Chapter 6.10
Analysis of Business Process Models in Enterprise Web Services

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ABSTRACT

This article reports a series of process-based models for the development of e-business using enterprise software applications. Merging management technology in workflow systems is a critical step to provide service-oriented architecture and on-demand business. We propose a value-oriented process technique as a strategic alignment to improve investment value. Our framework focuses on the guidelines for traditional users to identify the structural conflicts in integrating Web services. A comparative study of workflow models for intra-and inter-organizational process control is presented. This article identifies the current progress in the adaptability in the design of process models coupled with structural changes of workflow views. The study provides a resource list of successful implementations for practitioners in organizational management. The research highlights the motivation of market facilitation, expert sharing and collaboration that enable commercial applications to support complex heterogeneous, autonomous and distributed information systems.

INTRODUCTION

Business process modeling is a significant activity in enterprises as e-business and enterprise integration drive the need to deploy business processes online (Aissi, Malu, & Srinivasan, 2002; Weiss & Amyot, 2005; Sewing, Rosemann, & Dumas, 2006). Most business process modeling efforts are knowledge-intensive and require organizations to formalize a large number of complex inter- and intra-organizational processes to fa-

cilitate their ensuing deployment in large-scale workflow systems in enterprise planning (Tagg, 2001). These management systems need to be integrated with the tools of a process to perform within it: productivity tools, specialized technical support systems, such as CAD systems, graphic packages, enterprise-wide integrated software applications, such as enterprise resource planning (ERP), customer relationship management (CRM), mail systems and other communication systems. When the applications become more modulated and service-oriented, there will no longer be work-alone software. (Cimatti, Clarke, Giunchiglia, & Roveri, 2000).

The most common application for process modeling, control and management is Workflow Management Systems (WfMSs). The technology has become readily available (van der Aalst, Desel, & Oberwies, 2000; van der Aalst & van Hee, 2002; van der Aalst & Jablonski, 2000; Fischer, 2001; van der Aalst & van Dongen, 2002; Grigori, Casati, Dayal, & Shan, 2001; Herbst & Karagiannis, 2000; Cook & Wolf, 1999). Commercial workflow management systems (WfMSs) such as Staffware, IBM MQSeries, and COSA offer generic modeling and enactment capabilities for structured business processes. Besides standalone systems, WfMSs are becoming integral components of many enterprise-wide information systems (Leymann & Roller, 2000). Consider, for example, Enterprise Resource Planning (ERP) systems such as SAP, PeopleSoft, Baan and Oracle, Customer Relationship Management (CRM) software, Supply Chain Management (SCM) systems, Business to Business (B2B) applications which embed workflow technology.

The introduction of large scale systems such as the ERP system changes the structure of the organization of software applications. This moves from numerous independent software development procedures to an integrated Web based software framework with components for different purposes. Although ERP system can improve organization's performance, standardized ERP

system from the vendor such as SAP, need to be customized to be deployed in an organization. It has to be customized to fit the business goals of the company. This customization needs the continuous input of end user involvement. In order for the dynamics of the Web services to succeed, the deployment team needs to understand the business processes of the company that can be incorporated into a workflow design. The design layout can then be used for discussions with the management and end users to provide better understanding of the processes during changes.

Currently, "Eighty percent of the software that needs to be written has already been done collaboratively" (McKendrick, 2006). It was estimated that in U.S. alone, there would be 55 million user developers compared to 2.75 million professional software developers (Sutcliffe & Mehandjiev, 2004). Because the user developed software may affect the entire organization's system, more challenges and conflict issues arise in a more dynamic state (Bergeron & Berube, 1990). Although the centralized Information Technology (IT) department provides the traditional support of the enterprise-wide system, integration and workflow design are far from trivial. Without appropriate policies and control mechanisms, user development cost can be higher than the benefit it brings in (Galletta & Hufnagel, 1992). The cost related to such user software includes poor security, incompatible hardware and software, inadequate documentation (Davis, 1988), insufficient validation and testing (Alavi & Weiss, 1986; Davis, 1988; O'Donnell & March, 1987), and ill-defined policies regarding access to corporate databases (Alavi & Weiss, 1986). Without a structured process control flow or policy, collaborative computing in enterprise wide systems can hardly be effective.

This article presents the components of a standardized business process with the emphasis from the user point of view. The individuals involved in each process have the skills and human capital that complement one another.

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