Enterprise Portals and Web Services Integration

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INTRODUCTION

Portals went through the following different life cycle stages: desktop organization and personalization; single intranet-based portals such as human resource and Internet product-based or industry-based portals; functional-based portals such as knowledge management and business intelligence; and integrated intranet-based enterprise portal (EP) covering some or all functions of the enterprise (see for example http://www.ebizq.net/topics/eai/features/1650.html on how integrating portals and business process management (BPM) enabled the presentation of an integrated view of diverse back-end databases). Current research and practice efforts are directed toward making portals an open system supporting different platforms and allowing its integration into emerging technologies such as Web services (WS). A WS, on the other hand, is defined as an integrating loosely coupled application that uses three major standards: WSDL (definition of WS), UDDI (registry and discovery of WS), and SOAP (access of a WS). However, strongly coupled applications may also benefit from WS technologies to componentized diverse application platforms (i.e., databases, file-based legacy systems) using WS technologies. The article emphasizes cross-organization integration of business function and processes, rather than simply accessing general purpose WS such as weather forecasts and currency conversion.

This article highlights challenges stemming from technologies and management issues and opportunities for enhanced application integration and accessibility. Technology-based integration could follow either standard-based open architecture or product-based approach. Current technologies include the product-based MS .NET and the standard-based J2EE and XML. Major players in EP and WS technologies include IBM, Microsoft, Oracle, and BEA, with dedicated efforts and strong commitments to the integration of EP and WS. Major issues related to the management of both technologies include transaction management, message control and choreography, workflow management, and security. The following sections detail the discussions on these challenges and describe opportunities though a master-slave relationship between the two technologies.

CHALLENGES

Two types of challenges are identified: one stemming from the technologies needed to facilitate portal and Web services integration and another stemming from the need to manage the access of multiple loosely coupled systems running on different platforms belonging to multiple organizations.

Technology-Based Integration Issues

Technology-based integration could follow either standard-based open architecture or product-based approach. Major advantages of the first approach are flexibility (jungle view) of adding different software packages based on need, resiliency (tree view) of selecting parts of or all modules of a particular software, and scalability to a particular business function or a gross-functional process. The disadvantage of this approach is the need for careful planning in the selection of these software packages to accomplish strong integration among the different software packages, just as trying to put together Lego pieces. The latter approach conversely permits stronger integration and ease of implementation with its disadvantage stemming from the limitation of the particulars of individual software capabilities.

This article will report on two major standards related to the integration of Web services and portals. Their objective is portal migration from closed system to open system architecture. These standards could form the foundation to developing standards in compliance with the theme of the article of integrating WS and EP.

Java Specification Request (JSR) 168

A Java-based standard that facilitates writing Portlet to interface portals to Web services. Currently, it is used to link portal desktop screen to external general-purpose service such as weather forecast (Abdelnur & Hepper, 2003). Another related standard is Servlet Specification 2.3, SRV.12.1 Section.
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