

## Chapter 2.29

# Strategic Alliances of Information Technology Among Supply Chain Channel Members

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### ABSTRACT

*This chapter explores novel ways of improving flexibility, responsiveness, and competitiveness via strategic information technology (IT) alliances among channel members in a supply chain network. To gain competitiveness, firms have to constantly update their operational strategies and information technologies through collaborative efforts of a “network” of supply chain members rather than the efforts of an individual firm. In sum, the foci of this chapter are: (1) an overview of supply chain management (SCM) issues and problems, (2) supply chain coordination and integration, (3) the latest IT applications for improved supply chain performance and coordination, and (4) strategic IT alliances. This chapter concludes with a discussion of business implications and recommendations of future research.*

### INTRODUCTION

Supply chain management (SCM), characterized by interorganizational coordination (Hill & Scudder, 2002), deals with how each company in a supply chain coordinates and cooperates with its business partners. Along the supply chain, most business activities are integrated for effectively supplying products and services to customers via a continuous, seamless flow. Drawing on the concepts of value chain and value system (Porter, 1985), SCM inherits the viewpoint of “process.” In a value system, simply a series of integrated processes is insufficient to support a supply chain and offer fully synchronized operations of all

supply chain partners (Williamson, Harrison, & Jordan, 2004).

Recently, it has been realized that information technology (IT) plays an important role in supporting systematic integration and synchronization by providing automatic information flows throughout the entire supply chain. More and more SCM researchers have emphasized the need to embrace the enabling information technologies and explore the essential capabilities of effective information management for supply chain integration (Dai & Kauffman, 2002a). Kopczak and Johnson (2003) stated that the synchronization in a value system required a sophisticated information system (IS) to foster real-time information processing and sharing, coordination, and decision making by the entire supply chain. In line with Kopczak and Johnson's research, other researchers (Dai & Kauffman, 2002b; Gunasekaran & Ngai, 2004) have utilized a systematic study to classify the landscape of emerging online business-to-business (B2B) marketplaces.

In addition, Internet technology is then conceived as an enabling tool for effective integration of the information-intensive SCM processes via ubiquitous availability of timely information (Boyson, Corsi, & Verbraeck, 2003). Information transfer via Internet facilitates more interactive partnerships in multi-directions as opposed to the traditionally linear movement of information within a supply chain (Boyson et al., 2003). This information sharing from multiple directions has boosted the power of process integration and synchronization as well as effective collaboration among the supply chain members.

The remainder of this chapter is organized as follows. First, an overview of issues and problems existing in SCM (such as free-riding phenomenon, negative externalities, and bullwhip effects) is presented. Next, it describes the importance of supply chain coordination and integration, followed by a discussion of the latest IT applications that improve supply chain performance and coordination. The following sections focus on (1)

the importance of supply chain portal (SCP) in term of e-collaboration between firms, and (2) the "spillover" effect of IT investments.

With these two foci, the authors attempt to classify the differences between supply chain management systems (SCMS) and SCP in terms of major functions, applications, performance matrices, and the like. Two forms of strategic IT alliances for effective SC coordination are then discussed in detail, including technology similarity or geographic proximity. A typology of competitive advantage positions in terms of alliances and spillovers is also presented. In addition, the researchers intend to emphasize a new selection of IT, namely, SCP, and a different perspective of SCM, namely, a "spillover" effect of IT investments and a strategic alliance of IT. Last but not least, this chapter attempts to find an innovative way to improve a company's flexibility and responsiveness in terms of competitiveness. Finally, the last section concludes this chapter by discussing a number of business implications and recommendations for future research.

## **SUPPLY CHAIN COORDINATION PROBLEMS AND ISSUES**

### **Free-Riding Phenomenon**

A noticeable "free-riding" phenomenon has become more prevalent in a multichannel supply chain (Wu, Ray, Geng, & Whinston, 2004). With the occurrences of free riding, a channel member may acquire relevant sales data from one upstream member but actually purchase the products or receive the services from other vendors, possibly at a lower price. In other words, one channel member carries out the final sale transactions, while another channel member debuts the activities that are required to sell the products/services. In practice, a number of advanced information technologies, particularly the Internet, have increased supply chain channel members' caliber

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