11 Logistics and the Supply Chain

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Critical to the success of any business is a supply chain capable of serving the end customer more effectively and more efficiently than the competition. Central to this premise is an understanding that in today's global marketplace it is supply chains that compete, not individual firms. We explore the central role of logistics and the supply chain in gaining competitive advantage in a volatile global market by first defining the key principles of a market-responsive supply chain. Second, we discuss different supply chain strategies to improve the match between supply and demand, before dedicating two sections to the important subjects of logistics outsourcing and global sourcing. But first we begin by defining the supply chain, logistics and supply chain management.

Logistics and supply chain management

Supply chains are rarely simple chains, but rather complex networks of interconnected and interdependent companies. The end-to-end supply chain may comprise several tiers of organizations, each contributing in some way to the value of the chain as a whole. The interconnectivity of networks invariably means that competing firms are likely to have overlapping networks and may share suppliers and compete for the same customers. Figure 11.1 illustrates this idea showing two competing firms that are embedded within two interconnected and competing supply networks.

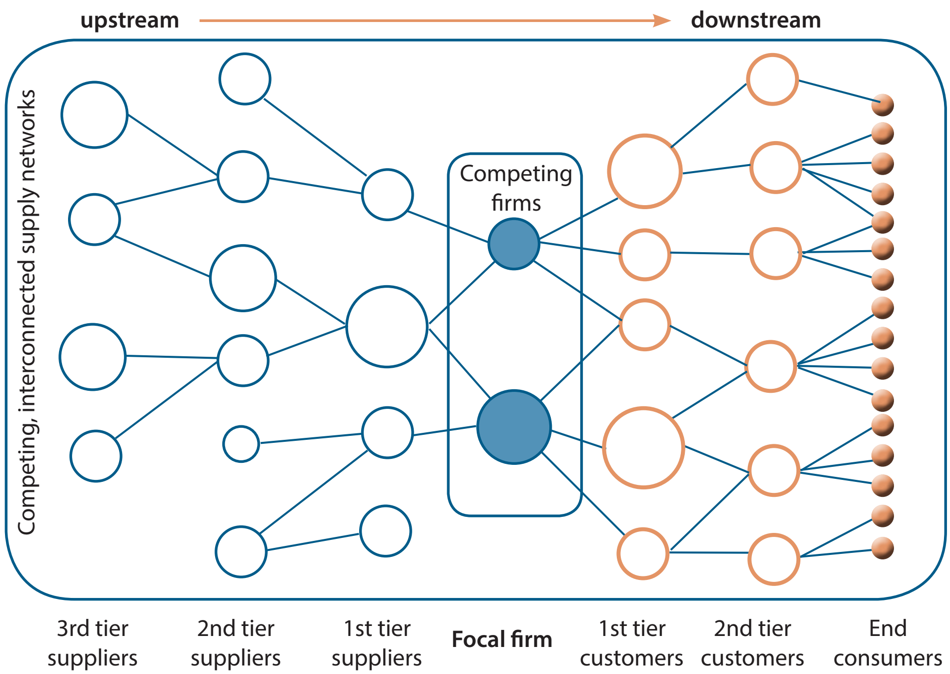

Figure 11.1: Interconnected competing supply networks

The success of the two focal firms indicated in Figure 11.1 is, to varying degrees, dependent on the combined abilities of all the companies that contribute to their respective value chains. If a critical node in the network fails then the whole network could be at risk. It is this understanding of network interconnectivity and interdependence that leads to the conclusion that supply networks compete, not individual firms. Christopher's (2011) definition of supply chain management reflects this understanding.

Supply chain management: the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole. (Christopher, 2011, pp5)

This definition underlines the importance of supplier and customer relationship management, as well as the need for an integrated enterprise view, focused on the final consumer and not just first tier customers and first tier suppliers.

If supply chain management is about managing relationships in the supply chain then what is logistics management? Some may argue that supply chain management is simply a new name for logistics, but logistics is a narrower discipline, focused on the movement and storage of materials through the supply chain. Christopher (2011) provides the following definition:

Logistics: the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost effective fulfilment of orders.
(Christopher 2011, pp4)

The goal of logistics management is to find the optimal trade-off between a number of often conflicting costs including: inventory holding costs, transportation costs, warehousing facility costs and batching and information processing costs. We might consider logistics to be part of the wider field of supply chain management; the two subjects together addressing the science and the art of managing supply networks.

Using the supply chain to compete

Competitive advantage over industry rivals is often won through innovation in supply chain design and not necessarily by product or service innovation alone. A great product delivered by an ineffective and inefficient supply chain will ultimately fail; to succeed, companies must recognise the critical role that the supply chain plays in achieving and sustaining market share. Without an effective supply chain strategy and without efficient supply chain management, companies will struggle to respond to changes in customer demand and shifts in consumer behaviour. Refer to Christopher (2011) for a more in-depth understanding about how logistics and the supply chain can be leveraged for competitive advantage.

Zara's innovative supply chain

The fashion retailer Zara (owned by Inditex) is an example of a company that effectively leveraged logistics and the supply chain to gain competitive advantage over other fashion retailers. Zara's success is not due to innovation in fashion design, but rather in the innovative design of their supply chain. Zara chose not to employ expensive fashion designers but rather young unknown designers keen to reflect the latest fashion trends in their designs. Using several supply chain strategies such as postponement of design, product differentiation and immediate use of real-time demand (discussed in the following section), Zara reduced the time it took to turn strategic stocks of raw materials into fashionable items of clothing in their stores from the standard 12 to 18 months, typical of the sector, down to just 3 weeks. This exceptionally short supply pipeline meant that Zara could completely refresh their product range every few weeks, enabling them to keep up with changing fashion trends whilst the competition continued to suffer the consequences of long, expensive supply chains.

Source: Zara: Responsive, high speed, affordable fashion, 2005, The Case Centre, Ref No. 305-308-8

Exercise

What is innovative about Zara's supply chain and how has this helped Zara gain competitive advantage?

Market-responsive supply chains

To create a market-responsive supply chain, companies can adopt a combination of different management concepts that together increase supply chain efficiency, as well as effectiveness in the marketplace. The aim is to match supply chain type with market requirements and, wherever possible, delay adding value to a product until the last possible moment before true demand is realised. Five key concepts are explained in the following sections.

■ Product differentiation

Central to achieving a market-responsive supply chain is an understanding that not all products or customers are equal. Managers must select the right supply chain to meet different market requirements, whilst considering different economic and non-economic product characteristics. In his seminal work, Fisher (1997) advises that managers should carefully consider the nature of demand for their products before devising a supply chain strategy. Fisher argues that products typically fall into two categories as described in Table 11.1. (The reader is referred back to Chapter 9, which also discusses product differentiation).

Table 11.1: Functional versus innovative products: differences in demand

Aspects of demand	Product type	
	Functional	**Innovative**
Demand	Predictable & steady	Unpredictable & variable
Product lifecycles	> 2 years	3 months to 1 year
Contribution margin	5% to 20%	20% to 60%
Product variety	low	high
Forecast error at time production committed	10%	40% to 100%
Average stock-out rate	1% to 2%	10% to 40%
Average end-of-season markdown (% full price)	0%	10% to 25%
Lead time required for make-to-order products	6 months to 1 year	1 day to 2 weeks
Management focus	*Physically efficient*	*Market responsive*
Supply chain strategy	*Lean*	*Agile*

Source: Adapted from Fisher, 1997, pp.107