

Chapter 7.10

Using Web Services in Business-to-Business Integration

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ABSTRACT

The Web services paradigm promises well for the future of Business-to-Business integration (B2Bi). Currently, however, this paradigm is still in its infancy and organizations investing in Web services are facing many challenges. In this chapter we discuss some important B2Bi issues and examine how Web services could play their part in these. Nowadays, many Web services standards are being drawn up, but most of these are still immature and do not fully answer the proposed challenges. This chapter presents some rather mature standards. The goal of the authors is to show the importance of a flexible and cheap integration technology, and to discuss how the idea behind Web services fits in this vision, as well as to clarify the role of some important Web services standards.

INTRODUCTION

For a long time, companies have been trying to optimise their processes in order to satisfy a number of stakeholders, such as customers and stockholders. Optimisation efforts used to concentrate on the inside of the organisation, which often showed in the deployment of an ERP (Enterprise Resource Planning) system. Also, many companies have been focussing on the integration (i.e., the coupling) of their own “stove-piped” IT (Information Technology) systems. This was necessary because most IT systems had been developed in isolation from other IT systems (for example because every department got its own IT system). Each system thus stood alone and had its own data, application logic and user interface. It is clear that this is not desirable. For one thing, the same data had to be entered in different systems,

leading to redundancy and increased difficulties to keep the data consistent with reality. Nowadays, the term “Enterprise Application Integration” (EAI) is used to refer to the integration of these different internal applications of a company.

Throughout the last decade, companies became aware of the fact that they could use IT to benefit from collaboration with other companies. Such collaborations involve some kind of automation of the communication between the companies; that is, companies try to integrate their IT systems. During recent years, one specific IT paradigm—namely the Web services paradigm—has become more and more important as it allows companies to realise a flexible, inexpensive, and loose coupling between their systems and those of their partners.

In what follows, we first discuss why companies need something like Web services. This discussion shows the importance of a dynamic, cheap integration technology, and the Web services paradigm is expected to offer such a technology. The whole paradigm is still under development. In this chapter, the basics of the Web services paradigm are being considered. Therefore, in the second section of this chapter, we clarify what we mean when we use the term “Web services”. Next, we present a number of basic B2Bi (Business-to-Business integration) challenges, and show how Web services could be of help when dealing with those challenges. The most important fact about Web services is that many issues are being standardized. Although many Web services standards are still under development, some standards have already achieved some level of maturity. Therefore, we present the basic Web services standards in the final section of this chapter.

WHY WEB SERVICES PARADIGM IS USEFUL

Over the past two decades, companies have slowly become aware of the importance of replacing their old hostile vision on business relationships—what you win, I lose—by a win-win vision. The companies work together to get a bigger pie instead of competing for a bigger piece of a smaller pie. A number of such companies have reached the point where they can be considered to form an “extended enterprise”. We define an extended enterprise (EE) as *a collection of legal entities ($N \geq 2$) with a collaborative mindset, that pursue repeated, enduring exchange relations with one another*. According to Bowersox et al. (2003), few companies have really reached this level of collaboration. They affirm that the most common forms of cross-enterprise relationships do not involve collaboration, but rely on contracting and outsourcing. For Bowersox et al. the most important issue in realizing an extended enterprise is the governance structure, which is not characterized by “command and control” but by a “voluntary” commitment. Such companies voluntarily unite operational and strategic capabilities and are willing to make partner-specific investments. Other cross-enterprise relationships (such as outsourcing) may also be the subject of optimization efforts, but they are not characterized by this collaborative mindset. Liedtka (1996) identified a number of critical success factors that contribute to the ability of organizations to achieve collaborative outcomes of real strategic value. Among those factors are *trust, shared goals, systems redesign, and a view of partnering as representing an opportunity rather than a loss of control*.

One shared goal could involve the strategy to focus more on the end customer of the product or service that is sold. During the last decades, companies became conscious of the importance of focussing on the customer. This idea gave rise to a discipline called Customer Relationship

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