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Cite this article: Amnur, Andi Akmal. 2024.  
Application of Industrial Cluster Concept  
in Increasing Collective Competitiveness.  
Join: Journal of Social Science Vol.1(5)  
page 539-551

**Keywords:**  
Industrial Cluster, Competitiveness, Value  
Chain, Supplier Network

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Published by:

GLOBAL SOCIETY  
PUBLISHING

# Application of Industrial Cluster Concept in Increasing Collective Competitiveness

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The industrial cluster concept has become one of the strategic approaches to enhancing a nation's collective competitiveness, particularly in the context of globalization and shifts in economic paradigms. Industrial clusters enable companies involved in a single value chain to collaborate more effectively, in terms of technology, management, and innovation. The application of this concept aims to increase productivity and value-added through the agglomeration of companies, supplier networks, and adequate economic infrastructure. This study discusses the implementation of the industrial cluster concept in Indonesia, the challenges faced, and the potential for development to improve national competitiveness. In the global economic era, competitiveness no longer relies solely on the availability of natural resources and cheap labor, but rather on the ability to innovate, mastery of technology, and collaboration between companies within an industrial cluster. This study concludes that the development of industrial clusters in Indonesia has great potential to enhance competitiveness, but it requires government policy support and cooperation among stakeholders, including educational institutions and the private sector.

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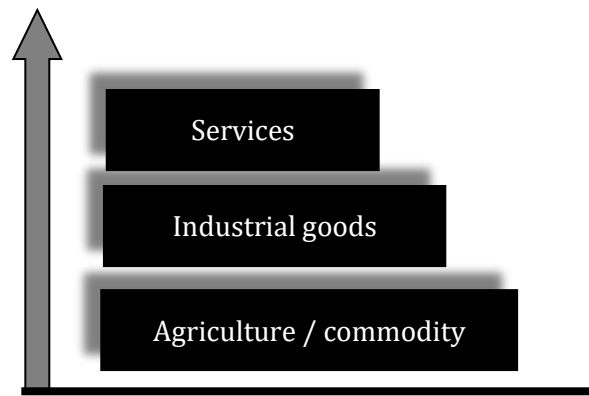
## 1. Introduction

The development of the national industrial sector as a driven economic development aims at four focuses, namely:

- a. Industries focused on labor absorption
- b. Industries focused on economic growth
- c. Industries that focus on driving downstream industries, and
- d. An industry that focuses on import substitution.

The four focuses on the development of the industrial sector require the participation of all stakeholders. In focusing on industrial development to absorb labor, efforts are needed to improve the quality and competence of the workforce, especially in this MEA era. In focusing on industrial development for economic growth, efforts are needed to increase process productivity through the introduction of technology and industrial management. To encourage the downstream industry, analysis and deepening of supply chains, logistics management and industrial process innovation are needed. Likewise for the development of industry as import substitution. The end of all industrialization processes is the market. So all businesses and industries compete to dominate the market. The key word of the market is competitiveness or competitiveness.

The change in the economic and development paradigm globally triggers the birth of new initiatives internally in each country. The old paradigm laid the foundation on the availability of raw materials, cheap natural resources, and also accompanied by low labor wages, due to the low competence of human resources.

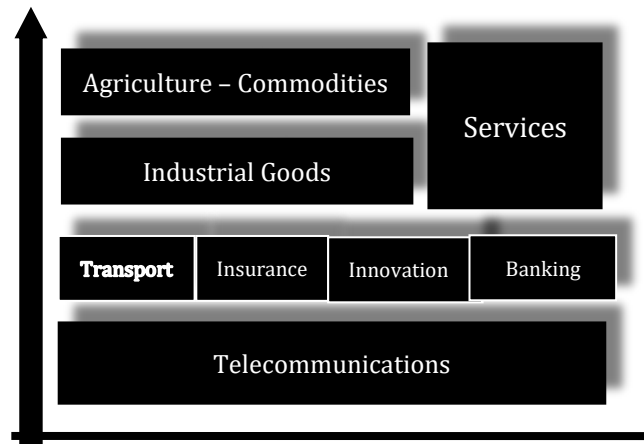


The development process is interpreted as a process of transformation from an agrarian country to an industrial country. The strategy carried out to achieve the transformation process is to increase capital accumulation and fundamental changes in technology. If this transformation process runs smoothly, at the same time it will grow the service sector and will become a leader in this economic growth. Intervention from the government is urgently needed, especially in policies that protect the domestic industry. Protection on one side has implications for high-cost industries, especially on non-production costs. Meanwhile, on the other hand, the industry will grow marginally (pseudo) and have no competitiveness.

What the industry is doing is suppressing local components, such as labor wages and local raw materials. Low labor wages result in the inability of workers to buy basic materials. This means that there must be a policy to monitor the prices of basic materials, such as rice, crops, meat and so on. This condition is felt by almost all countries and has become a global symptom. Therefore, globally, there has also been a change in the paradigm of economic development.

Industrial development is a part of inherent from the overall development. The new paradigm lays the foundation for development on something that can be renewed and developed. Telecommunication is a development that is the result of human thinking that can be continuously developed, used as the basis for economic development. What I want to say is, that the

basis of development is creative Human Resources, which are able to produce something that develops infinitely.



This new paradigm is characterized by several fundamental changes in the order of economic and industrial development, including:

- a. The emergence of the network economy (networking) is due to the availability of support for the information and communication technology revolution.
- b. The change of the conglomerate era and was replaced by the agglomeration era.
- c. There is a change in the competitive base from comparative advantage (abundant natural resources, and abundant and cheap labor) to sustainable competitive advantage (competent human resources, mastery of production technology, increase in added value in all value chains, and business networks).

The paradigm shift triggered several changes in global phenomena as follows:

- (a). Internationalization of Commodities
- (b). Transnationalization of Capital
- (c). Globalization of Information.

The objective of this research is to explain how shifts

in global economic paradigms and development have spurred the emergence of new initiatives in various countries. This study outlines the transition from the old paradigm, which focused on the availability of raw materials and cheap labor, to a new paradigm that emphasizes the development of creative human resources and technological mastery. The aim is to illustrate the transformation from an agrarian economy to an industrial economy, while highlighting the importance of government intervention in protecting domestic industries, and the role of commodity internationalization, capital transnationalization, and information globalization in the dynamics of the global economy.

Additionally, this research seeks to demonstrate how collaboration and partnerships among a country's business communities are key to winning competition in the global market, by prioritizing group competence in the era of commodity internationalization

## 2. Research Method

This research employs a descriptive qualitative method with a case study approach. The data used in this study is obtained from various literature, both national and international, related to the concept of industrial clusters and their applications. This approach involves analyzing industrial policies implemented in Indonesia and conducting comparative studies with other countries that have successfully applied the industrial cluster concept. This study also analyzes secondary data, including scientific journals, industrial reports, and official sources from relevant government and international institutions. In addition, interviews were conducted with industry practitioners and academics to gain a more comprehensive understanding of the implementation of industrial clusters in Indonesia.

### 3. Result and Discussion

#### **Commodity Internationalization**

A product is no longer made by a country, but is a donation from a network of production units from all over the world. Market dominance by an industrial product is no longer determined by the availability of raw materials and labor wage factors, but rather by the ability in the field of production design and access to the market.

Motor vehicle products, for example, are no longer made in Japan as a vehicle producing country, but can be made in Indonesia, or in Thailand and so on to meet the Asian market. Raw materials, components and so on can be made in Indonesia, from Korea, Thailand and others. The expansion of commodity production means the expansion of world production.

Competition, no longer at the company level, but at the level of the business community in a country. The key word in winning the competition is group competence. Partnering and building partnerships is very important in the era of commodity internationalization.

#### **Transnationalization of Capital.**

When a product is a merger of other industrial products around the world, the merger will also be followed by other factors of production, namely capital. For example, when the IBM computer company in the production process buys chips from Taiwan, monitors from Korea, casing from Indonesia, and other parts from other countries. The production of these components not only involves labor from all over the world, but also involves capital from various nations. In the product network, there is a capital trajectory between countries. This transnationalization of capital causes high capital liquidity, and quickly moves from one place to another.

## **Information Globalization**

The globalization of information caused the world to lose boundaries, which have been maintained as territorial boundaries. Information can be accessed by anyone from any corner of the world. The cross-border development of this information is very rapid. In the last decade, the development of information globalization has reached a figure above 300%.

## **Application of Industrial Cluster Concept**

Literally, the meaning of Cluster (cluster) is the grouping of similar activities within the scope of a certain area. In a narrower sense, cluster is also translated in Indonesian as an industrial center, which is an agglomeration of similar industrial activities. In line with changes in the global environment, the concept of cluster has developed and expanded in scope. So that industrial clusters can no longer be seen as industrial centers, which emphasize localization or demographic status. Meanwhile, industrial clusters place more emphasis on corporate agglomerations that form strategic and complementary cooperation and have intensive relationships.

The concept of industrial clusters has been widely discussed and discussed, both by academics and the business world, especially in relation to industrial development. The concept of industrial clusters is an integral part of the overall economic development models in a country. With the change of the strategic environment that is very dynamic, since the early 90s several countries have developed and implemented the concept of industrial clusters systematically and gradually. In fact, the application of industrial clusters can be used as an economic development strategy in many countries, and has implications for changes in the economic, monetary and trade structure.

Several countries in the regional region have developed industries with a cluster approach to answer the challenges of

changing the country's economy globally. In the last three decades, industrial development in Indonesia still tends to be oriented towards a broad spectrum approach (industrial perspective). In the early stages of industrial development, the strategy has given good results, where there has been a change in the economic structure. However, with the rapid change in the global environment, it turns out that the national industrial structure is not able to survive. Some of the symptoms that need attention include: (a) Changes in production. (b) Changes in competition patterns. (c) Capital mobility and investment movements. (c) Changes in the international trade order.

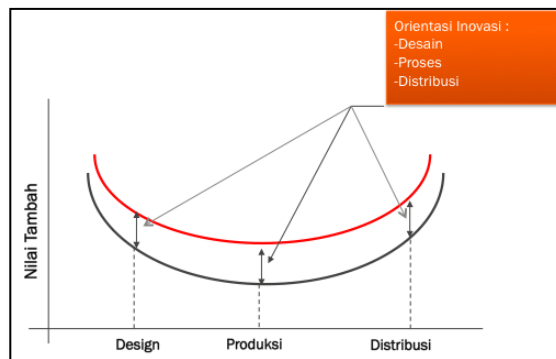
Apart from that, there are very rapid changes in the development of information technology and transportation which will be very meaningful to the development of the national industry. The competitiveness of a country, for example in the context of industrial competition, shows that competitive advantage is not only determined by each individual company. Each company is inherently part of a cluster, where each role moves in a value chain.

From the experience in several countries, it turns out that a strong cluster will ensure a sustainable competitive advantage. On the other hand, the industrial perspective shows that industrial groups are only based on the product characteristics of the product or industrial tree. Meanwhile, the cluster perspective is based on four key elements, namely Agglomeration, value added and value chain, supplier network and economic infrastructure. In its development, it turns out that the industrial cluster concept approach is more effective to be able to anticipate the dynamics of global competition.

The concept of industrial clusters emphasizes the full integration of all activities along the value chain (value chain). The main goal of cluster development is to increase and develop added value from the upstream to the most downstream activities,



both manufacturing products and services.



In general, the strategy to obtain and increase added value is carried out by following the process of following the value chain. In simple terms, this activity will involve activities: research and development, initial design of production, repair activities, preparation of prototypes, process design, procurement of components and materials, sub-assembly, final assembly, quality assurance, distribution and marketing.

### **Key Elements of Cluster Development**

The development of industrial clusters lies in the requirements for achieving goals, namely increasing collective competitiveness and sustainability (sustainable competitive advantage), which is called the key element of cluster development, namely:

#### **(1). Company agglomeration**

A corporate agglomeration is a collection of industries / businesses that have intensive relationships and high interconnectedness, and are complementary. In the context of cluster development, the agglomeration of cluster member companies forms strategic cooperation including with suppliers and even with competitors.

In the perspective of a cluster, an industrial center can be seen as a potential agglomeration, and in the process of cluster

development, an effort is needed to find and build a close relationship between others, and also open relationships with supplier networks which in turn are able to reduce several costs and investments. One form of this relationship is to form a joint facility for workers that functions to be able to speed up the skill transfer process. The companies in the cluster also have a strong network with local institutions, especially with universities. In addition, the companies in the cluster also have a global network of subcontractors, partners and vendors.

Judging from its characteristics, a cluster is mainly considered from the level of relationship between the elements involved in the cluster. On the other hand, there is a key role of the core industry which functions as a cheering car for the cluster concerned. The core industry can be in the form of export-oriented companies that have strength in market access, availability of raw materials or mastery of technology.

## (2). Value Chain.

The definition of added value is basically the basic concept of the difference or difference between the output value and the input. The concept of industry itself is based on the development of the greatest added value, so that the greater the added value obtained, the better an industrial process as a whole. The value-added component consists of contributions made by labor (labor contribution) plus capital contribution. Partially, for a certain process, the amount of added value is largely determined by the level of productivity, both labor productivity and capital productivity. In another concept, integrally increasing added value can be obtained by stringing each process from upstream activities to downstream activities. This principle is the basic foothold of the industrial cluster concept.

The main goal of cluster development is to increase Added Value (NTB = Gross Added Value) in all business components.

### (3). Supplier Network

The supplier network is one of the main actors in cluster development. In the global scope, the main supplier companies can be sourced from abroad (outsourcing), where each supplier can concentrate on its core activities or self-competence.

The development of this supplier element is one of the critical elements in the development of a cluster, so that the development of domestic suppliers is a strategic step that must be taken continuously.

In the development of industrial clusters, the supplier network consists of: (a) Suppliers of Technology, Innovation and Machine Tools (b) Suppliers of Raw Materials and Raw Materials Sources (c) Electrical Energy Suppliers (d) Suppliers of Design and Management, Human Resources (f) Suppliers of Capital, Finance, and Financing Guarantee Institutions.

### (4) Economic Infrastructure.

Economic infrastructure is a very important support in order to develop a cluster. The infrastructure is dynamic to support cluster development, which can be in the form of: software infrastructure consisting of accelerating a conducive business climate (deregulation and debureaucraticization, R&D services and technology access, availability of adequate human resources and hard infrastructure) includes electric power facilities, water, roads, ports, container terminals and others.

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