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Regional Innovation Cluster for Small and Medium Enterprises (SME): A Triple Helix Concept

Sri Herliana*

School of Business and Management, Institut Teknologi Bandung, Jl. Ganesha 10, Bandung 40132, Indonesia

Abstract

The presence of SMEs make an important contribution to the national economy. In order to enhance the competitiveness of SMEs, until now, various attempts have been carried out by the Government. One way to increase the growth of SMEs through cluster approach. Cluster development and growth of small and medium enterprises (SMEs) support programs Regional Innovation Cluster. Regional Innovation Systems is an integral part of the National Innovation System. In realizing National Innovation Systems effective and productive, and significantly contribute to national economic growth necessary to strengthen Regional Innovation Systems. The innovation could not go partially, he must be collaboration between the academy, the industry/the business and the government.

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Keywords: regional; innovation; cluster; SME; triple helix

* Corresponding author
E-mail address: sri.herliana@sbm-itb.ac.id

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1. Introduction

1.1. Background

In order to enhance the competitiveness of SMEs, until now, various attempts have been carried out by the Government. But the programs do still partial and done per sector. So the result is still not able to improve the competitiveness and productivity of the various groups, both government and private sector to enhance the competitiveness of SMEs through increased innovative capacity. (BPPT, 2011)

One way to increase the growth of SMEs through cluster approach. Cluster development and growth of small and medium enterprises (SMEs) need to be supported by innovation-based business incubation activities contained incubator. Purpose of encouraging the establishment of incubators such as the emergence of new companies (start-up companies) based technology, fostering intellectual capital in order to improve quality human resources, support programs Regional Innovation Cluster and seed clusters, and facilitate new business ideas and innovation are likely to be business units prospective.

Regulations No.18 in 2002 the Article 20 entrusted Local Government mandated obligation to formulate priorities and policy framework in the field of science and technology were outlined as strategic policy development in the area of science and technology. As well as at the national level, the local government strategic policy formulation should consider the input and perspective offered by the institutional elements of science and technology.

Regional Innovation System is an integral part of the National Innovation System. In realizing National Innovation Systems effective and productive, and significantly contribute to national economic growth necessary to strengthen Regional Innovation Systems. Therefore, Regional Innovation Systems should be developed with the involvement of various parties whose role is to work in a common purpose and a synergistic measures.

The innovation could not go partially, he must be collaboration between the actor who interacted with each other in a system or often was acknowledged as the innovation system that is an unity from an association of the actor, institutional, interaction relations and the productive process that influenced the development direction and the speed of the innovation and his diffusion (including technology and the good practice/best) as well as the process of learning (Taufik, 2005). The core from the innovation system was the network.

Paid attention to the importance network in the innovation system, then in the development of competitiveness through the system of the regional innovation was needed by collaboration between the academy, the industry/the business and the government.

1.2. Objective

Establish a means preparing clusters continuum units. Clusters are geographic concentrations of companies and institutions that are interconnected in a particular sector. They are related because together and complement each other. Cluster encourage industry to compete with each other. In addition to industrial clusters including government and industry who provide support services such as training, education, information, research and technology support (Porter, 1998). Growth of SME business needs serious attention from various parties concerned or related. Therefore, we need to know the factors that most contributed or dominant in the growth of SMEs. One approach to enhance business development is Regional innovation cluster. Regional Innovation Systems should be developed with the involvement of various parties whose role is to work in a common purpose and a synergistic measures. The objective of the paper to know :

1. Factors that contribute to the growth of SME Cluster
2. How regional innovation clusters to promote growth of SMEs
3. How role of ABG to enhancing business growth of SMEs

2. Theoritical Framework

2.1 Definition and scope of the cluster

According to Porter (1998) Clusters are geographic concentrations of companies and institutions that are interconnected in a particular sector. They are related because together and complement each other. Theoretically, centers/clusters formed for two reasons: (1) Historical factors and (2) Notching / Manipulation factors. These two factors will form two types of clusters: (1) Cluster Adults and (2) New Cluster. Cluster Adults usually formed when a region/city has many craftsmen, in the city, will initially formed an Artisanal Cluster. Because one way or another, the cluster is able to survive through time and draw others to support their activities. The emergence of industrial clusters begins when the parties appeared willing to become suppliers of specialized inputs for the artisanal clusters. Cluster Adults appear "naturally". So the emergence of cluster formation due deliberate government or other institutions who wish to form a cluster. Formation of clusters is often referred to as New Cluster since its establishment tend to be younger age than traditional clusters that exist today.

According to Porter, the competitiveness is formed by the interaction of several factors are referred to as factor "diamond". Diamond is formed by (1) condition factor, (2) demand conditions, (3) related and supporting industries, and (4) firm strategy, structure and rivalry. He also includes two context factors related indirectly through: (1) the role of chance and (2) the role of government. These factors dynamically affect the company's competitive position in the country. 'Competitive advantage in advanced industries is increasingly determined by differential knowledge, skills and rates of innovation roomates are embodied in skilled people and organizational routines "(Porter, 1990) The relationship of these factors may show a pattern cluster, where the relationship between the business (and organizations) should support the achievement of competitive advantage.

Based on the condition of the cluster (refer to diamond model) to assess the quality of production, technology, market, human resource capacity and its relation to the relevant parties for cluster development from government, private sector and related industries, the cluster can be classified into 3 clusters which are not inactive (dormant), active cluster (developing) and dynamic clusters (advantage). Some of the characteristics possessed (excerpted from JICA Report, 2004) are as follows:

1. Inactive clusters have the following characteristics:
   a. Product does not develop (likely maintain existing products)
   b. Technology does not develop (using existing technology, usually traditional, no investment in equipment and machinery)
   c. The local market (for market that already exists, not motivated to expand the market, this led to competition at a price not quality) and depending on the broker / dealer between
   d. The skill level perpetrators static (hereditary skills)
   e. The level of trust between the perpetrator and the perpetrator is low (low social capital, encouraging each other to hide the information market, technical, production, etc.)
   f. Information is very limited market (only certain individuals or groups that have access to direct buyers)
2. Active Cluster has the following characteristics:
   a. Developing products according to market demand (quality)
   b. Developing technology to meet the product quality in the market
   c. Marketing more actively looking for a buyer
   d. The establishment of market information
   e. The development of joint activities for the production and market (eg, purchase of raw materials together with sales offices, etc.)
3. Dynamic Cluster has the following characteristics:
   a. The formation of inter-firm specialization of the cluster (eg, for there are specialized metal casting industry, the manufacture of shapes, cuts,
   b. Cluster was able to create a new product that takes the market / consumer
   c. Technological innovations developed in accordance with the product

d. The development of partnerships with relevant industry both in product development, technology development and be part of related industries
e. Institutional development of clusters
f. The development of market information

Growers cluster development, as defined by Michael Porter (1998), containing four determinants or known by the name of the model that leads to the diamond industry's competitiveness, namely: (1) input factors (factor / input condition), (2) demand conditions (demand condition), (3) related and supporting industries (related and supporting industries), and (4) the company's strategy and its competitors (and context for firm strategy). Here is an explanation of the diamond model of Porter:

1. Input Factors
   Input factors in the analysis are variables that already exist and are owned by a cluster of industries such as human resources (human resources), capital (capital resources), physical infrastructure (physical infrastructure), information infrastructure (information infrastructure), the infrastructure of science and technology (scientific and technological infrastructure), the infrastructure administration (administrative infrastructure), as well as natural resources. The higher the quality factor of the input is, the more likely the industry to improve competitiveness and productivity.

2. Demand Conditions
   Models according to demand conditions diamond is associated with sophisticated and demanding local customers. The more developed a society and increasingly demanding customers in the country, the industry will always strive to improve the quality of the product or to innovate in order to meet high local customer wishes. But with globalization, demand conditions not only from local but also from overseas.

3. Supporting and Related Industries
   The existence of supporting and related industries will increase efficiency and synergies in Clusters. Synergies and efficiencies can be created mainly in transaction costs, sharing technology, information and specific skills that can be utilized by industry or other companies. Another benefit is related and supporting industries will create competitiveness and increased productivity.

4. Corporate Strategy and competition
   Corporate strategy and competition in the diamond model is also important because these conditions would motivate a company or industry to constantly improve the quality of the products and are always looking for new innovations. With the competition, companies will always find a suitable new strategies and strive to constantly improve efficiency.

2.2 Regional Innovation System

From the morphological, the term "innovation system" (semantically) expressed understanding of concepts and perspectives or a systems approach of innovation in a broad sense, that include innovation, diffusion and learning processes. The term innovation system also in terms of epistemology related with a systems approach, the economic outlook (relating to science and technology, innovation and diffusion, R & D, as well as role of science and technology), and the growing public policy especially the past few decades. Based on extensive and growing literature convention commonly used in the literature relating to this field, it can be concluded that the definition of "Innovation system" includes the "system of science and technology." This sense used in this guide. So it is with the term "innovation policy" that referred to in this guide (as used in most of the literature) also includes "policy science and technology "are commonly known. According to Law no. 18 In 2002, innovation is an activity research, development, and / or engineering a aimed at developing a practical application of values and context of new knowledge, or new ways apply science and technology that have there into the product or production process.

2.3 Triple Helix Concept

Theories about the Triple Helix was originally popularized by Etzkowitz and Leydersdorff as a method of innovation-based policy development. This theory emphasizes the importance of creating synergies three poles are intellectual, business and government. The purpose of this theory is the development of a knowledge-based economic development. Of the synergies is expected to occur circulation of knowledge leads to innovations that have potential economic or capitalization of knowledge (knowledge capital).

Triple Helix as a lead actor should always move that circulates to form knowledge spaces, spaces of knowledge in which the three actors already have an equivalent understanding and knowledge, which will direct the third actor to create a consensus space, a deal in which the three actors is starting to make a deal and a commitment to a matter that will ultimately lead to the formation of innovation spaces, spaces that can be packed innovation into economic value of creative products.

Circulation is always trying to create novelty (innovation) and innovation are changing the structures that already exist, or Creative Destruction (Joseph Schumpeter, 1934) which means, the emergence of new innovations in the industry will displace the old industries that are not creative and replaced with industry more creative. Space interactions that occur between the main actors Triple Helix can be analyzed as follows:

1. Space Science: Here individuals from various disciplines began to concentrate and participate in the exchange of information, ideas and ideas. Discourses and conceptions flourish and constantly strengthened.
2. Space Consensus: Here begins a commitment formations that lead to specific initiatives and projects, the establishment of new companies. Reinforced by the circulation of information is credible and neutral so it creates a sense of confidence in the individuals concerned to be the advocates of consensus.
3. Space Innovation: innovation is created here has formalized and transformed into knowledge capital, such as the emergence of the realization of the business, new product realization, the participation of financial institutions (eg, Seed Capital, Angel Capital, Venture Capital) and government support in the form of incentives, enforcement action against violations of intellectual property rights and so on.

Analysis of The Role of Triple Helix:

1. Academics

Academics have a role as an agent of disseminating and implementing the science, art and technology, as well as agents that form a constructive values for the development of creative industries in the community. Intellectual property as part of the scholarly community in the institutions of higher education and research institutions, has a major role in developing the creative economy. Contribution academics can be described in three forms of role, as contained in the Tri Dharma University, namely:

a. The role of education is intended to encourage the birth of creative generation of Indonesia with the mindset that supports the growth initiative and work in the creative industries;
b. The role of research conducted to provide input on the development of creative industries policy models and instruments are needed, and produce technologies that support the operations and the efficient use of resources and make a competitive national creative industry, and
c. The role of community service carried out to form a society with institutions / social order that supports the flourishing creative industries nationwide.

In carrying out its role actively, scholars are required to have disciplinary and experimental spirit high, the opinions are contrast (empathy and ethics), able to solve problems creatively, running cross-sector observations, using ICT technologies fluently, a member forum of science enrichment science and art both nationally and internationally, formal and non-formal.

2. Business

Actor businesses are entrepreneurs, investors and creators of new technologies, as well as a creative industrial consumers. Actor businesses also need to consider and support the sustainability of the creative industries in every role he did not mind. For example, through the use of input priority between domestic creative industries, such as the services of creative industries in research, advertising and others.

The role of business in the development of creative industries are:

a. Creator, that as a center of excellence of the creators of creative products and services, new markets that can absorb the products and services produced, and the creator of jobs for creative individuals-and individual supporters.
b. Forming Communities and creative entrepreneurs, namely as a motor that forms where the public sharing ideas, mentoring can hone creativity in doing business in the creative industries, business coaching or management training business management in the creative industries. In carrying out its role, businesses are required to use a high conceptual skills, able to create a new variation in the form of products and services, proficient organization, cooperation, diplomacy (the spirit of collaboration and orchestration), stoic face of the failure, and the ability to master the technical context of financial planning.

3. Government

Government involvement in the development of the creative industries is needed, especially through better management of regional autonomy, democracy, the principles of good governance. All three are not a new thing, it has become the main agenda of reform. If it works well, three is a positive condition for the development of creative industries. Experts believe, the progress of the construction of the creative economy is strongly influenced by the location / place (synonymous with autonomy), and tolerance / creative mindset (synonymous with democracy).

While the principles of good governance; participation, rule of law, transparency, responsiveness, equity (fairness), strategic vision, effectiveness and efficiency, professionalism, accountability, and supervision (landing), are the principles which the creative industries can grow aggressively. The government should have a sensitivity and appreciation of people's aspirations.

Understand that in Indonesia in building an intelligent man can not be executed only in the short term, because it means there is a process of learning intelligence development, breeding and enrichment. Pursuing the final results in the short term without a strong pillar based development will create a weak economic structure and unsustainable. For that government actors should be able to put the bureaucracy in proportion, transparent interaction with the spirit of achieving equal

The main role of the Government in the development of creative industries are:

a. Catalyst, facilitator and advocate that provide stimulation, challenge, encouragement, business ideas in order to move to a higher level of competence. Not always support it must be financial assistance, incentives or protection, but can also be the government's commitment to using his political power to the proportional and by providing administrative services to the public good;
b. Regulators that generate policies relating to people, industry, institution, intermediation, resources and technology. Governments can accelerate the development of creative industries if the government can make policies that create a business climate conducive to the creative industries.
c. Consumers, investors and even entrepreneurs. Government as an investor should be able to empower the state to become productive assets in the scope of the creative industries and is responsible for infrastructure investment industry.
d. Urban planner. Creativity will flourish in cities that have a creative climate. In order for the development of the creative economy is going well, it is necessary to create creative cities in Indonesia.

Governments have a central role in the creation of a creative city (creative city), which is capable of accumulating and concentrating the energy of creative individuals to be a magnet to attract individuals / companies to open businesses in Indonesia. This can happen because individual / company feels confident to invest seriously (long-term) in the cities, seeing the potential supply of knowledgeable human resources actively circulating in the area.

3. Methodology

The research method is the case study method with the unit of analysis is the industrial cluster of food in West Java. Industrial clusters foods represent clusters formed due to historical factors. Research technique used is a combination of qualitative and quantitative data required the qualitative and quantitative data in the form of primary data and secondary data., The primary data is searchable by a variety of ways: in-depth interviews (in depth

interviews), observation, secondary data was obtained by collecting documents and literature. The analysis technique used is descriptive analysis of qualitative / narrative.

4. Results and Discussion

4.1 Factors that contribute to the growth of SMEs

1. Human Resources
   Limited ability of employers and employees as a result of lack of knowledge and lack of education brings a very broad impact to various fields of activities. Skill owned in production usually acquired hereditary or self-taught. Insight marketing, corporate management optimally, access and information as well as many other activities will be limited.

2. Marketing
   This problem is commonly found among almost every SME. Marketing is closely related to an increase in business scale. The results of a new small business product reaches the local level). Various factor affecting the limited marketing is low-quality, government information is not held.

3. Capital
   For SMEs that will enhance product quality and expand marketing network required additional funding. So even some of the new types of businesses flourish and the potential to be developed due to lack of capital not enough collateral to obtain bank credit. Most additional capital may be obtained in a short time and the easy process. This condition usually they lend at interest strangling or middlemen.

4. Technology (standard with related industries)
   This issue is closely related to the ability to transfer technology and knowledge entrepreneurs / workers. This is where the factor of education and training are needed. Sources of inspiration improved working methods, quality of product design to suit consumer tastes done here. Mastery of technology is actually very beneficial and add value to a very large to production capabilities. Not infrequently they reject requests that are large or slightly better just because of the lack of existing machines.

5. Organization and management
   The small businesses tend to use the employees coming from close relatives despite lower ability compare with employees who are not family. Hal is less favourable view of competitiveness, discipline and responsibility.

6. Infrastructure issues
   Many small business locations poorly supported with adequate infrastructure. Obvious problems are beyond their Traffic. Helping hand of government in this area is expected.

7. Cooperation
   The small business owners are also sorely lacking in this partnership effort. One thing that the bottleneck is the lack of control of the legality of the business relationship with the other party. Small businessmen business practices in our country is traditional and bitter experience in business transactions make their stance in cooperation with other parties conducted business carefully.

8. Competitors
   Competition with similar products higher. Strong competition happens sometimes less fair as monopoly, causing permanent appointment as a supplier cant afford effort the small survive. When confronted with resulting manufacturer, the product will compete SME.

9. The next generation
   Most of the existing family-oriented SMEs and down. So weeks to business sustainability in need generation. Generation studies in the field showed that the generation companies do not continue. Several types of products such as traditional handicrafts by minimum interest in the next generation to continue the business predecessor. The next generation of successful taste better education were more interested in working in other fields.

10. The lack of access to large business / government
    Lack of access to big business or the government due to the absence or lack of communication and information delivery hello to the small business.

4.2 Regional innovation clusters of SMEs

Cluster development and growth of small and medium enterprises (SMEs) need to be supported by innovation-based business incubation activities contained incubator. Borrowing terms on the medical incubator, incubator formed intended to facilitate the emergence of new SMEs, which is based on technology transfer. Incubators also provide facilitation and training in terms of intellectual capital. Purpose of encouraging the establishment of incubators such as the emergence of new companies (start-up companies) based technology, fostering intellectual capital in order to improve quality human resources, support Regional Innovation System and seed clusters, and facilitate new business ideas and innovation are likely to be business units prospective.

In the early stages, as done Agency Research and Development Central Java province will develop the concept of out-wall incubation. This stage has not provided physical facilities such as offices, telephone, internet and so on. Sharpening its activities more on cluster development in that area. However, Agency research and development ready to assist the process of institution building, product development, and marketing. After incubation concept out-wall find the right format and developing new Agency Research and Development Central Java Province developed the concept of incubation in-wall. In advanced stages, The Agency Research and Development providing physical facilities, including space for offices and production processes, telephone, internet, and so on. In addition, the continued strengthening of the process of mentoring, product development, intensify cooperation with several partners and marketing.

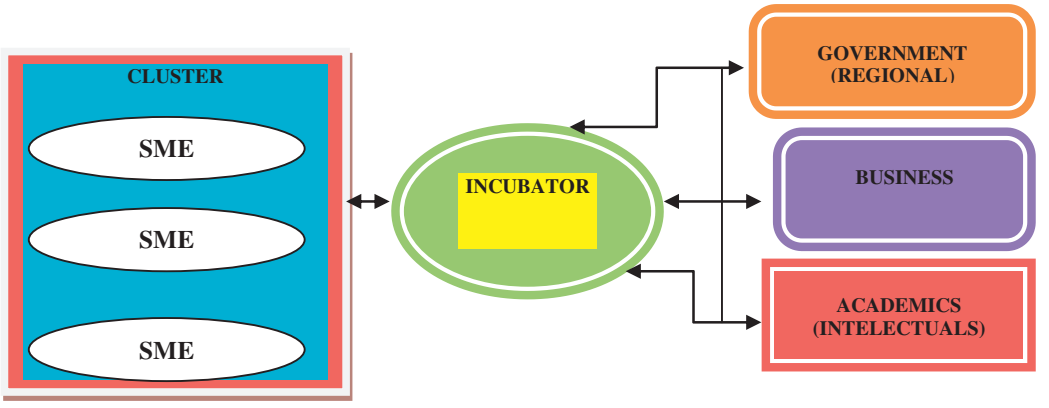

Fig. 1 Regional Innovation Clusters of SME: Triple Helix Concept

4.3 Role of ABG to enhancing growth business of SMEs Cluster

The Role of Triple Helix to enhancing business growth of SMEs

1. Academics (Intellectuals)
   Intellectuals here have a role as an agent of disseminating and implementing the science, art and technology, as well as agents that form a constructive values for the development of creative industries in the community. Intellectual property as part of the scholarly community in the institutions of higher education and research institutions, has a major role in developing the creative economy.
2. Business
   Actor businesses are entrepreneurs, investors and creators of new technologies, as well as a creative industrial consumers. Actor businesses also need to consider and support the sustainability of the creative industries in every role he did not mind. For example, through the use of input priority between domestic creative industries, such as the services of creative industries in research, advertising and others.
3. Government
   Involvement in the development of the creative industries is needed, especially through better management of regional autonomy, democracy, the principles of good governance. All three are not a new thing, it has become the main agenda of reform. If it works well, three is a positive condition for the development of creative industries. Experts believe, the progress of the construction of the creative economy is strongly influenced by the location (synonymous with autonomy), and tolerance/creative mindset (synonymous with democracy).

5. Conclusion

The ability of small business to increase sustainable economic growth depends on the ability of SMEs to enhance innovation. Innovation based on product technology research will make an immediate impact on improving sustainable productivity, which in turn can accelerate the economic growth of a nation. The ability to master science and technology a capital base in order to produce a very useful innovation for economic development in order to compete globally. Regional Innovation System to SME cluster development is based trigger synchronization between innovation, innovation support agencies, and users to develop innovations in the area of productivity and competitiveness of SMEs clusters. This approach will help to: (1) The success of the cluster has high leverage for regional development, (2) SME to achieve optimum economies of scale through unity, (3) Facilitate the transfer of knowledge and technology, (4) creating a creative environment to foster innovation and cooperation, (5) Focus more on encouraging synergy and facilitate stakeholders in the facilitation and development of SMEs in the cluster.

Based on the above constraints, assistance and support needed by small businesses are very diverse. Help and support are as follows: The role of the Academic ,business and Government :

1. Improved business insight
2. Facilitate the provision of raw materials
3. Increase knowledge of technology
4. Technology of production
5. Information technology
6. Facilitate marketing of products

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