

Improving IT Service Operation Processes

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Abstract. IT organizations often start improving IT service management from the processes that are closely related to customer interface, such as incident management, service request management and problem management. These processes belong to the service operation phase in IT service management. However, many IT organizations encounter difficulties while adopting service operation practices. The research problem in this study is: How service operation processes are performed in IT service provider companies and what types of challenges exist in these companies regarding service operation?

Keywords: Service operation, incident, problem management.

1 Introduction

Many IT organizations start the IT service operation improvement by using IT Infrastructure Library (ITIL). IT service management is a growing research field that has strong relationship with IT industry. Previous studies on IT service management field have dealt with problem management [1], success factors in ITIL implementations [2], reasons why ITIL projects fail [3], combining ITIL and CMMI frameworks [4], and IT service management process maturity [5]. Similarly, Tan, Cater-Steel and Toleman [2] have explored success factors of ITIL projects. There are also studies that have focused on improving service support processes [6] and improving service quality measurement framework [7].

The **main contribution of this study** is to describe how service operation processes are performed in IT service provider organizations, identify what types of challenges exist in service operation processes from different perspectives: service desk; incident management, service request management, problem management and continual improvement, and explore how continual improvement activities (measurement, reporting, managing improvement suggestions) are visible in service operation.

The remainder of the paper is organized as follows. In Section 2, the research methods of this study are described. In Section 3, we present service operation methods, continual improvement methods and IT service operation challenges in three cases. The discussion and the conclusions are given in Section 4.

2 Research Methods

The research problem in this study is: How service operation processes are performed in IT service provider companies and what types of challenges exist in these companies regarding service operation? The research problem was further divided into following research questions: How service operation processes are performed in IT service provider organizations? What types of challenges exist in service operation? How continual improvement is visible in service operation processes?

A case study research method with three cases was used to answer the research problem. The case Alfa is the IS Management unit of a government agency. The case Beta provides IT services for a large bank in Finland and the case Gamma is one of the largest IT service provider organizations in Finland. A case comparison analysis technique defined by Eisenhardt [8] was used to analyze the collected case study data. Data from cases was collected by using documents, archival records, interviews and discussions, participative observation and physical artifacts.

3 Improving IT Service Operation Processes

In this section, the results of the case study are presented. The results have been organized according to research questions.

3.1 How IT Service Operation Processes Are Performed?

Alfa: The user support services unit performs the service operation processes by providing support services for the use of the IT and management of production environment. There were several groups in several locations responsible for handling incidents and service requests. The 1st-line support is provided by the service desk. Remote support operates on 1st and 2nd level and handles incidents on 1st level during busy days. The Operations Bridge (Valvomo) manages and coordinates the investigation of infrastructure related incidents. Application support provides user support on application-related questions and user rights management manages access rights.

Beta: Beta's internal customers are employees of banks and insurance companies. The first-level support is carried out mainly by five units: process services (bank service processes, customer service support), user support team, the service desk of the IT provider, the telephone service of insurance business and business service numbers. Incidents may be reported by internal and external customers, employees (on bank and insurance domain), management and third party providers.

Gamma: Customers may contact the Gamma service desk by phone, by email or by creating an incident from the web portal. The incident management has been divided into three lines: first-line that is responsible for communicating with

customers and recording the service desk contacts, second-line that has specialized technical knowhow but does not answer the phone calls from customers and third-line specialist that have a deeper technical knowhow and participate in planning and implementing changes to for customers.

3.2 How Continual Improvement Is Visible in Service Operation?

Alfa: In Alfa, continual improvement regarding service operation is based on effective measurement of customer support and feedback collection. Feedback is collected frequently both from staff and customers. Customers are able to give feedback on service desk case resolutions. Feedback can be quantitative (4-10 scale) and open feedback. Service desk and support engineers can also record feedback to the service desk tool. The service manager of user support services analyzes the feedback and initiates improvement actions.

Beta: In Beta, we identified a role 'improvement owner' that is responsible for continual improvement, such as identifying improvement areas. Employees may report the improvement ideas regarding processes to those improvement managers that shall present them further to the CSI steering group. The Steering group directs the continual service improvement activities, decides annually on where improvements should be focused and improvement goals. Managers of Beta had also used Lean Six Sigma.

Gamma: Customer feedback and formal complaints on IT services come from customers through customer service managers that contact the production managers or management. A documented investigation is done for complaints and feedback is discussed in groups in order to identify the root cause and corrective actions. There is a documented process for managing feedback. Gamma frequently uses external auditors to benchmark their service operation processes.

In Alfa, Beta and Gamma, the measurement of service operation processes was performed by using the following metrics: Number of opened and closed service desk cases by type, number of major incidents, number of phone calls to service desk, service desk case resolution rates, number of SLA breaches in user support services, number of service desk cases by submission channel, and call response time.

3.3 What Types of Challenges Exist in Service Operation?

The following challenges were identified in case organizations' service operation: Lack of time to record support cases; lack of good metrics for problem management; interfaces between different ITSM processes are challenging; SLAs when a case is assigned to the 2nd level; lack of major incident definition; no responsible person for the service feedback; feedback reports are difficult to read; lack of rules for reopened cases; classification of incidents and service requests, terminology challenges; problems related to 3rd party service provider's quality, a large number of contact points, lack of problem management procedures, and lack of automated reporting.

4 Discussion and Conclusions

The main objective of this study was to answer the research problem: How Service Operation processes are performed in IT service provider companies and what types of challenges exist in these companies regarding Service Operation?

First, we showed the similarities and differences regarding two organizations' service operation methods. Differences were found especially in use of Service Level Agreements and problem management. Second, we explored continual improvement in service operation. Examples of continual improvement methods included collecting feedback on service desk case resolutions, using Lean Six Sigma to remove bottlenecks from ITSM processes, using PDCA philosophy, and benchmarking service operation processes. Third, the key service operation challenges were related to measurement and reporting of service operation processes, classifying incidents, challenges caused by third party service providers, challenges related to managing feedback and interfaces between IT service operation processes.

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