Leveraging Supply Chain Management in the Digital Economy

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INTRODUCTION

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. In other words, supply chain encompasses all of the activities associated with moving goods from raw-materials stage through to the end user.

The information systems needed to monitor all of these activities are a critical part of the mix. Successful supply chain management (SCM), then, coordinates and integrates all of these activities into a seamless process. It embraces and links all of the partners in the chain. In addition to the key functional areas within the organization, these partners include vendors, carriers, third-party logistics companies, and information systems providers.

THE BUSINESS CASE FOR SUPPLY CHAIN MANAGEMENT

Improving supply chain management has become the major objective of the corporate world, because it represents an opportunity to resolve monumental problems that face corporations and create a mismatch between supply and demand throughout their supply chains.

For example, let us go back a few years to 1992, when a study of a major department store facing serious market-share troubles showed that 46% of the buyers who entered its stores that year did not buy anything! More than half of the empty-handed said it was not because they did not want something—they did, but the store did not have the product. The department store ended up with dissatisfied buyers and lost sales, plus a surplus of goods in stock that people did not buy, leading to mark downs. This is not a unique story. The number of markdowns among retailers have skyrocketed in the last decade, to the point where people refuse to buy unless goods are on sale and they totally distrust words like "suggested retail price".

This epidemic arises from a total mismatch of supply and demand. Customer and retailer and manufacturer alike are victims of "wrong product, wrong time, wrong place, and probably wrong price." It is a staggeringly costly problem. The retailer must support unwanted goods. The manufacturer must often deal with returns and a complex system of credits.

With constant markdowns, many retailers have faltered and ultimately gone out of business. The manufacturers have not been paid and there they sit with resources allocated to the wrong arenas. The mismatch between supply and demand ultimately arises from the inability of vendors and manufacturers, as their markets change, to make the right decisions about who they want to be. For instance, do the department stores want to be discounters, competing on the basis of commodity products? That is, all department stores would carry the same basic designer/manufacturing lines in clothing. Or do they want to differentiate themselves through such means as exclusive designers, private labels, and customer service?

Let us consider another example. Hewlett-Packard was historically known for high quality, high functionality products in computing and measurement that few, if any, could deliver. As these products became commoditized, customers expected HP to lower its prices, while maintaining a high level of functionality. In HP's case the transition has been from high quality and functionality at a premium price, to differentiation through a competitive combination of price, functionality, and delivery performance. The customer today is looking for a tradeoff: "Can you customize it for my requirements and can you deliver it reliably? And, oh, by the way, keep the price down" (http://www.internetsolutions.enterprise.hp.com/supplychain/library/articles/30000_feet.html).

The real challenge for companies, then, is to make the right decision about where they want to position

Figure 1. Products and services differentiate on price, functionality, and delivery performance

(Source: http://www.internetsolutions.enterprise.hp.com/supplychain/library/articles/30000_feet.html. 2000)

themselves in cost, functionality, and delivery performance with respect to both their customers' requirements and their competitors' strategies and gambits (see Figure 1). Companies can achieve this with better supply chain management.

Supply chain management involves the flows of material, information, and finance in a network consisting of customers, suppliers, manufacturers, and distributors. (Figure 2 gives an overview.) Material flows include both physical product flows from suppliers to customers through the chain and reverse flows via product returns, servicing, recycling, and disposal. Information flows involve order transmission and delivery status. Financial flows include credit terms, payment schedules, and consignment and title ownership arrangements.

These flows cut across multiple functions and areas both within a company and across companies (and sometimes industries). Coordination and integration of these flows within and across companies are critical to effective supply chain management. However managing these flows effectively is a daunting task, particularly for global corporations. A global corporation's supply chain now usually consists of multiple enterprises located around the world. Furthermore, each of these enterprises is involved in a wide variety of supply chain activities—order fulfillment, international procurement, acquisition of new information technology, and customer service. There are complex relationships such as multiple suppliers serving multiple customers, or a supplier who may be a customer or even a competitor in different parts of the chain. This complexity is why some people refer to supply chains as "supply networks" or "supply webs" (http://www.manufacturing.net/scl/scmr/scm0016/integration_1.html).

Executives of the various companies are increasingly recognizing the tremendous payoff of truly integrated supply chains. They read about Wal-Mart's leveraging of the chain to achieve a dominant position in the retail marketplace. They hear of companies like Dell Computer reconfiguring the supply chain to respond almost immediately to customized orders. They are intrigued by the bold measures taken by M&M Mars to virtually eliminate standing inventory from the pipeline.

The supply chain payoff can come in many forms. It might reduce transaction costs by eliminating unnecessary steps in moving product to market. It could enhance customer service through closer coordination among vendors upstream and carriers, distributors, and customers downstream. Or may be it increases market share within better customer service or lower costs.

KEY CHARACTERISTICS AND PRINCIPLES OF SUPPLY CHAIN MANAGEMENT

The best supply chain management programs display certain common characteristics. For one, they focus intensely on actual customer demand. Instead of forcing into the market product that may or may not sell quickly (and thereby inviting high warehousing and inventory-carrying costs), they react to actual customer demand. And by doing so, the supply-chain leaders are able to minimize the flow of raw materials, finished product, and packaging materials at every point in the pipeline.

Andersen Consulting has encapsulated these qualities in what it terms the "Seven Principles" of supply chain management. When consistently and comprehensively followed, the consulting firm says, these principles lead to a host of competitive advantages—among them, enhanced revenues, tighter cost control, and more effective asset utilization. The seven principles are (http://www.ascet.com/ascet/wp/wpQuinn.html):

1. Segment customers based on service needs. Companies traditionally have grouped customers by industry, product, or trade channel and then