

Chapter 14

Logistics and Supply Chain Management and the Impact of Information Systems and Information Technology

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ABSTRACT

Supply chain management is the backbone of the movement of goods and services. Supply chain management is a term that has evolved from logistics. Traditional supply chain management involved a salesperson, who was the focal point in the supply or logistical chain. In a traditional supply chain model, a business would contact a salesperson to inquire about a product or a salesperson would pitch a product to a business; then the ordering process or supply chain management of movement of goods would funnel through the salesperson as the initial interface. Today, the supply chain has evolved; IT has changed the landscape of the supply chain with applications, such as RFID (Radio Frequency Identification), CRM (Customer Relationship Management systems), and ERP (Enterprise Resource Programs). The result is major changes in competitiveness, efficiency, costs, and strategy. This chapter examines the evolution of supply chain management and the impact of IT.

INTRODUCTION

Physical distributions of goods and services have had a profound effect upon society from time immemorial. Physical distribution, logistics, and supply chain management are all terms relating to the same core function; however, supply chain

management is the current evolution of the former. Supply chain management or SCM, has evolved to become part of business strategy and finance. In fact as Enrico Camerinelli (2008), asserts it is about aligning the operational flow with the financial flow. It is about fully evaluating the processes and the ‘end-to-end’ information that

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determine the values of liquidity, of the accounts and of the corporate working capital. This is a study of information systems and supply chain management utilizing information technology. The research problem is addressing the impact and influence of information technology upon supply chain information systems or supply chain management technology (SCMT). The following questions will serve as investigative questions: How has information technology affected supply chain management? How have information systems evolved in supply chain management and if so to what degree? For example, Lambert and Stock (1982) wrote the traditional emphasis on sales volume will be replaced by a concern for profitable business development. Top management's attention will be directed toward the physical distribution function as an area ripe for expense and asset reductions. Companies such as Wal-Mart and Target have certainly manifested Lambert and Stock's prognostications by implementing "Just in Time" (only necessary products, at the necessary time, in necessary quantity) (Sugimori, Kusunoki, Cho, & Uchikawa, 1977) procedures or *Value Added Networks* (VAN) (Sherer, 2005). This paper will attempt to answer these questions, along with a comparative analysis of supply chain management before applications such as CRM (customer relationship management software), ERP, (enterprise resource planning applications, or EDI (enterprise data interchange).

What is Supply Chain Management?

Logistics or SCM (supply chain management), according to Ballou (2007), before the 1950s there was little attempt to integrate and balance the activities later to be known as logistics activities that were in cost and/or service conflict. SCM evolved from logistics, which was associated with military terminology post World War II. The study and practice of physical distribution and logistics emerged in the 1960s and 1970s (Ballou, 2007).

Physical distribution can be broadly defined as that area of business management responsible for the movement of raw materials and finished products and the development of movement systems (Ballou, 2007). The prior definition was first offered in 1961 by EW Smykay (Physical distribution management: logistics problems of the firm). Studies of supply chain management have existed for over 40 years as Ballou (2007) asserts. Each transfer of goods from one business entity to the next requires the coordination of demand and supply between many different institutions in the channel, from the original grower of wheat seed to the ultimate consumer of flour (Ballou, 2007). The latter statement by Ballou illustrates the essence of supply chain management and therefore, the study of supply chain management. The purpose of this brief study is to examine the evolution of supply chain management from: logistics, to physical distribution, to supply chain management, and the effect of information technology as it applies to SCM.

Prior to the 1980s, most organizations worked fairly independent of their suppliers. Purchasing managers rarely viewed suppliers as value-added partners (Sherer, 2005). Susan A. Sherer published in her article titled *From Supply-Chain Management to Value Network Advocacy Implications for E-Supply Chains* (2005) where the author espouses purchasing was not seen perceived as a business problem. However, Wal-Mart, according to Sherer (2005), and its sheer size along with its number of suppliers pushed many companies into supply chain integration with Wal-Mart.

By the mid to late 1990s, the importance of SCM was widely recognized. The Supply-Chain Council (SCC), organized by Pittiglio Rabin Todd & McGrath (PRTM) and AMR Research, with 69 voluntary member companies (www.supplychain.org), now includes 1,000 corporate members world-wide in a broad cross-section of industries, including manufacturers, services, distributors, and retailers (Sherer, 2005).

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