E-Supply Chain Technologies and Management

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The chapter addresses supply chain integration by the use of collaboration tools. The author explains the concept of collaboration tools and its importance in the supply chain integration, evaluates the requirements for supply chain management, and emphasizes the collaborative problem areas within the supply chain. A case study for an application of collaboration tools is presented. The author argues that supply chain collaboration is effective only if the collaboration tools are integrated and used jointly by supply chain partners.

The chapter introduces the concept of experience management in multi-agent systems for supply chain management. The authors argue that agents in the supply chain must be capable of dynamically adapting their behavior. The chapter discusses issues in agent negotiation and cooperation, and provides an example of multi-agent architecture. The role of trust and deception in supply chains for real-time enterprises is also discussed.

The chapter proposes an infrastructure for modeling and coordinating e-business processes using e-coalitions (i.e., support for collaborations with supply chain partners over the Internet). It discusses traditional EDI systems and modern EDI systems over the Internet. It also describes a typical scenario where e-coalitions involve a travel agency and its partners for supplying flight tickets. The open software infrastructure for supporting supply chain and e-commerce includes CORBA, DCOM, and JVM.

The chapter presents a case study on a leading Chinese manufacturer of industrial valves that successfully integrated ERP and SCM systems. The integration of ERP and SCM improved the company's operations and resulted in many benefits. The process of implementation and integration also poses many challenges, some of which are unique to a Chinese manufacturing organization. The authors conclude with several lessons learned from the company's experience.