### Chapter II

# B2B Applications to Support Business Transactions: Overview and Management Considerations

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The use of Internet and Web technologies between organizations has gained much attention in recent years. Termed business-to-business (B2B) electronic commerce, the linking and integration of inter-organizational business processes and systems promises cost and time savings, as well as new business opportunities. The many examples of B2B applications cover a broad range of sales and purchasing processes, business models, industries, and products and services. Complexity ranges from simple message switchboards to sophisticated marketplaces handling a multitude of real-time transactions, integrated closely with the backend systems of the participants.

Using information technology (IT) to connect organizations is by no means a new phenomenon, but reaches back several decades to include electronic data interchange (EDI) systems and remote terminal applications. Still, systems based on Internet standards seem to be easier to set up technically and cheaper to interconnect. They might thus reach wider adoption and acceptance than many of the earlier initiatives, and as a result give smaller players a realistic opportunity to join in and reap benefits similar to their larger partners.

A closer look at recent examples, however, also reveals a number of difficulties and challenges. Besides shortcomings with respect to an adequate and affordable technology infrastructure, viable business models have not always emerged, and already project failures and market closures are being reported. A particular issue is that inter-organizational information systems always involve several independent decision makers whose interests have to be balanced very carefully.

After describing different forms of B2B electronic commerce systems and marketplaces, this chapter discusses a number of management challenges. The discussion includes earlier research on inter-organizational information systems.

# INTRODUCTION

Despite recent signs for an economic slowdown, in particular concerning the so-called "New" economy, and despite the failures of many dot-com startups, many firms still plan to invest in new technologies, in particular to establish electronic links across organizational boundaries. In fact, the preponderance of Internet business is now business-to-business (B2B), estimated at more than five times the value of consumer-oriented electronic commerce (B2C), and predicted to grow to 10 times its value by 2003 (Forrester, 1999; Tedeschi, 1999). The Gartner Group estimates that by 2004, B2B eCommerce will represent seven percent of a forecast $105 trillion in total global sales transactions (McCall, 2000).

After an early emphasis on B2B applications to support selling processes (sell-side applications), electronic procurement systems have seen much attention (buy-side applications, Segev, Gebauer & Färber, 2000). Most recently, attention has shifted to Internet-based electronic marketplaces. In a recent study, market research company Jupiter Communications estimates that the investments to set up inter-organizational online markets will reach $80.9 billion by 2005, up from $2.1 billion in 2000.

An electronic marketplace is a virtual marketplace where buyers and suppliers meet to exchange information about prices and product and service offerings, to collaborate, and to negotiate and carry out business transactions. Numerous announcements of online exchanges, possibly involving many thousands of business partners, have been made in a number of industries, including automotive (Covisint), retail (Transora) and electronics (E2Open). Success is not always granted, however. In fact, B2B online markets often report difficulties in generating sufficient liquidity, and in some cases have already terminated their activities completely (Chemdex), providing evi-

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