Chapter XVI

Business-to-Business E-Commerce for Collaborative Supply Chain Design and Development

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Abstract

SMEs form a virtual enterprise—a short-term loose integration, to meet business opportunities; managers of SMEs are looking for a tool that could help them design the strategic model of the supply chain in which they are collaboratively involved. Though the use of e-commerce tools has a lot of potential to improve an enterprise’s collaboration efforts with other enterprises, realizing an e-commerce tool that enables collaborative supply chain design and development is not easy, as collaborating enterprises may each use a different flavor of XML, multiple technology solutions, and have different business rules. This chapter presents a methodology for developing a new e-commerce tool to assist collaborative supply chain management. By this methodology, a new tool that is affordable by the SMEs and offers improved pipeline visibility could be easily implemented.
Introduction

This chapter deals with concepts and a methodology for realizing a new e-commerce tool for collaborative supply chain design and development (CSCDD). The methodology for realizing the new tool is primarily aimed at satisfying the needs of small to medium-sized enterprises (SMEs). First, we present definitions for some of the keywords used in this chapter.

E-commerce enables faster, cheaper, global, and secure means of inter-enterprise collaboration for production and sales of products for achieving enhanced customer value (Davidrajuh, 2002). Turban (2002) provides a typical definition for e-commerce:

**Definition 1: E-Commerce.** E-commerce enables the business processes (like buying, making, selling, etc.) to take place over the networks, mostly the Internet (Turban, 2002).

Supply chain is a global network of enterprises that collaborate to improve the flows (such as material, information, fund, and work) between them to obtain improved customer satisfaction, low-cost product and/or service, and faster product delivery. The Global Supply Chain Forum defines supply chain as:

**Definition 2: Supply Chain.** The integration of key business processes from end-user through original suppliers who provide products, services, and information that add value for customers and other stakeholders (Hvolby & Trienekens, 2002).

**Definition 3: Small to Medium-Sized Enterprise.** By small to medium-sized enterprise (SME), we refer to an enterprise carrying out small to medium-scale manufacturing, employing fewer than 250 employees, and an annual turnover less than EURO 40 million or trade balance less than EURO 27 million (Norwegian Trade Council, 2002).

Collaborative Supply Chain Management

This introductory section on collaborative supply chain design and development covers two interesting concepts: virtual enterprise and collaborative supply chain management. Virtual enterprise is a short-term loose integration of SMEs that bundle their competencies with the help of e-commerce to meet some market opportunity. We believe that SMEs form a virtual enterprise first, before they start collaborating in their supply chain design and development efforts.

After the short introduction to CSCDD, an illustration on the complexity and sophistication in managing collaborative supply chain activities is presented: the iterative nature collaborative supply chain management, and modeling and simulation aspects are given; a basic understanding on these two issues is necessary for realizing a new e-commerce tool.
E-Readiness Assessment Methods and Tools
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