

# Chapter 1

## Introduction to Supply Chain Management and Multimodal Logistics

### ABSTRACT

*This chapter provides an understanding of basic essence of supply chain management. It introduces a multi-dimensional facet of supply chain management. A typical supply chain has at least three entities, that is, the supplier, the firm, and its customer. The inter-link between these three entities comprises three primary components of a supply chain, namely, the inbound or upstream supply chain, internal supply chain, and outbound or downstream supply chain. However, in a real-life scenario, for many firms (especially in case of large and complex firms), the suppliers, and production centres are more than one. This increases the complexity of the supply chain structure. This concept has been introduced in this chapter. The drivers of supply chain have been categorized under strategic and operational drivers. This aspect has been explained, with examples. The chapter discusses the enablers and inhibitors of a supply chain of a firm. It proceeds to explain the issues in assessing and integrating the drivers, enablers, and inhibitors in the supply chain planning process. Bull whip and snow ball effects are two important outcomes of an inefficient supply chain. These concepts have been introduced here. Finally, the chapter concludes by laying down the objectives and the strategies of supply chain management. It prioritizes the focus of supply chain management, stating that customers come first followed by cost optimization. The chapter discusses on the ways to make supply chain agile and flexible. Supply chains are always prone to disruptions; hence, this chapter talks*

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*about a resilient supply chain. Next to customer, cost is an important element that enables a firm to keep its price competitive and be profitable. Here the concept of a lean supply chain has been discussed, a way to minimize waste and hence reduce cost. Supply chain management varies with firms' business strategy. The firm may choose to follow either a cost-leadership strategy or a differentiation or a focus strategy and thus would accordingly adopt push or pull or push-pull (supply chain) strategy. In case of cost-leadership strategy, the firm is expected to follow "make-to-stock" (operations) strategy; in case of differentiation strategy it would adopt "make-to-order" strategy; and for focus strategy the firm embraces "engineer-to-order" strategy. This chapter discusses these aspects to correlate the different dimensions of business and its supply chain management. Firms now are focussing on global operation to leverage on opening up of economy, enabling them to lower the cost of operations and achieve the desired quality. Besides, globalisation has also led to widening of market coverage. A brief introduction to global logistics management has been made in this chapter to emphasise on operationalization of a firms' global supply chain.*

## **SUPPLY CHAIN: DEFINITION, CONCEPT, AND ESSENCE**

A supply chain is a network of nodes that ensures supply of inputs to operations of a firm resulting in production of goods and services and supply of these goods and services to the customers and consumers of the firm.

Figure 1 illustrates a simple supply chain with two nodes connected to the firm.

This supply chain has one supplier and the firm sells goods directly to the end customers.

However, there can be more than one tier of suppliers to a firm and more than one entity in the distribution of finished goods to the end customer. The initial nodes in the  $N^{\text{th}}$  tier represent the original suppliers and rest of the nodes in the upstream supply chain represents the assembly points.

*Figure 1. A simple supply chain*



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