Chapter VII

Service-Oriented Enterprise Architecture

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Abstract

Service orientation is a new paradigm, not only for software engineering but also for the broader topic of enterprise architecture. This chapter studies the relevance and impact of the service concept and service orientation to the discipline of enterprise architecture. It provides ideas on how to set up a service-oriented enterprise architecture. It is argued that a service-oriented approach to enterprise architecture provides better handles for architectural alignment and business and IT alignment, in particular.

Introduction

Continuing globalization, the economic downturn, mergers and acquisitions, and changing customer demands are forcing enterprises to rethink and restructure their business models and organizational structures. New products and services need to be developed...
and delivered better, faster, and cheaper due to increasing international competition. Therefore, enterprises have to be increasingly efficient, flexible, and innovative to be successful. They will focus more on core competencies and outsource other activities to dynamically selected partners to deliver the best possible customer value and the shortest time-to-market.

In order to manage all these changes and stay competitive, enterprises have started to develop enterprise architectures. These bring together all architectures modeling specific aspects of an enterprise. They provide a way for managers and enterprise architects to assess the impact of changes in one aspect of the enterprise’s operations on the other aspects.

The emergence of the service-oriented computing (SOC) paradigm and Web services technology, in particular, has aroused enormous interest in service-oriented architecture (SOA). Probably because such hype has been created around it, there are a lot of misconceptions about what SOA really is. Numerous Web services evangelists make us believe that if you would divide the world into service requestors, service providers and a service registry, you would have a service-oriented architecture (for example, Ferris & Farrell, 2003). Others emphasize that SOA is a way to achieve interoperability between distributed and heterogeneous software components, a platform for distributed computing (for example, Stevens, 2002). The interesting thing is that the service concept applies equally well to the business as it does to software applications. Services provide the units of business that represent value propositions within a value chain or within business processes. Even though dynamic discovery and interoperability are important benefits of Web services, a purely technological focus would be too limited and would fail to appreciate the value of the (much more general) service concept. SOA represents a set of design principles that enable units of functionality to be provided and consumed as services. This essentially simple concept can and should be used not just in software engineering but also at all other levels of the enterprise architecture to achieve ultimate flexibility in business and IT design.

The main objective of this chapter is to study the relevance and impact of the service concept and service orientation on the discipline of enterprise architecture. The chapter answers the following questions:

• What is enterprise architecture and why is it important?
• What is the current state of practice in enterprise architecture?
• Why should enterprises consider moving to a service-oriented enterprise architecture?
• What are the implications of service orientation for enterprise architecture?
• What support is required for doing service-oriented enterprise architecture?
• What road maps exist for moving to a service-oriented enterprise architecture?

The rest of the chapter is structured as follows. First, we survey the state of the art in enterprise architecture and architectural support. Then we study the relevance and