



Service Portfolio Measurement: Evaluating Financial Performance of Service-Oriented Business Processes

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ABSTRACT

Service-oriented architectures offer promising means to flexibly organize business processes. At the same time, new challenges for management arise in order to realize these potentials. Given the technological opportunities, these challenges essentially lie in choosing the right mix of services on the basis of an appropriate infrastructure supporting value adding activities. In order to support this management perspective, a focus on service-oriented business processes is suggested in this article. Hence, a shift from technical aspects of designing service-oriented information systems to economic aspects of using them according to business needs is drawn. For this purpose, findings on the evaluation of financial performance of service-oriented business processes are presented in this paper. The objective is to develop a measurement system for decision support on the configuration of a company's service portfolio reflecting specific economic conditions relevant in a certain situation. Following a design science approach, general principles of a measurement system are worked out and structured in a comprehensive framework. Then, the application of a corresponding system is presented with a practical study. Finally, perspectives on the specification and implementation of the system are sketched.

Keywords: evaluation of services engineering; outtasking performance measurement; service-oriented business process management; total costs of ownership; return on investment

TOWARDS A MANAGEMENT OF SERVICE-ORIENTED BUSINESS PROCESSES

Service-oriented architectures (SOA) facilitate the design of information systems by flexibly combining highly-specialized services that are obtained via the web on demand (Loh & Venkatraman, 1992). Examples for technologies that have been developed for this purpose are

COM+, CORBA, und RMI (Weikum & Vossen, 2002). With the initiative of Enterprise Application Integration (EAI), Web services turn out in practice to enable a widely-spread realization of SOA (Hung, Li et al., 2004; Yang, 2003).

From an economical perspective, SOA offers great potentials for flexibly adopting business processes to the ongoing changes inside and outside the company (Dickson, Cheung et al., 2004; Tiwana & Ramesh, 2001; Vonk &

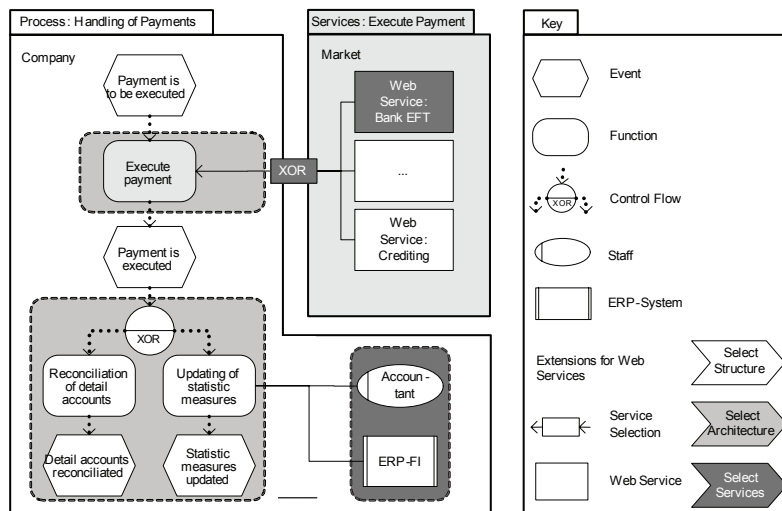
Grefen, 2003). On the basis of SOA, processes of an information system can be extracted and ‘out-tasked’ to service providers. According to Keen and McDonald “Out-tasking [...] breaks a company into a portfolio of process-centred operations rather than interlocking departments or functions”(Keen & McDonald, 2000). The economical relevance of SOA is reflected by the concept of service-oriented business processes in this article. Figure 1 illustrates this concept on the basis of a business processes modelled in the notation of Event-driven Process Chains (EPC) (Scheer, 1994).

In service-oriented business processes, parts of the entire process can be out-tasked to alternative service providers (Grefen et al., 2002). That way, the business process integrates a certain set of services that have to be both combined with internal functions and configured according to the companies needs (Limthanaphon & Zhang, 2003; Orriëns et al., 2003). The basis for service-oriented business processes are set by service-oriented information systems. Hence, SOA puts companies in a position to concentrate on their core competence by sourcing out parts of a process to service providers and thereby flexibly adopt changes.

According to Forrester, companies with a service-oriented architecture can reduce costs for the integration of projects and maintenance by at least 30 percent (Vollmer & Gilpin, 2004). Major providers of ERP-Systems incorporate service-oriented architectures in their solutions: ‘Sonic ESB’ by Sonic Software (Craggs, 2003), ‘mySAP Business Suite’ by SAP (SAP, 2004), ‘e-Business on demand’ by IBM (IBM, 2004), and the ‘Application Server’ by Oracle (Oracle, 2004). As a future trend, Gartner predicts that by 2007 most company frameworks will have changed to service-oriented architectures (Farber, 2004).

As information systems offer means to out-source services, the question arises which collection of services should be selected according the specific business needs of a company. Following a business perspective, this also comprises considering services that are not exclusively automatically carried out by parts of an information system. Along with the business processes, also those services that may be partly or fully carried out by staff have to be taken into account. In order to make appropriate decisions on the selection of the service portfolio, an appropriate Service Portfolio

Figure 1. Concept of service-oriented business processes using Web services



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