Chapter 1.14
Different Types of Business-to-Business Integration:
Extended Enterprise Integration vs. Market B2B Integration

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ABSTRACT

In this chapter we argue that there exist two basic forms of business-to-business integration (B2Bi), namely extended enterprise integration and market B2Bi. This chapter clarifies the meaning of both concepts, shows that the difference between both is fundamental, and discusses the consequences of the difference in the realm of Web services development. The importance of coordination and the role of standards are studied for both types of e-business. The authors hope this chapter clearly shows the foundations of B2Bi and that the chapter as such brings clarity into B2Bi practices.

INTRODUCTION

Information and communication technology (ICT) is becoming more and more prevalent in many businesses. In the past, many information

systems have been developed to deliver some specific functionality. Nowadays, one of the tasks of information technology (IT) departments is to integrate existing information systems, not only within the company borders but also across company borders. Also, new information systems are being developed that should deliver cross-company functionality. The human communication processes that are involved in analyzing and designing the business, and in designing, implementing, and maintaining information systems, are affected by the fact that the IT department of one company has to create software to fulfill requirements of people not only in their own company but in *other* companies too. In this context, the term "extended enterprise" is often used. The extended enterprise concept is, however, not unequivocally defined.

This chapter first discusses the concept of the extended enterprise and opposes this form of economic organization to the two other basic forms of economic organization, namely the firm and the market. Next, we derive from organization theory (see, e.g., Hatch, 1997; Morgan, 1996) two basic types of B2Bi, namely extended enterprise integration and market B2Bi. We show that the extended enterprise constitutes a specific context within which information systems are being developed, integrated, and maintained, and that this context allows for/needs specific ways of integration. We discuss the role of standards and coordination for both types of B2Bi.

This chapter is relevant for both researchers and practitioners. Researchers can relate their research to the two types of B2Bi. It is interesting to note that not all ICT innovations are appropriate for both types of B2Bi. For example, the public universal description, discovery, and integration initiative focuses on market B2Bi, not on extended enterprise integration. For practitioners the chapter reveals a number of coordination issues they should be aware of when pursuing B2Bi. For both groups it is interesting that the chapter investigates the role of standards in realizing B2Bi.

THE EXTENDED ENTERPRISE VS. OTHER FORMS OF DOING BUSINESS

For a long time, two basic forms of economic organization have been recognized: markets on the one hand and hierarchies (firms) on the other. Powell (1990) refers to Ronald Coase as the person who first discussed the firm as a governance structure rather than just as a black box that transforms inputs into outputs. Coase (1937) asserts that firms and markets are alternative means for organizing similar kinds of transactions. Only in the 1970s did proponents of the transaction cost economics act upon Coase's findings. One of these proponents, Williamson (1975, 1985), argues that some transactions are more likely to take place within hierarchically organized firms (Williamson equated *firms* with *hierarchies*) than through a market interface. More specifically, he states that transactions that are to be executed within hierarchically organized firms are likely to involve uncertainty about their outcome, recur frequently and require substantial "transaction-specific investments" (of money, time, or energy) that cannot be easily transferred. On the other hand, exchanges that are straightforward, non-repetitive, and require no transaction-specific investments can be expected to take place across a market interface.

Organization, or hierarchy, arises when the boundaries of a firm expand to internalize transactions and resource flows that were previously conducted in the marketplace. (Powell, 1990, p. 303)

This dichotomous view of markets and hierarchies—as discussed by Williamson (1975)—sees firms as separate from markets and assumes the presence of sharp firm boundaries. These sharp boundaries, however, do not always seem to be present. This is true especially in the case of partnering organizations (extended enterprises, see Figure 1). Transactions between partner-

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