Chapter 6.13
A Relative Comparison of Leading Supply Chain Management Software Packages

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ABSTRACT

Supply Chain Management (SCM) has proven to be an effective tool that aids companies in the development of competitive advantages. SCM Systems are relied on to manage warehouses, transportation, trade logistics and various other issues concerning the coordinated movement of products and services from suppliers to customers. Although in today's fast paced business environment, numerous supply chain solution tools are readily available to companies, choosing the right SCM software is not an easy task. The complexity of SCM systems creates a multifaceted issue when selecting the right software, particularly in light of the speed at which technology evolves. In this paper, we use the approach of Analytic Hierarchy Process (AHP) to determine which SCM software best meets the needs of a company. The AHP approach outlined in this paper can be easily transferred to the comparison of other SCM software packages.

INTRODUCTION

A supply chain represents the veins of a business; it is a network of facilities and distribution options that perform the functions of material procurement, the transformation of materials into intermediate and finished products, and finally the distribution of finished products to customers. Supply chains are not specific to any one industry; they are inherent in both manufacturing and service based organizations. Supply chains do however vary in complexity from industry to industry and even firm to firm. The process of managing supply chains is a multi-billion dollar software industry; the worldwide market for SCM software topped an estimated $6 billion in 2006 and is expected to reach $10 billion by 2010 (a compound annual growth rate of 8.6%) (Trebilcock, 2007).

Supply chains are evolving to meet the changing requirements of the companies trying to manage them. A few years ago simply having full visibility of your own supply chain was seen as extraordinary. Now that visibility is no longer enough; companies need to be agile in respect to their supply chain (Croom, Romano, & Giannakis, 2000; Bartels, 2006). Companies need to make educated business decisions based upon the information captured in their information systems.

SCM systems are used to coordinate the movement of products and services from suppliers to customers (including manufacturers, wholesalers, and retailers). The system's main objective is to manage warehouses, transportation, trade logistics and various other issues concerning facilities and the movement and transformation of materials en-route to customers.

The components of SCM include (but are not limited to) supply chain event management and optimization, warehouse management, radio frequency identification (RFID), transportation management, demand management, supplier relationship management, and service parts planning. Beyond the traditional elements, SCM software has also incorporated modules for international management; this is the direct result of the growing need for businesses to manage supply chains that include a mix of global suppliers, manufacturers, and company owned plants. In fact, the bursting demand for global SCM has led the upsurge in the worldwide market for SCM systems (Aksoy & Derbez, 2003; Das & Buddress, 2007; Hill, 2007).

Why Compare?

Research has found that the typical U.S. manufacturer is managing an average of more than 30 contract relationships (Trebilcock, 2007). Wholesalers are distributing to worldwide retailers and jobbers for resale; and retailers now staff virtual storefronts that service customers globally. The growing supply chain requires a management system that is efficient and caters to the needs of each enterprise. The benefits of implementing an appropriate SCM system include: Increased top-line profit growth through supplier teamwork; Reduced inventory carrying costs and stock-outs; Increased customer service; Supply chain visibility; Optimization of the value chain respective to cost reduction and bottom-line improvement; Reduced corporate-wide operating costs; Increased competitiveness; and Quick adaptation to changing markets without detriment to customers.

However, since SCM system implementation is typically not a small scale operation, there are inherent managerial risks. For example, within businesses with several facilities, partners, and departments etc., a legacy or manual SCM system can lead to bottlenecks. There are cases where the appropriate SCM application is chosen but it does not sufficiently integrate with the rest of the enterprise software applications. In some cases, the wrong SCM application is chosen (perhaps to cut costs or due to poor information); the result is that the whole business from sourcing to distribu-