Chapter VIII

Infrastructure Support for Smart Organizations: Integration of Web Service Partners in Heterogeneous Environments

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Abstract

In a rapidly changing world, continuous adoption of new practices is crucial for survival; organizations embracing the latest technologies have a competitive edge. Smart organizations readily take on board new organizational forms and practices, those in particular that offer agility and responsiveness. The Internet and the World Wide Web offer a new way of collaboration via Web services, but heterogeneity of different service components make cooperation difficult. This chapter describes a new approach to combine Web services by employing a layered structure, in which composition of a value-added service can be built from individual components, and each service component can have semantically equivalent but syntactically different alternatives.
Introduction

Smart organizations make good use of internal and external expertise. Knowledge existing within the company can be utilized across different departments, and skills available externally can be employed to improve product or service offerings and market position. To gain the most out of collaboration and cooperation across different organizational units, they have to be managed well and should be built on sound infrastructure.

In the last decade, Web services emerged as a very efficient tool to manage business processes on a ubiquitous platform. In many cases, there can be several, semantically equivalent components, as many service providers offer similar services and similar content, albeit on different platforms and with different interfaces. While there may not be one method that addresses all challenges of heterogeneity, the approach of introducing an integration layer can often offer a solution.

This chapter presents the field of Web services that enable smart organizations to approach their operation in a new way. We start with explaining the benefits of internetworking and using the World Wide Web for business process cooperation. This is followed by a brief overview of Web services, presented from the aspect of smart organizations. Next, we address the problem of heterogeneity that poses one of the greatest challenges to the technology. Then we present an approach of introducing an integration layer that helps in overcoming the difficulties of heterogeneity and in adopting one particular service from among many similar ones. A practical example illustrates how the method works. The chapter concludes with an evaluation of the proposed model.

Smart Organizations and Web Services

Smart Organizations

The changes in business practices present new challenges to companies; staying in the front line requires continuous innovation and investment. One of the most important competencies for organizations seeking to thrive is the application of smart technology in a smart way. Organizations are called smart
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