizes as industrial zones basically describes today's clustering (Humphrey & Schmitz, 1995).

The major model for the present day's world for clustering studies is Silicon Walley in USA or clustering of thousands of advanced technology companies in Germany's Ruhrgebiet region. Besides, clustering based economic development understanding especially gain speed with the study of Porter called "*Competitive Advantage of Nations*" which he wrote in 1990. Porter in his study emphasized general trends of leading industries in any region by their clustering in a specific geographical area in other words their involvement in competitive clustering (Porter, 1990)

Person who firstly suggested and defined clustering concept is Michael Porter. According to Porter clustering is "Concentrating of interrelated enterprises and institutions in

a geographical manner in specific areas. Clustering involves interrelated industries and other institutions bearing importance by means of competition. These cover specialized suppliers and specialized infrastructure suppliers providing components, machine and services (Eraslan, Bulu & Bakan,2004).

Clustering generally extends vertically as to cover supply channels and customers and horizontally persons producing complementary products and enterprises in the relevant industries related by means of technology or common inputs. Finally, clustering covers other institutions providing specialized training, education, research, information and technical support such as public institutions and universities, standard identifier agencies and consultants, vocational training institutions and trade unions (Porter, 1998a).

Some of the definitions and approaches are given below previously performed relevant to clustering (Alsaç, 2010) According to these definitions;

Clustering according to Crouch et al.; is the trend of companies executing similar activities to be established closer without any obligation. According to Rosenfield clustering in the simplest term can be defined as concentrating of companies those may form synergy for their geographical connection and their dependencies even though their employment level are not high or non-significant. Economic clusters are not only related and industries and institutions supporting each other, rather they are more competitive, related and institutions supporting each other. Clusters, according to Swann and Prefer, defined as group of companies established in a specific geographical area. Innovative cluster according to Simmie and Sennett can be defined as many associated industry and/or service companies having higher degree of co-operation generally via supply chain and working under the same market conditions. Clusters according to Roelandt and Hertog can be defined as companies' (specialized suppliers are included) and producers' network dependant in a powerful manner within the production chain and creating added value within themselves.

3. Reasons and Possible Results of Clustering

If we sort reasons for enterprises clustering under the name of clustering activities by considering studies and researches made for clustering;

1) *Providing regional or global competitive advantage*: To provide competitive advantage in regional or global economy according to the dimensions of enterprises

2) *Common Activity Area*: Enterprises continuing their activities in the same sector wishing to consolidate their sectoral knowledge, skills and experiences

3) *Proximity*: Creating synergy in specific level by establishing enterprises wishing to be successful for their activities.

4) *Forming an Efficient Supply Chain*: To be closer to suppliers having vital importance for production enterprises and also to be closer to raw materials and other production factors required

5) *Catching the Innovation and Change*: One of the most important objectives of enterprises interacting each other by clustering is to catch changes and innovation by developing their specialism, knowledge, skills and abilities in the global economy.

Besides, enterprises consider issues as differing per their sector continuing the activities such as easy accessing to qualified labor force they need together with clustering and on-the-job training of this training with the advantages of clustering, providing employment of employees specialized in their fields and increasing and development of R&D activities.

Above mentioned clustering, reasons for clustering and possible results of the enterprises are indicated as a model below.

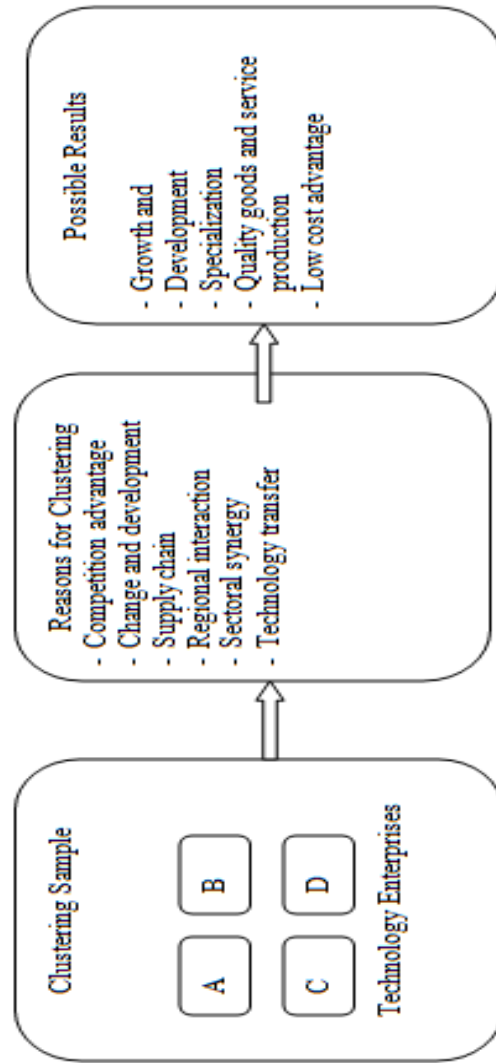


Figure: Clustering, Reasons of Clustering and Its Possible Results

In the above figure it is shown that enterprises continuing their activities in technology field cluster to create competitive advantage, to provide change and development in their relevant sector, to form an efficient supply chain, to create a business synergy as they locate in the same geography or region, to provide sectoral association and cluster to transfer new issues newly emerging in technology. It is estimated by basing on researches made for the subject

matter that enterprises clustering with clustering activities will result in some positive results such as growing and development which is one of the basic foundation objectives of enterprises moreover specialization, producing quality goods and services and providing low cost advantage.

Both big scaled enterprises wishing to continue their existence in global economy also small scaled enterprises plunge into new quests. One of the important reasons for that is the severe competition is global economy. Enterprises wishing to cope with this competition exhibit some new approaches to produce goods and services with lower costs and to make their activities sustainable. Accordingly, enterprises giving more importance to R&D and monitoring change and development gain more competitive superiority when compared to others. It is not possible for the enterprises not caring about this and similar specialities to survive in continuously growing global economies. When it is considered from this point of view clustering providing competitive opportunity for small scaled enterprises and saving big scaled enterprises from high costs and waste of sources can be considered as an alternative (Kuşat, 2010).

4. Effect of Clustering to Competitive Advantages of SMEs

Clustering activity mostly bear importance for small and mid scaled enterprises by means of their advantages, benefits and advantages to provide for enterprises. SMEs being assessed as "*Economy's locomotive*" for developing economies are obliged to increase their competitive advantages to continue their existence and to grow when compared to big scaled enterprises. SMEs need to consolidate their knowledge, skills and experiences in order to accomplish this. Otherwise, they may disappear in continuously developing, changing and developing global competitive environment. SMEs wishing to grow and develop and to take place in global competitive environment need to cluster with enterprises having same activities in the geographical area to create synergy, to catch technology and to prevent waste of resources.

When it is considered by means of SMEs being included to a cluster provides convenience to supply inputs to enterprises, to access to information and technology and to be in coordination with other enterprises in the activity field. A developing clustering attracts specialized producers and suppliers to the cluster and by this way by providing supply opportunities from local decreases transportation costs and stock costs and prevents delays (Devrim ve Özpençe, 2007).

Since this situation bears importance for enterprises wishing to make their mark in their own activity regions supplier companies will try to exhibit better performance to be able to hold to the market. Moreover, spatial connection increases communication by this way suppliers' services such as warranty and installation develops within the process. On the other hand, not only creates demand for inputs in a region but also increases production of increasing demand inputs (Porter, 2000).

For instance, enterprise employers within a well organized cluster by connecting to a specialized and experienced employee pool and thereby reducing costs for employment. For employees being in a cluster where many enterprises relevant to their speciality fields locate provides advantages for them by increasing their chance of finding job. Personal relations and network within the cluster facilitate data flow and access to information by developing sense of trust. For instance; data about the current needs of the clients sweeps among the companies within the cluster (Porter, 1998a).

By this way companies, catch the chance of taking their measures on time in line with the new requirements. This situation encourages companies within the cluster to be both efficient and innovative for their activities. With thanks to connections and complementariness between actors within the cluster total of the cluster constitutes more than the parts total (synergy). For instance opinions of tourists in a tourism clustering not only effected by the place where they accommodate but also all services they take advantage of such as restaurants, shopping centers, transportation means. By this way, success of one of the actors within the cluster also reflects positively to others (Porter, 2000).

Both pressure and incentive will be more for the development of quality among cluster actors with the product-service coordination to be provided within the cluster. Some of the investments organized by public such as construction of special infrastructures or providing training programs may affect enterprises' efficiencies. For instance, employing persons obtained a specific level of speciality with vocational training reduces corporate training expenses. Similarly cluster applicants may also invest to training programs, quality centers and test labs to obtain total utility (Porter, 2000).

A cluster as a whole take advantage of efficiency increase that enterprises will provide by specializing in their field of activity. Consequently, acting in co-operation also to meet common needs provides positive results when compared to individual measures (Tiftik, 2011)

There are some issues bearing importance to allow enterprises to reach their targets in the cluster (Bakan,2009).

- Defining sectors having higher competitive level
- Performing needs analysis (such as SWOT and PEST analysis)
- Designating how clustering will contribute for the competitiveness of enterprises and region
- Designating training requirements and delivering required trainings
- Shareholders' (public institutions, private sector, universities and other shareholders) analysis
- Designating effect of clustering to innovation (Designating how clustering approach will provide contribution for the developing of innovation capacity within a clustering)
- Designating how clustering approach will provide contribution for the creation of communication networks

among players and/or for the enforcement and canalising of the current business networks.

- Preparing strategic road map for clustering
- Development and realization of clustering policies

5. Innovative Management Approach for SMEs

It will be useful to define terms of innovation and innovation management concepts before advancing to innovative management approach for SMEs. Innovation as a concept; is the application of new or modified goods or services or processes; marketing method; or a new organizational method for workplace applications, workplace organization or foreign affairs (Çeliktaş, 2009). Peter Drucker considered innovation as a function of entrepreneurship and defined it as increasing level of satisfaction by creating new sources by entrepreneurs or increasing level of satisfaction by increasing utilization opportunities of current sources (Drucker, 1998).

Many definitions made relevant to innovation concept (Elçi, 2007). Some of these definitions and approaches as mentioned by Elçi; innovation is an idea, implementation or an object perceived as new. If one enterprise develops a new product or service for itself or use a new method or input for itself than it shall be deemed to make a technical modification. Enterprise for the first time making a technical modification is the innovative company and this action is called innovation. It is the application of this opinion by the organizations having similar objectives for the first time. "Innovation is the realization of a change which is new for an organization and its environment. They are the different applications for organizations. Innovation covering the time period from putting ideas forward to making them commercialized is an organizational and individual behavioral pattern series having connections with the defined source separation points. Industrial innovation, covers design, production, management and commercial activities executed for the first time commercial utilization of a new process or equipment (or developed / state of the art)." Innovation is the synthesizing a requirement in the market

and production of a product responding to this requirement. Innovation according to another definition is a tool providing entrepreneurs to make changes to manifest a different business or service. It has the characteristics of being indicated as a discipline, ability of learning and implementation. Innovation not only means commercialization of a major development by means of technology (radical innovation) but also covers small scaled utilization for technological knowledge (development or incremental innovation). Innovation is the implementation of new ideas. It is the solution of systems' problems (requirements) with the new solutions relevant to the requirements. Innovation = invention + utilization. Invention means all efforts revealed to form new ideas and to make them functional. Utilization period covers commercial development, implementation and transfer; it also involves focusing to ideas and inventions directed to specific objectives, to assess these objectives, transfer of research and/or development results and utilization of technology based results in a wider area, their generalization and popularization. Companies can catch competitive advantage with innovation. They approach innovation from a wider degree to cover both new technologies and new methods of performing work.

Innovation is a word of foreign origin defining commercial implementation of new ideas those never considered before and by this way increasing of competitive power. It means to discover something that is not available before, and to make that is not ever made before and to provide endorsement and profit increase with thanks to these innovations. It Turkish equivalent "innovation" or invention however every innovation or invention can be commercial. For that reason it would be correct to use word "inovasyon" until finding a better Turkish definition. Before all, innovation is an economic process. There can be a product or a service or a more developed management model. There is no possibility of coincidence for innovation. Initially there must be required accumulation of knowledge. It is also necessary not to confuse R & D (Research - Development) with innovation. Even though every research gives positive results it shall not cause an innovation. However we cannot expect innovation

to develop without rising R&D level. Research is an important factor to allow innovation to develop. The most important factor triggering those is the process of globalization (Göker, 2000).

It is the global economy rapidly converting both to a single market and also to a single production platform. Recently while competitors in any sector are only domestic market companies in present day there are competitors all around the world. In the past while a few similar versions of a product or service is sold, in present day both products and services begin to resemble each other. Moreover, imitation capabilities enormously increased and imitation periods significantly shortened. As a result of those, goods in the market become widen and since those goods resemble each other customers begin to make price comparison. Unfortunately this comparison mostly develops in favour of goods having lower prices, most suitable payment methods and delivery conditions. In other words, price pressure on enterprises increase as the products and services are becoming "similar" that means becoming commercialized. Moreover as customers buying products from you are stronger they increase this price pressure and implement to enterprises. Consequently prices decrease and profits diminish (Kırım, 2006).

Innovation provides better meeting of personal and social requirements such as health, recovery, working, transport. Innovation is also basis for entrepreneurship spirit. Each new approach raise as a result of a process to bring a specific innovation. Moreover, all approaches need continuous innovation to sustain their competitive power. These are also true for countries. They are also obliged to convert new ideas to technical and commercial success rapidly in order to maintain their economic growth, competitive powers and employment opportunities (Kırım, 2006).

The determining factor for competitive advantage in 21st century are not only production costs. Shortenings in product life time, speed of responding to market's needs, product and service quality, design, development of new products and services, product and service production per

customer requirements, new production and organization models are vital when compared to costs. All of these factors require innovation. Entering new markets, to increase current market share and increased competitive power depend on these factors (Elçi, 2007).

There are six different views of innovation for enterprises as stipulated under researches made. These are,

- 1) Product Innovation
- 2) Service Innovation
- 3) Marketing Innovation
- 4) Organizational Innovation
- 5) Process Innovation
- 6) Business Model Innovation

When it is considered by means of countries and sectors, developments in newly emerging and rapidly developing advance technologies greatly dependable for the innovative capability of small and mid scaled enterprises that means capability of conversion of ideas to new marketing products. For instance, a research made in United States points out that 50% of all innovation since World War II and 95% of radical innovation originates by new or small scaled companies (Timmons, 1999).

In the present day when world changes rapidly, complexities of products increase and where globalization can be felt in every aspect of life to survive by competing is only possible with the method of innovation (Dismukes, 2005). A study made for SMEs in France indicated that capability of innovation relevant to product and processes is directly in connection with company's innovative method and monitoring technological innovations in the sector (Motwani, 1999).

Enterprises to position themselves in a strategic manner bear vital importance. In a study made in Spain among one

thousand three hundred fifty one SME qualified companies it was found out that company's guiding in terms of strategy has positive effects on their innovative capacities (Aragon, 2005).

SMEs must be capable of utilizing their engineering and technology management techniques in order to develop their innovative capacities by preserving their advantage, they must be institutionalized by utilizing process approach for product development, implement new techniques, capable of implementing data management, can co-operate, can be a part of network structures and can be capable of assessing opportunities brought by digital economy. However SMEs are disadvantageous when compared to big scaled companies for their economical feasibility. SMEs must gather and form clusters in cyber world and they must co-operate within network structure (Malhotra, 2000).

Proximity among the leading characteristics of clusters can affect innovation processes in two forms. First, economic and social networks among enterprises plays a vital role for the creation of innovative information and to generalize efficient practice models. These relations, can be with formal ways such as common R & D studies of enterprises or informal ways such as transfer of specialism in some matters via common labor force pool. Second, with moving ahead from the fact that innovation is not a product of big scaled companies having major sources small changes done gradually by the small scaled enterprises groups may result big scaled innovative changes and may provide contribution for the whole of the SMEs in the region (Raines, 2001b).

As a result of that regional focusing for the innovation supporting policies are increased in recent years. For instance, enterprises began to take advantage of R & D activities conducted with universities more frequently. Moreover supporting models increasing capacity and abilities of small scaled enterprises to develop innovative ideas also implemented. Innovation rather than being perceived as a product of a group of enterprises it began to be accepted as a function of regional economy supported with policies (Raines, 2001b).

There are various positive effects of clustering on the enterprises' capacities to make innovations. These can be summarized as follows; (Porter, 1998a)

- Well informed and clients always demanding more quality are parts of clustering and future oriented Windows of companies within the cluster is wider when compared to the ones out. Correct and fast information about the new requirements of customers can be easily obtained within a cluster. By this way being involved in a cluster allows companies chances to make innovations in line with their costumers' needs.

- Enterprises being involved to cluster are in a more advantageous position for the recognition of new and developing technological and operational opportunities or distribution means, service and marketing approaches. Especially effect of this situation is frequently observed in clusters having continuous co-operation with universities. Since, being involved within a cluster will also include local suppliers and partners to innovative process, it provides them to supply services, equipment and machines faster those needed by an enterprise. On the other hand, enterprises will be forced to utilize innovative methods against comparison and competitive pressure.

6. Conclusion

Knowledge and skills of enterprise managers of small and mid scaled companies against management activities and growing management scale gradually becoming complex in an environment where there are globalization, information economy, rapidly changing information and communication technologies, new market opportunities and economic crisis makes adaptation to change complicated. Since entrepreneurs are inadequate by means of time and information level for emerging of new specialization areas, information being a vital value, relations of enterprise-environment gaining importance and organization structures becoming complex enterprises also need other managers. There is a need for professional managers to comprehend changes and to respond changes with new approaches those

selected among specialists and undertaking the decision making organ function in the enterprise (Gümüştekin, 2005).

Survival of SMEs having an important place in developing countries' economies both in domestic economy and also in global economy and also realize growing objectives which is one of their basic reasons of their establishment is very important. Moreover it is very important for them to consider following issues relevant to clustering and innovation in order them to increase their market shares and their profitability levels by creating competitive advantage before big scaled enterprises;

(1) They must interact with other enterprises (information and capability exchange, specialist labor force and source exchange, technology exchange, etc. issues) in their relevant geographical region.

(2) Their inclusion to most proper clustering activities to decrease their costs and to prevent waste of sources in order for them to reach their targets

(3) It is necessary to adopt innovative in other words innovative management approach for the issues giving importance to information and technology in order to have a prestigious place among global economic actors by following changes and development as one of the most important problems of SMEs. In this issue, innovative approaches must be exhibited both for management approaches per the area of activity and also for the new goods and service production understanding and also for presenting new opportunities for the market.

(4) Besides changes in macro factors in global economy, likes, preferences and understanding of clients demanding goods and services and creating market continuously changing and developing in a considerable extent. Customers in all levels easily accessing to information and technology also demand this change in SMEs and in all other enterprises. Enterprises capable of comprehending this understanding and those knowing what customers need put a completely an innovative point of view when compared to other enterprises and may create competitive advantage.

(5) SMEs' managers should comprehend their sector and assess current sector conditions and draw new road maps accordingly and must adopt new organizational approaches. Thus individuals forming organization following changes with the managers. Guiding employees in an effective manner, to provide them work as required depends on the best definition of them. This will only be possible by continuously renewing and developing its own, organization and its system.

(6) SMEs adopting clustering and innovative approach will meet training requirements of their employees by realizing on-the-job-training also mentioned as organization learning.

(7) SMEs must adopt idea of surviving by co-operating with other SMEs performing same business with them rather than being destroyed according to approach of our ancestors "There is safety in numbers" with clustering activities. When the status of small scaled craftsman against present day's huge shopping centers (Mall) the importance of the issues can be better understood. Already malls are another type of clustering activity by means of their structures.

Consequently, SMEs continuing their activities within present day's global economy are obliged to see and understand rapid development of information and communication technologies in social life. They are obliged to pay more attention to clusters and clustering activities recently adopted by managers with a great extent to develop new solution proposals to be able to grow, survive, to understand market and customers to increase their profitability level which are their essential reason of existence.

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