Chapter 16
Framework for IT Service Value Engineering: Managing Value and IT Service Quality

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ABSTRACT
Managing the business value of IT-Services is an important aspect in the context of IT-Service quality management. This chapter introduced a framework for IT-Service value engineering and closes gaps in research and practical management in IT value management. The concept illustrates aspects of IT service value engineering and IT business alignment and the relation to IT service quality management. The Framework for IT service value engineering is made up of different management levels and a value engineering process. It integrates various concepts from IT and business value management in order to evaluate and improve the contribution of IT services towards overall business value.

INTRODUCTION
Today, the management of information technologies (IT) is a highly complex task that requires a broad spectrum of competence. The development of service-oriented architectures, cloud services and the construction of “software as a service” models demand concepts that provide management support regarding the selection, evaluation and implementation of modular IT services within companies. On an operational management level, there is a demand for an alignment concept to support the mapping of IT services to business processes. Additionally, there is a requirement to demonstrate that IT provides a measurable value with regard to business success.

From the perspective of research, many concepts and models have been developed in the past in order to describe the general contribution of IT towards business value. The efficient use of IT within enterprises has also been the focus of a great number of publications in the context of IT business alignment. However, up until now one aspect has not been considered either in research or in practical management, i.e. the efficient integration of these specific models into a general
systematic value management framework which integrates aspects of IT business alignment, business engineering and IT value management.

With the intention of closing this gap, we have developed the framework of “value engineering,” which describes a structured process for identifying value as well as risk propositions of IT services in the context of business processes and IT business alignment. This includes the systematic analysis of IT readiness and IT potentials of business processes. Value engineering combines the idea of IT business alignment and IT service portfolio, thus filling the gap in the effective description of the business value of IT services. To describe the idea of IT service value engineering in detail, this chapter outlines value engineering as a concept which enables operational alignment between business processes and IT services in order to increase the business value of IT. With regard to the practical application of value engineering, we are confident that this framework will help companies to efficiently manage the above-mentioned challenges in the future.

With the help of value engineering, the IT potentials of business processes can be identified and evaluated. In the context of operational alignment between IT services and business processes, this allows a number of IT services to be identified which have the potential to support the necessary target process tasks. The goal of the IT service value engineering concept is to assess each IT service independently according to its ability to support business processes and its contribution towards the overall business value. Based on this evaluation process, an efficient portfolio of IT services can be identified which optimally supports business processes and has the potential to contribute most towards the business value under the given circumstances.

The first parts of this chapter introduce and describe the IT service value engineering framework and also highlight selected concepts and specific research work on which the framework is based. The following section of the chapter gives an overview of the concept of business engineering as well as of the current state of research regarding IT business value, focusing especially on concepts for evaluating the business value of IT. A further part roughly outlines concepts and findings from IT business alignment research. A comprehensive framework for IT service value engineering is described based on these concepts.

### BUSINESS ENGINEERING

The idea of “business engineering” is based on the professional and systematic development of innovative business concepts in the context of increased potentials of information technology (IT) and new opportunities in IT developments (Österle & Blessing, 2005).

Business and IT are constantly changing. Over the last few years, a large number of innovative developments in the field of IT management have shown a demand for a more flexible and more efficient use of IT services within enterprises. However, in order to master this situation of change in business and IT and to optimally combine the various concepts, suitable methodologies and tools need to be developed. An example of this was presented by Österle and Winter (2003) who introduced the concept of business engineering. Following their interpretation, business engineering is considered as “the methodological and model-based construction plan for organizations of the information age”. Accordingly, it is much more than just a new way of modeling business processes and rather a holistic concept for designing and engineering organizational structures and processes (Österle & Blessing, 2005). The concept of business engineering focuses on the future organizational architecture of companies which is customer-oriented and based on network interactions. As a result, enterprises need to build up competencies in managing a value network in cooperation with their respective partners. To do this efficiently, they need to develop their
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