

# Chapter 11

## Analyzing Requirements and Approaches for Sourcing Software Based Services

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### ABSTRACT

*Increasingly, software is no longer developed as a single system, but rather as a smart combination of so-called software services. Each of these provides an independent, specific and relatively small piece of functionality, which is typically accessible through the Internet from internal or external service providers. To the best of our knowledge, there are no standards or models that describe the sourcing process of these software based services (SBS). We identify the sourcing requirements for SBS and associate the key characteristics of SBS (with the sourcing requirements introduced). Furthermore, we investigate the sourcing of SBS with the related works in the field of classical procurement, business process outsourcing, and information systems sourcing. Based on the analysis, we conclude that the direct adoption of these approaches for SBS is not feasible and new approaches are required for sourcing SBS.*

### INTRODUCTION

Services dominate well-developed economies such as the EU and US. The sheer size of the services sector in the overall economy and their potential in creating economic growth and welfare (through considerable opportunities for productivity gains) motivate a growing interest in understanding and developing services. Information Technology (IT) is one of the major drivers for improving traditional

services and introducing new ones. IT moved from a back-end to a front-end role and business and technology become more and more integrated. Moreover, the increasing role of IT in business processes also acts as a driver and enabler of other developments like more demanding customers and organizations specializing and partnering in globally operating networks. All of this entails that we need new ways of thinking about and working with IT. The traditional approach to IT, with large monolithic systems, has been very successful in achieving a high degree of efficiency in case of high-volume,

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standardized products and services in a stable environment. However, the abovementioned developments are much more difficult to accommodate with traditional IT systems.

A flexible and integrated approach to the development of business services and their supporting software, will contribute to more agility and a better alignment between business and IT. The business perspective – business processes, functional specifications, information models, and service level agreements – can be taken as the starting point. This is combined with a different approach to software: “thinking in services”. For example, think of on-line services for checking creditworthiness of customers, processing credit card payments, or computing exchange rates. These are just small examples of a much more profound development. Next to that, we also see entire software packages delivered as an online service, as witnessed by the success of companies such as Salesforce.com.

Increasingly, business software is no longer developed as a single system, but rather as a smart combination of so-called software services. Each of these provides an independent, specific and relatively small piece of functionality, which is typically accessible through the Internet from internal or external service providers. This raises the issue of sourcing these software based services (SBS). Sourcing of SBS presents a considerable challenge because it should align a number of organizational processes on strategic, tactical, and operational levels. To the best of our knowledge, there are no standards or models for dealing with the sourcing process of services completely.

In this paper we will address the *what* of sourcing of SBS (sourcing requirements) and the *how* of sourcing SBS (sourcing approaches). The salient contributions of our paper are as follows.

- We identify certain service requirements for sourcing SBS and we associate the key characteristics of SBS with these sourcing requirements.

- The sourcing approaches in the field of classical purchasing, business process outsourcing, and information systems sourcing can guide the sourcing process of SBS to a certain extent.
- As the sourcing requirements of SBS have a close knit relationship with the key characteristics of SBS, the direct adoption of these approaches for SBS cannot be feasible. New approaches are required for sourcing SBS.

As the concept of SBS is gaining more and more prominence, sourcing of SBS emerges as a promising area of research, requiring the interdisciplinary convergence of supply chain management and information technology.

## **SOFTWARE BASED SERVICES**

### **Thinking in Terms of Services**

Service is a widely used term, with different meanings in different disciplines. In economics, a service is claimed to be a process that creates benefits by facilitating either a change in customers, a change in their physical possessions, or a change in their intangible assets (Hill, 1977). Service provision has been defined as an economic activity that does not result in ownership, and this is what differentiates it from providing physical goods.

In marketing, a service is a process that relates to the performance of an activity executed in co-operation with the customer (Grönroos, 2007). Four basic characteristics of (consumer) services are often emphasized in defining services (Zeithaml, Parasuraman, & Berry, 1985): Intangibility or non-material, inseparability of production and consumption, heterogeneity (non-standardization) of service outcome and processes, and perishability (cannot be stored). However, this is mostly directed at services involving a

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