

# RESEARCH ON MODEL MINIMIZATION OF PRICES LOGISTICS WITH MANAGEMENT LOGISTICS INTEGRATED AND SUPPLY CHAIN FOR THE INDUSTRIAL AREA OF THE PEOPLE

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**ABSTRACT:** Input-output system of production, is the dependency system input demand production factor of a company, and the dependence of the output to bid on various companies, input-output system in changes in demand and supply of the group of companies gave birth to the theory of supply chain, how to meet the supply needs of factors production in the group of companies at any time, and how to offer production results in a group of upstream and downstream enterprises. Supply chain will be achieved if supported distribution fiisk integrated, logistics system that integrates namely; communications systems, transportation systems, warehousing systems, facilities systems, and system inventory. Integrated logistics management and supply chain, the coordination of logistics activities and logistics operations.in order to optimize the effectiveness, efficiency, economy, productivity (3EP) on the integration of communication systems, transportation, warehousing, facilities, and inventory resources, thus achieved an optimal supply chain system. To achievehappy of whole personfor all Indonesian people, the government needs to buildthe industrial area of the people, that its activities for human resource development, cooperatives, production the peoplesand the preservation of the environment. On the other hand the implementation of the ASEAN free trade system will have an impact on the industry, one of the most perceived impact of competition creates goods and services with highcompetitiveness, seeing the condition of integrated logistics supply chain system is still bad.Especially the industrial area of the people. the ability to produce goods and services at a lower cost can not be achieved, due to the system integrated logistics and supply chain Indonesia is still far from satisfactory. This study will observe the phenomenon of integrated logistics and supply chain. of high-performance logistics costs in Indonesia, with the survey method andstudy of the library, as well as trying to formulate and solve the problem of logistics costs minimal.Research is also useful for the development of a green economy on land and at sea to, with the development approach of integrated logistics and supply chain in the industrial area of the people. retrieved the competitiveness of the economy of the Green of the high,if logistics costs low. Model minimization of prices logistics with integrated logistics and supply chain, It can also be applied to the relationship between the industrial area people, or the relationship with consumers.

**Keywords :** Implementation ofmanagement logistics integrated and supply chain

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## INTRODUCTION

To achieve whole personhuman development and the whole, the Government needs to build industrialthe development for the industrial area of the people, which containsactivities, noble cultured human resource development, and cooperatives, production people's.Environment sustainable development, Development must be undertaken in order to realize the Justice of all the people. It required the construction for industrial area , which was formed from the input-output system of the supply chain and logistics integrated

system, connected with landline ports, sea ports, air ports, which produces price minimization model of logistics. Especially for a free trade deal with ASEAN.

Free trade ASEAN will implemented, one felt the most impact is the strict competition in the industrial sector. This relates to the competitiveness of the industry which is an important factor for a country to be able to survive and become a winner in persaingan. According Pahalad (1990), in the long run some of the factors that determine a company's competitive advantage is the ability to create goods and services, at lower costs continuously, and the speed of the company to be responsive to customer requirements compared to its competitors. Seeing the condition of Indonesia now, the Indonesian industry to be able to produce goods and services at lower cost than its competitors endah still difficult to do. This is because Indonesia's logistics performance is far from satisfactory.

## RESEARCH METHODS

Conduct literature studies and surveys about the phenomenon of existing logistics systems. The core approach of an integrated logistics management model is the integration of the components logistics system, ie communication logistics, transportation systems, warehousing, facilities systems, and resource provision. Integrated logistics management and supply chain. Core model approach integrated logistics management and supply chain is the establishment of a network of supply factors of production or products on the system input-output production company industrial of the people. can form the input-output system on supply chain, according Poirer (2004) there are five stages of evolution integrated logistics management and supply chain, the functional integration of the company, the existence of the company, cooperation partners, external network.

Total business systems, raw materials, semi-finished materials, finished goods and accompanying information that ensure the provision and availability of strategic commodities, basic needs of society equally and affordable and improve the competitiveness of the industry. The high cost of logistics is happening in Indonesia certainly hamper the availability of strategic commodities and staple for the community and the decline in industrial competitiveness.

The Indonesian archipelago requires an integrated logistics system, effective and efficient in order to improve competitiveness, and ensure the existence of a strategic commodity of basic needs of society equally and affordable. Principal pillars of integrated logistics systems is to ensure the

smooth flow of goods effectively and efficiently and economically as well as productive, which is reflected in lower logistics costs, and services that are responsive and satisfying. Efficient logistics management and will effectively help businesses to be more ahead of the competition through the creation of higher added value. Outperformed competitiveness, in turn, will increase the growth of the national economy and improve people's welfare.

The problems of competitiveness in an increasingly open world market as it is a tough challenge for the domestic industry. Without the competitive advantage given the ability and high, undoubtedly domestic products would not be able to penetrate the international market. This situation is further aggravated by the influx of imported products that threaten the position of the domestic market. Based on the necessary efforts to improve competitiveness and build a competitive advantage for domestic products. One factor that greatly affects the competitiveness of national industry is the decline of the national logistics performance in the last decade. In order to solve the various problems that occur, in particular the high cost of logistics problems, then one approach that can be used is to apply Integrated logistics management and supply chain, the national industry. It is necessary that the various obstacles that could potentially arise can be anticipated as early as possible.

## ANALYSIS

The concept of management logistics integrated and supply chain, have been very popular and some experts have defined integrated logistics management and supply chain, of which, according to Oliver and Weber (1982), apparatus, or supply chain management approach. Supply chain is a physical network consisting of companies that are involved in supplying raw materials, produce goods, and deliver it to end users. Meanwhile, according to Martin (1998) supply chain is a network organization involving relationships upstream and downstream in the process and the different activities that provide value in the form of products and services to customers. Meanwhile, Simchi-Levi et al. (1999) suggested that supply chain is a range of approaches applied to integrate suppliers, entrepreneurs, warehouses, and other storage areas efficiently so that the product is produced and distributed with the right quantity, the right location and the right time to reduce cost and satisfying customer needs.

Based on the above definition, in essence Supply chain is a network of organizations regarding the relationship to the upstream (upstreams) and downstream (downstreams), in the different processes and activities that produce value embodied in goods and services in the hands of customers. Supply chain considers integration to be achieved for the entire procurement chain, from upstream to downstream and even up to the last customer. Supply

chain management can be described as a cross-functional activities in a variety of disciplines, namely: logistics, purchasing, management information systems, operations management / production, engineering, accounting, marketing, and all of that into consideration in the decision-making process.

Of the various terms above, it can be said that basically Integrated logistics management and supply chain is not only oriented to the internal affairs of a company, but also the external affairs concerning relationships with partner firms. Coordination and collaboration needs to be done because the companies that are at the core of the supply chain to satisfy consumer wants the same end, they must work together to make a cheap product, send it on time, and with good quality. Competition at the moment is not just one company with another company remains among supply chain with the supply chain one another.

Spirit of collaboration and coordination are also based on the awareness that the strength of a supply chain depends on the strength of all elements that are in it. However, the spirit of collaboration and coordination must not sacrifice the interests of each individual company. Good supply chain can enhance the ability to compete for the supply chain as a whole, but does not cause the party to sacrifice the long term. Therefore we need understanding, trust, and clear rules. Ideally, the relationship between the parties in the supply chain takes place for the long term. Long-term relationship enables all parties to create a better trust and create efficiencies. Efficiency can be created due to a long-term relationship means reducing the costs to get a new partner company.

### **Role of Management Logistics integrated and Supply Chain Improving Effectiveness and Efficiency and the Economic and Productivity Production**

Management approaches integrated logistics and supply chain developed along with the increasing needs of the business to reduce costs overall. According to Hicks et al. (1999) 5% cost reduction can provide the same effect as an increase in revenues of 25% on corporate profits. In general, the supply chain aims to reduce costs, reduce time, reduce transaction and higher quality assured for goods or services that flows along the supply chain (Surjati Herman, 2004). Because of the scope of the supply chain manages the flow of goods, the concept of supply chain many intersect with logistics management. The difference supply chain focus more on the aspects of planning, while in logistics management more operational nature. If you see an industrial component of operating costs, the cost of logistics is the second largest component after the purchase of materials, goods and services. The high cost of logistics show yet optimal management of physical distribution is

represented by the coordination of the five activities, namely: inventory, transportation, warehousing communication order, utilization.

The low efficiency of distribution in Indonesia can be derived from a variety of factors including inadequate logistical infrastructure, such as transportation (roads, ports, transport equipment), warehousing facilities and human resources skills. This shows that the approach to Integrated logistics management and supply chain in Indonesia have not been applied, both within the company and between companies that are in the supply chain. During this industry in Indonesia are generally more focused on improving the efficiency of processes (functional processes).

According to Poirier (2004) there are five stages of evolution supply chain, namely: (1) Functional Process: the integration of the company, (2) Intra-Enterprise: corporate excellence, (3) Inter-Enterprise: Cooperation partner, (4) External Network: constellation chain values and (5) the total business system: network connectivity completely. From the experience of many countries in the world, it takes a relatively long time to rise from level 2 to level 3, because it takes a lot of change in behavior and culture in particular. Indonesian industry itself is generally still at level 1 and only a small portion at level 2.

Application of integrated logistics and supply chain for the industrial area of the people, as one of the efforts to increase the competitiveness of the industry require steps that should be a concern for the stakeholders related, the first, creating a relationship between the chain to make it more specific to the field of business, forming a pattern of an integrated and interrelated. Secondly, should there should be management support. Management at all levels from the strategic to the operational need to provide support from planning, organizing, coordinating, implementing, until control. Third, build partnerships in an agreement on the whole chain. The partnership pattern that is formed cooperative relationship between the company, the company and the buyer is more specific and focused on volume, distribution, lead time, and quality. By building a reliable partnership it will form a strong commitment to creating supply chain thus controlling the supply of inventory can be carried out efficiently in cost. Fourth, build an integrated information system in every part involved in the supply chain system that will support the performance and productivity of each of the supply chain. Expected with the above steps, the implementation of integrated logistics and supply chain for the industrial area of the people, is able to increase the added value that will enhance the competitiveness of industry.

Logistics Performance Index survey results (Logistics Performance Index / LPI) by the World Bank. Indonesia was ranked 43rd out of 150 countries in 2010 disurvei and Indonesia continue to slide into position warning 75 among 155 countries surveyed and is under the performance of some other ASEAN countries such as Singapore (second), Malaysia (ranked 29th), and Thailand (ranked 35th). LPI published by the World Bank uses six indicators of assessment, namely customs, infrastructure, ease of arranging international shipments, logistics competence in the country, and time of delivery. As for the scores and sequence Indonesia compared to some countries in Asia for each assessment indicators can be seen in Table 1 below.

**Table 1. Position the performance of Logistics Indonesia 2010**

| Negara    | LPI  |       | Customs |       | Infrastruktur |       | International Shipments |       | Logistics Competence |       | Tracking & Tracing |       | Timeliness |       |
|-----------|------|-------|---------|-------|---------------|-------|-------------------------|-------|----------------------|-------|--------------------|-------|------------|-------|
|           | Rank | Score | Rank    | Score | Rank          | Score | Rank                    | Score | Rank                 | Score | Rank               | Score | Rank       | Score |
| ASEAN     |      |       |         |       |               |       |                         |       |                      |       |                    |       |            |       |
| Singapura | 2    | 4,09  | 2       | 4,02  | 3             | 4,22  | 1                       | 3,86  | 6                    | 4,12  | 6                  | 4,15  | 14         | 4,23  |
| Malaysia  | 29   | 3,44  | 36      | 3,11  | 28            | 3,5   | 13                      | 3,5   | 31                   | 3,34  | 41                 | 3,32  | 37         | 3,86  |
| Thailand  | 35   | 3,29  | 39      | 3,02  | 36            | 3,16  | 30                      | 3,27  | 39                   | 3,16  | 37                 | 3,41  | 48         | 3,73  |
| Filipina  | 44   | 3,14  | 54      | 2,67  | 64            | 2,57  | 20                      | 3,4   | 4                    | 2,96  | 44                 | 3,29  | 41         | 3,83  |
| Vietnam   | 53   | 2,96  | 53      | 2,68  | 65            | 2,56  | 58                      | 3,04  | 51                   | 2,89  | 55                 | 3,1   | 76         | 3,44  |
| Indonesia | 75   | 2,76  | 73      | 2,43  | 69            | 2,54  | 80                      | 2,82  | 92                   | 2,47  | 80                 | 2,77  | 70         | 3,46  |
| ASIA      |      |       |         |       |               |       |                         |       |                      |       |                    |       |            |       |
| Japan     | 7    | 3,97  | 10      | 3,79  | 5             | 4,19  | 12                      | 3,55  | 7                    | 4     | 7                  | 4,13  | 13         | 4,26  |
| China     | 27   | 3,49  | 32      | 3,16  | 27            | 3,54  | 27                      | 3,31  | 29                   | 3,49  | 29                 | 3,55  | 36         | 3,91  |
| Korea     | 23   | 3,64  | 26      | 3,33  | 23            | 3,62  | 15                      | 3,47  | 23                   | 3,64  | 23                 | 3,83  | 28         | 3,97  |
| India     | 47   | 3,12  | 52      | 2,7   | 47            | 2,91  | 46                      | 3,13  | 40                   | 3,16  | 52                 | 3,14  | 56         | 3,61  |

Source: World Bank, 2010.

Based on the analysis Input-Output Table below shows that Indonesia's logistics costs are still high. The portion of the cost of logistics to Gross Domestic Product (GDP) by industry sector and the overall economy is still high, the industrial sector range in the level of 61.1% while the overall economy is in the range of 47.6%. This means that the portion of the cost of logistics in the product on the consumer is still very high. When compared with developed and developing countries, in Table 3, the portion of the overall logistics costs compared to its GDP is still not satisfactory.

**Table 2. Logistics Cost to GDP ratio for the Years 2010 and 2015**

| KODE SEKTOR | TYPE OF INDUSTRY               | In percentage |       |
|-------------|--------------------------------|---------------|-------|
|             |                                | 2010          | 2015  |
| 27          | Processing and preserving food | 136,1         | 111.4 |
| 28          | Oils and fats                  | 47,9          | 50.1  |
| 29          | Rice milling                   | 105,4         | 101.8 |
| 30          | Any type of flour              | 64,5          | 57.5  |
| 31          | Sugar                          | 192,4         | 138.4 |

|  |   |             |                 |
|--|---|-------------|-----------------|
| 32   | Other food  | 63,1        | 54.3            |
| 33   | Drinks  | 65,8        | 95.2            |
| 34   | Smoking   | 30,7        | 31.0            |
| 35   | Spinning  | 23,3        | 27.0            |
| 36   | Textiles, clothing and leather                        | 58,6        | 40.4            |
| 37   | Bamboo, wood and rattan                               | 64,3        | 56.4            |
| 38   | Paper, paperboard and articles of paper               | 56,8        | 58.0            |
| 39   | Fertilizers and pesticides                            | 51,1        | 51.7            |
| 40   | Chemistry   | 81,4        | 112.3           |
| 41   | Petroleum refining                                    | 26,6        | 25.8            |
| 42   | Rubber and plastic goods                              | 52,1        | 68.7            |
| 43   | The stuff of nonmetallic minerals                     | 47,6        | 66.3            |
| 44   | Cement  | 164,0       | 100.2           |
| 45   | Basic iron and steel                                  | 102,1       | 129.1           |
| 46   | Base metals instead of iron                           | 45,7        | 53.5            |
| 47   | Metal charcoal  | 55,7        | 55.4            |
| 48   | Machines, tools and electrical supplies               | 110,0       | 110.1           |
| 49   | Transport and repair tool                             | 58,8        | 41.3            |
| 50   | Other items that are not yet on the classify anywhere | 163,6       | 131.7           |
| <b>The Ratio Of The Cost Of The Logistics Of The NTB Industry:</b> |   | <b>63,4</b> | <b>61,161.1</b> |
| <b>The Ratio Of The Cost Of The Logistics Of The NTB Economy:</b>  |   | <b>47,3</b> | <b>47,6</b>     |

Source: BPS, processed

**Table 3. Logistics Cost ratio to GDP compared Indonesia developed countries**

| <b>Country</b>  | <b>Logistics Cost To GDP in percent</b> |
|-----------------|---|
| Amerika Serikat | 9,90                                    |
| Jepang          | 10,60                                   |
| Korea Selatan   | 16,30                                   |
| Indonesia       | 47,60                                   |

Source: blueprint of national Logistics System development,

The high cost of logistics in Indonesia is not only caused by the high cost of land and sea transportation, but also by many factors related both to regulatory, human resources, processes and infrastructure that is not efficient, and the lack of professionalism of actors and logistics service providers (freight distribution company that has not growing). Data description above explains that Indonesia's logistics performance is a factor that greatly affects the competitiveness of national industries. This indicates that one of the causes of low competitiveness of national industry over the past decade is due to lower logistics performance resulting in high logistics costs nationwide.

The use of integrated logistics management and supply chain for companies several areas in developing countries, including Indonesia, is still very limited. Where the relationship between each sub-system involved in general are still discontinuous, making it difficult to compete in the free market. This can be seen from the operational separation between the sub system upstream to the downstream sub-system caused by the sub-system many played by entrepreneurs in small-scale products, and do not have a strong bargaining position. In Indonesia can be applied optimally to fix some of the shortcomings that inhibit this system, in this case a solution that can be done is to transform the structure into a separate insulated and vertical integration structure. It is intended to integrate sub-system upstream to the downstream in the management decisions. Efforts were developed with forms which could accommodate industry players from each sub-system.

## CONCLUSION

The cost of logistics in Indonesia is still high, 47.60% against GDP, whereas America Serikat 9.90% of GDP, in Asia Indonesia of higher than Japan with 10.60% the GDP, South Korea 16.30% of the GDP. The cost logistics of high in Indonesia that led to low competitiveness for production the people's of Indonesia. These conditions influential simultaneously against several factors or elements in an industrial area of the people. The first, factor the development for production the people's of Indonesia declining. These two, factor human resource development the cultured and Professional the declining . The third, factor the development of cooperatives declined. The fourth, factor preserving the environment too is decreasing. If the four factors on the industrial area of the people happen of decline, It can lead to the failure of development based on Pancasila, that ultimately makes the failure of the development of social justice for all the people.

The high cost of logistics is also an obstacle for the development of green economy on land and at sea. Because in Indonesia, of the industrial area of the people so the region is a green economy. In Indonesia the green economy on land and at sea, is the development of people's industrial area on the river basin area, mountains, sea, Islands, secluded Suburban and outlying. In that region, logistics system which is still in very bad, poor communication systems, transportation systems, warehousing systems, facilities systems are bad, and bad inventory system. The entire logistics system bad conditions caused logistics costs are expensive. So the competitiveness of the production



of people's are low, this will be more felt at the time of the implementation of the ASEAN free trade agreement..

To overcome this problem, it needs the application of a model of logistics integrated and supply chain. On the industrial area of the people. In the region, the the entire company established a supply chain from input output for the factors of production. Next after the supply chain formed from the entire company, it would have formed the supply routes between the companies. at the industrial park also built an integrated logistics system. That is, the integration of communications systems, transportation systems, warehousing systems, systems facilities, inventory system. With the formation of integrated logistics and supply chain in the industrial area of the people. Model minimization of prices logistics can be formed. The price depends on the component logistics systems. That is, communications systems, transportation systems, warehousing systems, inventory systems, facilities and systems. If lower cost components of logistics, then logistics costs are lower overall.

In the application of effective logistics system development and efficient approach to supply chain management, need to be supported by laws and regulations progressive and adequate infrastructure so that it can become the foundation for human resources and logistics management professionals. Information and communication technology support advanced logistics and service provider of world-class logistics will encourage industry to provide the best added value for national competitiveness. Therefore, the development of industrial zones or production centers for competitiveness must be transformed with logistics systems ranging from planning, implementation to the control.

Some steps that can be taken and be considerate of the relevant stakeholders to improve the system so that integrated logistics management and supply chain can grow well in Indonesia, among others; The first, emphasis on the development and maintenance efforts in the chain, namely the establishment of the relationship between the chain, more specifically, for example in the volume, quality, distribution, depending shortcomings in the field of business, forming a pattern of an integrated and interrelated; second, Controlling supply inventory should be directed at cost efficiency, such as the number of supply tailored to the amount of product that can be sold so that the resulting stability of raw material inventory and no buildup of stocks which resulted in an increase in the cost of storage; Third, in determining the location and transportation network in the chain made with the calculation and pay attention to the impact on inventory costs, in this case will have an effect on the level of sensitivity of consumers, therefore, an evaluation of this very necessary; fourth, Establishment of a system of information between the parties in charge

of collecting, processing, storage, and dissemination of information to all stakeholders based on the belief in them, with this will support the performance and productivity of each member of the chain.

Determination of the development of an effective and efficient logistics system is done via two ways suggested different strategies. First, for strategic commodities or basic needs (rice, sugar, flour, salt, cooking oil, cement, fertilizers, medicines, fuel oil and LPG), with a target to be achieved is to ensure the supply of, access to and prices affordable. To achieve this is done through the construction of a distribution system that ensures the availability and ease in obtaining basic goods at affordable prices evenly through institutional engineering in which the government has a major role both as a regulator and as a guarantor in obtaining materials affordable and equitable.

Secondly, for other commodities including seed and export is done through the implementation of an integrated transport system, which ensures the effective and efficient flow of goods in the supply chain (supply chain). The strategy adopted is to combine and integrate the production centers / industrial zones with the transport logistics network of sub logistics and supported by a network of information and efficient communication so that the logistics process can be efficient and effective in turn can enhance the industry's competitiveness in the market international. The second of the above strategies should form an input output system of the supply chain, the industrial area of the people, which is integrated with the integrated logistics system on the whole region. Integrated with the integrated logistics systems and supply chains from the port by land, sea ports, and airports.

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