

Chapter VIII

The Use of Collaboration Tools in Supply Chain: Implications and Challenges

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ABSTRACT

The supply chain environment today is a collaborative business environment in which the members of supply chains are interlinked with each other. Hence the collaboration extends in supply chains to inter- and intra-enterprise applications, the so-called collaboration tools, such as customer relationship management, supplier relationship management, e-business and employee-business integration. In order to achieve this collaboration, supply chains also realize the need to implement integrated collaboration tools, which integrate tightly their intra- and inter-supply chain processes. With new technologies like Web-enabled services, wireless applications, and software applications, the supply chain today needs frameworks that consider the requirements of collaborative supply chain scenarios. This chapter thus will introduce a framework to ensure that collaboration at all supply chain levels is considered at a very early stage of the project so that the integrated supply chain collaboration can be designed and implemented. A case study of an application of collaboration tools is presented. This framework was used successfully to design and implement a collaborative integrated-enterprise system for a manufacturing enterprise. However, collaboration in supply chain is only effective if the collaboration tools are integrated or used jointly by supply chain and their collaborative partners. Therefore, this chapter first explains the concept of collaboration tools and its importance in the supply chain, evaluates the requirements for supply chain management (SCM), and tries to ascertain the collaborative problem areas specifically within supplier and SCM relations.

INTRODUCTION

This chapter will examine issues relating to e-business technologies coordination and control between the head offices of multi-national automotive corporations' supply chains (SCM) and their suppliers. The e-business technologies facilitate the information and communication transfer in different domains without the limitation of place. E-business technologies such as business-to-business (B2B), customer relationship management (CRM), enterprise resource planning (ERP), electronic data interchange (EDI), advance planning systems (APS), and supplier relationship management (SRM) provide real-time access to demand, inventory, price, sourcing, and production data to be shared by manufacturers and their suppliers spanning the boundaries of the supply chains. The use of e-business technologies in SCM propelled companies towards collaboration and converted the way companies are conventionally organized (Bak, 2003).

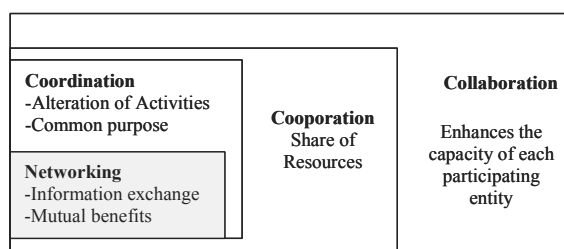
In the literature the e-business technologies have been seen as a source of networking, coordination, and cooperation which are linked to collaboration, and differ in scope. The term *collaboration* encapsulates a platform that provides cooperation processes based on agreements on use of common applications, data, and information technology available to the participants (Fleisch, 2001). The scoping in this chapter is similar to Mason and Lefrere (2003), wherein networking

refers mainly to exchanging information for mutual benefit, coordination in this respect includes networking and goes a step further by including the alteration of activities in order to achieve a common purpose, and cooperation steps further in that it shares the resources. Collaboration in this context can be seen as an overarching term that encapsulates and enhances the capacity of another organization and vice versa (see Figure 1).

Collaboration in e-business literature enables the electronic interaction between business partners (Wigand, Picot, & Reichwald, 1997). The execution of collaboration processes requires an information infrastructure to link the partners in a supply chain. From an economic perspective two characteristics apply to the collaboration in SCM: first, SCM and its members are jointly responsible for the creation of a product or service. They have a mutual objective and a common value creation aim, which is coordinated by legal terms as well as bona-fide agreements. Second, SCM also includes legally and economically independent entities, where the economic independence is based on the reality that SCM members or entities also can belong to other SCM or on the contrary operate alone in the market. These independencies are characterized by the fact that each enterprise accepts the individual risks, where it defines its own collaboration boundaries and own goals and plans independently or jointly under collaborative benefits and risks. There are examples of possible applications for solutions such as integrated ERP system, electronic marketplaces which can consist of bilateral system links, hub and spoke architectures, and of Web service architectures.

The need for collaboration tools in SCM is of high importance as the competitive advantage remains in linking all trading partners to ensure the timely delivery of goods and services to the final consumer efficiently and effectively. To understand these issues, the research on supply chain management distinguishes between strategic, tactical, and operational level decision making in which the strategic level is concerned with

Figure 1. Collaboration as an umbrella term¹



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