

# Use and Importance of Clusters as Enhancing National Competitiveness

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*A Critical Evaluation*

## **Introduction**

All nations in the world are actively considered as a part of the world economy. Each nation is affected by and affects other nations in the world. In the present era countries and regions are facing a tuff time in developing themselves. Each region or country is facing intense competition and thus are taking steps towards aggressive economic development (PORTER, Micheal E., 2011). This economic development is fostered by globalization, digitalization, technological up gradation, augmented living conditions, and ever increasing society's demands. The various traditional economic development approaches are not sufficient and in many instances have failed to provide the desired level of economic development to many regions in the present times.

Thus in order to enhance national and regional competitiveness in the international platform countries at local and regional levels is undertaking the concept of cluster formation. These clusters aid the country in its economic development and thus help the country compete in international markets. International competitiveness of countries is graded by Global Competitiveness Report.

This report is a critical evaluation of clusters to understand its use and importance in enhancing national competitiveness. This report reviews the various aspects related to clusters and also tries to understand the role of government in cluster development. This cluster approach is also analyzed using the Porter's Diamond theory to gain a better understanding of the concept. Throughout the study, practical examples are provided to strike a balance between theory and practice. Finally conclusion has been developed based on the study.

## **Concept of Clusters**

Clusters are a modern day approach adopted by countries to provide for economic development. In simple term a cluster can be defined as an economic region. The specialty of this economic region lies in the fact this region is developed consciously by setting up interdependent and complementary

units hailing from a particular industry or ground who not only compete with each other but also cooperate and thus result in the overall economic development (PORTER, Micheal E., 2000). Along with units suppliers and other institutional framework are also available in this region. The companies instead of separate units emerge as a single unit in the international market thus gaining strong recognition. As these regions specialize in particular areas, the units within these regions become very competent and competitive.

The primary purpose of developing clusters is to bring together various small units and firms within a specified geographical region thus establishing proximity among them (NORMAN, George and Pepall, Lynne, 2004). These companies together lead to the creation of an economic region that is specialized and very strong. Some of the examples of clusters of national importance are Hollywood, Silicon Valley (California), leather business (Italy), financial hub (New York) (NORMAN, George and Pepall, Lynne, 2004). By adopting the national strategy of developing clusters, countries are in a position to booth their regional competitiveness and also minimize regional disparities.

The networking within the various units in a cluster is very strong which results in their economic development. These units also foster technological developments and thus boost their growth through innovations. (ANDRIANI, Dr. Pierpaolo et al., 2005)

## **Competitiveness**

Competitiveness in this repost provide for competitive portfolio of various regions at regional, local and national level. In the modern day, where capitalism is engulfing the entire economic structures economists and analysts have outlined the importance of competitiveness for economies (KITSON, Micheal and Martitni, Ron and Tyler, Peter, 2004). Nations are striving to gain competitive advantage. These nations are developing policies and imbibing growth tools in order to gain competitive advantage.

Competitiveness of an economy in the present day is treated as an innate requirement for any economy. Many developed economies have designed institutions that monitor and rate the competitiveness of a region primarily of a nation (KITSON, Micheal and Martitni, Ron and Tyler, Peter, 2004). Competitiveness of a place is categorized by the fact that it is very attractive for companies and units in order to undertake commercial activities within its boundaries. It is the competitiveness of the economy or place that helps the growth of the region as well as development of the units within the region. The units within the place and people associated with the region both grow and develop. The living standards of people are raised multi-fold. (KITSON, Micheal and Martitni, Ron and Tyler, Peter, 2004)

### **National Competitiveness and Clusters**

Clusters are considered as one of the crucial economic strategy that can heighten national competitiveness (MARTIN, Ron and Sunley, Peter, 2003). Out of all the strategic initiatives undertaken by economies to gain competitive advantage by far, the strategy of clusters have provide to be the most promising and most successful one. The concept of clusters is so promising that not only international institutions like World Bank and OECD (Organization for Economic Cooperation and Development) are promoting the same but also even regional level institutions and governments are actively involved. These institutions and government promote clusters as it provides for various benefits like job creations, economic development, economies of scale etc.

Ireland is an exceptional example of a successful cluster. Ireland has become the hub of producing electronics hardware. The country has been awarded with the distinction of employing the largest people under OECD. The electronics hardware comprises of personal computers, software products and services. The country is also flourished with call centers. The employment scenario in Ireland is very good. Highly skilled people are absorbed within the economy at very higher wage rates which has resulted in improving standards of living of its people. Ireland today becomes one of the largest

exporters of quality electronics hardware which has resulted in the overall economic growth of Ireland from export proceeds. (OECD, 2001)

## Porter's Diamond

The Diamond model by Porter has been one of the most important models to understand and analyze dynamics related to a national, local or regional cluster. The model clearly outlines that primarily there are 4 parameters based on which the competitiveness of a cluster is determined. First parameter is external factor condition like land, labor, capital etc (JIN, Byoungho and Moon, Hwy-Chang, 2006). Second parameter is demand conditions, third is related and supporting industries and fourth is firm strategy, structure and rivalry (JIN, Byoungho and Moon, Hwy-Chang, 2006). It is based on these four parameters the clusters are strategically developed and analyzed. These four parameters are also responsible for the success or failure of a cluster. Below is the diagram depicting the Porter's Diamond Model (BOJA, Catalin, 2011).



(BOJA, Catalin, 2011)

## Analyzing Clusters using Diamond Model

### Hsinchu cluster in Taiwan

The Hsinchu cluster in Taiwan is an indispensable contributor towards the country's economic development and growth. The cluster is a technology oriented cluster providing a strong ground for industries in the high-tech field to develop. Hsinchu Science Park has become the breeding ground for primarily 5 types of industries namely, integrated circuits, computers and peripherals, telecommunications, precision machinery and biotechnology.

**External Factor Conditions:** The major factor that supported the establishment and growth of this cluster was availability of skilled manpower. The economy was also supported by entrepreneurship skills which further aided the process of cluster development. The manpower available for one industry in Taiwan could closely be linked to another industry thus resulting in spillover effect. The manpower was very cheaply available which a primary criterion for cluster's success was. Venture capitalist took the responsibility of developing the cluster and making investments for industrial development.

**Strategy and Competition:** The cluster was established and developed by the government of Taiwan with the main aim to specialize in the technological sphere. The industries within the cluster have highly dedicated themselves towards research and development which has proved to be the key to success. The industries within this cluster face intense competition from Korean and Japanese industries.

**Demand and Market Conditions:** The produce from this cluster was exported mainly to United States, China, European Union and Japan. Taiwan has strong infrastructural base which supported the exports. In the initial phase domestic demands were very low but later on this domestic demand increased.

**Related and Supported Industries:** Given the produce of the industries in this cluster, it can be absorbed by any related industry. Companies into manufacturing and assembling of any electronic

ranging from mere refrigerators from highly technical network servers use produce from this cluster. Thus making the cluster produce a high demand and highly used product.

(GERTISER, Sebastien et al., 2006)

### **Perspectives on Clusters**

Product clusters like the clusters for textile manufacturers are observed to have different sets of marketing and product related strategies and other promotional tools and techniques from a cluster related to the production of technology based products like the biochemical and other electrical products. The buying behavior and motivational elements of the consumers along these product lines differ related to different parameters like target customers. Marketing needs of business companies differ also in terms of business clusters operating in the national and international frameworks. The marketing objectives of the business companies earn relevancy related to the different types of clusters whether national or international in fashion. The clusters of business corporations are also formed depending on their position in the industry life cycle. It is observed that the strategies and the promotional tools required for the companies in the introductory stage largely differ from such in the maturity stage. Concentration of the companies also helps in formation of different types of clusters that tend to range from small, medium to large number of corporations. Firms that tend to develop leadership potentials in their own clusters tend to be known as the market leaders in that specific cluster. Similarly the business firms that have the lowest share in the different clusters are known as Courtisans. Again the clusters that are found to gain lower relevance related to competition in the international context are known as Neighbor Boss. Finally Ants are known as companies that not only have very low market shares in their own clusters but also reflect lower relevance relating to the context of international competition. Again business leaders that act as potential leaders in their own clusters and also in the global arena act in a self-sufficient fashion related to their marketing and communication activities. Thus firms eyeing to gain a space in the international markets are required

to gain active membership of the member clusters to help gain potential access to better resources and also to gain needed strength. A firm tends to join a relevant cluster by becoming an active follower of the effective cluster. The ant types of companies that reflect very low relevancy in the relevant cluster tend to become highly cooperative to gain effective stand in the relevant sector. The chances of survival of the ant types of companies are highly dependent on the activities of the relevant cluster (MacGregor, 2007).

## **Role of Government**

The role of government in creating and developing clusters is inevitable. It is the government of any country that is responsible for policy development as well as it is the government of any economy that is responsible for its national competitiveness. The various policies formulated by the government and its steadiness results in fostering national competitiveness (PORTER, Micheal E., 2000). A cluster is a strong contributor towards economic development of a nation. This is evident from eth fact that it results in creation of employment, optimal utilization of resources, and generation of wealth and enhances productivity. With government friendly policies it becomes easy for clusters to develop and prosper. It is the government polices and contribution that o a large extent have an impact cluster's performance. The role of government in cluster development can be elucidated from below discussed examples.

### **Wine Cluster in Ontario**

The wine cluster in Ontario is the outcome of various efforts taken by Ontario's government. The government actively invested large numbers in to support the growth and development of this industry. The government along with close coordination with powerful selected few companies designed a competitive strategy to support the industry. The financial support by Ontario's government towards the industry has resulted in international success of the industry. The cluster produces some of the finest wines which are sold across the globe. Ontario's wine produce solely



accounts for 42% of the total world's produce. The wines from this cluster are famous and have been awarded with international awards. Some of the wines like ice-wines of superior quality are specialized produce of Ontario and are highly competitive in international market. (SINGH, Indira, 2003)

### **Plant Biotechnology Cluster in Saskatoon, Canada**

The biotechnology cluster in Saskatoon is one of the pioneer and leading clusters in the sector of agriculture. The government has very actively funded research in this sector and thus has led the growth of technological innovations. The outcomes of extensive research in this cluster are the development of novel rapeseeds and canola. The government has also very actively participated in mass selling of canola and other associated technological developments across the globe. Other than undertaking heavy investments in this cluster the government is also responsible for strengthening the cluster. Today the cluster has become a breeding ground for more than 100 companies which are working round the clock to provide for cluster and well as economic development of the nation.

### **Information, Communications and Technology Cluster in New Brunswick**

The government of New Brunswick had a vision to branch out and expand its economic horizons. It was this vision that led to the development and promotion of information, communications and technology in the area. In order to promote this industry at both national and international level, the government itself became one of the largest consumers of produce from this cluster. The government also aided in the process of creating skilled and qualified personnel. This was done by development of educational institutes at varied levels and of varied forms that would support the cluster. This thus helped in the up-gradation of the overall economy. In the present times, more than 250 companies in the cluster have merged to have a very strong cluster in the world. It also provides on a large scale and generates huge proceeds for the economy. (NATIONAL RESEARCH COUNCIL CANADA, 2009)

## Conclusion

Clusters have been key contributors in the economic development of regions in which they are present. Today countries and regions are realizing this fact and have aggressively adopting strategies that would provide for development of clusters in their economies. One of the major reasons for promoting such clusters is the economic growth and national competitiveness gained by nations. These clusters provide the economies a distinct recognition thus helping them attract international attention. The role of government in cluster development and promotion cannot be avoided. Though in many cases government is not in a position to support clusters but yet with government aid and support the chances of being successful as a cluster is enhanced to a larger extent.

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