

## Analysis of ERP System Implementation in Improving Supply Chain Management Performance in Food Companies in Indonesia

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### ABSTRACT

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Manajemen rantai pasokan adalah pendekatan yang paling efektif untuk mempertahankan keunggulan kompetitif dan produktivitas di sebuah perusahaan. Manajemen rantai pasokan dan sistem ERP adalah alat yang ampuh untuk meningkatkan kinerja organisasi dan mempertahankan keunggulan kompetitif. Sistem ERP berfokus pada peningkatan alur kerja dan pemanfaatan data yang efektif. Penelitian ini bertujuan untuk mendorong implementasi ERP pada PT Indofood Tbk, PT Garuda Food, dan PT Nestle Indonesia dengan fokus pada aktivitas supply chain management, implementasi sistem enterprise resource planning dan manfaat ERP dalam meningkatkan kinerja supply chain pada suatu perusahaan. Metode penelitian yang digunakan adalah studi literatur dengan mengumpulkan informasi dari berbagai jurnal untuk mengetahui keberhasilan implementasi ERP pada perusahaan-perusahaan makanan di Indonesia. Hasil akhir penelitian menunjukkan bahwa implementasi ERP di PT Indofood Tbk, PT Garuda Food, dan PT Nestle Indonesia telah memudahkan seluruh karyawan divisi sehingga kinerja operasional menjadi lebih efektif dan efisien serta memberikan kontribusi positif terhadap efektifitas SCM perusahaan.

*Keywords:* Perencanaan Sumber Daya Perusahaan, Rantai Pasokan & Manajemen Gudang

### ABSTRACT

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Supply chain management is the most effective approach to maintaining competitive advantage and productivity in a company. Supply chain management and ERP systems are powerful tools to improve organizational performance and maintain competitive advantage. ERP systems focus on improving workflow and effective data utilization. This study aims to encourage ERP implementation in PT Indofood Tbk, PT Garuda Food, and PT Nestle Indonesia with a focus on supply chain management activities, implementation of enterprise resource planning systems and the benefits of ERP in improving supply chain performance in a company. The research method used is a literature review by collecting information from various journals to determine the success of ERP implementation in food companies in Indonesia. The final results show that ERP implementation in PT Indofood Tbk, PT Garuda Food, and PT Nestle Indonesia has made it easier for all division employees to make operational performance more effective and efficient and provide a positive contribution to the effectiveness of the company's SCM.

*Keywords:* Enterprise Resource Planning, Supply Chain & Warehouse Management

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### INTRODUCTION

Companies must be able to follow and implement every development of information technology in order to compete in this competitive era in improving production strategies and supporting company productivity. Things that need to be considered in improving supply chain performance are the existence of integrated data so that they can get information quickly before making a decision. ERP (Enterprise Resource Planning) is a multi-module, business packaging application solution that allows organizations to integrate business processes such as finance, human resources, procurement, distribution, and other departments. Enterprise Resource Planning is a

method for industry in seeking more efficient business processes by sharing information within and between business processes and running businesses electronically.

Management is an integration system between functions or across organizations in a production and delivering products to distribution customers. This system focuses on the process of the flow of goods or services from suppliers, manufacturers, retailers to consumers which are from one interconnected unit, without boundaries, and take place transparently. In simple terms, the concept of *Supply Chain Management* is a strategy related to the production, shipping, and distribution of products (goods or services) from the company to the customer. This concept is carried out to find out the management of a person or team in increasing the scale of productivity, quality, and operational efficiency in the company.

The success of ERP implementation is very important in improving and strengthening every effectiveness of the resources in the company, both from the company's operational performance that is increasing and the support of the performance carried out by its resources. The importance of ERP implementation in companies solves complex problems to be more organized without eliminating parts of its business.

The use of ERP is very beneficial for several food companies in Indonesia. We have successfully analyzed some companies that have succeeded in implementing the ERP System on supply chain performance. By analyzing several food companies in Indonesia such as PT Indofood Indonesia, PT Nestle Indonesia and PT Garuda food, this study explains the implementation of ERP in improving *supply chain performance*. The results of this study are expected to improve efficiency in the company, improve the company's image in the eyes of customers, increase customer satisfaction, and others.

## RESEARCH METHODS

The research objects in this study are three food companies, namely PT Garuda food, PT Indofood Indonesia and PT Nestle Indonesia. This company produces various kinds of healthy foods that are already known throughout the world, especially in Indonesia. By using this research object, the study was conducted to determine *the Supply Chain Management* (SCM) and the function of *Enterprise Resource Planning* (ERP) on the operational performance of food companies in Indonesia.

This research method uses literature analysis by collecting data from journals as references related to the benefits of implementing an ERP System in improving *Supply Chain performance*. According to Danial and Warsiah (2009: 80) Literature Study is a study conducted by researchers by collecting a number of books, magazines and research objectives. Literature Study is the process of collecting, reading, and evaluating various library sources that are relevant to the topic or problem of the research. Literature Study is conducted to understand the topic being researched and to find out what is already known and what is still a question mark in the field. Literature Study is a research method that is often used to help find problems and find the theoretical basis of the topic raised by the researcher.

## RESULTS AND DISCUSSION

This study discusses the implementation of ERP systems to improve performance in 3 food companies in Indonesia as follows:

1. PT Garudafood
2. PT Indofood Indonesia
3. PT Nestle Indonesia

#### A. *Supply Chain Management Activities at PT Garudafood*

##### 1. **Supplier**

As is known, peanuts are the main component used to make crispy peanuts in PT. Garuda Indonesia products. The ingredients used include: (a) Peanuts. Peanuts can grow in loose soil, the soil must be moist and close to a water drainage channel with a soil pH range of 6 - 6.5. Peanuts are the main raw material at PT Garuda Food Indonesia, the supply location for these peanuts is usually around the island of Java, for example Wonogiri, Gresik, Jember, Cilacap and many others, then specifically outside Java, PT Garuda Food Indonesia usually has its own peanut farming land which comes from Bali and also Lampung. (b) Food additives. To enhance the savory taste of peanuts and create a distinctive aroma and appetizing taste in the products sold, PT Garuda Food Indonesia uses additional ingredients in the form of spices and flavorings in relatively large quantities. These ingredients are imported from Solo and Rembang.

##### 2. **Manufacturing**

The following are the stages carried out to process peanuts into savory peanuts, as follows: (a) Washing cooking, The first and most important stage in the production process is cleanliness, therefore peanuts must undergo an initial washing process. This process is carried out by placing the peanuts in a tub that will be cleaned. In addition to cleaning, this stage also helps determine the acid content of the peanut sample that will be re-examined. (b) Drying, after going through the first washing or boiling stage, the peanuts will go through a drying process that uses an oven machine to roast and dry them. The purpose of this process is to reduce the water content in the peanuts so that they can be mass produced. (c) Gravity separator, after going through the washing and drying process, PT Garuda Food Indonesia uses a gravity separator procedure to separate ordinary peanuts from premium peanuts. The GS machine is used to remove dust and dirt that sticks to the peanuts. (d) Sort, this sorting process aims to select high-quality and high-quality peanuts. PT Garuda Food Indonesia focuses on two categories of peanuts that are suitable for production and sale: regular peanuts, which are peanuts with less than three seeds and poor skin. In addition, premium peanuts often have three seeds; otherwise, these peanuts are usually included in regular peanuts. However, depending on the skin and whether the peanuts are clean and in good condition, peanuts with two seeds can sometimes be considered premium. (e) Roasting, this step is almost the same as drying; the only difference is the temperature when doing it. PT Garuda Food Indonesia does this by re-roasting peanuts that have gone through the sorting stage to reduce their water content and increase the cooking time, which improves their savory texture. (f) Packing, Product packaging is the last step in the production of savory peanuts at PT Garuda Food Indonesia. Peanuts that meet sales standards will be immediately packaged and marketed.

##### 3. **Distribution**

Savory peanut products are already affordable and healthy snacks, therefore of course they are in demand by various groups from children to adults. Distribution PT Garuda Food Indonesia

has sold its products to remote areas of Indonesia, not only that but PT Garuda Food Indonesia also focuses on exporting sales to 20 countries, including China and India.

#### 4. Retail outlet

This savory peanut product is sold both retail and in bulk. It is hoped that the opening of this retail location will help PT Garuda Food Indonesia in increasing product sales because not all customers will buy products in bulk, and along with technological advances, retail sales can be done online through e-commerce platforms such as Shopee and Tokopedia.

#### 5. Customer

PT Garuda Food Indonesia, a company engaged in the food industry, produces Kacang Gurih. Because everyone is free to taste and buy this product, the marketing target of PT Garuda Food Indonesia is all groups. Fresh peanuts can be used as a snack while relaxing or as a dessert after eating.

### B. Implementation of *Enterprise Resource Planning System* at PT Garuda Food

Assisting companies in inventory management, manufacturing, and more integrated and effective delivery to increase production, reduce costs and improve customer satisfaction. In addition, implementing an ERP system can also help companies improve the transparency of supply chain management. This allows companies to better monitor and manage each phase of the supply chain business process.

### C. Benefits of Implementing *Enterprise Resource Planning System* at PT Garuda Food

- 1) Quality and Efficient, This ERP system can build a clear and effective company structure and goals, which will improve the business significantly.
- 2) Company performance, with the ERP system at PT Garuda Food Indonesia, can improve the company's work performance due to the system that supports and adequate work performance, this triggers a positive organizational structure in the company.

### D. *Supply Chain Management* Activities at PT Indofood Indonesia

1. *Supplier* = This division is responsible for supplying raw materials such as wheat flour, seasonings, and other additional equipment. For example, to make *instant noodles*, spices and ingredients are needed in the formation of *instant noodles*. These raw materials will be made by suppliers or from other companies that specifically make the raw materials needed to make *instant noodles*. These raw materials will be placed in the warehouse.
2. *Manufacturer* = After the raw materials are made, the goods from *the warehouse* will be sent to the manufacturer. In this stage, the finishing of the *instant noodle product* will be carried out. So, in making Indomie, this manufacturing process makes Indomie by combining raw materials from *suppliers* and using the appropriate recipe. After the *instant noodles* are made, a laboratory test will be carried out to ensure that these *instant noodles* are suitable for the market. After that, the packaging process will be carried out so that these instant noodles become finished products (Indomie).

3. *Distributor* = Indomie finished products from manufacturing will be sent to distributors. These distributors will be responsible for distributing Indomie production results. They are the ones who will expand their products so that Indomie is available in various places. These distributors will then offer Indomie to retailers or directly to end users/customers.
4. *Retailer* = After receiving Indomie from the distributor, this retailer or retailer will then market it to consumers such as in supermarkets, minimarkets, and canteens. This retailer is needed so that consumers can buy enough products without the need to buy Indomie products in very large quantities.
5. *Customer* = This consumer is the person who will buy and eat the Indomie. This consumer buys as much Indomie as they want from the retailer.

#### **E. Implementation of Enterprise Resource Planning System at PT Indofood Indonesia**

The ERP system at PT Indofood can handle manufacturing, logistics, distribution, and equipment processes whose purpose is to control activities that occur with a faster process. The implementation of the ERP system at PT Indofood is also an initial plan to face and overcome problems that arise in the company. PT Indofood implements the ERP system because it is able to reduce the company's cost burden to maximize revenue results at a more efficient level. So, the role of ERP in PT Indofood is to be able to consider choices related to good design so that it can be developed by the company.

#### **F. Benefits of Implementing Enterprise Resource Planning System at PT Indofood Indonesia**

1. **Improve operational efficiency:** ERP enables PT. Indofood to automate many business processes, such as procurement, production, delivery, and sales.
2. **Increase responsiveness to customers:** By using ERP, PT. Indofood can speed up the delivery process and increase the timeliness of delivery to customers.
3. **Increased visibility and transparency:** ERP gives PT Indofood greater visibility over the entire supply chain, including stock, customer demand, and production needs.

#### **G. Supply Chain Management Activities at PT Nestle Indonesia**

##### **1. Supplier**

Suppliers are the first stage in the supply chain, because suppliers are companies or individuals who provide production goods such as raw materials and raw materials needed to be processed into finished products, suppliers are categorized in the first stage of the supply chain. This is because it will be difficult for a company to operate if it does not meet the right supplier. As a result, the involvement of suppliers in the supply chain of each company is considered very significant. Therefore, the role of suppliers is considered very influence in the supply chain of every company.

##### **2. Manufacturing**

The second step is manufacturing, which involves processing raw materials to create a finished product. There are several manufacturing companies that work with several suppliers to generate profits for both parties.

**3. Distributor**

After completing the second stage, distributors are the next step. Distributing finished goods to clients directly or through retailers who then distribute their products to customers are the activities that occur in this chain.

**4. Retailer**

Retailers are businesses that sell goods to end consumers that are obtained directly from the primary manufacturer. Because retailers typically charge much higher prices than direct distributors, not many businesses can use the retail channel at this level of the supply chain.

**5. Customer**

This chain is the final link in the supply chain, which is where raw resources are transformed into finished goods and ultimately delivered to consumers.

**H. Implementation of Enterprise Resource Planning System at PT Nestle Indonesia**

ERP is implemented in order to improve and strengthen the effectiveness of all company resources. The success of this implementation is determined by the improvement of the company's operational performance and the support of its resource performance. By using a system control management approach that is appropriate for each country, PT Nestle Indonesia made a decision. The company needed an information technology system to handle the systems of all its business units and provide a competitive advantage for all its business processes. To assist its five business operations—technology, HR management, purchasing, marketing, and business intelligence—PT Nestle Indonesia once established a company intranet in 1997.

**I. Benefits of Implementing Enterprise Resource Planning System at PT Nestle Indonesia**

ERP systems are created to address complex and well-structured issues without eliminating certain aspects of the company's operations. After being implemented, PT Nestle Indonesia benefits from ERP's ability to streamline business operations, making it easier for all divisions to run operational performance more successfully and efficiently. PT Nestle Indonesia is able to make decisions more quickly and effectively, this can develop and implement a work ethic in the company that has a controlled and systematic system standardization. ERP also offers strong security and accessibility for PT Nestle Indonesia.

Implementation of ERP in improving Supply Chain performance			
Name Company	Activity Analysis Supply Chain Management	Enterprise Implementation Resource Planning System	Benefit
PT Garuda Food	<ol style="list-style-type: none"> <li>1. Supplier</li> <li>2. Manufacturer</li> <li>3. Distributor</li> <li>4. Retail outlet</li> <li>5. Customer</li> </ol>	<ol style="list-style-type: none"> <li>1. Helping companies in more integrated and effective inventory, manufacturing and shipping management.</li> <li>2. Helping companies improve the transparency of supply chain management.</li> </ol>	<ol style="list-style-type: none"> <li>1) Building clear and effective company structures and goals.</li> <li>2) Improving company work performance is due to a system that supports and</li> </ol>

			adequate work performance.
PT Indofood Indonesia	<ol style="list-style-type: none"> <li>1. Supplier</li> <li>2. Manufacturer</li> <li>3. Distributor</li> <li>4. Retailer</li> <li>5. Consumer</li> </ol>	<ol style="list-style-type: none"> <li>1. Handling manufacturing, logistics, distribution and equipment processes with the aim of controlling activities that occur with faster progress.</li> <li>2. Able to reduce the company's cost burden because it maximizes revenue results at a more efficient level.</li> </ol>	<ol style="list-style-type: none"> <li>1) Improve operational efficiency.</li> <li>2) Increase responsiveness to customers.</li> <li>3) Increase visibility and transparency.</li> </ol>
PT Nestle Indonesia	<ol style="list-style-type: none"> <li>1. Supplier</li> <li>2. Manufacturer</li> <li>3. Distributor</li> <li>4. Retailer</li> <li>5. Consumer</li> </ol>	<ol style="list-style-type: none"> <li>1. Improve and strengthen the effectiveness of all company resources,</li> <li>2. The success of this implementation is determined by the improvement of the company's operational performance and the support of its resource performance,</li> <li>3. Implementing system control management strategies that are appropriate to each country.</li> </ol>	<ol style="list-style-type: none"> <li>1) Addressing complex and well-structured problems without eliminating certain aspects of the company's operations.</li> <li>2) Benefit from ERP's ability to streamline business operations, making it easier for all divisions to carry out operational performance more successfully and efficiently.</li> <li>3) Nestle Indonesia Company is able to make decisions more quickly and effectively.</li> <li>4) Offering strong security and accessibility for PT Nestle Indonesia.</li> </ol>

**CONCLUSION**

The implementation of ERP (Enterprise Resource Planning) systems in food companies in Indonesia, such as PT Indofood Indonesia, PT Garuda, and PT Nestlé Indonesia, has been proven to have a positive impact on supply chain performance. ERP systems help these companies integrate various business functions, from production management, finance, distribution, to resource management throughout the organization. Thus, ERP systems become one of the important tools in increasing the competitiveness of companies in the increasingly competitive food industry. The implementation of ERP directly affects supply chain performance. With an ERP system, companies can monitor the supply chain in real-time, optimize inventory management, and improve production planning and control. This reduces delivery delays, optimizes the use of raw materials, and increases the speed of response to market demand. For example, PT Indofood and PT Nestlé Indonesia can organize more efficient production schedules and reduce the risk of running out of stock or overstocking.

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