

## Chapter 9

# Paradigms of Supply Chain Management

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### ABSTRACT

*Supply chain management is a naturally difficult task due to participation of various economically independent companies. In turn, strategy planning and management processes in supply chain are more complicated than a single business. In the process of strategy formulation for a supply chain, it is necessary to consider benefit and abilities of all members. In this chapter, some models for supply chain strategy formulation are discussed, and the most applicable management paradigms of supply chain are investigated. In addition, initiatives, attributes, and appropriate conditions for implementing each paradigm are investigated. Hence, the purpose of this chapter is to give a viewpoint regarding philosophies and concept of supply chain management along with introducing and analyzing some paradigms and practices of supply chain management including lean, agile, leagile, resilient, and green paradigms.*

### INTRODUCTION

The primary aim of each business is meeting customers' demand in the best possible way to maximize its overall profit. In other words, the business goal can be defined as customers' satisfaction since the customers are the sole source of a business income. It is necessary to align "what a business performs" completely with "customers' expectations". Alignment between business per-

formance and customers' expectations guarantees customers' satisfaction, which in turn increases business profitability. Nevertheless, customers' satisfaction has various dimensions such as low prices, high quality, on time delivery, desirable services, etc. which a single firm is unable to achieve the overall satisfaction of customers. Each firm involved in the procurement, supplying, manufacturing, distribution, and delivering goods or services to customers has a unique and effective role in achieving customers' satisfaction. This

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is the primary philosophy for emergence of the supply chain concept. With a systemic approach towards the business environment, it is obvious that providing goods and services to the customers is not related merely to a single company, but a series of companies located along together and working together, each one having a unique role in the process of providing goods and services to the customers, which is called “Supply Chain (SC)”. Therefore, the supply chain concept is a result of systemic approach to the business environment.

Effective management of supply chain activities requires identifying the needs of target customers. The competitive strategy of a SC is planned based on the behavior of target customers as well as competitors. By planning the SC competitive strategy, SC managers specify how they intend to compete in the market, what degrees of uncertainties will be faced in future and which market segments are targeted. After this, it is required to plan the SC strategy in different functional domains including procurement, production, inventory, and distribution, supporting the SC competitive strategy. This process of aligning competitive and SC strategies may need revising competitive strategy based on restrictions and SC members’ capabilities, whenever the ability of SC members cannot support the competitive strategy. In addition, to implement the SC strategy, various management paradigms and practices are developed in the area of SC management.

The purpose of this chapter is to give a viewpoint regarding philosophies and concepts of SC management and analysis as well as evaluation of some of paradigms and practices of SC management each applicable for a specific business environment. In this chapter, after describing about SC philosophies and SC decision making structures, various models in developing the SC strategy are discussed. Some paradigms and practices in supply chain management are introduced. Some of the most important paradigms and practices of supply chain management are discussed in this chapter including push/pull approach, lean thinking, agile

and leagile paradigms, resiliency in managing a supply chain, and green supply chain management.

## **SC PHILOSOPHIES**

In traditional business methods, each firm independently tries to maximize own profit. In such business environments, implementation of improvement plans is limited within organization boundaries. Since the firm is considered separated from other SC partners in the traditional businesses, all the business ideas and optimization schemes are restricted; therefore, the globally optimal solution is not achievable. If boundaries of the traditional firm planning are extended to include all SC members then the improvement plans will be more effective, and more desirable business ideas will be generated and as a result, the business position will be promoted. It is expected that the performance of a business, participating in its SC actively, stands higher than a traditional business who is acting alone.

SC consists of all organizations involving in supply, production, distribution, and delivery of goods or services to its customers. Although retailers are the only SC members that are in direct contact with customers and have the duty of delivering SC products to the customers, it is not true that retailers are capable of utter satisfaction of customers. Nowadays, the business environments are more complex than ever. The customers’ expectations have increased. In addition, things having value for customers such as lower prices, higher quality, on time services and post-sale services are no longer achievable by a single firm. Providing such values for the customers need cooperation and coordination between all companies who participate in providing goods and services to the customers. This is the primary philosophy of emerging the SC concept.

Customers’ values are not confined within a single company’s walls; therefore, these walls must be removed to satisfy the customers. If the

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