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QSPM and 7C's Strategy for e-SCM Implementation Strategy (Case Study: XYZ Plastic Corporation)

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Abstract

Competition in the industrial world in the era of globalization is increasingly tight line with advances in information technology. Advances in information technology companies make every attempt to improve its internal business processes. To optimize its business processes, companies should not only be oriented to internal processes, but rather an external process that involves a relationship with the companies involved as a business. XYZ Corporation is a company engaged in manufacturing plastic household goods. The resulting products include a variety of bottles (which are used for soap, lotion, shampoo, and ink), bottle caps, cans, mannequin body fit, and others. XYZ is facing problems of a delay in arrival of raw materials, stock-checking errors, and delays in delivery of goods to the customer. Based on the problems that arise, the authors propose to use the e-SCM applications to XYZ because the e-SCM can help coordinate all the activities of the supply chain from raw material procurement to distribution to the customer, especially considering the number of suppliers that work with XYZ.

Keywords: *e-Business, e-SCM, SCM, QSPM, 7C's Strategy, Five Porter Forces*

1. Introduction

Supply Chain Management (SCM) plays an important role in the activities of the business process management integration between each business person starting from the supplier, manufacturer, distributor, retailer and customer. SCM is used to manage the necessary raw material estimates ranging from purchasing to finished goods sales as well as organize and plan the entire inventory and logistics processes of the company. It cannot be denied that the effective or wether a company can SCM serves as an indicator of success a company in business competition environment that exists today [1,2].

Electronic Supply Chain Management (e-SCM) is an application that supports all the operational processes of the SCM that use network Internet, intranet, or extranet as medium of communication online and real time so it can be easily to ensure good raw materials and finished goods from suppliers to consumers is always available [2]. Systems integration processes between companies and exchange data electronically in e-SCM is implemented via the World Wide Web.

2. Literature Review

E-business is any exchange of information through electronic media, both within the organization and with external stakeholders to call for support for various business processes [5]. According to [3] e-business is electronic commerce (or e-commerce) in a broad sense, which includes many other activities, such as the trading business with other businesses and

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internal processes that companies use to support their purchase, sell, rent, planning, and other activities.

According to [4], e-Supply Chain Management (e-SCM) is the use of technology to enhance collaborative B2B processes and improve speed, agility, real-time monitoring, and customer satisfaction. This includes the use of information technology to improve supply chain operations (*e.g.*, e-procurement), as well as supply chain management (*e.g.*, planning, coordination, and control). E-SCM is not just about technological change, but includes changes in management policies, organizational culture, performance matrix, business processes, and organizational structure along the supply chain.

e-SCM is the management philosophy of tactical and strategic aims for the network of productive capacity and the collective resources of the supply duct system (supply channel systems) that intersect through the application of Internet technology in finding innovative solutions and capabilities synchronization channel dedicated to the creation of a unique, individualized sources of customer value [1,2,4].

The purpose of SCM is to create a network of fast, efficient, and low-cost business relationships, or the supply chain, to get the company's product from concept to market. In other words SCM goal is to win the market competition, and therefore supply chain should be able to provide products that are inexpensive, quality, timely, and varied. These objectives can be achieved if the supply chain has the ability to operate efficiently, creating a quality, fast, flexible and innovative.

The success as a supply chain in improving their performance cannot be separated from Internet technologies. Internet makes the words the collaboration, coordination, and integration to be meaningful and can be implemented in practice in the field. With the Internet, the parties in the supply chain can share information and conduct transactions faster, cheaper, and accurate. Information inventory levels, production capacity, product configuration and so can be easily shared via the Internet infrastructure. The Internet can enhance SCM by making real time information available and enabling collaboration between trading partners.

3. Research Method

This research uses approach with case study method. The researcher doing several exploration field studies in the company and interview the CEO and also the manager in this corporation. The scope of this research includes analysis of the running system of SCM and environment industry companies, the analysis strategy using strategy formulation on the input stage through the IFE matrix and EFE matrix, matching stage through the IE Matrix and SWOT matrix, and decision stage through the QSPM matrix, as well as designing the site overlay e-SCM for companies using 7C’s analysis.

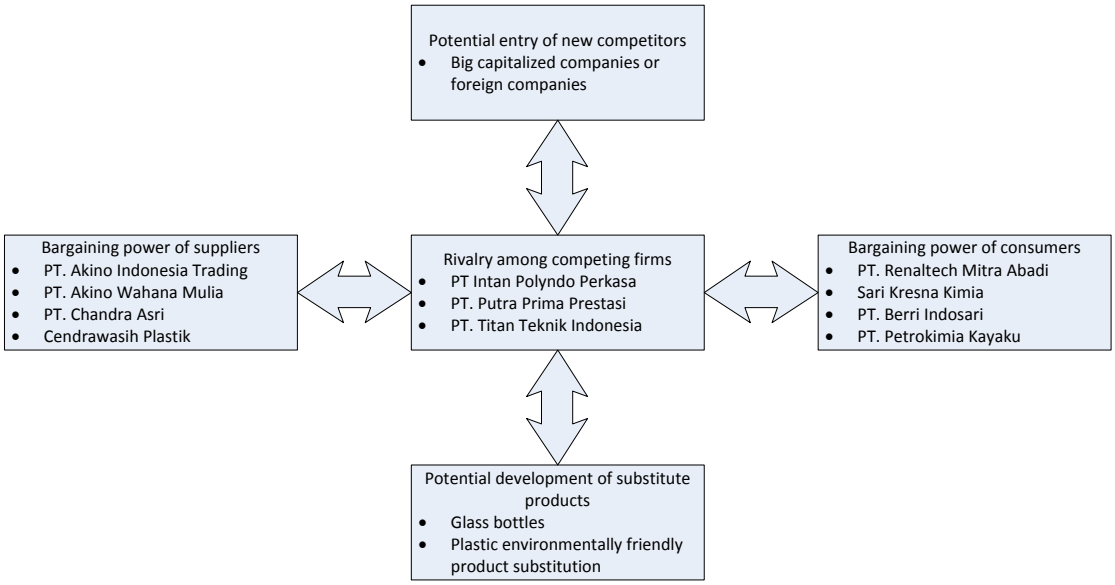
4. Research Findings

XYZ Plastic Corporation (XYZ) is a company specializing in the field of plastic household industry located in Tangerang. The resulting products include, among others, an assortment of bottles (used for soap, lotion, shampoo, and ink), bottle caps, jerry cans, mannequin bodyfit, and others. As a result of supply chain system not yet fully integrated automatically, there are problems that commonly occur in XYZ as raw material arrival delays and error checking of stock. Additionally in the downstream supply chain, the problem of delays in delivery of the goods to the customer. Without an integrated and automated systems, it is possible also the presentation of data and information quickly.

XYZ do much cooperation with large companies in Jakarta. In addition to considering multiplicity also the partnership with supplier companies as well as complementary material for resins to other XYZ which is about 200 company supplier, the needs of e-SCM for XYZ will be very helpful because Intenet technology will be more effective for the process of collaboration, coordination, and integration of information in the supply chain.

Porter's five forces model of competitive analysis is a widely used approach to developing strategies in various industries [8]. The nature of competitiveness in the industry can be seen as a union of five powers: Rivalry among competing firms, Potential entry of new competitors, and Potential development of substitute products, the bargaining power of suppliers, and the bargaining power of consumers.

Based on Figure 1, the analysis of the five forces Porter on XYZ, it can be inferred that XYZ position within the industry is strong. This can be reviewed from the rivalry between similar firms are strong enough, as if the order side like the power of bargain with the buyers, the power of bargain with suppliers, threat of new entrants and the threat of substitution products. However, the company must remain prepared to deal with the possibilities that exist in the foreseeable future [9].



Source: [9]

Figure 1. Five Forces Porter Analysis on XYZ Industry

According to [8], Internal Factor Evaluation (IFE) matrix is a tool to formulate strategies that summarize and evaluate the strengths and weaknesses in the major functional areas of business. This matrix will provide a basis to identify and evaluate the relationship between the functional areas of business. IFE matrix indicates the conclusion, the total value of the weighted average is 2.2555 (smaller than 2.5) that indicate that XYZ still belongs to the affluent have not been strong enough in the internal strength of the company.

External Factor Evaluation (EFE) Matrix allows planners to summarize and evaluate strategies to external factors such as information on economic, social, cultural, demographic, environmental, political, government, law, technology, and competition [8]. EFE matrix indicates the conclusion, the total value of the weighted average is 3.03 (greater than 2.5) that

indicate that XYZ considered capable of taking the opportunities and avoid the threat of external factors as well.

Internal-External Matrix (IE) to position the various divisions in the nine-cell display. IE matrix is based on two key dimensions: total IFE weighted average of the X axis and the total weighted average of EFE on Y axis On the X axis of the IE Matrix, total IFE weighted average of 1.0 to 1.99 represents a weak internal position; values from 2.0 to 2.99 are considered medium, and the value of 3.0 to 4.0 is strong. Likewise, the Y axis, the total weighted average EFE from 1.0 to 1.99 are considered low, values of 2.0 to 2.99 is medium, and the value of 3.0 to 4.0 is high. IE matrix can be divided into three main areas that have implications for different strategies. First, the recommendation to enter in the cell division I, II, or IV can be described as a growing and building. Intensive strategy (market penetration, market development, and product development) or integrative (backward integration, forward integration, and horizontal integration) may be most appropriate for these divisions. Second, the entry in cell division III, V, and VII can be managed in the best way to guard and defend strategy. Market penetration and product development are the two most common strategies used for this division. Third, general recommendations are given for the entry in cell division VI, VIII, and IX is harvest or divest. The strategy used for this division is a savings and divestments.

From the IE matrix results, indicates that XYZ is in cell II that can be described as "grow and build" and recommendations for this division is intensive strategy (market penetration, market development, and product development) or integrative (backward integration, forward integration, and horizontal integration).

Quantitative Strategic Planning Matrix (QSPM) shows the best alternative strategy by using the input of stage 1 analysis and the matching results from the analysis of phase 2. In concept, QSPM determine the relative rates of the various strategies based on how far the key success factors internal and external utilized or repaired.

SWOT matrix generating alternative strategies that can be applied by XYZ, and based on the analysis carried out of alternative strategies of most appeared on SWOT matrix is backward integration strategy and product development strategy, which will be included in the decision through the matrix of the QSPM. Table 1 described the summarized the QSPM analysis for XYZ. It was concluded that the backward integration strategy more suited by XYZ partners compared with product development strategy. With the acquisition of the number of TAS 5.1097 for backward integration strategy that Is Greater Than the number of TAS 4.6187 for product development strategy. Backward integration strategy can be done by XYZ is with the design of e-SCM applications to improve coordination with suppliers, especially the procurement of raw materials to the process that is more practical and fast.

Based on QSPM analysis, XYZ Corporation continues the implementation of e-SCM with 7C's Strategy. Here are the results of the analysis of the design using the 7C's analysis:

- Context: Design context of e-SCM site which is made is functionality oriented, where the site's function oriented is the main objective of the design so that the sites of e-SCM can provide benefits for XYZ.
- Content: On the website of e-SCM, the sound effects and video is not required, because the whole process in general contains information and data that is dominated by text and tables for activity supply chain.
- Community: Interactions that occur between user-to-user can be limited, due to the limited read and send information which is useful to stakeholders in the system.

- Customization: After activation and login, the page will be customized or personalized interface in accordance with the role and function of each part that participate, ranging from a supplier, customer/partner, sales, and so on.
- Communication: Examples of communication that occurs in through the exchange of data, information, and activities of the procurement of items for supplier and purchasing, confirmation, as well as ordering the product. The event is a two-way communication for each side to get feedback as needed.
- Connection: For this section, the site of the e-SCM does not need to be linked to other sites because all of the information and data necessary to process e-SCM can be accessed after login.
- Commerce: Financial process transactions and payments are still done manually, but the bidding activities and reservations can be made through this e-SCM site.

Table 1. QSPM Analysis of e-SCM XYZ Strategy Choices

Strategy Choices						
Key Factors		Weight	Backward Integration		Product Development	
			AS	TAS	AS	TAS
Strength	Already has a lot of remain customers	0.0713	2	0.1426	4	0.2852
	Good relation with the producers of raw materials for plastic container.	0.0737	4	0.2948	2	0.1474
	25 years of experience in the field of plastic container.	0.0538	4	0.2152	4	0.2152
	The machines are high-tech and follow the latest developments.	0.0977	2	0.1954	3	0.2931
	Have a good quality system and product quality.	0.0823	3	0.2469	2	0.1646
Weaknesses	Marketing and promotion of products that have not been optimal because it hasn't any marketing staff.	0.0608	1	0.0608	3	0.1824
	Dont have a system that is integrated in each division for the coordination process.	0.1465	4	0.586	3	0.4395
	Procedures for the procurement of goods is a fairly complex.	0.1169	4	0.4676	2	0.2338
	There is still a problem of manpower such as human errors that often encountered.	0.0824	-	-	-	-
	High cost in operating company.	0.2097	4	0.8388	3	0.6291
Opportunities	Products offered is the plastic used household needs everyday.	0.0885	2	0.177	4	0.354
	Many potential market share.	0.0864	3	0.2592	3	0.2592
	The demand for plastic products growing.	0.1165	3	0.3495	3	0.3495
	Lack of replacement products that can replace the plastic.	0.0316	-	-	-	-
	Plastic raw material consumption in Indonesia is estimated to be up by 7.8%	0.1132	4	0.4528	3	0.3396
Threats	The condition of the economy which is still not completely stable.	0.1009	2	0.2018	2	0.2018
	The emergence of many new competitors that attempt to capture the market.	0.073	1	0.073	2	0.146
	Foreign exchange fluctuations.	0.1753	-	-	-	-
	Rise in the price of the raw materials of plastic.	0.1269	3	0.3807	1	
	High cost of transportation of goods and customer sensitivity towards price.	0.0838	2	0.1676	3	0.2514
Total			5.1097		4.6187	

Sources: [10,11,12,13,14,9]

Figure 2 shows the whole system of the proposed E-SCM order process by starting from a customer, raw material procurement with supplier, internal corporate data processing process in production and inventory, as well as the delivery of finished goods to the customer with the use of the Internet in e-SCM system is proposed.

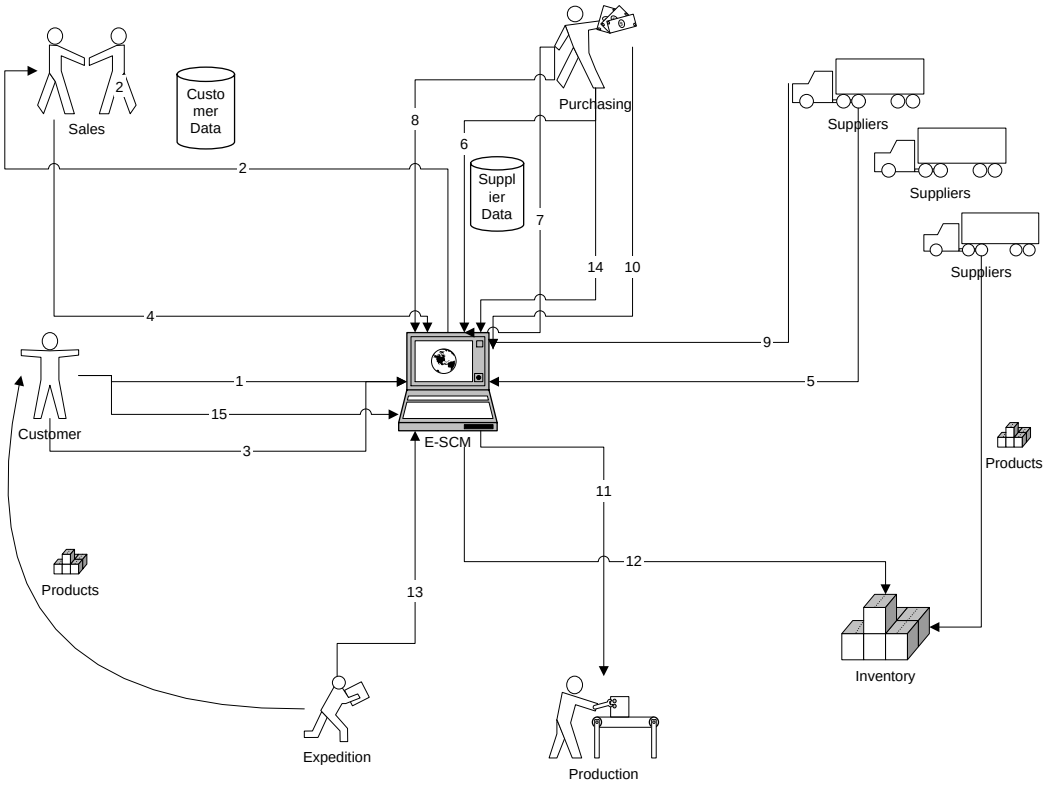


Figure 2. Design of E-SCM System Proposed

5. Conclusions

SCM condition that runs at XYZ currently still encounter some problems, such as delays in the arrival of raw materials, errors in the checking of stock, as well as the delay in delivery of the goods to the customer. These problems can be caused by the lack of integration of information that occurs along the supply chain. Based on the analysis that has been done through the IFE and EFE matrix on input stage, SWOT matrix and IE matrix on matching stage, and decision stage using QSPM matrix, design of e-SCM is proper for the company. E-SCM solution also supports collaborative planning and increase the speed of the network supply. Design implemented based on 7C's analysis is a display to facilitate the supply chain and focusing on the benefits obtained after using the site e-SCM.

Based on the above conclusions, the suggestions can be submitted to assist in the successful design of e-SCM at XYZ are prepare the appropriate human resources in the ability and responsibility given to the operation of e-SCM system can run smoothly, the introduction of e-SCM applications to all parts of the company is clearly so that all parts involved can perform the procedure in accordance with their respective functions, and lastly XYZ must also consider data security issues for the parties responsible.

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