Chapter 8
Continual Process Improvement Based on ITIL and Process Mining

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ABSTRACT
The inherent quality of business processes and their support through information technology (IT) increasingly plays a significant role in the economic success of an organization. More and more business processes are supported through IT services. In order to provide IT services with the required quality and at minimum costs, the importance of effective and efficient IT service management (ITSM) processes is crucial. In this contribution, the authors present a new approach, which allows the continual process improvement by the interconnection of the ITIL reference model, the 7-step improvement process, and process mining. On the basis of the reference model, to-be processes are set and key indicators are determined. As-is processes and their key indicators derived by process mining are subsequently compared to the to-be processes. This new approach enables the design, control, and improvement of ITIL based customer support processes, which will be trialed in practice.

INTRODUCTION

Reference models such as ITIL and COBIT (Control Objectives for Information and related Technology) represent proven best practices and provide key indicators for the design and control of ITSM processes. The idea behind the development of ITIL is the recognition that organizations are becoming increasingly dependent on IT in order to satisfy their corporate aims and to meet their business needs (Office of Government Commerce, 2007). The integrated view on business and IT has evolved from a more process-oriented view of ITSM to a consequent service lifecycle.
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approach. This new approach lines up still more strongly upon the business requirements. Instead of executing a collection of processes efficiently and effectively, ITIL v3 pursues the aim of integrating ITSM processes, people, and tools with the business strategy according to the IT service lifecycle. What becomes clear throughout the whole lifecycle is the orientation of the IT services at the business requirements and the actual need of the customers.

ITSM has therefore risen to the major challenge of aligning the IT services with the business and to produce high-quality IT services. The IT services are offered to customers and provided to users by an IT service provider. Within the last years, the number of organizations, which act as service providers, has increased due to the popularity of shared services and outsourcing. This in turn has strengthened the practice of service management and at the same time imposed greater challenges upon it (Office of Government Commerce, 2007).

In today’s highly competitive environment, the IT service providers are on the one hand judged on their ability to deliver in time and at agreed service levels. The enormous pricing competition further puts pressure on them to reduce total costs of ownership in order to provide their services at an adequate cost-benefit ratio. The business environment on the other hand often increases the frequency, complexity, and the extent of changes and, thus, requests utmost flexibility with respect to the IT services and the customer requirements to ITSM.

Because of these pressures, quality enhancement and cost reduction have become mainstream thinking of IT service provider. Not only it is important that this commitment to quality and costs is targeted to the production processes, but also to the IT service management activities. A vivid demonstration of the importance of the quality of both IT services and ITSM processes is the internet service provider (ISP), which represents a special variant of an IT service provider. Since IT-based internet services are its products, IT processes moves beyond support processes. As a result of the relevant IT production processes and ITSM processes being the production processes of the ISP, the importance of IT services and ITSM processes is considerably higher.

To deliver and maintain services in a timely, cost-effective and reliable manner, organizations are advancing the automation of their ITSM processes and making use of emerging technologies. Considering that by now a considerably high effort is put into the aim to continually improve the process quality it is of equal importance to develop further the “continual improvement process” itself. This is required for both continuity and cost effectiveness of an efficient process management. Also the automation not only of the operational processes themselves but also of the process management activities is a prerequisite for high maturity levels (The IT Governance Institute, 2007). Process mining, for example, facilitates the analysis of processes by extracting a process model from log files, which have been recorded during the execution of the ITSM processes. Process mining also opens a considerable potential of automation, whose utilization can vastly improve cost and time factors.

ITIL can be used with existing methods and tools, especially since this framework strongly recommends that organizations adapt its practices within their own context. Therefore, the question arises how procedures and emerging techniques, such as process mining, can be seamlessly integrated into ITSM processes in order to continually improve ITSM processes.

In front of this background, this publication analyzes how ITSM processes can be improved on the basis of ITIL and process mining. Section 2 initially describes the fundamentals of ITIL and process mining and incorporates a literature review. Section 3 opens up with an initial discussion on the controversies and problems with quality management of ITSM processes. Next, the possibilities of quality management based on ITIL and process mining are explained through
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