

# Chapter 6

## Service Oriented Business Process Modeling Today and Tomorrow

**Lai Xu**

*Bournemouth University, UK*

**Paul de Vrieze**

*Bournemouth University, UK*

### ABSTRACT

*In this chapter, the authors explore fundamental links between business process management and Web services. The authors discuss how service technologies can extend traditional business process management into a cross-organizational environment (i.e., over Internet) to face the fast changing world. Particularly, the authors discuss the issues of business process modeling for service-oriented business process management.*

### INTRODUCTION

Web services are becoming the de facto standard for the implementation of distributed enterprise computing systems. They enable collaborative business processes and ease their construction. So far, enterprises have adopted service oriented architecture and use Web services to provide business functionalities within their own boundaries. Further enterprises should also open their business

functionalities to a larger community in order to enable cross-organizational business processes. Web services have also overcome enterprise borders; for example, in industries such as logistics.

A Service Oriented Architecture (SOA) is a distributed software architecture principle that harnesses the flexibility and reach of the Internet with that of extended distributed systems engineering practices. Web service composition and choreography provide additional layers above ba-

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sic service invocation whereby collaborative user scenarios enable different worldwide consumption of these services. This is an important element of making Web services viable for wide-spread use and to provide a closer representation of business transactions in cross-domain enterprises. They also encourage modularity and loose coupling.

In this chapter, we are going to explore fundamental links between business process management and Web services. We discuss how service technologies can extend traditional business process management into a cross-organizational environment (i.e., over Internet) to face the fast changing world. Particularly, we will discuss the issues of business process modeling for service-oriented business process management.

The structure of this chapter is as follows. Section 2 discusses state of the art of business process modeling. We look at different types of business process related service compositions in Section 3. Section 4 gives a review of different business process modeling languages and business process execution languages respectively. Section 5 discusses the future of service-oriented business process management. Finally, some conclusions are drawn.

## **STATE OF THE ART BUSINESS PROCESS MANAGEMENT**

Existing business process management platforms are usually designed for software developers and business process experts rather than regular end users (in our case business users). As a result, they offer rich functionalities for universal and detailed modeling and development of business processes. In addition, their focus is on planned, well-structured, formalized, and highly repetitive business processes, which are often located within a single organization, or among few, selected organizations with well-established business relations. As a consequence, existing business

process management platforms with heavyweight services usually cannot be exposed to ordinary end users who want to create new or to adapt existing processes because they lack the necessary technological and business background.

There is increased pressure to build enterprise applications quickly in order to respond to situational needs of the business. Many of these applications never get delivered because they are too difficult to write, too costly to implement, too brittle to customize and maintain once deployed, or cannot be provided in a sufficiently timely fashion.

Nowadays, there is a large and growing provision of Web services that could be very valuable in supporting business goals. Their use, procurement, and provisioning is exceedingly simple. While the use of Web services is relatively easy, they represent programming interfaces, and are not always straightforward to use from the perspective of end-users (even power users). In this section, we first discuss lightweight business process management. Then we will explain process configuration for supporting fixable processes. Finally, we introduce open sources business process management systems for supporting small and medium enterprises.

## **Lightweight Business Process Management**

Business process management is the technology of choice for automating long-lived dynamic processes. Traditionally it has been hard to configure such systems, and many activities are linked up in ad-hoc ways (Nguyen et al., 2009a). Nowadays, there is a large and growing provision of Web services that could be very valuable in supporting business goals. Their use, procurement and provisioning is exceedingly simple. While the use of Web services is relatively easy, they represent programming interfaces, and are not always straightforward to use from the perspective of end-users (even power users).

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