



Chapter VII

Designing Integrated Supply Chains

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Abstract

This chapter introduces the concept of Supply Chain Management (SCM). It provides a broad definition of supply chain, the drivers for integrated supply chains design, and current challenges in global supply chains. More importantly, this chapter provides the reader an insight into aligning corporate strategy, people mindset, process design, and technology in designing an integrated supply chain. A real-life example in the health care industry is provided. The example aims to give readers the identification of supply chain bottlenecks, the right methodology to map the AS IS processes, and the redesign of simplified supply chain processes. Finally, the guidelines for supply chain management implementation issues, such as vendor selections and team building, are addressed.

Introduction

We live and breathe in a world of supply chains. Consider, for example, how we buy bread from retail stores. The ingredients come from various sources, dispersed physically.

Wheat and rice are grown by farmers. The flour or rice mill manufacturer processes the wheat into flour. It is distributed to the bakery to turn the raw material (flour) into breads of different shapes, sizes, or flavors. Then, the wholesaler packs the breads into different packages and sells them to retail stores. Increasingly, we expect information technology and systems to enable integration and delivery of such a supply chain. Needless to say, in order for businesses to fulfill the daily demand of customers, a well-designed supply chain is crucial. More importantly, though, this is becoming extremely significant in the context of business, where supply chains are an integral part of globalization.

The main objectives of this chapter are to:

- Address the concept and definition of supply chain.
- Analyze the current issues in the global supply chain.
- Identify the bottlenecks in the current supply chain design.
- Establish an urgency of aligning people, strategy, processes, and technology in a supply chain design.
- Provide a sensible and measurable approach in designing integrated supply chains in order to reduce risks.
- Provide recommendations in supply chain application, vendors, and partner selection during supply chain implementation.
- Address future trends in integrated supply chains.

Background

Considering a simple bread-buying process at the outset of this chapter, it is clear that businesses, suppliers, and consumers are involved in supply chain relationships. The entire supply chain encompasses demand planning, purchasing of raw materials, production planning, and delivery of finished products, as well as after-sales service. However, let us start this discussion by considering what we mean by supply chain management.

According to the Supply Chain Council (Bolstorff & Rosenbaum, 2003), supply chain management is defined as the art and science of managing the movement of product and services from businesses to end customers. The definition also varies on the motivation and interest of different parties. For example, business application and software vendors described SCM as APS (Advance Planning and Scheduling) tools to streamline business processes.

These definitions can be applied to create what would be a supply chain model (see Figure 1) to explain the supply chain management and integrated supply chain.

Based on the model, supply chain management consists of five core processes: Plan, Source, Manufacture, Deliver, and Service. Planning involves activities like sales forecasting, customer segmentation, material planning, and so forth; Source includes purchasing from suppliers; Manufacture deals with production; Delivery is the physical

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