

Chapter XVIII

B2B and EAI with Business Process Management

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ABSTRACT

This chapter introduces the application of process management to business-to-business (B2B) integration and enterprise application integration (EAI). It introduces several integration examples and a complete conceptual model of integration with a focus on process management. Several specific process-oriented integration problems are introduced that are process-specific in nature. The goal of this chapter is to introduce B2B and EAI integration, to show how process management fits into the conceptual model of integration and to convey solution strategies to specific process-oriented integration problems. The exercises at the end of the chapter continue the various examples and allow the reader to apply their knowledge to several advanced integration problems.

INTRODUCTION

The times when organizations implement their individual application systems are definitely over. So is the time where all for the business relevant functions are implemented in-house and where only sales activities require the cooperation of organizations. Instead, application systems like enterprise resource management (ERP) systems

can be bought from software vendors and installed within the information technology (IT) department. Once installed, they can be used by the organization's employees. In addition, accounting, supplier interactions, payment processing and other important business functions require automated interactions with the respective organizations that provide the business functions as outsourced functionality.

From an IT perspective this means that application systems need to be integrated with each other as well as those with business partner's IT systems. The integration of application systems within organizations is called enterprise application integration (EAI) and the integration with business partners' IT systems over networks is called business-to-business (B2B) integration. Both, EAI and B2B integration have to work hand in hand in order to provide a seamless business process implementation across the trading partners.

Historically, the two types of integration were subject to software development themselves, however, in the meanwhile packaged software systems, often called middleware, provide this functionality. This book chapter introduces the specific concepts of EAI and B2B integration. It gives an overview of the requirements as well as specific underlying principles that are relevant for integration. As integrations require many processing steps in the general case, process management technology is utilized for integration. In context of this book the role of process management in integration is emphasized and at the center of the discussion. Furthermore, many examples are provided that show how to put the integration concepts to work to solve various specific integration problems.

This chapter starts with introducing two very common examples, one for B2B integration and one for EAI integration in order to show the complexity of integration as well as some of the major requirements. The examples also level set the terminology as well as the meaning of the two forms of integration. After the examples an important abstraction is introduced that shows that from a process management perspective the two types integrations can be abstracted into a single conceptual integration model. Afterwards the most important concepts are listed, discussed and explained using small examples along the way. A series of fundamental integration scenarios follows showing the use of the integration con-

cepts. At the end of the chapter several exercises follow. The interested reader is encouraged to solve them for developing a better understanding in the space.

INTEGRATION EXAMPLES

EAI integration and B2B integration, as shown later in this chapter, are really two specializations of a common abstraction from a process management viewpoint (and other viewpoints as well that are not discussed in more detail in this chapter, see (Bussler, 2003) for a more comprehensive discussion). In order to motivate the common abstraction of EAI and B2B integration as well as to substantiate the integration concepts discussed in the next section, two examples are introduced here that will serve as prototypical use cases throughout the book chapter. The first example is a typical B2B integration from the supply chain domain and the second example is a typical EAI integration from the company-internal IT domain.

B2B Example: RFQ Process

The request for quotation (RFQ) process is a process common to many enterprises. The RFQ process is a communication between two or more companies across a public or private network. The goal of this process is to establish an agreement between a buyer and a seller: A buyer needs a certain product and needs to find out from one or more potential sellers if they can provide the required product. Typical purchasing parameters are price, quality, quantity or availability. The buyer asks several sellers using a request for quote (RFQ) about the desired product and each seller sends back at most one quote (Q) containing the specifics of their offer. This process can iterate several times until a satisfying agreement is reached. Buyers, after receiving quotes, might adjust their purchasing parameters and ask for

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