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# Improving Service Design & Service Transition Phases of Service Management System

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It is funny to think that only about eight months ago was the first day of school, and now I have already finished my Master's Thesis. Making this study was a learning experience and through this, I have learnt a lot and understood the different functions in my company much better.

In addition to the great teachers and interesting courses, the best thing for me personally in this school has been my classmates, absolutely marvelous people, which I hope to see regularly for many years to come.

I want to thank my great professors and teachers who motivated me and gave me constructive feedback. I want to thank my boss, who made it possible for me to attend in this degree and all stakeholders in my company who helped me with my thesis. Also, my heartfelt thanks go to my girlfriend for supporting me through this year.

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<p>The objective of this thesis is to propose improvements to the Service Design and Service Transition phases in the Service Management System of the case company. The proposed improvements aim to get the maximum benefit from the perspective of the production. Therefore, all commercial matters are left out of the scope of this study.</p> <p>This study was conducted using action research method. When this study was initiated, the most important development area was not known. Strengths and weaknesses of the case company regarding the Service Design and Service Transition were found through current state analysis, and the lack of Operative Service Transition Model was chosen as the focal weakness for this study. Conceptual framework of Service Design and Service Transition was compiled after studying the best practice. This framework was used to build the initial and final proposal of this study.</p> <p>The most important output of this thesis is the Operative Service Transition Model, which consists of two documents. The first document illustrates the Service Design and Service Transition in parallel in the case company. The second document lists all operative requirements that must be met before a new service is approved for sales.</p> <p>When the proposed model is introduced in the case company, it is expected to have a positive impact in providing services to customers. This effect stems from the fact that with this model the provided services are more systematically designed and transitioned. Therefore, the amount of service-specific operational activities is reduced.</p>	
Keywords	ITIL, Service Design, Service Transition, Service Management System, Service Acceptance Criteria

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## ACRONYMS

BA	Business Area
CDC	Cloud & Data Center
CM	Change Management
CMDB	Configuration and Management Database
CSA	Current State Analysis
CSI	Continual Service Improvement
EM	Event Management
IEC	International Electrotechnical Commission
IM	Incident Management
ISO	International Organization for Standardization
ITIL	Information Technology Infrastructure Library
ITSM	Information Technology Service Management
KPI	Key Performance Indicator
LAN	Local Area Network
MOG	Management and Operations Guide
PDCA	Plan-Do-Check-Act
PIR	Post-Implementation Review
PM	Problem Management
PSG	Portfolio Steering Group
RF	Request Fulfilment
SAC	Service Acceptance Criteria
SDP	Service Design Package
SMS	Service Management System
SO	Service Operations
SP	Service Platforms
SPOC	Single Point of Contact

## 1 Introduction

With digitalization, the importance of corporate IT services is growing considerably. In particular, larger companies cannot afford their critical services to be operated uncertainly. At the same time, the pressure for productivity is tough and services must be produced as cost effectively as possible. In this equation, services are often designed and transitioned into production as quickly as possible. This leads to the fact that the design and transition of the service may not be sufficiently focused. If the service is not properly designed and transitioned, it is difficult, if not impossible, to provide it cost effectively. Poorly designed services tend to take more resources to provide it.

This thesis focuses on the design and transition phases of service lifecycle and presents a model for improving these phases in the case company. This study is done from the perspective of production. This means that the end result aims at making significant improvement in Service Operations –unit in the case company.

### 1.1 Case Company Background

The case company is one of the leading providers of secure network and data center solutions in the Nordic countries. The case company is a part of large multinational mobile phone operator and employs approximately 200 people mostly in Helsinki metropolitan area. The case company business concentrates on providing IT services to enterprises, public administration, financial institutions, and manufacturing industry. Main business areas are network, security and cloud & data center. The case company has obtained an ISO/IEC 27001 certificate for information security management, an ISO/IEC 20000 certificate for IT service management, and an ISO 14001 certificate for an environmental management system. The case company was chosen as a case study company because the author of this document works for it.

## 1.2 Business Challenge, Objective and Expected Outcome

The case company has grown steadily over the last seven years, and new service customers are considerably larger companies than previously. Large companies have different kinds of demands for service providers, and these demands need to be tackled before the service is transitioned to the operations department. The Service Management System (SMS) of the case company was created four years ago when ITIL v3 framework was introduced. However, the SMS is not scalable enough for providing services for the largest customers. Problems with present SMS occur especially when a large customer purchases 10-15 different services at the same time. Presently, providing services for the three largest customers uses the majority of the resources in the Service Operations department. Because of this, the customer satisfaction has declined among all customers. The case company has actively developed its operations. Nevertheless, it has been recognized that the design and transition phases of the present SMS need to be developed.

This study explores the Service Management System of the case company. **The main objective is to suggest improvements in the design and transition phases of the Service Management System of the case company.**

Figure 1 below illustrates the lifecycle of services in the case company and the scope of this thesis.

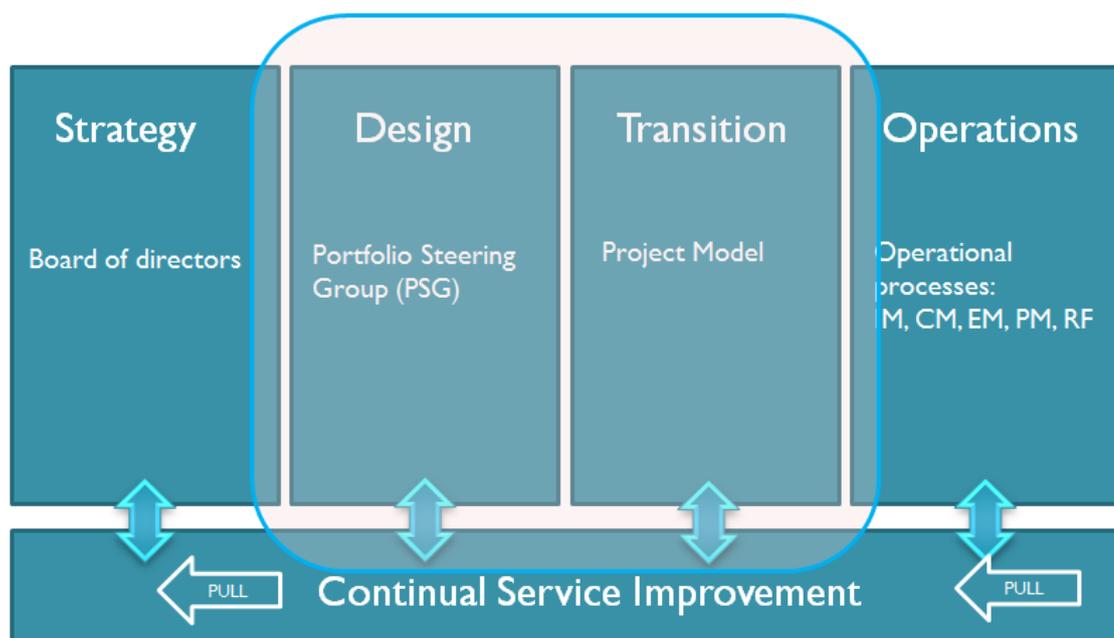


Figure 1. Service lifecycle and the scope of this thesis.

As seen in Figure 1 above, the scope of this thesis includes the Service Design and Service Transition parts of the service lifecycle in the case company. This study also briefly reviews the Service Strategy and Service Operations phases of the Service Management System to understand the current situation and problems that the Service Operations department of the case company encounters.

### 1.3 Key Concepts

Each service provider has described their own way to manage their services at some level. The description can be dispersed to various instructions, guidelines, roles, documents or even unwritten processes. Service Management System (SMS) is an all-encompassing management system that defines service management in the company. The case company whole service lifecycle is managed via SMS, which is the main document including a collection of tools, processes, roles and responsibilities describing service management in the case company.

Best practice for IT Service Management (ITSM) is described in ITIL, which covers all processes that are needed during the five stages of service lifecycle (Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement). ITIL is described in more detail in Section 4. The case company has adapted major part of the ITIL processes to the Service Operations phase. Best practice in Service Transition and Service Design are also partly in use, but not as strongly as in Service Operations.

This thesis is written in seven sections. Section 1 of this thesis introduces the business challenge, objective, and the expected outcome. It also introduces the case company. Section 2 presents the methods and material used to make this thesis. Section 3 discusses the current state analysis to find out the strengths and weaknesses of the case company. Section 4 presents the best practice of Service Design and Service Transition. This is followed by Section 5, which presents the initial proposal, which was built on the basis of current state analysis and best practice. Section 6 discusses the feedback on the initial proposal and presents the final proposal and recommendations. This is followed by Section 7 with discussion and conclusions.

## 2 Method and Material

This section discusses the way this study has been carried out and materials that were used. This section is divided into five subsections. The first subsection discusses the research approach. The second subsection presents the research design. The third subsection presents the data collection for this study. The fourth subsection discusses the data analysis. The fifth subsection presents the validity and reliability plan.

### 2.1 Research Approach

This subsection discusses the research approach of this study. Research can be done as quantitative and qualitative research. Quantitative research is used to study a large amount of samples to find patterns and trends (Teerikangas 2015). Qualitative research is collecting and analysing qualitative data, and it is used to understand the context in which decisions and actions happen. Qualitative research answers the research questions what, how and why (Teerikangas 2015). This study is done by using qualitative research because it aims to develop organizational matters that are not possible to study with quantitative research method. Desk-study approach was also used for studying internal documents of the case company.

Action research does not include any separation between researcher and a practitioner (McNiff 2002) and instead of doing research about action, the research is done in action. Research is carried out using action research approach within the different service functions in the case company, concentrating on the Service Transition and Service Design. In action research, the researcher is a practitioner, and other practitioners can be researchers (McNiff 2002). Thus, action research approach is very suitable for the development of organizations, where the researcher is actively involved in the everyday life of participants in the company. Figure 2 below illustrates the concept of action research.

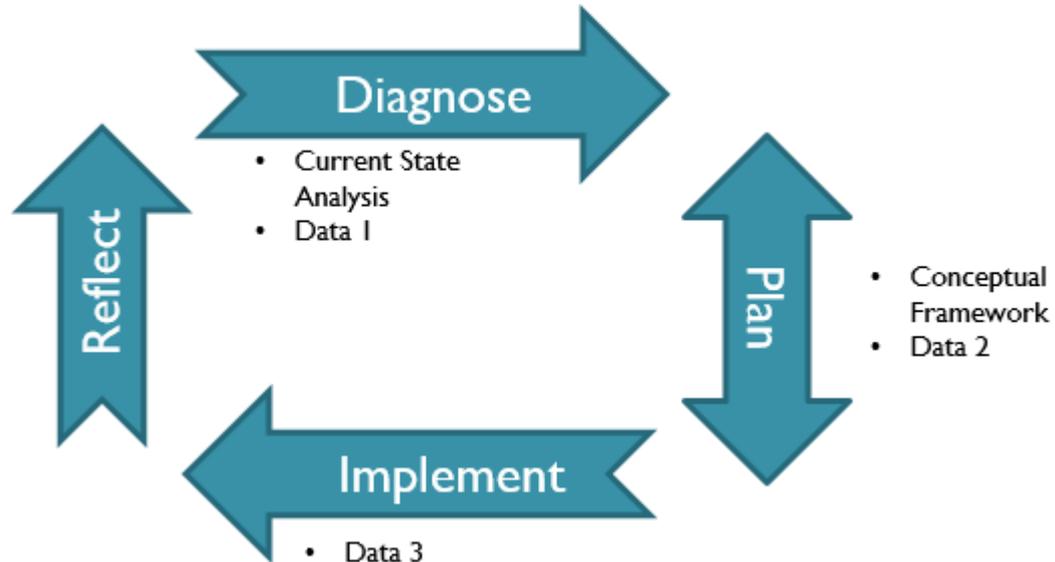


Figure 2. The concept of Action Research.

As can be seen in Figure 2 above, Action Research starts with diagnosing the situation with current state analysis. Next phase is plan, which includes conceptual framework built on the basis of best practice and available knowledge studied after the current state analysis. Implementing the plan gives new information, and the plan is developed further. This is repeated as many times as needed until the plan is at a sufficient level. Final phase is reflect, where the research results are evaluated, and next steps are considered.

## 2.2 Research Design

Implemented research design of this thesis is illustrated in Figure 3 below.

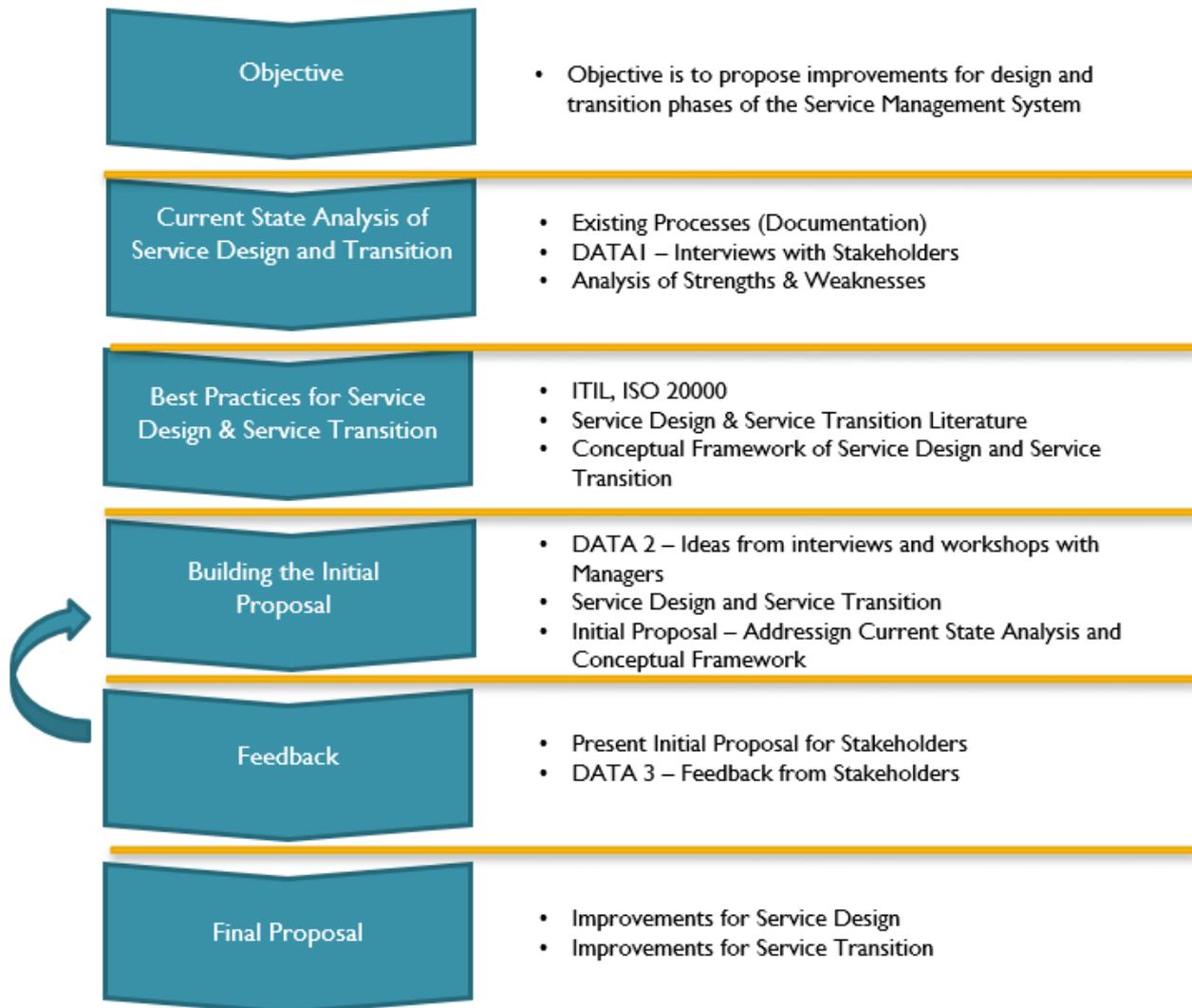


Figure 3. The research design of this study.

As can be seen from Figure 3 below, the objective of this thesis is to propose improvements for Service Design and Service Transition phases of the Service Management System of the case company. The first step of this study was to carry out current state analysis. This included studying existing process documentation and interviewing persons responsible for creating and developing these documents. The interviewed persons were selected on the basis of initial discussions with team heads in Offering unit and they all have an essential role in the Service Design and Transition phases in the case company. Analysis of strengths and weaknesses was created based on the information acquired by studying and interviewing and this created Data 1 of this study. Most significant weakness found determined the main focus area of improvement, and therefore guided into a certain area of best practice to study. The case company had already implemented many ITIL-processes and accomplished ISO 20000 certification, so ITIL and ISO 20000 documentation played an important role in the studies. ISO 20000 certification defines

that the service management processes have to be defined, but it was unclear that were these processes followed properly in the case company. In addition to ITIL and ISO 20000, other Service Design and Service Transition literature was studied. The conceptual framework of Service Design and Service Transition became the outcome of the literature review.

Conceptual framework and findings from CSA were used to build the initial proposal. Information received from initial interviews and two workshops with stakeholders was also used for building the initial proposal and these are Data 2 of this thesis. The initial proposal was presented to stakeholders and feedback was collected. This feedback is Data 3 of this thesis. Data 3 was used to improve the initial proposal to final proposal. The final proposal includes two documents that help the case company in Service Design and Service Transition phases.

This subsection presented the research design of this study. Next subsection discusses data collection for this study.

### 2.3 Data Collection

This subsection discusses data collection. Data in this thesis was collected in 3 separate phases. First data was collected in the current state analysis. Second data was collected during building the initial proposal, and third data was collected as feedback from stakeholders regarding the initial proposal.

#### *Data collection 1*

Data was collected during current state analysis through interviews and studying the existing documents and processes in the case company. Data received from interviews with key stakeholders created Data 1 of this thesis. Interviewed people can be seen from Table 1 below.

#	Situation	Participant(s)	Duration	Questions	Documents
1.	Interview (25.1.2016)	Service Operations, Manager	1h 10min	Appendix 1	Interview Transcript (7p)
2.	Interview (26.1.2016)	Service Operations, Director	1h 20min	Appendix 1	Interview Transcript (7p)
3.	Interview (27.1.2016)	Business Support Functi- ons, Manager	55min	Appendix 1	Interview Transcript (6p)
4.	Interview (28.1.2016)	Offering, Manager	1h	Appendix 1	Interview Transcript (7p)
5.	Interview (2.2.2016)	Offering, Manager	1h 15min	Appendix 1	Interview Transcript (8p)
6.	Interview (2.2.2016)	Business Support Functi- ons, Director	1h 20min	Appendix 1	Interview Transcript (8p)
7.	Interview (17.2.2016)	Offering, Director	1h	Appendix 1	Interview Transcript (8p)

**Table 1. Data 1 Interviews.**

As can be seen from Table 1 above, overall seven people were interviewed face-to-face during two weeks. The interviewed persons cover each major unit of the case company that has something to do with the designing and transitioning of services. Service operations unit was also involved because it has the best knowledge of the problems with the present situation. Project office personnel carry out the transition of designed services, and Offering unit has the overall responsibility for designing services. Each person interviewed has been working for the case company for several years, and they all are either managers or directors. The interview questions were divided into four areas. These areas follow the service lifecycle according to ITIL framework: Service Strategy, Service Design, Service Transition, and Service Operations. Most of the questions were asked about Service Design and Service Transition. Service Strategy and Service Operations were included in the questions to understand the current situation of the case company (strategy) and problems that the case company is currently facing (operation).

In addition to interviews, internal documentations were also studied to understand the present processes. The most important document was Service Management System, which describes the service management in the case company. List of internal documents can be seen from Table 2 Below:

#	Document	Length	Type
1	About productizations: workshop and materials	22 pages	Training leaflet
2	Case Company Strategy	17 pages	Process Documentation
3	Certificates	Intranet web page (Accessed 22.2.2016)	Certificate
4	Developing Service Design	Intranet web page (Accessed 22.2.2016)	Training leaflet
5	Developing services and activities	Intranet web page (Accessed 22.2.2016)	Process Documentation
6	Network Services	Intranet web page (Accessed 22.2.2016)	Process Documentation
7	Organization Chart	10 pages	Organization chart
8	Overall picture of Service Design	Intranet web page (Accessed 22.2.2016)	Process Documentation
9	Portfolio Steering Group Initiative template	2 pages	Template
10	Processes and responsibilities	Intranet web page (Accessed 22.2.2016)	Process Documentation
11	Project Management in the case company	3 pages	Process Documentation
12	Project plan template	16 pages	Template
13	Quality guide	Intranet web page (Accessed 22.2.2016)	Process Documentation
14	Service Management System	23 pages	Process Documentation
15	Service Portfolio Management	Intranet web page (Accessed 22.2.2016)	Process Documentation
16	Service Portfolio Management process	8 pages	Process Documentation
17	Service Strategy	44 pages	Process Documentation
18	Services	Intranet web page (Accessed 22.2.2016)	Process Documentation
19	Stakeholder definition	Intranet web page (Accessed 22.2.2016)	Process Documentation
20	Standards	Intranet web page (Accessed 22.2.2016)	Process Documentation
21	Transferring responsibility from Sales to Project	6 pages	Template
22	Customer Transition Checklist	3 pages	Template
23	Customer Transition Post-Implementation Review	2 pages	Template

**Table 2. List of internal documents used as Data 1.**

As can be seen from Table 2 above, 23 different internal documents were used as Data 1 for this study. The current state analysis is based on the data collected from the interviews and documentations presented in this subsection.

### *Data collection 2 and 3*

When Data1 was collected by interviewing people for CSA, also new development ideas regarding Service Design and Service Transition were asked from the interviewees. Data 2 consists partly of these development ideas. Data 2 also includes development ideas from internal workshops, which were documented after the workshop. Also, short discussions with interviewees were held to clarify some of the points that were recorded during interviews. Data 2 workshops are listed in Table 3 below.

#	Situation	Participant(s)	Duration	Discussed topics
1	Workshop 16.3.2016	Manager/Offering (Member of PSG) Manager/Offering Manager/Project Office	1 hour	See Appendix 1
2	Workshop 31.3.2016	Manager/Offering (Member of PSG) Manager/Offering Manager/Project Office	1 hour	See Appendix 1
3	Workshop 18.4.2016	Technical Business Manager / Offering Technical Specialist / Service Platforms	1 hour	See Appendix 1

**Table 3. Data 2 workshops.**

As can be seen from Table 3 above, three internal workshops are used as Data 2 in this study. Notes of discussed topics can be seen from Appendix 1.

Governing function for Service Design in the case company is Portfolio Steering Group. At first, the purpose was to present the initial proposal to PSG. However, there were no available time slots in the PSG meetings in April of 2016. Therefore, it was agreed that the feedback for initial proposal is collected from PSG members separately, and the final proposal is presented to PSG in spring/summer 2016 when there is next available time slot. The initial proposal was presented to five out of nine PSG members. The feedback received on the initial proposal was noted and this is Data 3 of this thesis. Data 3 interviews are listed in Table 4 below.

#	Situation	Participant(s)	Duration	Discussed topics
1	Interview 4.4.2016	Director - Member of PSG	20 min	See Appendix 1
2	Interview 5.4.2016	Director - Member of PSG	25 min	See Appendix 1
3	Interview 6.4.2016	Director - Member of PSG	35 min	See Appendix 1
4	Interview 6.4.2016	Director - Member of PSG	35 min	See Appendix 1
5	Interview 14.4.2016	Director - Member of PSG	30 min	See Appendix 1

**Table 4. Data 3 interviews.**

As can be seen from Table 4 above, five members of PSG were interviewed and notes of Data 3 collection are attached to this thesis in Appendix 1.

## 2.4 Data Analysis

This subsection discusses the analysis of data in this study. This subsection divides into three parts because each of the data collection stage (Data 1, Data 2 and Data 3) is discussed separately.

In Data 1, the interviews were carried out in a meeting room, and only two persons were present, interviewer and interviewee. All interviews were conducted in Finnish and therefore transcribes are not included in this thesis. All translated interview questions can be seen from Appendix 1 in this study. The interview questions were divided into four parts in accordance with the IT service life cycle. These parts are Service Strategy, Service Design, Service Transition, and Service Operation. At first, there were too many questions and after first and second interview part of the questions was removed. All the interviewees could not answer all the questions. The interviews were recorded, and notes were written during the interviews. After the interview, recordings were listened and transcribed. After this, non-relevant parts of the transcriptions were removed, in order to make them easier to read.

After all the interviews had been carried out, all relevant matters from the transcriptions were put into mind map into four categories. Categories were the same as with the questions: Service Strategy, Service Design, Service Transition, and Service Operation. After this, the data in the mind map was reorganized into following categories: strengths, weaknesses, service design model, customer transition model, Portfolio Steering Group and proposed improvements. Direct quotations were also listed in the mind map. As soon as the mind map was ready, current state analysis writing began.

In Data 2, part of the data was collected from the same mind map that was used with Data 1. When people were interviewed for Data 1, they were also asked about improvement ideas, and these ideas are part of Data 2. These improvement ideas were copied into separate mind map into following categories: customer transition check, customer transition model, and other development ideas. In addition to this, three workshops with different stakeholders were held. In these workshops, different kinds of ideas were suggested to improve the situation, but only those ideas were noted, where there was a consensus. Ideas from workshops and interviews supported each other. Based on this collected data, it was decided that similar model for transitioning services should be built as is used with customer transition projects.

In Data 3, altogether five out of nine PSG members were interviewed separately. The initial proposal was presented to them, and feedback from PSG members was written down as notes. To avoid misunderstandings, at the end of each meeting, the interviewee was asked that were the recorded notes correct. Received feedback was straightforward suggestions for improving the initial proposal. The initial proposal consists of two documents: Operative Service Design Project Model and Operative Service Transition Checklist. Only the latter of these documents received improvement ideas.

This subsection discussed the data analysis of this study. Next subsection presents the validity and reliability plan.

## 2.5 Validity and Reliability Plan

Validity and reliability plan tells the reader if the study is rigorous and how well it stands if it is scrutinized by other people. It tells that how the data was tested for validity and how reliable the data is. Concept of validity is often divided into 4 types of tests: Internal validity, construct validity, external validity, and reliability (Quinton & Smallbone 2006).

The purpose of internal validity is to tell that was the research performed as it was designed and did the researcher measure what was designed to measure. In action research, internal validity does not play so important role because the researcher may not yet know what the results will be when the current state analysis is done. Exposed weaknesses and problems might be completely different than what the study was initially about. In action research interview questions can be adjusted to more suitable ones dur-

ing the research and interviews can be carried out again if needed. The purpose of construct validity is to tell that is the tested theory valid. Since this study is not testing any theories, it is not necessary to take into account.

External validity seeks to clarify that can the research results be utilized in other similar studies, even though the context of the case would be different. The final proposal of this work is tailored to propose development ideas for the Service Management System of this individual case company. Thus, it is unlikely that the final proposal as such would give great benefits in other case studies. However, this study builds the proposal from several issues found in current state analysis and well-known theories (i.e. ITIL and ISO 20000) and these individual issues may be of help to other case studies.

Reliability means assessing the study asking the question “If the research would be repeated or conducted by some other party, would the end result be the same?”. For this purpose, this work includes as precise as possible descriptions of how the research is done, how the data is collected and how the data has been analysed. This study includes the following steps to ensure the reliability. First, all interviews and workshops conducted for this study were recorded and transcribed. Second, transcribed interviews were sent to each interviewee individually by e-mail for review that no misunderstandings were noted. Finally, the interviewed persons were selected so that each unit, which has something to do with the Service Design and Service Transition, has been taken into account. No single person's individual opinion is not regarded as a fact before it has been secured from other parties. The interviews were held in Finnish and quotations used in this study are translated into English by the author.

In summary, this study is carried out using qualitative research and action research. Research design starts from current state analysis, which is used to find the strengths and weaknesses of the case company. Best practice and other available knowledge are studied, and conceptual framework of Service Design and Service Transition is compiled. This is then used to build the initial proposal, which is then presented to the stakeholders in order to obtain feedback. Based on the feedback, the final proposal is built. The research design includes three different data. Data 1 was used with current state analysis. Data 2 was used to build initial proposal and data 3 was used to build the final proposal. Next section discusses the current state analysis.

### **3 Current State Analysis**

This section discusses the current state of the case company regarding the Service Design and Service Transition phases. The aim is to identify the weaknesses that currently causes problems in the Service Operations unit. This section is divided into eight parts starting with general information and then continuing to explain the processes and functions of the case company. The first subsection describes the current state analysis procedure. The second and the third sections describe the services and service management in the case company. The fourth, the fifth and the sixth subsection discusses three different phases of the service lifecycle in the case company: Service Design, Service Transition, and Service Operation. The seventh subsection discusses identified strengths and weaknesses. Finally, the eight subsection presents more details about the main weakness found.

#### **3.1 Overview of the Current State Analysis Procedure**

Data to this current state analysis was collected by interviewing people and studying the internal documentation of the case company. Before the interviews, internal documentation was explored in order to understand the case company descriptions of its own operations and, therefore, to make the right kind of interview questions. The interviews were recorded and transcribed afterward. After that, transcriptions were analysed with revisiting the internal documentation at the same time. Interviewees were managers and directors of each major unit, which has something to do with the Service Design and Service Transition in the case company. Thus, on the basis of interviews, the overall picture is obtained, which includes the description of the current situation of the case company, present Service Design and Service Transition phases, and problems, which the Service Operations unit is currently facing.

#### **3.2 Service Management in the Case Company**

The case company is an IT-house that offers IT solutions to customers. The four business areas of the case company are network, security, cloud & data center services and post-sales support. The majority of the turnover of the case company comes from the sale of network and security devices, and this has been very successful. During the last

eight years, the case company has managed to increase its net sales as planned. However, the case company has not achieved its target with annual profit, because selling hardware increases turnover, but it does not bring big profit. That is why the case company has recently begun to place greater emphasis on selling services rather than just selling equipment. This is now also included in the strategy of the case company (Data 1, Document 2). Services that the case company sells are often tailored solutions for customers. The case company is well known in the market as an agile IT service provider. However, selling tailored services has two sides, as one interviewee said;

They (tailored services) are things that set us apart from the competition. It is a double-edged sword. There is never possible for us act as productized and efficiently as, for example, operators do. And if we try to do so, then we might be less relevant in competition at all. (Data 1, Interview 7)

This means, customers like to buy solutions and services tailored for them, so it is easier to sell these (Data 1, Interview 6). On the other hand, tailored services are always a bit more complicated to provide than standard services, and these costs more for the service provider, for example, as extra resources needed to provide.

Presently, the Service Management System (SMS) of the case company is described in a single Word-document, which name is Service Management System (Data 1, Document 14). This document describes in general level all of the processes, systems, stakeholders, functions and policies that the case company uses for managing the services. More detailed descriptions can be found in the Intranet of the case company, and the SMS document contains links to these Intranet web pages. SMS document was originally created for the ISO/IEC 20000 certification, and document headings follow the ISO/IEC 20000 certification requirement list for the most part. After creating the document, it has not been updated very often. SMS document also includes some same information as the Intranet of the case company, but the intranet information is updated more frequently. This means that for some part the information in SMS document is outdated. Next ISO/IEC 20000 audit is in the spring of 2016, and the case company currently has plans to convert the SMS document to a separate intranet web page before it (Data 1, Interview 2). At the same time, the content of the SMS is evaluated and duplicate information removed.

The case company has acquired ISO/IEC 20000, ISO 14001 and ISO/IEC 27002 certifications. ISO/IEC 20000 standard contains requirements for an IT Service Management

System and it is based on the ISO 9001 standard. The standard complies with the processes and requirements on the ITIL framework (Data 1, Document 3). Figure 4 below illustrates the ISO/IEC 20000 model (Data 1, Document 14).



**Figure 4. ISO/IEC 20000 model of Service Management System.**

As can be seen from Figure 4 above, SMS is the whole system that is used for providing services. Service requirements of the customer are used as an input and with SMS they are provided as services.

ISO/IEC 27001 is defined as follows. "ISO/IEC 27001 is an international information security management system standard for implementing risk assessment and any necessary preventive measures. The standard sets requirements for identification of risks targeted at an organization's information and for their credible management" (Data 1, Document 3). ISO 14001 is an international standard for environmental management systems. Meeting the requirements of the standard indicates that the organization actively minimizes the environmental impact of its processes, products and services (Data 1, Document 3).

According to these certificates, the activities of the case company are audited annually. Deviations are recorded, and they have to be put in order, or the case company loses its certification. The company also performs internal audits themselves as part of the ISO/IEC 20000 requirements (Data 1, Document 14).

The case company service lifecycle is described in the SMS document. Service lifecycle has five phases, and it complies with the ITIL framework mode. The case company service lifecycle is illustrated in Figure 5 below.

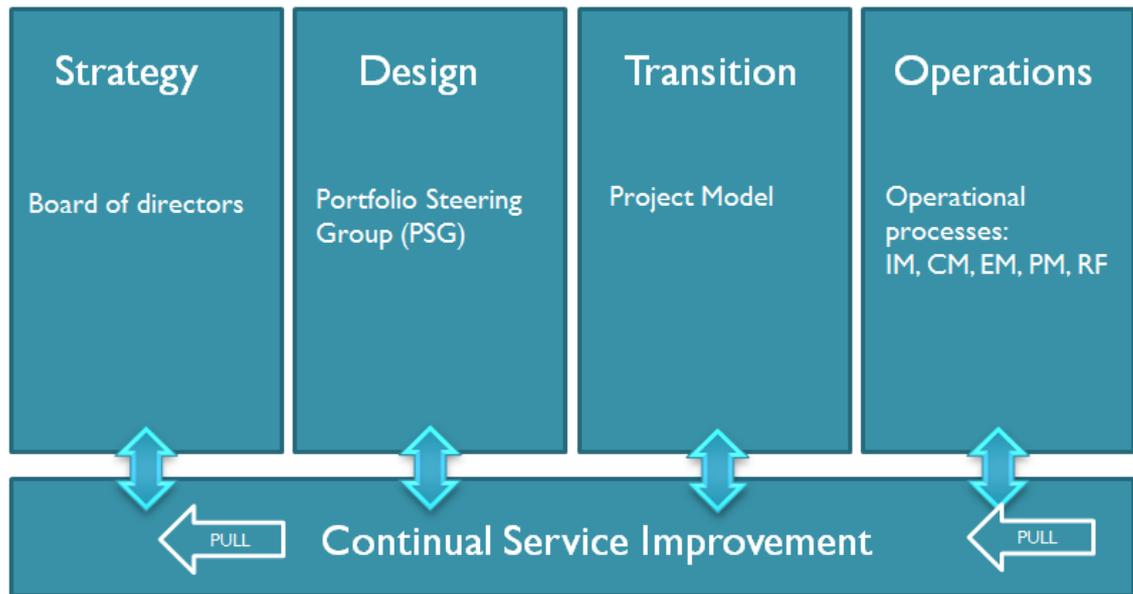


Figure 5. The IT Service lifecycle.

As Figure 5 above illustrates, the case company service lifecycle consists of five different phases. The first phase is the Service Strategy, which is the board of directors of the case company making strategic decisions, for example, about the business areas. Next phase is Service Design, in which the new or changed service is designed. Service Design is governed by Portfolio Steering Group, which is described in more detail later in this section. The third phase is Service Transition, which aims to produce all the things that were designed in the Service Design phase and transfer the service to Service Operations. Service Operations is the phase when service is provided to customers. The last phase is the Continual Service Improvement, which aims to continually develop and improve the service.

This subsection described the services and service management in the case company. Next subsection discusses the different functions that manage services in the case company.

### 3.3 Service Functions in the Case Company

The case company has had large organizational changes at the end of 2014. At the same time as the new organizational chart was introduced, other major changes were also made. Separate Offering unit including 4 different Business Areas was founded. Also, Service Operations and Service Platform units were founded. The present organization chart of the case company is presented in Figure 6 below (Data 1, Document 7).

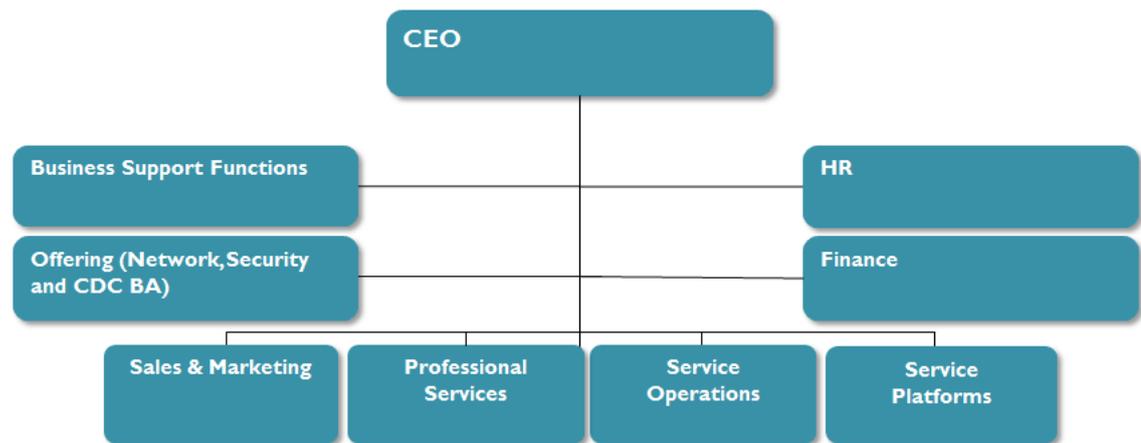


Figure 6. The organization chart of the case company.

As Figure 6 above illustrates, the major units of the case company are Business Support Functions, Offering, Sales & Marketing, Professional Services, Service Operations, Service Platform, Finance and HR.

The responsibilities of different units are as follows. HR and Finance are responsible for all Human Resources and financial activities. Business Support Functions is responsible for project management, sales support, and service management. Offering unit is responsible for managing the service portfolio of the case company and designing new or changed services. Sales and Marketing are responsible for selling the products and services in the portfolio to the customers and handling the marketing of the case company. Professional Services unit consists mostly of expert teams, who do consulting work and act as a Tier3-support for production. Professional Services unit also includes the Quality and Security Management. Service Operations (SO) unit is responsible for ultimately providing the services. Service Platforms (SP) unit is responsible for maintaining and developing the infrastructure and platforms (for example, company data centers, ticketing system, monitoring system and documentation system) that the whole case company uses for providing the services for customers. Service Platform also acts as a Tier3 support for Service Operations.

Offering unit was established by the end of 2014, so it is still quite new unit in the case company. Offering unit and the business areas are shown in Figure 7 below (Data 1, Document 7).



Figure 7. The four business areas of the case company

As seen in Figure 7 above, Offering unit includes four different business areas: Network, Security, Cloud & Data Center and Post-Sales Support. The responsibility of designing new or changed services is solely in Offering unit, which uses resources from other units in the case company (Data 1, Interview 7).

This subsection covered the organization chart and different functions of the case company that are involved in the Service Design and Service Transition phases. Next subsection discusses the present situation with designing new or changed services in the case company.

### 3.4 Service Design in the Case Company

This subsection discusses the present way to design new and changed services in the case company. Figure 8 below illustrates the Service Design phase of the service lifecycle.

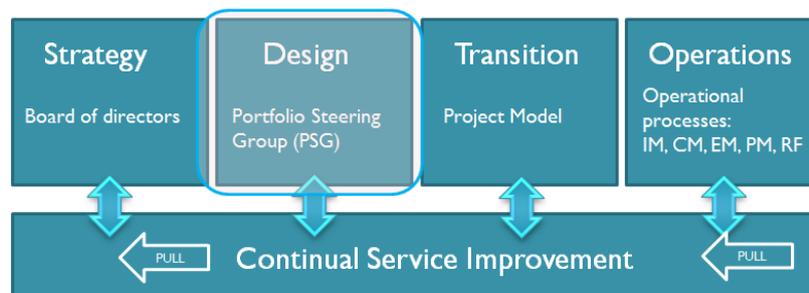


Figure 8. Service design phase of the service lifecycle.

As can be seen from Figure 8 above, this subsection discusses the Service Design phase. Before Offering unit was founded, it was unclear which unit is responsible for designing services. This is why the quality of services designed in the past varies very much. Some services (for example LAN-service) are designed quite well, but some services do not have all the necessary documents created about them (Data 1, Interview 6). Inadequately designed services also have been sold in the past. In these cases, only some of the required documents are ready, and a major part of the documentation is

missing. In this kind of cases, the rest of the Service Design has to be done in the transition project. As phrased by one of the interviewees;

It just may be that the only document is service description when the service is sold. Rest of the design has to be made by the project (Data 1, Interview 3)

In such cases, transition project often faces difficulties when transitioning the inadequately designed service into production. Without proper design, it is difficult to do a proper transition. One of the interviewees said;

Checking the production requirements of the new service often remains the first transition check's responsibility. And it is not the responsibility of transition check (Data 1, Interview 1).

It is also perceived that designing new services is not transition projects responsibility, but it should be done in advance in the Service Design phase (Data 1, Interview 3). Transitioning inadequately designed services into the production causes extra work for Service Operations unit, which is, after all, the unit that provides the service for customers. The problems appear, for example, as poor instructions, insufficient network diagrams, unclear responsibilities and inadequately adjusted event management. Thus, for example, during incident Service Desk is not able to solve the issue fast enough. Also, planning and implementing changes in customer IT-environments include extra work when there are not sufficient documents to refer to. Next subsection discusses the Service Design model in the case company.

#### 3.4.1 Service Design Model in the Case Company

This subsection discusses the Service Design model in the case company. Presently, in the case company, it is generally unclear whether there is any model that is used when designing new or changed services. Some interviewees suspected that each business area has its own way to design services (Data 1, Interviews 1,3,4). In other words, if new service is decided to be designed, it depends heavily on the individual, who designs the service, how the design ends up. The case company is also lacking the criteria for a well-designed service. As one interviewee said;

This company does not have any description or standard that would tell what kind of service is a well-designed service (Data 1, Interview 6).

At the end of the year 2015, Offering unit started to develop the model for designing new or changed services. The aim is to define and agree on the requirements, limitations and checkpoints for designing services (Data 1, Interview 4). So far, this development project has defined a list of documents that must be created regarding the new service before it can be accepted for sale (Data 1, Interview 4). This list includes, for example, requirements for production –documents, which seeks to ensure that the production is capable of providing the new service (Data 1, Document 1). Presently, the list is not yet complete, and it is therefore not yet tested with any new service (Data 1, Interview 4).

Moreover, although the case company already has a first draft of a list of necessary documents, it lacks the requirement for the quality and content of the documents. For example, for new service, it is required to have a test plan before transitioning it to production, but there are no specific requirements for the test plan itself. The test plan content remains the responsibility of the author, and thereby the level of the test plans varies a lot (Data 1, Interview 4).

The case company has a strong history of not having owners for different services. Therefore, in the past, the case company has not had a responsible person, who could be contacted if some specific service would need development. At the end of 2015, Offering unit has defined two different owners (commercial and technical) for most of the services in the portfolio (Data 1, Interview 7). For all services, the definition has not yet been made. These roles are Business Manager and Technical Business Manager. Responsibilities of Business Manager include the commercial part of Service Design, implementation, and development. Responsibilities of Technical Business Manager include the technical implementation and further technical development of the service together with Service Operations unit and project management (Data 1, Document 18).

Moreover, a list of services and their technical and commercial owners can be found on the intranet of the company (Data 1, Interview 4). However, this list is not very common knowledge in the case company. One interviewee described the situation as follows;

Presently, we have problems with identifying responsible persons. Who is in responsible for what? Who is responsible for wireless networks service? I know that, but there are many other services which do not have responsible persons (Data 1, Interview 6).

This means that in some cases employees do not know who to contact when they have a lack of clarity regarding some specific service. This leads to the fact that Technical Business Managers and Business Managers do not receive the feedback regarding the services from the sales and Service Operations.

As mentioned earlier, Offering unit has already started a large-scale work to produce new service descriptions and other necessary documents of all services that the case company currently provides (Data 1, Interview 4). This is a big job since the case company has a lot of inadequately designed services in the history. The first step is to determine the list of necessary documents and the level of the documents. After that, these documents need to be produced regarding all services, in order to be able to provide all the services with the same model (Data 1, Interview 4).

In summary, the company has no clear approach to the design of new services, and this causes extra work for transition projects, as they are forced to build and implement the services, which has not been sufficiently designed. List of required documents for new services has been made, but a list of required information per document is lacking. Offering unit has already started to formalize the Service Design as a whole, but this is a lot of work, and it is going to take a long time before it is ready. Next subsection discusses the Portfolio Management in the case company.

### 3.4.2 Portfolio Management

This subsection discusses the Portfolio Management in the case company. At the same time when the case company acquired ISO/IEC 20000 certification, a new function for Portfolio Management was established. Portfolio Management Group (PSG) is responsible for supervising the Service Design and partners of the case company in accordance with the strategy of the case company. PSG meets every other week or when necessary. All major functions and departments of the whole organization are represented in the meetings. PSG makes decisions about the services that the case company starts to develop, services that are removed from the portfolio, services that are ready to sell and vendors that are used to provide the services (Data 1, Document 8). Most of the inputs to PSG are delivered from business areas, but everyone in the company is allowed to take initiatives to PSG. For initiatives, the case company has a separate template, which takes into account the business potential, the importance of the service to the customer,

estimated development workload, the need to invest in training, preliminary pricing model and the identified risks (Data 1, Document 9). PSG is sufficiently well-known company function, so it can be said that it is one of the "gates" that must be passed through when designing new or amended services (Data 1, Interview 6).

Members of the PSG have collectively broad knowledge of the case company as an organization and activities of the IT sector on the market (Data 1, Interview 2). When PSG makes decisions, the final result is usually achieved by talking. One interviewee described the decision-making as follows:

In general, a quite genuine debate is taking place and explaining what is the real need for this service. If for example, there is no big potential and it requires a lot of training, generally it is not accepted. I think that there is a good group in the PSG. CEO knows the sales department and how well different services sell, Service Platform and Service Operations are also present, so we know how we can provide the service (Data 1, Interview 6).

PSG does not necessarily have clear data on the basis of which the decision is made (Data 1, Interview 4). In this case, the decision is based on a so-called "broad knowledge" which the PSG members as a collective have (Data 1, Interview 4). For example, broad knowledge of demand management, the situation with the competitors and the amount of expertise that the case company has, regarding the service. In such cases, decisions might be opportunistic one-off decisions, and they are not based on long-term yield expectations (Data 1, Interview 7). Therefore, the end result is sometimes the long-term productivity challenges, even though the decision would have been a very good decision for an individual trade (Data 1, Interview 7).

After PSG has made its decision, the development and design of the new services are performed by an individual who has been named responsible for that by PSG. This responsible person updates the status of the design to the decision log of the PSG, which acts as a tool for monitoring the progress of the design (Data 1, Document 18). Decision logs of the PSG are published in the case company intranet. Separate project model for Service Designs are not in use, but the development is carried out with agile-method taking into account all requirements and boundary conditions (Data 1, Document 18). While the decision log of PSG is updated during the progress of the Service Design, the interviewees felt that PSG does not have enough control over the process (Data 1, Interviews 1,2,3,4,5,6,7). As one interviewee said;

PSG is more like a starting pistol shooter, but follow-up after that is missing (Data 1, Interview 1).

Besides the fact that the service is not necessarily properly designed, the service may be designed to be different from what the PSG has understood on the basis of the original initiative (Data 1, Interview 6). This is often due to the fact that the PSG has not defined with sufficient precision the type of service it should become (Data 1, Interview 6). Documentation of the newly designed service is delivered to PSG for review before it is accepted for sale. However, as already mentioned before, there are no unambiguous criteria for approval of new documents. This means, for example, documents produced for the Service Operations department, which ultimately provides the service, are not checked well enough, and their level depends heavily on who has designed the service (Data 1, Interview 4).

This subsection covered the management of service portfolio in the case company. Authority in the Portfolio Management is the Portfolio Steering Group, which works well for authorizing design projects. However, PSG does not follow the design project progression after that. This may cause the designed service to be something different than what PSG has initially authorized to be designed. After service has been designed, the next phase is Service Transition. Next subsection discusses the Service Transition in the case company.

### 3.5 Service Transition in the Case Company

This subsection discusses the Service Transition in the case company. Figure 9 below illustrates the Service Transition phase of Service Lifecycle.

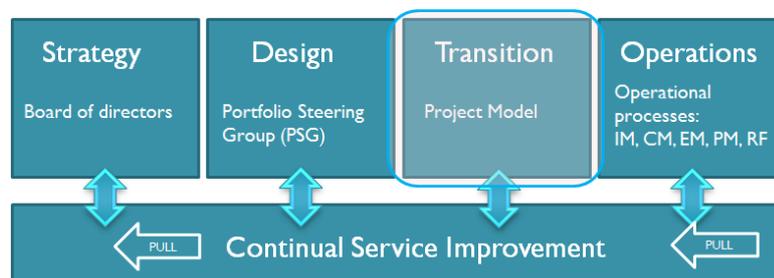


Figure 9. Service transition phase of the service lifecycle.

As can be seen from Figure 9 above, Service Transition is the next phase in service lifecycle after Service Design. Since the case company provides IT services to other companies, employees have a slightly different idea of a transition in the case company

(Data 1, Interviews 1,2,3,4,5,6,7). The case company has identified two different meanings for a transition: customer transition and service transition.

### 3.5.1 Transition Type 1: Customer Transition

In customer transition, the customer has purchased, for example, management and monitoring service for their IT-environment. In order for providing the service for the network equipment of the customer, customer transition project, led by the project manager, is launched. This project involves the following matters. Network devices of the customer environment are configured for remote management, customer is set up in the production systems of the case company, network assets of the customer are added to Configuration Management Database (CMDB) of the case company and monitoring the devices is put on, instructions for Service Operations are created, network diagrams are drawn, default reports are created, and Management and Operations Guide (MOG) is written and agreed with the customer. Different steps of customer transition project model can be seen from Figure 10 below.

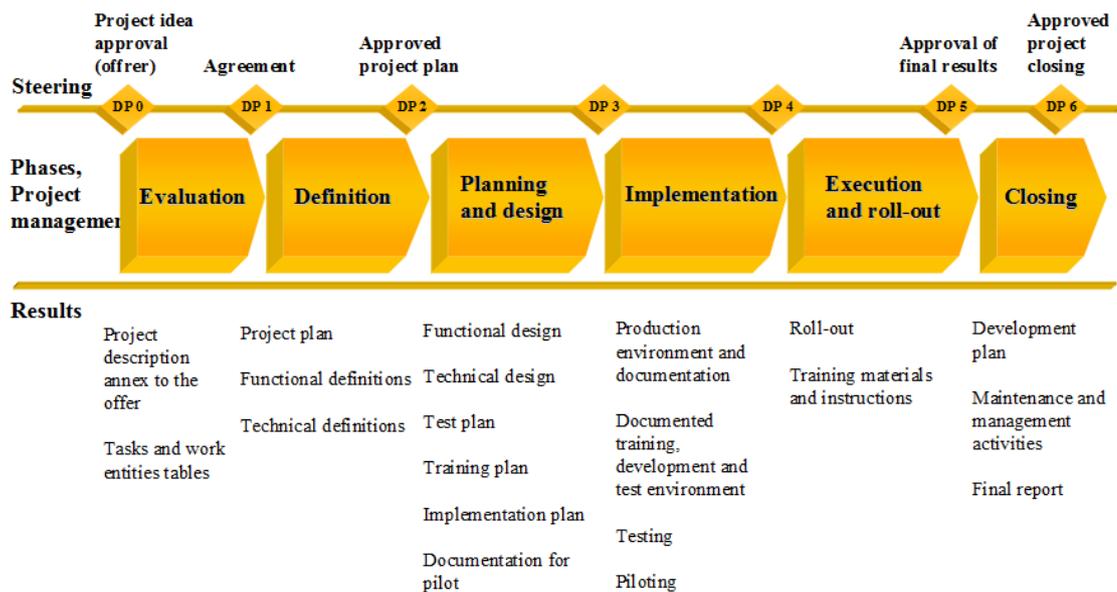


Figure 10. Customer transition project model (Data 1, Document 12).

As can be seen from Figure 10 above, customer transition projects have a clear project model. Interviewees said that this project model is systematic and accurate (DATA);

Project model itself is good. It contains plans, acceptance criterion, etc. At the end of the project it is clear what needs to be done so that the production department can provide the service. These are defined in the transition checklist. The base body of the model is therefore good (Data 1, Interview 1).

Before providing the service for the customer can be started, Service Operations unit must accept the customer transition project output. For this purpose, Service Operations unit has developed a tool to verify that the transition project output is valid for Service Operations to provide the service. In practice, this tool is a checklist, which is handled within Excel (Data 1, Document 22). With this tool, project output is checked that all practical things (for example documentation, instructions, asset information in CMDB, event management adjustments, backups, etc.) are in order before the customer is accepted for the production. If deficiencies are found, the project output is rejected by Service Operations. In this case, the transition project needs to correct the lack of things right and reserve a time for new transition check. Part of the Transition Checklist can be seen from Figure 11 below.

	Date:		
	Customer/Service:		
	Project Manager:		
	SO Participant(s):		
			ok?
<b>MOG</b>	Yleistä	Does Management and Operations Guide (MOG) exist? Does the customer have named Service Manager?	
	Incident Management	Does MOG include Incident Management contacts? Does MOG define how to operate with different IM-tickets in night time? Is Major Incident Management Process described? (Mandatory)	
	RMA	Does MOG include instructions on how to handle RMA's?	
	Change Management	Is change management included in the contract? Is Emergency Change defined? (Mandatory) Who are allowed to request changes?	
	Documentation	What kind of documentation exists and who is responsible for them?	
	Standard Changes	Are standard changes included in the contract? What is the SLA for Standard changes? Are the Standard changes defined in a correct manner?	
	<b>Network Diagrams</b>	Customer network diagram	Does logical network diagram exist? Does physical network diagram exist? Are there any other network diagrams regarding this customer? Are the assets named correctly in network diagrams?
Management connection diagram		Is the management connection network diagram available?	

Figure 11. Customer Transition Checklist (Data 1, Document 22).

As can be seen from Figure 11 above, Customer Transition Checklist includes specific questions regarding the validity of the customer transition project output. Figure 10 shows only a small part of the whole checklist.

Moreover, customer transition check is a clear point where shortcomings of transition projects are identified. However, the staff does not feel that the lessons learned would go to the Service Design phase, but rather learning takes place with the individuals working as project managers. As one interviewee said;

It would be important to learn from transition checks. For example, when new service is introduced and in transition check it is noticed that we do not have any clear model how the billing should be handled with this kind of services. This kind of lessons learned should happen in the design phase and not just with the one person working on the project (Data 1, Interview 1).

Customer transition project cannot be closed before the project Post-Implementation Review (PIR) is done. This review is done together with the project manager and Service Operations stakeholders, and the goal is to check that the Service Operations unit has been able to provide the service and have there been any surprises after the customer has been approved for production (Data 1, Document 23). PIR meetings are held usually 2-4 months after the customer has been approved for production and reserving this meeting into the calendar is one mandatory part of transition checklist. Only when the PIR meeting has been held and approved, the customer transition project can be closed, and customer IT-environment is fully on responsibility of the production instead of the project.

Before the project is started, sales and project manager have a meeting, which purpose is to transfer as much information as possible from the sales person to the project manager related to the customer (Data 1, Document 21). In most cases, the project receives adequate information from sales for launching the customer transition project (Data 1, Interview 23). However, sometimes, the sales department is not able to give all the necessary information and the project must be started with insufficient information. One interviewee described the situation as follows;

With one big customer, we often have a situation that the service should be already provided to the customer even though we do not yet have any description about the service that we should provide. The description can be a service contract or customer solution description. Altogether, the salesperson cannot give the information about what has been agreed with the customer regarding this service (Data 1, Interview 3).

For such situations, the Project Management Office has developed a checklist that should be used whenever transferring customer case from sales to project manager. This list was introduced at the end of 2015, and it aims to ensure that the contracts (i.e. Service Description, Service Level Agreement, Service Agreement, Customer Solution Description) are at a sufficient level and that Service Operations is capable of providing that service (Data 1, Document 21). Approximately half of the requirements in this list are more or less copied from the Customer Transition Checklist. This list also says that if the relevant information is missing, the project manager could refuse to initiate the

project and return the case for the salesperson. However, despite this information, project managers often feel that they do not have possibilities to refuse the initiation of the customer transition project (Data 1, Interview 3).

In difficult customer cases, the sales person should contact Business Manager or the Technical Business Manager of the service in question. It has been clearly defined that responsibilities of Business areas include supporting sales department in all difficult sales situations (Data 1, Document 18). However, sometimes sales department does not contact the business manager or technical business manager at all before closing the deal (Data 1, Interview 6). This may result in that the service is not sold correctly.

Sometimes deals are made without consulting the service owners at all (Data 1, Interview 6).

Insufficient information from sales regarding the customer case employs the project manager much. Before the customer can be transitioned into production, Service Operations unit requires that certain documents have been created and accepted. If not, the project manager has to create them in the project, even if the job should have been done in connection with the main contract (Data 1, Interview 3). This often causes confusion and extra work for the project, which could lead to delays in the whole project (Data 1, Interview 3). Sometimes, for business requirements, the customer transition project has to be approved and taken into production, even though all transition check requirements are not separately approved. In these cases, the Service Operations unit records the unfinished project tasks as precise as possible and requires that the project finishes these tasks before the Post-Implementation Review of the customer transition project. (Data 1, Interview 1).

The case company has identified two types of transition project. First type, customer transition project, was described in this subsection. Next subsection describes the service transition project in the case company.

### 3.5.2 Transition Type 2: Service Transition

Another identified transition is service transition, which aims to transit new service into production. In this case, the transition does not necessarily take new customers into production but builds up the necessary instructions, infrastructure, platforms and processes

for Service Operations to provide the new service. When the service transition is completed, a new customer can be transitioned to use this new service with customer transition project. An example of such a service is a shared platform that is used to provide authentication service based on text messages to many customers (Data 1, Interview 1). The interviewed persons recognized that service transition is also a transition project. However, the resourcing of this kind of transition project in the case company was unclear (Data 1, Interview 1,2,3,4,).

None of the interviewees could tell any model that is used for service transition in the case company (Data 1, Interview 1,2,3,4,5,6,7). One interviewee, who has worked with different project in the case company for years, described the situation as follows;

I can't say that I would know how services are transitioned into production in this company... My perception is that the service transition is hung out to dry rather than carried out formally (Data 1, Interview 3).

As described earlier in this section, PSG defines the needed resources for designing new service. In most of the cases, the responsible person for designing the service is from Offering unit. Resources from the case company project management office are not used in service transition projects (Data 1, Interview 3), even though the designing of new services is called as a "productization" project (translated from Finnish "tuotteistus") in the case company.

Service transition projects do not follow any project model as customer transition projects do. Customer transition project model has been tried with service transition projects, but it has been considered too heavy and slow (Data 1, Interview 4). Because of this, for some interviewees, it was also unclear that where is the line between Service Design and Service Transition (Data 1, Interview 1,2,3,5). As previously mentioned in this study, issues related to the Service Transition are taken into account when designing the service, but it is not as clearly defined as a separate transition phase that needs to be completed systematically.

The case company Service Design focuses more on the commercial side of services than the operative side (Data 1, Interview 5). This means that, for example, sales brochures, pricing models, marketing material, etc. are designed, created and introduced, but technical requirements, instructions, and training are not systematically designed and at least not implemented. One interviewee described an example as follows;

...and then the shared platform for this service is build. I can't say that how many people at this point think that someone else is going to actually provide the service with this platform and that these things should be documented now. Not necessarily at all (Data 1, Interview 5).

The case company seeks to design the service from commercial and marketing point of view well, but it lacks the systematic way to deliver the new service to the production. Thus, it can be said that the case company does not have a systematic way to do Service Transition.

In summary, the company has identified two different transition types: customer transition and service transition. The case company has a lot of experience in customer transition projects, which have a well-working project model. Customer Transition Checklist, which aims to check, that everything is in order before transitioning the customer into production, was also mentioned as strength. Service transitions do not follow any systematic operating model, which is why they are handled case by case basis in slightly different ways. For new services, operative service transition model is lacking. Whether it is a customer transition or service transition project, the service or customer always ends up in the Service Operations. Next subsection discusses the Service Operations in the case company.

### 3.6 Service Operations in the Case Company

This subsection discusses the Service Operations –unit in the case company, in order to understand the problems that currently occur in the production. Figure 12 below illustrates the Service Operations phase.

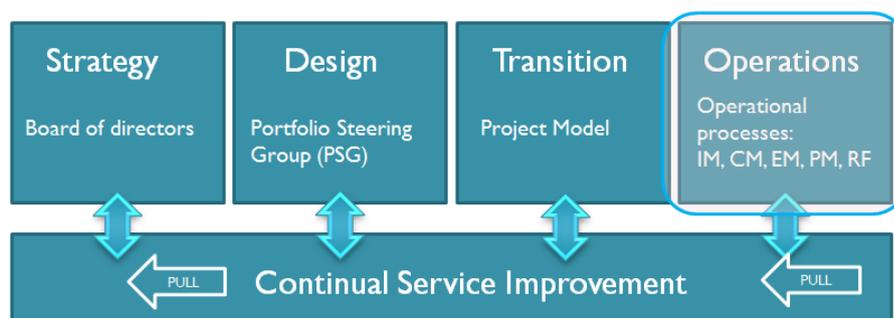
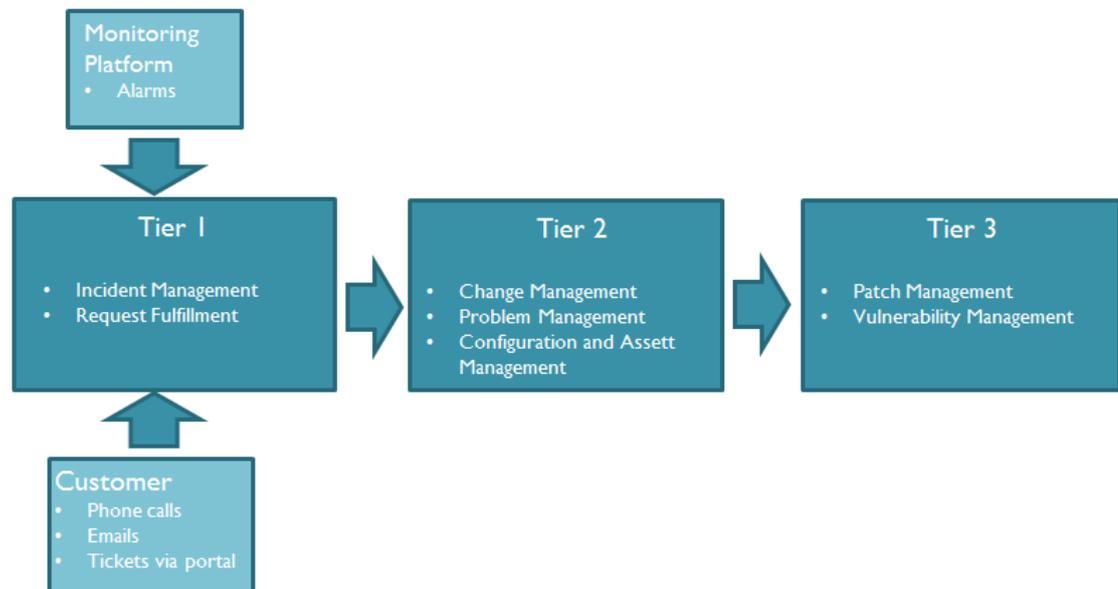


Figure 12. Service operations phase of the service lifecycle.

As can be seen from Figure 12 above, Service Operation is the last phase of service lifecycle. In the case company Service Operations is the unit that ultimately provides the

service for the customer. In Service Operations unit, Service Desk is the Single Point of Contact (SPOC) for all customers, following the 3 tier support. Service Operations operates in accordance with the ITIL Framework processes. The 3 tier support model of the case company is illustrated in Figure 13 below.



**Figure 13. The 3 tier support model of the case company.**

As can be seen from Figure 13 above, the core processes include Incident Management, Request Fulfillment, Event Management, Change Management, Problem Management, Configuration and asset management and Patch Management.

The amount of service customers in Service Operations unit has been increasing significantly in recent years, and new customers are also larger than in the past. The case company has a history as a small IT-house, where all the Service Desk employees are familiar with each customer network fairly well (Data 1, Interview 2). Now, due to increased amount of customers, the case company has had to change its way to organizing the work and knowledge in Service Desk.

The problems in Service Operations unit occur mostly as a lack of resources, but it is recognized that instead of just adding resources to the unit, the design of services should be developed (Data 1, Interview 1). The case company can provide services for small companies quite well. Problems begin to appear when larger customer purchases a lot of different services (10-15 services) at the same time (Data 1, Interview 2). Large companies often have exceptional demands when purchasing IT-services, which the case

company, as an agile service provider, often agrees. The requirements as individual requirements are not difficult to provide. However, when more than one big customer has different requirements, it begins to be difficult to maintain the documents and instructions updated and available enough for all employees working with customers. Presently, the case company already has so many service customers that the Service Desk employee cannot possibly be familiar with each customer operating models (Data 1, Interview 1).

Moreover, problems are also caused by customer environments, which are transitioned into production in the same condition as they are. When making the contract, the sales department has failed to take into account the present situation of the customer environment. This means that the customer environment could include, for example, old network devices that are known to cause more incidents. Also, old software versions in network devices are more likely to cause extra incidents than updated versions. As one interviewee said;

Big customer IT environment should be transformed before transitioning it to production. Our company's design phase with new customers lacks the architectural point of view. We should be able to say to the customer that their IT environment is not in a good shape, and we cannot provide our services before the environment is put in better condition (Data 1, Interview 2).

With outdated software versions in the customer IT environment, it is hard to provide, for example, patch management service to the customer network devices.

In summary, Service Operations –unit operates in accordance with ITIL-processes. Recent new customers are bigger than before, and they are purchasing several services at the same time, which causes resource problems in the Service Operations. Next subsection discusses the strengths and weaknesses found in the case company.

### 3.7 Strengths and Weaknesses

This subsection discusses the strengths and weaknesses of the case company that were identified by carrying out current state analysis. The main weakness chosen for this study is discussed separately in the next subsection.

A number of strengths and weaknesses were identified in the case company. It was noted that all strengths could be divided into six different categories and weaknesses

into four different categories. In other words, same strengths and weaknesses came up several times, but they were described in different words. List of identified strengths and weaknesses regarding Service Design and Service Transition in the case company can be seen from Table 5 below. Strengths and weaknesses in Table 5 are arranged according to their importance.

#	Strengths	Weaknesses
1	Customer Transition Checklist in use	Service Design phase lacking clear model for designing new or changed services
2	Offering unit has already started to develop Service Design	Portfolio Steering Group does not actively monitor Service Design project progression.
3	Selling tailored services are selling well	<b>New services are designed at some level but clear operative transition phase lacking</b>
4	Customer Transition Projects uses good project model	Organization-wide uncertainty of who owns which services
5		Portfolio Steering Group lacks clear Road Map
6		Customer Transition Projects does not get enough information from sales when launching the project.

**Table 5. Strengths and weaknesses of the case company.**

The strengths and weaknesses of the case company arranged according to their importance are presented in Table 5 above. The main weakness chosen for this study, the lack of operative service transition phase, is bolded in Table 5. This weakness is discussed in more detail in the next subsection. This subsection describes the other strengths and weaknesses.

The case company often sells tailored services to its customers. From the business perspective, this is one of the strengths of the case company (Table 5, Strength #3). This has also been seen as a challenge because providing tailored services is more complicated than providing standardized services. However, this is not seen as a weakness, because employees recognize that this is why the case company has managed to grow as it has during last years.

In recent years, the case company has had a lot of changes related to the Service Design. At the end of 2014, Offering unit was established, and this was the first time when the case company had a unit that is unambiguously responsible for designing new or changed services. Before this, services were designed by whatever resources were available at that time. This is why the level of the design varies a lot with the old services in the case company. Service Portfolio is governed by Portfolio Steering Group (PSG), which is a well-known function in the case company. PSG makes the decisions on new services to be designed, and this works well. However, PSG should also monitor the progress of the Service Design, and this is not done at a sufficient level (Table 5, Weakness 2). This has led to the fact that the outcome of the designed service depends heavily on the individual who has been responsible for the design. Some individuals have done the design well, and some have not. PSG is also lacking a road map that is visible for employees (Table 5, Weakness 5). Therefore, the staff sometimes feels that they do not know how the different service designs are progressing.

The Service Design in the case company is more focused on designing the commercial materials than the necessary requirements in terms of production. One of the strengths is that Offering unit has already taken steps to improve the Service Design phase (Table 5, Strength 2). Offering unit has drawn guidelines regarding the documentation that needs to be produced regarding the new service before it can be said to be designed. However, there are no criteria for the listed documents, which make it difficult to say whether the document is described at a sufficient level. The quality of the produced documents depends heavily on the individual designing the service.

The case company has a long history of having services without named owners. During the last year, Offering unit has made changes to this state of affairs, by appointing two different roles for each of the services. These roles are Business Manager, who is responsible for commercial matters of the service, and Technical Business Manager, who is responsible for the technical aspect of the service. For all the services the owners have not yet been defined, which can be seen in the case company as an organization-wide uncertainty regarding this. Some of the interviewees did not have any information on whether the services have named responsible persons at all (Table 5, Weakness 6). Partly this seems to be a communication problem. Informing the staff by, for example, writing about service owners in the company intranet blog, could reduce the amount of uncertainty regarding service owners.

The customer transition in the case company follows a good and proven project model (Table 5, Strength 4). However, one of the weaknesses is that the project manager is not able to get sufficient information from sales when launching the customer transition project (Table 5, Weakness 5). This causes extra work for the project, which may lead to a delay in the project schedule. Before Service Operations approves the new customer to the production, project manager and Service Operations participant must have a meeting, in which all production requirements for a new customer are validated. This transition check is one of the strengths of the case company (Table 5, Strength 1). However, a similar model is missing when transitioning new services (Table 5, Weakness 3). In general, in the case company, the difference between Service Design and Service Transition is unclear.

This subsection discussed all strengths and weaknesses found in the case company with the current state analysis. Weakness number three in Table 5 was chosen as the main weakness for this study. Next subsection discusses this main weakness in more detail.

### 3.8 Operative Service Transition and its Detailed Strengths and Weaknesses

Previous subsection discussed all found strengths and weaknesses of the case company. This subsection discusses the main weakness chosen for this study (Table 5, Weakness 3). The main weakness is the lack of operative service transition model.

Presently, services are transitioned into production without any formal criteria. As mentioned previously, this causes problems for production. If the transition phase of new services can be developed and criteria for new services put into use, it is expected to have a positive impact on the production. Offering unit is already developing the Service Design as a whole. However, this holistic model is so complex that it takes several months, if not years before the currently identified development areas are completed. This study investigates the development of Service Design and Transition phases from the perspective of the production. Thus, the most important thing is to get the maximum benefit from the point of view of the production, during the period of time when this study is carried out. This study is carried out in approximately two to three months of time, so realistically it is not possible to develop the whole Service Design and Transition model.

On these grounds, the weakness chosen for this study is the lack of operative service transition model with the new or changed service. This means that the commercial side,

for example, introducing new services for sales, is left out of the scope. Developing this weakness also has an impact on the other weaknesses identified in the current state analysis. Developing an operative service transition model is part of the biggest weakness found in the case company (Table 5, Weakness 1), which is developed by Offering unit in the long run. Before approving new services into production, the Service Operations unit can also require that the service has owners. This means that in the future there should be no new or changed services without owners. This is a direct impact in the weakness number four in Table 5.

This section discussed the current state analysis of the case company. A number of strengths and weaknesses were found and listed. The lack of operative service transition model was chosen as the main weakness for this study. The next section goes through the most common theories of Service Management System.

## **4 Best Practice on Service Management System**

This section discusses best practice on Service Management System. This section is divided into eight subsections. The first subsection presents the reasoning behind the presented best practice. The second subsection discusses IT Infrastructure Library (ITIL). The third subsection discusses ISO 20000 requirements for a company that is ISO 20000 certified. The fourth subsection presents the basic knowledge of Service Strategy. The fifth subsection presents the basic knowledge of Service Design. The sixth subsection discusses Service Design Package (SDP). The seventh subsection discusses Service Acceptance Criteria, which is a part of SDP. The eighth subsection presents the conceptual framework of Service Design and Service Transition that was built on the basis of the best practice and available knowledge presented in this section.

### **4.1 Reasoning Behind Presented Best Practice**

This subsection sets out the basis on which the theories presented have been selected. A number of weaknesses were found through the current state analysis of the case company, and the lack of operative service transition model was chosen as the main weakness for this study. Although term "operative transition model" refers to the Service Transition phase of the service lifecycle, main issues can be tackled in the Service Design phase. Service Design is the phase that is responsible for designing the transition phase also. The case company has already successfully implemented operative processes from ITIL framework. ITIL framework also presents models for Service Design Package and Service Acceptance Criteria, which can be at least part of the operative transition model for the case company. From the perspective of Service Operations unit, ITIL has brought a lot of benefits to the company and best practice of ITIL could be taken into account in the earlier phases of the service lifecycle. Studies also show that as the adoption of ITIL increases, organizations start to gain more strategic and operational benefits (Marrone & Kolbe 2011). Therefore, this section concentrates mostly on the best practice of ITIL regarding Service Design phase.

Moreover, the case company is ISO 20000 certified, and ISO 20000 defines a number of requirements that must be met when designing new or changed services. From the perspective of the production the most important requirements are that Service Design must include test plans, service acceptance criteria, dependencies on other services,

different resources (human, technical, information) authorities and responsibilities, training needs and new or changed technology that is used to provide the new or changed service (Finnish standard association 2011). Thus, the best practice and available knowledge is also scrutinized from ISO 20000 perspective.

This subsection discussed the reasoning for the best practice presented in this section. Next subsection discusses IT Infrastructure Library.

## 4.2 IT Infrastructure Library

IT Infrastructure Library (ITIL) is a framework of best practice in the management of IT services that allows the service provider to provide high-quality IT services to its customers (Steinberg 2011).

ITIL's value comes from the IT service provider understanding business objectives and the role that IT services play in enabling these objectives. (Kabachinski 2011:62).

Best practice includes descriptions of processes, functions and other capabilities needed to provide the IT services (Hunnebeck 2011). ITIL is not a standard, which companies have to follow and companies cannot certify to ITIL. Instead, it provides guidelines that help to create value for service customers when understood correctly and used properly. ITIL provides a single model for managing the service lifecycle. The implemented parts of ITIL depends on the company. For example, if the company does not yet have any ITIL processes implemented, it is easier to start implementing resolution processes, such as Incident Management, Request Fulfillment, and Problem Management. When resolution processes are implemented and working, it might be time to start implementing some control processes, such as Configuration Management and Change Management. ITIL aims to increase operational efficiency as good as possible and reduce operating costs by this (Hunnebeck 2011). When this is accomplished, the company is also closed to Green IT, though this is not directly a goal of ITIL (Cater-Steel & Tan 2011).

All in all, ITIL contains 26 different processes. ITIL's processes are illustrated in Figure 14 below.



Figure 14. ITIL processes (Reddy 2012).

As seen from Figure 14 above, service lifecycle management model of ITIL is divided into five main categories; Service Strategy, Service Design, Service Transition, Service Operations and Continual Service Improvement. Each of these main categories has separate processes and functions defined, which are used to manage the service in that lifecycle phase.

The first phase, Service Strategy, provides best practice on the long-term profitable growth regarding IT service management. This phase of the ITIL lifecycle finds answers to questions such as: What are the services we want to offer and to whom? How do we stand out from our competitors? How do we actually produce value for our customers? (Service strategy 2011). Next phase is the Service Design, which focuses on the design of new or changed service so that it is in line with the strategy and that they can be implemented in the most cost efficient and effective way. Service Design, as the name suggests, only designs the services (Hunnebeck 2011). Services are not created or implemented in this phase. The third phase is Service Transition, which aims to implement the service in respect of all that Service Design phase has initially designed. Service Transition creates the readiness to the production environment and transfers the service into operation (Rance 2011). Service Operation is the life cycle phase in which the customer experiences the service. The last phase is the Continual Service Improvement, which aims to continuously improve the service efficiency and effectiveness (Lloyd 2011).

ITIL defines Service Management as follows:

Service Management is a set of specialized organizational capabilities for providing value to customers in the form of services (Service strategy 2011:27).

Dattero et al. (2009) again defines IT service management as follows:

IT Service Management (ITSM) is an emerging discipline focusing on a set of well-established processes. These processes conform to standards as ISO/IEC 20000 and best practices such as ITIL. The goal of ITSM is to optimize IT services in order to satisfy business requirements and manage the IT infrastructure while better aligning IT with organizational objects (Dattero et al. 2009).

In a nutshell, the target of ITSM is to create value for customers in the form of IT services so that it is cost-effective and aligned with the provider company business. ITIL presents that two conditions must be fulfilled before the value is created for the customer. Service must be fit for purpose and fit for use (Hunnebeck 2011). These are also called as Utility and Warranty. Figure 15 below illustrates the value creation model of ITIL framework.

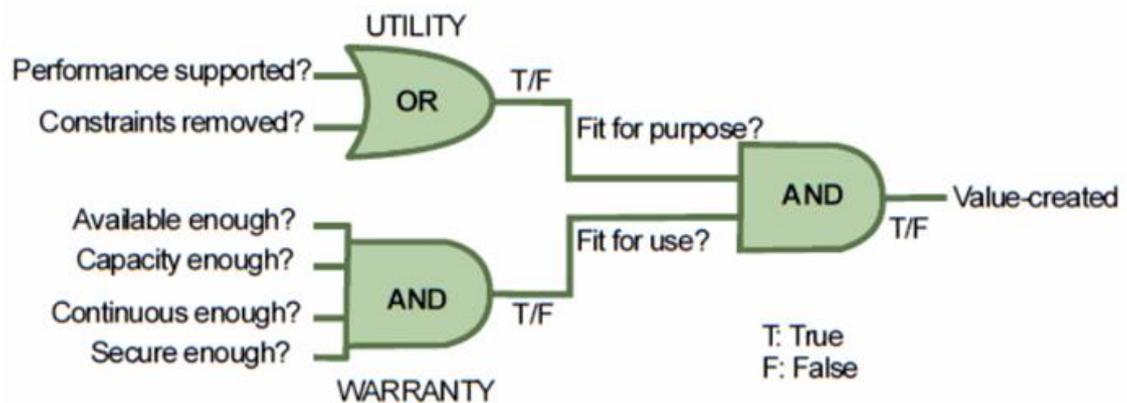


Figure 15. Value creation model of ITIL framework (Hunnebeck 2011)

As can be seen from Figure 15 above, the service must have a positive impact on the desired outcome or remove any obstacle that prevents performance, before the service can be fit for purpose. The service must meet four conditions to ensure the warranty of the service. The service must be available in sufficient quantities, have sufficient capacity, be continuous and secure enough. In other words, before value can be provided, the utility must be what customer wants, and the service must be delivered fulfilling the customer requirements (Hunnebeck 2011).

Studies show that ITIL maturity has a positive effect on the implementation of new processes in the company (Marrone & Kolbe 2011). Introducing ITIL processes do not necessarily show any benefits right away. This follows the learning curve model. At the early stages of implementing new processes challenges arise, but as the experience grows

the implementation of new processes gets easier (Marrone & Kolbe 2011). Only when the maturity of the ITIL in the company grows, achieved benefits start to show up. When the management sees the benefits of implementing ITIL from the business perspective, it is more likely that the company supports implementing ITIL processes more (Marrone & Kolbe 2011). Although ITIL has been proven to improve overall profitability and reliability of providing IT services, some larger organizations have still not used ITIL best practice (Hoerst et al. 2016). This may be due to the fact that some of the organizations are lacking working IT strategy. (Hoerst et al. 2016). For example, only 59% of the hospitals in Austria and neighboring regions have working IT strategy, and this can be regarded as one barrier why most of the hospitals IT departments have not implemented ITIL processes. (Hoerst et al. 2016)

In summary, ITIL provides best practice for IT service management and implementing these practices likely brings benefits for a company that provides IT services. The company can implement only appropriate parts of ITIL. Typically, companies start to implement resolution processes first and what an earlier stage of the life cycle of a service is, the less likely processes of ITIL are in use. ITIL provides only one model of several processes. It is up to the company define the specifications of the implementation of the model. Requirements for processes and operating models come from customers and quality certificates. Next subsection discusses ISO 20000 certification, which specifies requirements for IT service management.

#### 4.3 ISO 20000

ISO stands for the International Organization for Standardization. ISO 20000 includes the requirements for IT Service Management System, and it is based on the ISO 9001 standard. ISO 20000 requirements are largely same as ITIL framework provides best practice for managing services.

It (ISO 20000) specifies requirements for the service provider to plan, establish, implement, operate, monitor, review, maintain and improve an SMS. The requirements include the design, transition, delivery and improvement of services to fulfill service requirements (Finnish standard association 2011).

ISO 20000 does not explicitly require complying with any particular rule. Instead, it defines a list of requirements which must be met by using the best practice and instructions that the company has defined itself. ISO 20000 requires that Plan-Do-Check-Act (PDCA)

–model of the company applies to all components of service management and services. Figure 16 below illustrates the PDCA-model.

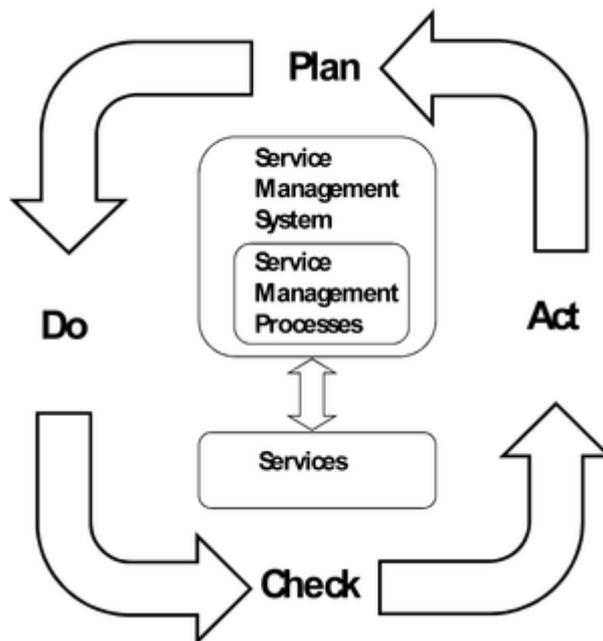


Figure 16. PDCA-model (Finnish standard association 2011).

Figure 16 above illustrates the following steps of PDCA-model. In the first step (Plan) the Service Management System (SMS) with its documentation is planned and agreed. Next step (do) is carrying out using the SMS. In the third step (check), the SMS as a whole is measured and its performance evaluated and reported. In the final step (act), the SMS and service performance is developed through a variety of measures (Finnish standard association 2011). This procedure is repeated constantly seeking t in this way to improve the SMS and the services provided. (Finnish standard association 2011). PDCA model is also a part of the ITIL Continual Service Improvement phase. In ITIL framework has added three extra steps more and it is called the seven-step improvement plan. However, the outline of the model is the same as the PDCA model (Lloyd 2011).

In accordance with ITIL, ISO 20000 SMS includes the Service Design, Service Transition, service delivery and continuous improvement. Figure 17 below illustrates the ISO 20000 SMS.

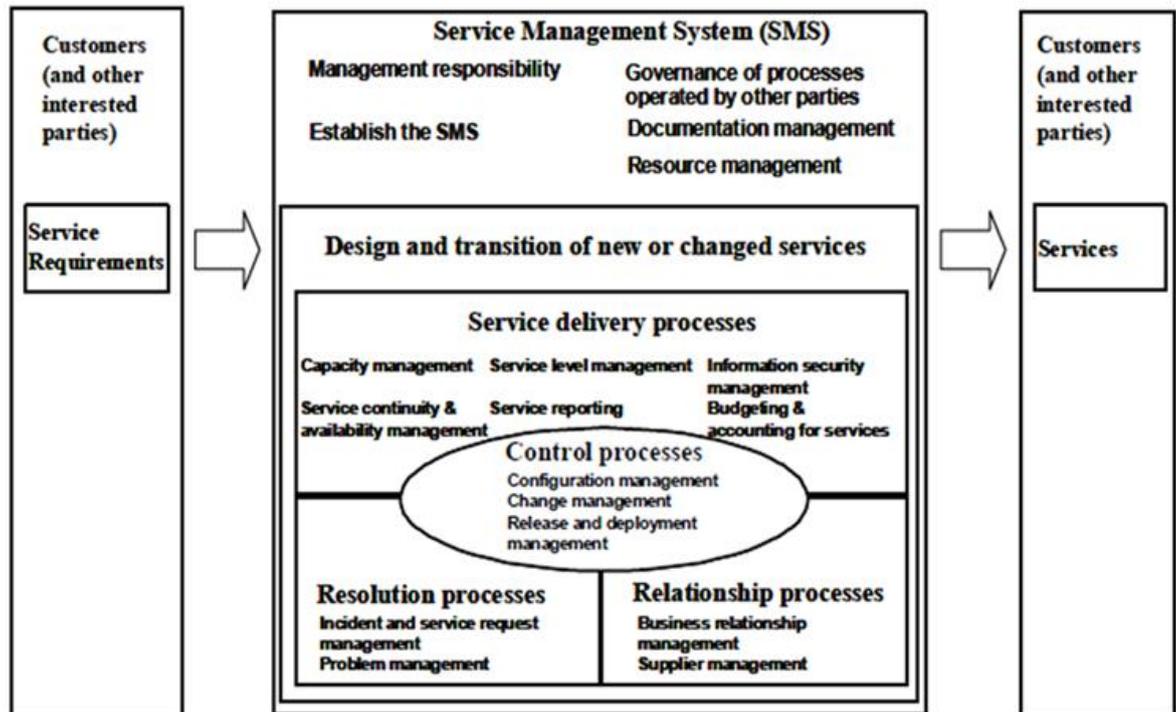


Figure 17. Service Management System (Finnish standard association 2011)

As Figure 17 above illustrates, SMS means the entity, which provides services that meet customer service requirements. The SMS includes different phases of the service lifecycle and requirements that have to be carried out during these phases.

With regards to this study, the most important ISO 20000 requirements are discussed in ISO 20000 section 5, which defines the requirements for the following subjects: *Planning new or changed services, Design, and development of new and changed services and transition of new or changed services*. Except the first pages, the contents of the ISO 20000 standard may not be directly copied without permission. Therefore, this work does not include direct quotes from ISO 20000.

ISO 20000 certified company must be able to prove that it has also acted according to its SMS. Due to this, the activities of the company are audited annually by an external auditor. Also, the company must carry out regular internal audits to ensure that the company is capable of meeting the requirements of ISO 20000 standard.

In summary, ISO 20000 requires that the whole Service Management System is described and that the company can prove that it acts according to it. ISO 20000 certified

companies are regularly audited to ensure that these requirements are met. Next subsection briefly discusses Service Strategy, which is the first phase of the service lifecycle.

#### 4.4 Service Strategy

This subsection discusses the Service Strategy, which is the first phase of the service lifecycle. Before starting to design new services, it must be estimated that does it fit in the strategy of the company. In Service Strategy phase, the suitability of the service for the goals of the company is assessed, resources needed to provide the service are estimated and technology and products to provide the service are evaluated.

All IT service provider companies have, in a way or another, service portfolio (Rance 2011). In some companies, it might be a list of services in different excels or even in silent information. In better examples it might be a clearly defined separate IT system. Service portfolio is divided into three main categories (Rance 2011). First, service pipeline includes all services that are being considered or developed, but they are not yet available for the customer. Second, the service catalogue is a listing of all services that can be offered to the customers at the moment. The service catalogue includes separate descriptions of services to customers and for internal use. Description for customers is more commercial description and description for internal use is the technical specification and description of the service. Third, the service portfolio includes a list of all services that are retired (Hunnebeck 2011).

Service Design is only one stage in the service lifecycle, which can be seen mostly in the service pipeline of the service portfolio. Also, services in the service catalogue can be re-designed if major changes are implemented in the service. Altogether, Service Strategy issues must be assessed and decided before Service Design can be started.

This subsection briefly discussed the Service Strategy, which is the first phase in service lifecycle. Next subsection discusses the second phase of service lifecycle, Service Design.

#### 4.5 Service Design

This subsection discusses the Service Design phase of the service lifecycle. Service Design Package (SDP) and Service Acceptance Criteria (SAC) are part of Service Design, and they are discussed in the next subsections.

The common mistake that people make when designing something completely foolproof is to underestimate the ingenuity of complete fools.  
Douglas Adams (1952-2001) (Brainyquote.com. n.d.).

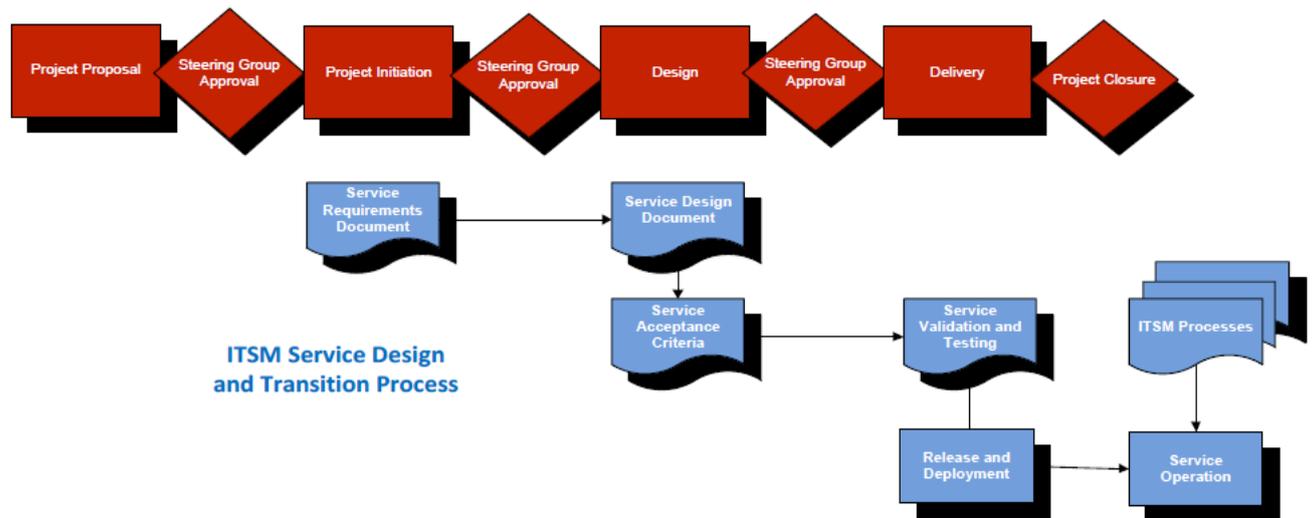
Service Design is the part of the service lifecycle where the service is designed so that it meets the business requirements and it is cost effective to provide in accordance with the current regulations and policies. ITIL defines the Service Design as follows:

The objective of Service Design is to design IT services so effectively that minimal improvement during their lifecycle is required (Hunnebeck 2011:4).

Although the objective is minimal need for the development of the service during the Service Operation, it does not exclude the continual development of services and systems, which need to be separate ongoing process.

According to ITIL, four aspects need to be considered when designing services (Hunnebeck 2011). These aspects are called the four P's: People, partners, products, and processes. First, people need to take into account because they do the service design, transition, operation, and development. Second, partners (suppliers, manufacturers, vendors) need to take account because they are also stakeholders when providing services. Thirdly, need to take into account the products (services, technology, tools) that are used to provide the service. Fourth, need to take into account the processes that are used to provide the service.

Service Design phase does not yet implement anything. It only designs and plans services. Only when the design is ready, it is passed along to Service Transition for implementation, testing and deploying everything that was designed in the Service Design phase (Hunnebeck 2011). In real life, however, there is not so clear limit between Service Design and Transition. Tasks of both of these phases overlap. For example, the same person could be responsible for designing and transitioning a service and the tasks of both phases are done in parallel. Figure 18 below illustrates the Service Design and Transition phases in parallel.



**Figure 18. Illustration of Service Design and Service Transition phases in parallel (ISO20000templates.com 2011).**

As seen in Figure 18 above, Service Design and Service Transition are taking place at the same time. Service Design project starts from the proposal of new service. New Service Design project is approved by a function, which the company has determined to be the governing function of the Service Design. In Figure 18 above, the governing function is Steering Group. Steering Group must include participants from each department, which has something to do with the service lifecycle. If the service is ultimately managed by the IT department of the company, this is the phase when IT department must bring forth special demands regarding the Service Operation. In the case company of this study the governing function is Portfolio Steering Group (PSG) and the service is ultimately provided by the Service Operation –unit. When the Service Design project proposal has been approved, the project is started, and requirements for new service are defined. These requirements are once again approved by the governing Steering Group. After approval the actual Service Design can be started. Service Design creates the documentation and definitions of all things that need to be implemented before the service can be provided. Once the design criteria have been completed, the actual design is approved by the governing Steering Group. This is followed by the Service Transition. Service Design project ends when the service has been transitioned into production successfully. (Marrone & Kolbe 2011).

Service Design includes a number of different processes, which are listed in Figure 14 earlier in this section. One of these processes is the Design Coordination, which is responsible for coordinating the overall Service Designs so that the design targets are fulfilled (Hunnebeck 2011). Design Coordination is also responsible for creating Service Design Package (SDP) and delivering it forward to Service Transition as agreed. SDP

includes all necessary information about the Service Design that is needed in the transition of the service (Hunnebeck 2011). Next subsection discusses Service Design Package.

#### 4.5.1 Service Design Package

As mentioned above, Service Design Package (SDP) should be created by Service Coordination process in Service Design phase when designing new or changed services. SDP consists of requirements for service, service design, organizational readiness assessment, and service lifecycle plan. Service lifecycle plan itself consists of different plans. For example, plan for service transition, plan for service operational acceptance and service acceptance criteria. Different templates for SDP can be found on the internet. Figure 19 below illustrates the table of content of SDP template (Ross 2011).



1	Overview
2	Part I: Header
2.1	Name of the service
2.2	Service Owner responsible for delivering the service
2.3	Clearance information
3	Part II: Detailed Requirements Specification as a Basis for Service Transition
3.1	Service level requirements
3.2	Functional requirements
3.3	Information security requirements
3.4	Compliance requirements
3.5	Architectural constraints
3.6	Interface requirements
3.7	Migration requirements
3.8	Operational requirements
3.9	Required access rights
4	Part III: Service Operation and Improvement Concepts
4.1	Service Operation
4.2	Continual Service Improvement
5	Part IV: Technical and Organizational Implementation Blueprint
5.1	Decomposition of the Business Service into Infrastructure Services
5.2	Transition strategy
5.3	Details on technical changes
5.4	Organizational changes
5.5	Required financial resources
6	Part V: Transition Planning Information
6.1	Preliminary Service Transition Plan

Figure 19. The table of content of SDP template example (Ross 2011).

As can be seen from Figure 19 above, SDP aims to take a holistic view of a new or changed service management. However, ITIL does not define the content of the SDP in particular detail. It defines in general terms the issues which should be considered in accordance with the best practice when creating SDP. Depending on the industry and the services provided, Service Design Packages may be very different from each other. Organizations themselves need to define the details of their SDP (Hunnebeck 2011). However, at a minimum, SDP should include the definition of 5 aspects of the service design: the service itself, tools for providing the service, architecture, metrics for measuring the service and processes needed to deliver the value to the business or end users (Ross 2011). One part of the SDP is Service Acceptance Criteria, which is described in more detail in the next subsection.

#### 4.5.2 Service Acceptance Criteria

Design Coordination creates the SDP, and one part of the SDP is Service Acceptance Criteria (SAC). SAC lists all requirements that must be met before service is approved for production. This is to ensure that the service is working as expected and that the Service Operation is capable and ready to provide the service once the transition is complete (Hunnebeck 2011). SAC is included at every stage of Service Design and Service Transition. In other words, SAC must be maintained continuously. Only when the service is being transitioned to be the responsibility of the production, items in SAC are checked (Zitek n.d.). Everything needs to work as it has been defined in the Service Design phase. Figure 20 below illustrates SAC association with different stages of Service Design and Service Transition.

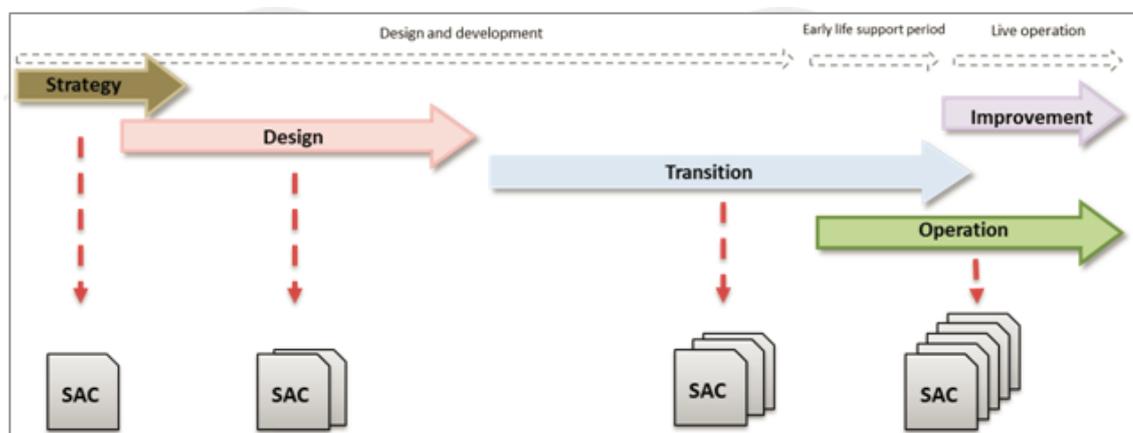


Figure 20. Service acceptance criteria in different phases of the service lifecycle (Zitek n.d.).

Figure 20 above illustrates the amount items to check in SAC increasing when moving closer to the production.

As previously mentioned, ITIL does not define the content of SDP in details. Similarly, ITIL does not define the content of SAC in details. Each organization needs to compile SAC that best suits their business and services. Typically, SAC is a checklist, which reviews the following issues (tfl.gov.uk 2013). Check that acceptance for requirements for the service is done. Check that service has been tested as agreed. Check that supporting arrangements are identified and in place. Check for availability, continuity, and performance (FitSM n.d.). Check for support and technical documentation. Check that staff has been trained to provide the new service. Check that rollback plans are in place and that they have been tested. Figure 21 below illustrates an example of Service Acceptance Criteria template.

Category	Acceptance criteria	Critical?
<b>Functional and technical acceptance criteria</b> <ul style="list-style-type: none"> <li>• Functionality to be effectively provided by the service</li> <li>• Other</li> </ul>		
<b>Availability, continuity and performance-related acceptance criteria</b>		
<b>Security and data protection-related acceptance criteria</b>		
<b>Usability-related acceptance criteria</b>		
<b>Organisational acceptance criteria</b> <ul style="list-style-type: none"> <li>• Criteria for effective communication</li> <li>• Criteria for effective user or support staff training</li> </ul>		

Figure 21. An example of service acceptance criteria template (FitSM n.d.).

As can be seen from Figure 21 above, one example of Service Acceptance Criteria is a checklist handled in Excel.

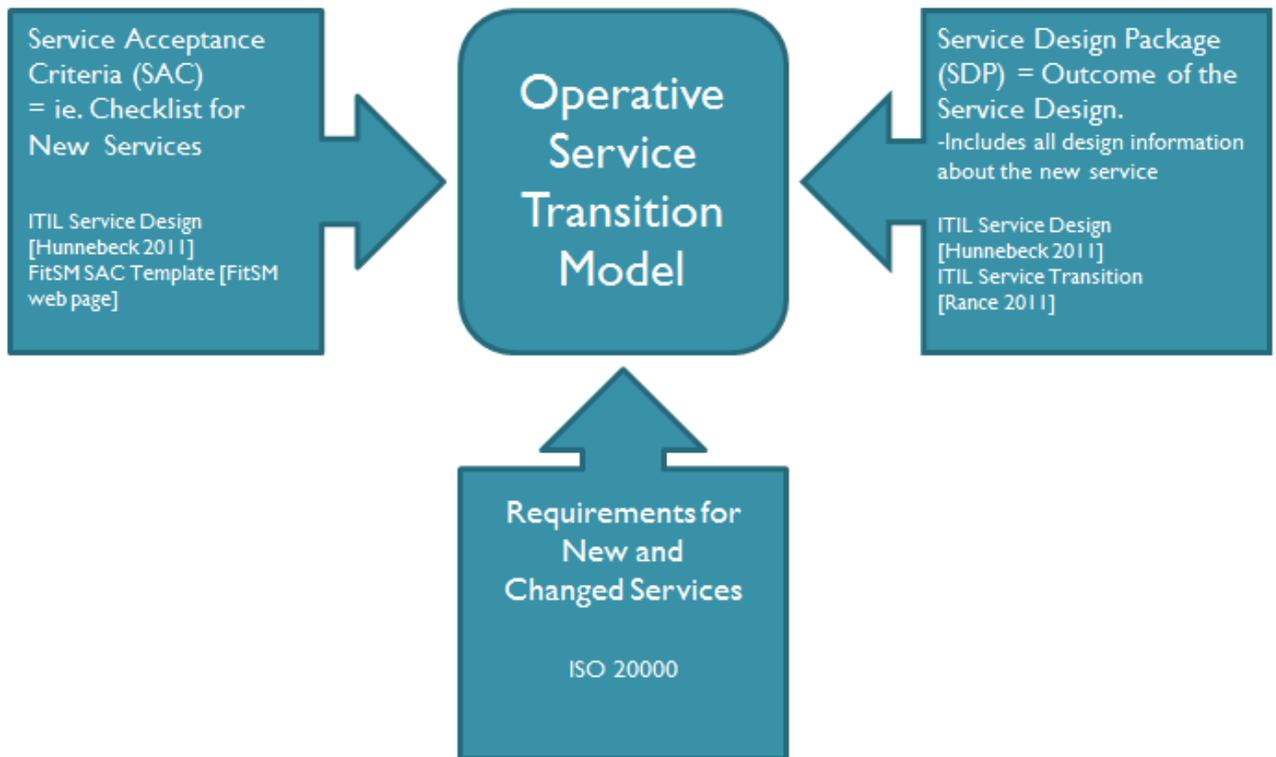
In summary, Service Acceptance Criteria (SAC) is a list of demands that must be fulfilled before service can be accepted into production. List of demands can be handled for example in Excel spreadsheet. SAC is part of the Service Design Package, and it should

be updated during the whole service lifecycle. ITIL provides a model of the SDP and the SAC, and it does not define exact requirements for these. Every company must define their own SAC and SDP that support their business and services. Next subsection presents the conceptual framework for this study.

#### 4.6 Conceptual Framework

This section covered the best practice for IT service management. Adoption of ITIL framework and increasing its maturity in companies has a proven positive impact on the operational activities and business of the company. Therefore, this best practice investigation consisted mostly of the best practice of ITIL. ITIL framework includes a number of different processes, and companies can take as much of those processes into use as they want. Typically, companies start to implement operative ITIL processes first. Later, when the ITIL maturity grows, companies can implement other ITIL processes. Service Strategy was presented shortly in order to understand the basis of the Service Design acts. The main focus of the best practice investigation was on Service Design. More specifically Service Design Package (SDP) and Service Acceptance Criteria (SAC) were reviewed in more detail. The best practice investigation also shortly presented ISO 20000 and ISO 20000 certification influence on the Service Management System of a company.

On the basis of the presented best practice and available knowledge in this section, the conceptual framework was compiled. This conceptual framework is used to build the proposal of Operative Service Transition Model for the case company in the next section. The conceptual framework is presented in Figure 22 below.



**Figure 22. Conceptual framework of Operative Service Transition Model.**

As can be seen from Figure 22 above, the conceptual framework consists of 3 areas of best practice and available knowledge: Service Acceptance Criteria (SAC), Service Design Package (SDP) and requirements for new and changed services (ISO 20000).

Service Acceptance Criteria is a list of requirements which must be fulfilled before the service is approved for production. SAC should be updated during the whole service lifecycle starting from Service Strategy and ending in Service Operation. As new requirements for new service are detected, the SAC should be updated. When the service is transitioned into production, SAC list is checked before service is approved for production. The purpose of SAC is to ensure that the new service is implemented as planned, no shortcomings are done, and a minimal amount of service development is needed during the production. At its simplest, the SAC may be a checklist which is dealt with, for example, Excel or Word. A more advanced version of the SAC could be handled, for example, in a ticketing system with separate tasks for all requirements that need to be accomplished before service is approved for production. SAC is one part of the Service Design Package. It was separated as a separate part in conceptual framework because it is an essential part of the main weakness of the case company, which is the lack of Operative Service Transition Model.

Service Design Package is the whole output of Service Design phase. It includes everything that the Service Design phase has designed regarding the new service. According to ITIL framework, SDP is the data that is given to Service Transition. Service transition then creates and implements everything that is defined in the SDP. Presently, in the case company, the whole Service Design phase is under development. Therefore, it is essential to understand how the proposed Operative Service Transition Model fits in the whole Service Design of the case company.

When designing new services, other requirements must also be taken into account. The most important of these requirements for the case company is ISO 20000 since the company has ISO 20000 certification. ISO 20000 specifies a detailed list of requirements regarding the whole Service Management System that must be fulfilled when the case company is audited. With regards to this study, the most essential ISO 20000 requirements are for the design and implementation of the new or changed service.

This section covered the best practice of the IT service management. The best practice investigation focused mostly on the ITIL framework and specifically on the Service Design phase of the service lifecycle. Service Design includes Service Design Package and Service Acceptance criteria, which were presented in more detail. In addition to these, basic description of ISO 20000 was presented. Also, the requirements of ISO 20000 for a company that has ISO 20000 certification were presented. On the basis of the presented best practice, the conceptual framework of Service Design and Service Transition was compiled, which is used in building the proposal for the Operative Service Transition Model for the case company. The next section discusses building the proposal for the case company.

## 5 Building the Initial Proposal

This section merges the results of the current state analysis and the conceptual framework towards the building of the proposal. This section is divided into four subsections. The first subsection presents the findings of data collection 2. The second subsection discusses the reasoning behind the initial proposal. The third subsection presents the initial proposal for Operative Service Transition Model. The fourth subsection summarizes this section.

### 5.1 Overview of Proposal Building Stage

This subsection discusses the findings of Data collection 2 (Data 2). First, it describes Data 2 collection. After this, it presents the found requirements for the initial proposal from Data 2. Following, discussion of the scope of the initial proposal and description of the scope definition. Finally, it summarizes this subsection.

Data 2 consists of two different data. First, it consists of the same interviews, which were the base of Data 1. Each interviewee was asked about the way they would begin to develop the different phases of the service lifecycle, and these answers are used in Data 2. Second, Data 2 consists of three internal workshops. Detailed scripts of these workshops were not recorded but Appendix 1 of this study presents basic information (participants, date, duration and discussed topics) of all meetings. These workshops included participants from every organization unit that is in any way involved in the Service Transition phase. Next subsection discusses the requirements for the initial proposal that were found from Data 2.

#### 5.1.1 Findings of Data Collection 2: Requirements for the Initial Proposal

This subsection discusses the found requirements for the Initial Proposal. As found in the current state analysis, the case company lacks a systematic model for transitioning new or changed services, while customer transitions follow a model that has been recognized as working model and is known by all interviewees. Therefore, the most important development area is a similar systematic check for new services as with customer transitions (Data 2, Interview 1, 4,7). One of the interviewees described the situation as follows;

Service design projects should have a similar checklist as customer transitions have so that basic things would not be forgotten when designing services (Data 2, Interview 1).

Presently, at the end of all customer transitions, transition check meeting is held. In this meeting, all operational requirements for the new customer are checked before the customer is approved for production. Requirements are listed in a Customer Transition Checklist, which is considered as long excel sheet (Data 2, Interview 4). However, it is noted that despite going through the transition checklist includes hours of work, in the long run, it generates a lot of benefits (Data 2, Interview 1). If a similar model for checklist is introduced for new services, it is also expected to create benefit in the long run.

Transition checklist is a document which should be updated and developed on a regular basis. This means that transition checklist should have an owner, who develops and updates it and demands that the listed requirements are met when transitioning new customer or service (Data 2, Workshop 2). Presently, however, it is not entirely clear who, or what unit, should be responsible for the ownership of the Service Transition Checklist when it is created in this study (Data 2, Workshop 2).

In addition to the ownership, the post-implementation review (PIR) was also mentioned as an important part of the Operative Service Transition Model. One interviewee described the present situation as follows;

When service is designed, no checks are done. We lack technical and commercial PIR for Service Design. After project, it should be evaluated that did the project output match the expectations (Data 2, Interview 2).

Presently, post implementation reviews for new services are not done. This means that there is no checkpoint for reviewing that does the service work as it was designed and is Service Operations able to provide the service as was designed (Data 2, Interview 1). Thus, feedback channel from Service Operations is lacking and learning does not happen as well as it could happen. Generally speaking, many of the interviewees considered it important that the Service Transition model should include similar post implementation review as the customer transition model has (Data 2, Interview 1,2,4,5).

The case company also has an example of rather well designed IT security service, which was designed in 2013 (Data 2, Workshop 2). This service design includes technical service description, which describes large portion requirements that are essential in terms of production (Data 2, Workshop 2). This document includes a description of,

for example, technical details, management of the service, backups and disaster recovery (Data 2, Workshop 2). In addition to technical details, it is also considered as an important thing that all services have owners. As one interviewee said;

The first thing is that responsible person for all services must be found. Someone who could take all our feedbacks of our services and develop the services - Pete

Also, testing the new services before transitioning them into production was considered important. As noted in the current state analysis, new services are not systematically tested (Data 2, Interview 6). A test plan is one requirement that needs to be taken into account when building the Operative Service Transition Model. One interviewee also mentioned that services should be tested by the case company itself;

This company has the internal need for almost all services that we provide. I mean that we should test all our services internally before offering them to the customers (Data 2, Interview 6).

This means that out of all services the case company offers, it should aim to use internally as many services as possible before they are offered to customers. This way the case company would learn from design mistakes and improve the service without customer impact.

This subsection discussed the requirements regarding the initial proposal that were found from Data 2. Next subsection discusses the scope of the initial proposal regarding Data 2.

### 5.1.2 The Scope of the Initial Proposal

This subsection discusses the scope of the initial proposal, which was determined by the findings from Data 2. The scope of the initial proposal of this study became clear after meeting with different stakeholders. It was agreed that initial proposal of Operative Service Transition Model consists of two documents (Data 2, Workshop 2).

The first document, Operative Service Design Project Model, overviews the service design project and customer transition project in parallel and it should include the post implementation review for both projects types. The first version of this document was sketched on a flip chart with stakeholders and it was agreed that the author of this study creates similar picture with Power Point (Data2, Workshop 2). The second document,

Operative Service Design Checklist, is a checklist handled in Excel, and it includes all Service Operations requirements for a new service (Data 2, Workshop 2). Technical details for this checklist were collected from all interviews, customer transition checklist and one example of well-designed service. These two documents are illustrated in Figure 23 below.



Figure 23. Operative Service Transition Model consists of two different documents.

As can be seen from Figure 23 above, the Operative Service Transition Model consists of two different documents.

Moreover, presently, the lack of Operative Service Transition Model affects three out of four business areas (BA) that the case company has. These three business areas are Network BA, Security BA, and Cloud & Datacenter (CDC) BA. The fourth business area, Post-Sales Support BA, does not include many operative actions. Therefore, it does not require transition model (Data 2, Workshop 1). Designing CDC services include a wide range of different requirements compared to Network and Security BA. Presently, CDC services are also designed in a slightly different manner in the case company (Data 2, Workshop 1). Therefore, the scope of the initial proposal for Operative Service Transition Model includes only Network BA and Security BA (Data 2, Workshop 1). The scope of the initial proposal of Operative Service Transition Model regarding business areas is presented in Figure 24 below.



Figure 24. The scope of the initial proposal includes two business areas.

As seen in Figure 24 above, CDC BA and Post-Sales Support BA are left out of the scope of the initial proposal of Operative Service Transition Model. Later, if the initial proposal is approved, implemented and tested, it can be improved so that it also includes CDC services (Data 2, Workshop 1).

In summary, the case company has two different transition types. The first type, customer transition, is one of the strengths of the case company and it follows a well proven model for transitioning the customer into production. The second type, service transition, lacks a systematic model for transitioning the service into production and this is the focal weakness of this study. The first transition type is used as an example when the initial proposal is built. In addition to the requirements in the customer transition model (type 1), service transition model (type 2) needs to include more detailed test plans and requirements for each service to have named owners to update and develop the service transition model. The initial proposal of this study consists of two documents. The first document, Operative Service Design Project Model, overviews the Service Design project and customer transition project in parallel. The second document, Operative Service Transition Checklist, is a similar checklist for new services as customer transition project has before transitioning the customer into production.

This subsection discussed findings of Data 2, which consisted of same interviews that were the base of Data1 and meetings with different stakeholders. Findings of Data 2 are used for building the initial proposal later in this section. Next subsection discusses the reasoning behind the initial proposal.

## 5.2 Reasoning Behind Initial Proposal

This subsection discusses the reasoning behind the initial proposal. First, it reviews the current situation with the Service Design in the case company. Then, it presents the scope of the initial proposal. After this, it reviews the customer transition model, which is used as an example when building the initial proposal. Finally, it presents the redrafted conceptual framework, which is used to build the initial proposal.

As already mentioned in the current state analysis, the case company still has a lot to develop in the Service Design phase of the service lifecycle. The case company has designed services during the last years with resources which were available at that time. This means that quality of designed services varies a lot because the systematic model for designing and transitioning services has been lacking. Although the term Operative

Service Transition Model refers to the Service Transition phase, the model itself needs to be developed in the Service Design phase.

Presently, the case company has an ongoing development project for the entire Service Design phase, which is a big entity. Operative Service Transition Model is only a part of the whole Service Design phase. Developing the whole Service Design is a big and slow work. It may take several months or years before significant results can be seen. This study aims to improve the Service Design from the production point of view, and developing and implementing Operative Service Transition Model could have a positive impact in a shorter time period.

The initial proposal of Operative Service Transition Model presented in this study is a model for only two of the four business areas (BA) of the case company. These two business areas are network BA and security BA. Post-Sales support BA and Cloud & Datacenter (CDC) BA are left out of the scope. Post-sales support business was left out of the scope because it is rather small compared to other business areas and it does not include so many operative actions. CDC BA services include a lot of different requirements compared to other business areas, and they are presently designed in a bit different method than network and security services. Therefore, CDC BA services were left out of the scope. If the initial proposal of this study is approved and implemented in the case company, it is recommended that in some time period the CDC services should aim to adapt in the same or similar kind of model.

The case company has a proven model for customer transitions. Customer transition model consists of two parts. First, before accepting the customer into production, all operative requirements are checked. This happens in a meeting with all stakeholders and requirements are listed in an excel sheet. Second, two to three months after the customer has been approved for production, post-implementation review (PIR) is held. This is a similar meeting as the first part of customer transition model. In this meeting, it is checked that the output of the transition project worked as it was expected and that the Service Operations unit has been able to provide the service. PIR-meetings enable the case company to learn from the project outputs and transfer the knowledge into earlier phases of the service lifecycle (Service Transition, Design, and Strategy).

Customer transition model, that was described above, was utilized in creating the Operative Service Transition Model, taking into account the following five points. First, the

case company has ISO 20000 certification and therefore the model takes into account all the requirements of ISO 20000 regarding Service Design and Service Transition. Second, the new services should be tested much further and wider than is currently specified in the customer transition model. Thus, requirements for test plan were taken into account in more specific. Third, Offering unit of the case company is already developing its Service Design phase as a whole and this development project has been taken into account. This means that developer of this model regularly communicated with Offering unit to avoid working with the same issues in different units. Fourth, in the current state analysis, it was found that there is an organization-wide uncertainty of service owners. Thus, the initial proposal of Operative Service Transition Model includes the requirement for the case company to appoint an owner to the new service and to communicate this to the organization at a sufficient level. Fifth, Operative Service Transition Model is new for the case company. Therefore, it is recognized that all needed information for the model could not be collected inside the company by interviewing people and reading internal documents. Thus, the model is examined on the basis of best practice (ITIL) and Service Acceptance Criteria example found on the internet.

It was agreed that Operative Service Transition Model consists of two documents. First document, Service Design Project Model illustrates the two identified transition types in parallel. This document was drafted with stakeholders during workshop. Second document, Operative Service Transition Checklist, lists all operative requirements for new service. The basis of Operative Service Design Checklist consists of Customer Transition Checklist, which is illustrated in Figure 11 in Section 3.5.1. The data to the checklist was collected from different stakeholders (interviews and workshops).

On these grounds, the conceptual framework was redrafted so that the Operative Service Transition Model is part of the Service Design and it includes inputs from best practice (ITIL), found example of SAC, ISO 20000 requirements, and the case company strengths and weaknesses. Framework for initial proposal can be seen from Figure 25 below:

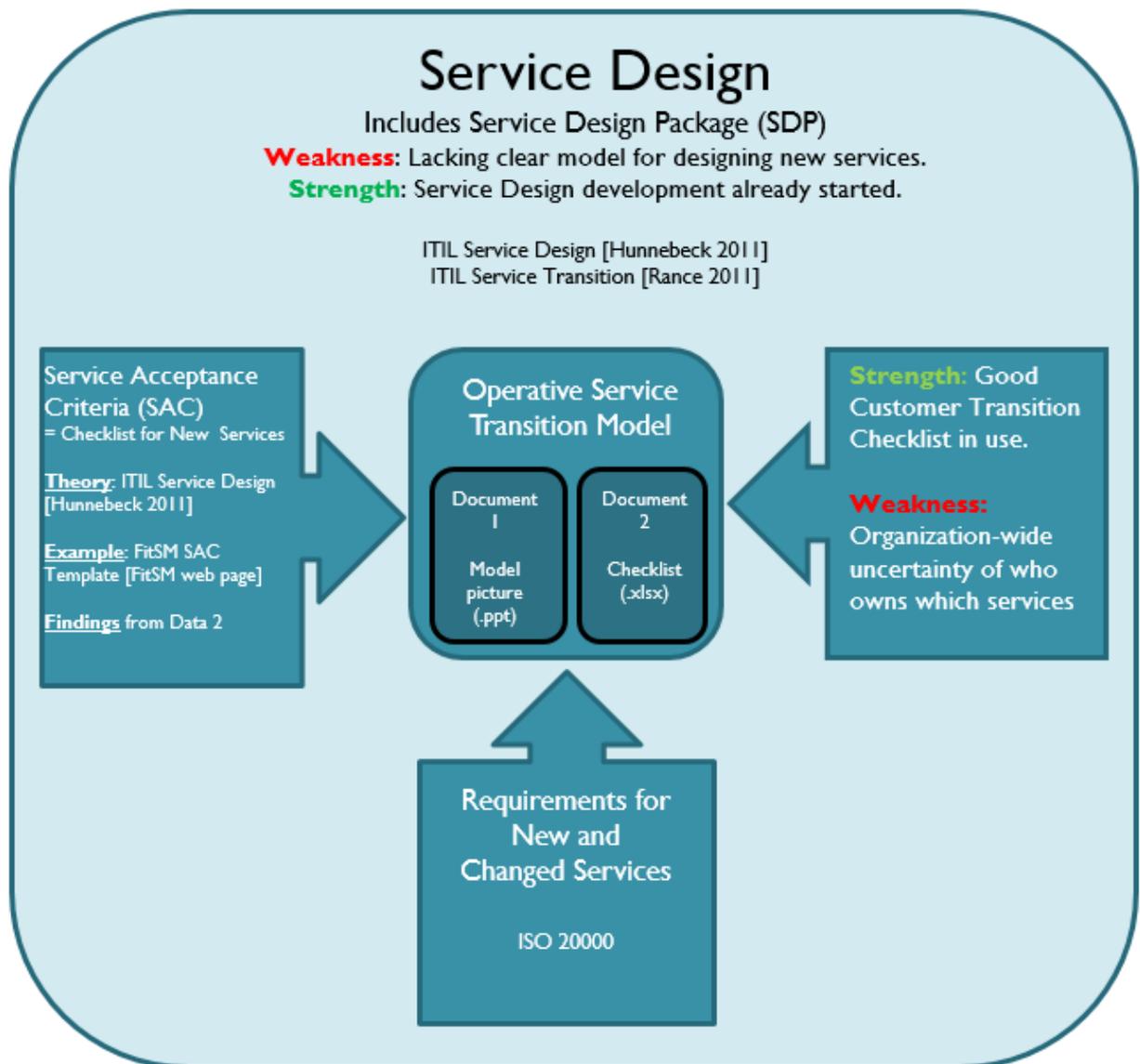


Figure 25. Framework for initial proposal of Operative Service Transition Model.

As can be seen from Figure 25 above, in the case company, Operative Service Transition Model is part of a larger entity, which is the Service Design. The initial proposal of Operative Service Transition Model consists of two documents and it was built using the best practice (ITIL), ISO 20000 requirements and strengths and weaknesses that were found in the current state analysis.

In summary, Operative Service Transition Model is part of a larger entity, which is the Service Design. The scope of the initial proposal includes only two of the four business areas in the case company. In addition to using customer transition model as an example, best practice (ITIL), ISO 20000 requirements, Data 2 findings, and strengths and weaknesses found in the current state analysis were used building the initial proposal.

Initial proposal of Operative Service Transition Model consists of two different documents. The first document, Operative Service Design Project Model is a process picture illustrating service design project and customer transition project in parallel. The second document, Operative Service Transition Checklist, is a list of operative requirements regarding new service.

This subsection discussed the reasoning behind the initial proposal. The aim of this subsection was to increase understanding of the reasoning behind the initial proposal. Next subsection discusses the initial proposal of Operative Service Transition Model.

### 5.3 Initial Proposal for Improving Service Design and Service Transition

This subsection discusses the initial proposal for improving Service Design and Service Transition phases in the case company. The name for the built initial proposal is Operative Service Transition Model, and it aims to improve Service Design phase and Service Transition phase at the same time. As the next subsection illustrates, Service Design and Service Transition functions partly in parallel. Therefore, improvement areas for Service Design and Service Transition are not presented separately in this study.

As discussed in the previous subsection, the initial proposal is based on the ISO 20000 requirements, best practice, and strengths and weaknesses found in the current state analysis. The initial proposal presented in this study consists of two documents. The first document is Operative Service Design Project Model, and it overviews the Service Design project last phases and customer transition project in parallel. This document also includes the post implementation review for both projects. The second document is an excel sheet including all operative requirements for a new service and is called Operative Service Transition Checklist. Both of these documents are created from the perspective of the production, and therefore they do not include, for example, commercial matters. Next subsection discusses the first document, Operative Service Design Project Model.

#### 5.3.1 Operative Service Design Project Model

First of the two documents created as the initial proposal for Operative Service Transition Model is an overview picture of the Operative Service Design Project Model. It illustrates the Service Design project and the Service Transition project in parallel. This picture also

illustrates the checkpoint for Operative Service Transition Check. With this model, service cannot be approved for sale by PSG before the Operative Service Transition Check is done. Operative Service Transition Checklist is the second document created in this study as the initial proposal, and it is described in more detail in the next subsection. Overview of the Operative Service Design Project Model is illustrated in Figure 26 below.

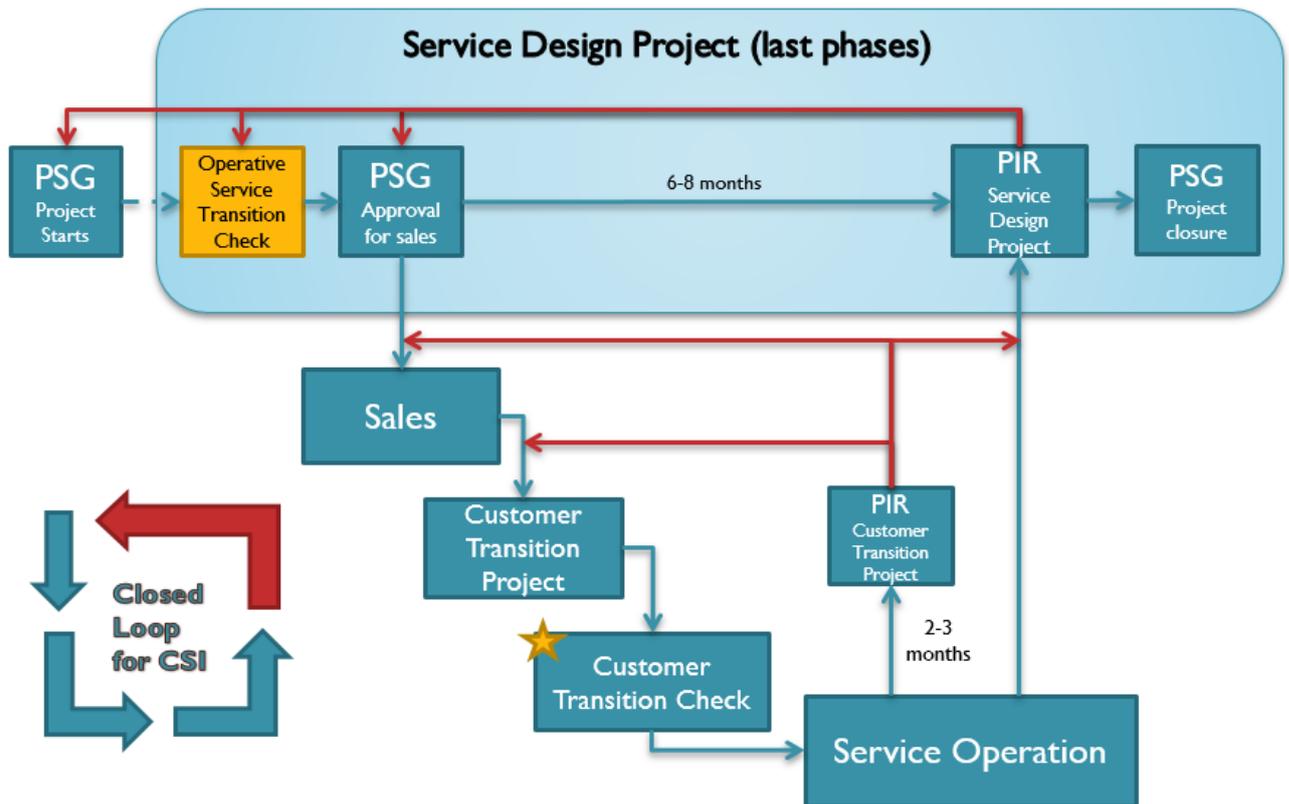


Figure 26. Operative Service Design Project Model.

As can be seen from Figure 26 above, this model includes only the last phases of the Service Design Project. According to this model, before PSG can approve the service for sale, Operative Service Transition Check must be done (marked as yellow in Figure 26). This check includes all operative requirements that must be met before PSG can approve the service for sales. When the new service is approved and the customer purchases the service, customer transition project is launched and before the customer can be delivered into production, customer transition check must be done. Two to three months after accepting the customer for production, post-implementation review (PIR) for the customer transition project is done. Customer Transition Check (marked with yellow star in Figure 26) is one of the main strengths in the case company and it was used as an example when Operative Service Transition Checklist was compiled.

In respect of the customer transition project, this model does not include improvements. Instead, it aims to illustrate the relation between customer transition project and service design project. Figure 27 below illustrates the Service Design Project Model with highlighting the different project types.

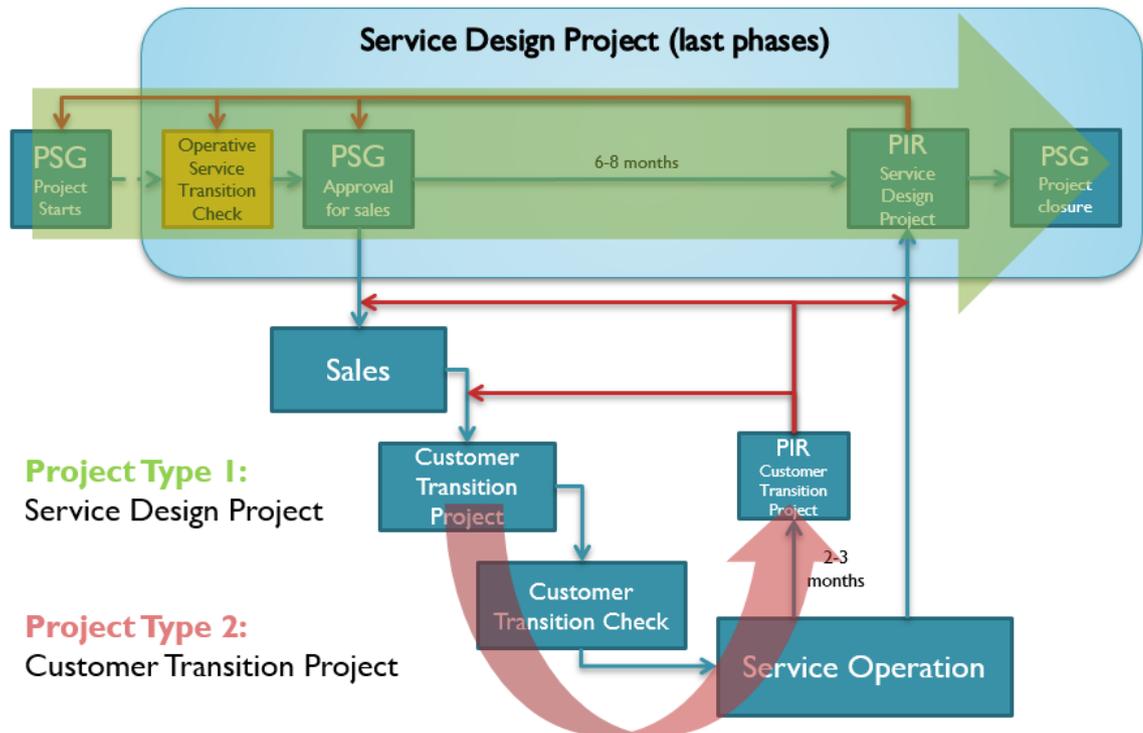


Figure 27. Service Design Project Model.

As can be seen from Figure 27, Service Design Project Model illustrates the two project types in parallel. It also illustrates service design project post-implementation review six to eight months after it has been approved for sales. This post-implementation review aims to check that the service has been working as it was designed. Also Service Operations capability for providing the service is checked. If development for the service is needed, information about this must be delivered into PSG, which delivers the information to Offering unit, which is responsible for developing the services. This model enables the Continual Service Improvement for services and for the Service Design project model itself.

The initial proposal of Operative Service Transition Model consists of two different documents. The first document, Operative Service Design Project Model was described in this subsection. The second document, Operative Service Transition Checklist, is described in the next subsection.

### 5.3.2 Operative Service Transition Checklist

The previous subsection discussed the overview of the last phases of the Service Design project. Illustration of the model (Figure 26) included checkpoint for Operative Service Transition Check, and this subsection discusses this checkpoint. In accordance with its name, Operative Service Transition Checklist is a list handled in Excel, and it includes all operative requirements for new services. Only operational matters are included in the list and, for example, commercial matters are left out of the scope. Figure 28 below illustrates screenshot of the first part of the Operative Service Transition Checklist.

Operative Service Transition Checklist		
Participants: Stakeholders from SO, SP, PS, Offering		
<b>Stakeholders</b>		Comments
<b>Stakeholders</b>	List of people who has been involved developing this service	
<b>Technical Service Description</b>		Comments
NOTICE! Some of the required information here is going to be described in the customer transition project. Only the recommended models for providing service is described here.		
<b>Management</b>	What kind of management connections are used with the service? How are the different devices managed? What kind of authentication is used? Does the customer have access to the devices? If yes, what level of access? What is the recommended protocol for managing the service/devices?	
<b>Monitoring</b>	List of monitored assets and services? What is monitored? How the monitoring is done? What thresholds are in use with alarms? What logs are collected? Where are they stored? Instructions for new alarm types. How Service Desk should perform with them?	
<b>Standard Changes</b>	List of defined standard changes Instructions for all standard changes	
<b>RMA</b>	Who acts as a onsite support for this service? Is it needed? Is the OnCall person used for RMA? Are spareparts available? If yes, where? What kind of support contracts the devices have?	

Figure 28. Operative Service Transition Checklist.

As can be seen from Figure 28, Operative Service Transition Checklist includes detailed operative requirements for new service. The case company provides several different kinds of services, so it is taken into account that the checklist does not apply for all new services as it is. Therefore, with every Operative Service Transition Check all requirements in the list are not valid, but they are still good to be considered in the service design project. With some services, technical details are not described in the technical

service description, but in the technical customer solution description, which is produced by the customer transition project.

Operative Service Transition Checklist includes seven main requirements, with more detailed requirements included in them. First, all stakeholders in the Service Design project must be listed. This way it is easier to start solving possible problems regarding the new service when information about all developers and their involvement is listed and available. Second, technical service description must be written and available. This is a separate Word document which includes detailed technical specifications of the service. It aims to answer, for example, the following questions: How the service works? How it is managed? How it is monitored? What kind of changes are usually implemented in the service? How it is reported? Third, the service must be tested and a test-document must be written and available. Also, this document must describe the tests that need to be done during the customer transition project. Fourth, all existing documentation in the production documentation system must be reviewed and updated if needed. Fifth, all assets and necessary information regarding the service must be added to the Configuration Management Database (CMDB) of the case company. Also, the monitoring must be adjusted as described in the technical service description –document. Sixth, transition plan for Service Operations and whole staff needs to be written and available. Seventh, date for the post-implementation review must be reserved.

It is noted that the first version of Operative Service Transition Checklist is not perfect, and it needs to be developed when used with different kind of services. In order to keep the list updated, the list must have an owner who improves the list when new development ideas are available. The owner of the list should be in Offering unit, because they are responsible for the Service Design projects. Also, this way Offering unit could easily use the checklist as a task list for new services.

This subsection discussed the Operative Service Transition Checklist, which is one of the two documents which build the initial proposal for Operative Service Transition Model in this study. Next subsection discusses other recommended improvements.

### 5.3.3 Other recommended improvements

As noted in the current state analysis, the Service Design in the case company is not presently working as it should be. Offering unit has already started to develop the Service Design as a whole, and this could take several years. However, quick fixes could be done with implementing the model proposed in this study, even though it is only the first version. For further development, two improvements for this model are recommended. First, the proposed model of operative service transition does not include any key performance indicators (KPI). In order to improve the service design project model and services, Offering unit should design and implement KPI's and start measuring the effectiveness of the project model. Second, the post-implementation review of service design projects should include commercial review also. This way the case company could learn from the decisions that the PSG has made. This would answer, for example, to the next questions: Have the customers been happy with the service? Has the sales department been able to sell the service? Is the service profitable? This way the case company would have the possibility to learn also from the business perspective of new services.

One of the weaknesses found in the current state analysis is that there is an organization-wide uncertainty of service owners and their responsibilities. These owners are Business Manager and Technical Business Manager, and list of these owners can be found on the case company intranet. However, this information has never been organization-widely communicated and at least part of the staff is not aware of the service owners. Therefore, it is recommended that Offering unit should inform the whole staff of service owners and their responsibilities by, for example, writing an intranet blog post about them.

This subsection discussed the initial proposal of Operative Service Transition Model which consists of two different documents: Operative Service Design Project Model and Operative Service Transition Checklist. In addition to this model, three other recommended improvements were presented. Two of these recommended improvements were further improvement of the initial proposal. Next subsection summarizes this section.

#### 5.4 Summary of Initial Proposal

This subsection summarizes the initial proposal. The initial proposal of Operative Service Transition Model consists of two different documents. The first document, Operative Service Design Project Model, overviews the last phases of service design project and illustrates the service design project and the customer transition project in parallel. Also, it illustrates the checkpoint when Operational Service Transition Check must be done and when the service design project should be reviewed after the service has been approved for sales by PSG. The second document, Operative Service Transition Checklist, is a detailed list of operative requirements for new service. In addition to these two documents, three other recommended improvements were presented. Two of these recommended improvements were related to improving the proposed model. One of the recommended improvements was related to internal communication in the case company.

This section discussed the initial proposal. The aim was to present the initial proposal and methods that were used to build it. First, data 2 was analysed, and scope of the initial proposal was presented. Then, the reasoning behind the initial proposal was discussed. After this, the initial proposal of Operative Service Transition Model and other recommended improvements were presented. The last subsection summarized this section. The initial proposal of Operative Service Transition Model was presented to the majority of PSG members and feedback was collected. Next section discusses the received feedback on the initial proposal.

## 6 Feedback on Proposal

This section discusses the feedback on initial proposal of Operative Service Transition Model. This section is divided into three subsections. The first subsection discusses the findings of data collection 3. The second subsection presents the final proposal of Operative Service Transition Model. The third subsection presents other recommended improvements and summarizes this section.

### 6.1 Findings of Data Collection 3

This chapter discusses findings of data collection 3. As already discussed in the current state analysis, the governing function for Service Design in the case company is the Portfolio Steering Group (PSG). Therefore, the PSG is the right group of people to evaluate the initial proposal presented in this study. The initial proposal of this study was first presented to the secretary of PSG. It was noted that the proposal of this study is very good, and it should be discussed in PSG thoroughly so that at least half an hour would be used in the PSG meeting (Data 3, Interview 4). However, in April 2016, agendas of the next PSG meetings were already decided, and there were no available time slots for this proposal. Due to the tight schedule of this work, it was decided that the feedback on the initial proposal is collected from PSG members separately and the final proposal is built upon this feedback (Data 3, Interview 5). When the feedback is collected and final proposal built, it is presented in the PSG meeting with at least half an hour time slot (Data 3, Interview 5). Five of the nine PSG members were interviewed. One of the PSG members was developing the initial proposal with the author of this paper and gave feedback during workshops (Data2, Workshop 1,2). Therefore, six out of nine PSG members participated in the feedback collection. Each of these six members said that the proposed model is good and gave their comments as feedback (Data 3, Interview 1,2,3,4,5). Figure 29 below illustrates the PSG members that gave feedback regarding the initial proposal.

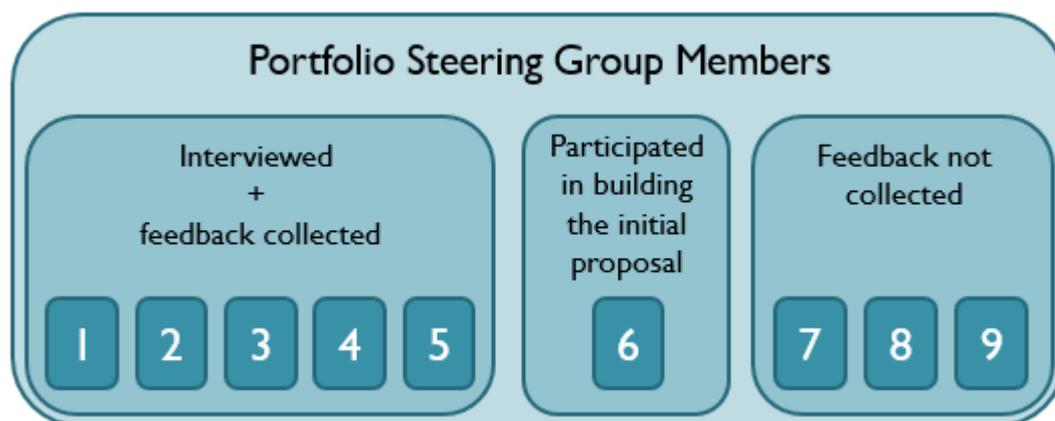


Figure 29. PSG members that gave feedback regarding the initial proposal.

As can be seen from Figure 29 above, five out of nine PSG members were interviewed and one member participated in building the initial proposal of this study.

All interviewed PSG members said that the first document, Operative Service Design Project Model, is a good overview picture (Data 3, Interview 1,2,3,4,5). According to one interviewee, the feedback loop of the overview picture should point straight to Offering unit, which is responsible for the service design project model (Data 3, Interview 4). However, it was decided that because this is an overview picture, it is enough that the feedback points to PSG because Offering unit managers are represented in the PSG meetings. Based on the received feedback, the Operative Service Design Project Model is well-designed document and therefore does not need further development at this point (Data 3, Interview 1,2,3,4,5).

Based on the feedback collected from PSG members, five improvement suggestions for the second document, Operative Service Transition Checklist, were noted. First, the checklist should include requirements for information security (Data 3, Interview 2,4). The case company is an IT security company with ISO 27000 certification, which requires that information security requirements are considered in the Service Design and Service Transition phases. Second, the checklist should include a part where deficiencies are listed (Data 3, Interview 4). If something regarding the Service Design is not done or it cannot be done, it should be listed with descriptions about the risks. Also, schedule for fixing the issue and responsible persons should be written in this part of the document. This way, PSG can see the remaining risks if the service is approved for sales when there is some task still undone. Third, requirements for testing and test plans should be reviewed once more to ensure that they meet the ISO 20000 requirements (Data 3, Interview 4). Fourth, the service design project model post-implementation review should

also include commercial post-review (Data 3, Interview 1,3,4). This is not included in the scope of this thesis, and this is included in the other recommended improvements. Fifth, the layout of the checklist should be modified so that it has one column for choosing the status of the task (Data 3, Interview 4). Text to this cell should be chosen from a drop-down menu, and the color of the cell should be changing automatically regarding the status. This way it would be easier to see the tasks that are ready.

This subsection discussed the findings of data collection 3. Five out of nine PSG members were interviewed to collect this data. One of the PSG members was also participating in the building of the initial proposal. All interviewed PSG members thought that the initial proposal of Operative Service Design Project Model is good and at the moment it does not need further development. Five improvement suggestions for Operative Service Transition Checklist were noted. The final proposal of Operative Service Transition Model was built based on these improvement suggestions. The final proposal is presented in the next subsection.

## 6.2 Final Proposal for Improving Service Design and Service Transition

This subsection presents the final proposal for improving Service Design and Service Transition in the case company. As the initial proposal, the final proposal is also called Operative Service Transition Model, and it consists of two documents. As discussed in the previous subsection, first of these documents, Operative Service Design Project Model, did not receive any improvement suggestions from interviewed PSG members. Therefore, it is presented in the final proposal as it was presented in the initial proposal. The final proposal of Operative Service Design Project Model can be seen in Appendix 2 of this thesis and in Figure 26.

Based on the received feedback, the second document, Operative Service Transition Checklist, was improved in the following manners. First, information security requirements were added as one main topic to the checklist. Detailed requirements were not written in the checklist because it is not in the scope of this thesis. Therefore, the final proposal of the checklist includes empty cells in the information security requirements. Defining the specific information security requirements is noted as other recommended improvements in this thesis. Second, remaining tasks/risks was added as one main topic in the checklist. All requirements that are not met need to be written in this part, including a list of identified risks regarding the unfinished tasks. Also, responsible person and

schedule for the unfinished tasks need to be noted. Third, requirements for test plans were revised regarding the ISO 20000 requirements. Test plan requirements were not updated, as the ISO 20000 defines that the company must determine the appropriate level of testing itself. Fourth, a column with drop-down options was added to the checklist. This drop-down gives four options for each requirement in the checklist: *OK*, *Not OK*, *Notice (must write comment)* and *Not relevant (Why? Must write comment)*. The color of the cell changes automatically, regarding the status of the requirement. Figure 30 below illustrates a screenshot of the final proposal of Operative Service Transition Checklist.

Operative Service Transition Checklist			
Participants: Stakeholders from SO, SP, PS, Offering			
<b>Business Manager:</b>	ie. Jane Doe		
<b>Technical Business Manager:</b>	ie. John Doe		
<b>Stakeholders</b>			List of all stakeholders and their roles on the service design project
<b>Stakeholders</b>	List of people who has been involved developing this service and short description of their role in the project	Not OK	
<b>Technical Service Description</b>			
NOTICE! Some of the required information here is going to be described in the customer transition project. Only the recommended models for providing service is described here.			Comments
<b>Management</b>	What kind of management connections are used with the service? How are the different devices managed? What kind of authentication is used? Does the customer have access to the devices? If yes, what level of access? What is the recommended protocol for managing the service/devices?	Not OK	
<b>Monitoring</b>	List of monitored assets and services? What is monitored? How the monitoring is done? What thresholds are in use with alarms? What logs are collected? Where are they stored? Instructions for new alarm types. How Service Desk should perform with them?	OK	
<b>Standard Changes</b>	List of defined standard changes Instructions for all standard changes	OK	
<b>RMA</b>	Who acts as a onsite support for this service? Is it needed? Is the OnCall person used for RMA? Are spareparts available? If yes, where? What kind of support contracts the devices have?	Notice (Must write comment)	
<b>Version management</b>	Description of how is the version management is handled with this service?	Not relevant (Why? Must write comment)	
<b>Vulnerability Management</b>	Description of how vulnerability is handled with this service	Not OK	

Figure 30. The final version of Operative Service Transition Checklist.

As can be seen from Figure 30 above, the final proposal of Operative Service Transition Checklist includes a column, which illustrates the status of the requirement. Status is selected from a drop-down menu, and the color of the cell depends on the status. This way, it is easy to see the overall status of all requirements. Also, business manager and technical manager are pointed out clearer than in the initial proposal of the checklist. The final proposal of Operative Service Transition Checklist is as Appendix 2 in this thesis.

This subsection presented the final proposal for improving Service Design and Service Transition in the case company. The final proposal is called Operative Service Transition Model and it consists of two documents, Operative Service Design Project Model and Operative Service Transition Checklist. The first of these documents remained the same after initial proposal. The latter document was improved based on the received feedback. Two main topics were added and layout of the document was improved. Next subsection presents other recommended improvements.

### 6.3 Recommendations

Implementing the final proposal of Operative Service Transition Model gives the case company a systematic model for Service Transition from the perspective of the production. This subsection discusses the recommended action regarding the implementation of the final proposal and other recommended improvements.

It has been recognized, that the Operative Service Transition Checklist is not yet complete. It lacks some requirements that were not thought in advance when the list was created. Therefore, it is recommended that the proposed model should be piloted as soon as possible with newly designed service. Piloting the model gives more feedback than interviewing people and this way the checklist can be improved more. If the proposed model is determined to be good, it should be introduced to the entire Offering unit, so that each Service Design project manager is aware of the operative requirements that must be met before the service is approved for sales. When six to eight months has passed since the service has been approved for sales, PSG should make sure that the Service Design project manager brings the post-implementation review of the new service into the agenda of PSG.

In addition to introducing the Operative Service Transition Model, some other recommended improvements were found during current state analysis and other interviews. For Service Design project model, two improvements are recommended. First, the post-implementation review should take into account the commercial side of the service. This means that the review should consider the profitability of the service, has it been easy to sell and have the customers been happy with the service. This way the company could

have a systematic way to review the business perspective also. Second, Key Performance Indicators (KPI's) should be defined for Service Design project model. This would enable the company to measure the model and improve it better.

For Operative Service Transition Checklist, three improvements are recommended. First, PSG should define an owner from Offering unit for the checklist. Owner should be someone who has the time and interest to improve the checklist. Second, information security requirements should be defined in the checklist. This is not in the scope of this thesis, but it was added to the checklist as one main topic. Detailed information security requirements were not included in the checklist. Third, the case company should implement the same or similar model for cloud and datacenter services. This way the case company could start designing and transitioning all services in the same manner. The checklist created in this study includes requirements only for security and network services. Cloud and data center service requirements were left out of the scope because they are more complicated. However, the Operative Service Transition Model presented in this thesis should work as a basis for cloud and datacenter services also. Recommended improvements are illustrated in Figure 31 below.

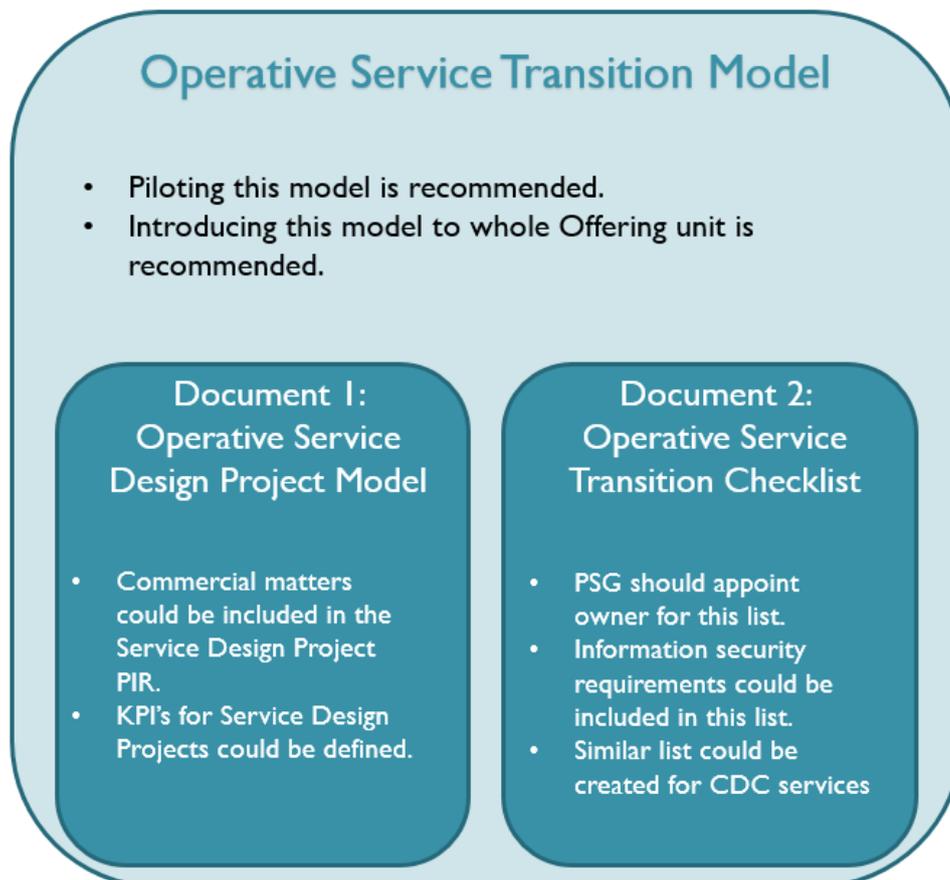


Figure 31. Recommended actions for the case company.

Recommendations for Operative Service Transition Model and for the two documents it consists of can be seen from Figure 31 above.

This section discussed the final proposal for improving Service Design and Service Transition phases in the case company. The name of the proposed model is Operative Service Transition Model, and it consists of two different documents. The first document, Operative Service Design Project Model, illustrates overview picture of Service Design project and customer transition project in parallel. It also illustrates the post implementation in both project types. The second document, Operative Service Transition Checklist, includes all operative requirements for new service. This checklist defines documents that need to be created for new service and information that should be included in these documents. In addition to these two documents, other improvements were also recommended. These improvements included, for example, following manners. Including the business review of new service in the Service Design project post implementation review and implementing similar Operative Service Transition Model for cloud and datacenter services. Next section presents the discussion and conclusions.

## 7 Discussion and Conclusions

This section discusses the results of this thesis. It starts with the summary of this thesis. Then it presents practical recommendations for the case company. Finally, it evaluates this thesis, including outcome vs. objective comparison and reliability and validity check.

### 7.1 Summary

This study examined the ways to improve Service Design and Service Transition phases from the perspective of the production in the case company. When this study was initiated, the case company experienced problems providing services for their biggest customers. It was identified that the Service Design and Service Transition phases could be developed to improve the situation. However, the best development area was not clear. Strengths and weaknesses of the Service Design and Service Transition phases in the case company were found through current state analysis. The main strength of the case company was a systematic and proven way for customer transition projects. This strength includes a post implementation review for the project, which is carried out two to three months after the transition is done. Several weaknesses were also found, but from the perspective of the production, the lack of Operative Service Transition Model was considered the most important weakness for this study.

Best practice and other available knowledge was studied regarding Service Design and Service Transition. The available knowledge part was heavily based on ITIL and ISO 20000 requirements, as the case company is ISO 20000 certified. Based on the analysis of the available knowledge and best practice, the conceptual framework for Operative Service Transition Model was compiled. Next, the conceptual framework was modified so that it includes strengths and weaknesses of the case company and the initial proposal of this study was built based on this.

The initial proposal focused on developing and Operative Service Transition Model and consisted of two documents. The first document, Operative Service Design Project Model, is an overview picture illustrating service design project and customer transition project in parallel. The second document, Operative Service Transition Checklist, is a list of operative requirements that must be met before the service is approved for sales. This model also includes the post implementation review for new service, which is supposed to be done six to eight months after the new service has been approved for sales.

The initial proposal was presented to five out of nine Portfolio Steering Group members separately for feedback collection. The initial proposal was improved based on the feedback. The first document, Operative Service Design Project Model, received only good feedback and it was not improved. The second document, Operative Service Transition Checklist, was improved by adding more requirements for new services.

In the end, the most important output of this thesis is Operative Service Transition Model, which consists of two documents. Documents are Operative Service Design Project Model and Operative Service Transition Checklist. By implementing this model, the case company could improve its Service Design and Service Transition phases, and doing so, it would also improve the situation with the Service Operations unit.

## 7.2 Practical Recommendations

The practical recommendations from this study include the following points which are recommended to take into account when implementing the final proposal of this study. By Implementing the Operative Service Transition Model, the case company could achieve considerable advantages from the perspective of the Service Operations. In order to achieve these advantages, it is recommended that the case company management carries out following three most important recommendations.

First, it is recommended to appoint owner for the Operative Service Transition Model proposed in this study. The owner should have enough time and interest in developing this model further.

Second, it is recommended to pilot the proposed Operative Service Transition Model as soon as possible. It has been noted that the model is not yet complete. With first transitioned service, it is expected to be developed better.

Third, it is recommended to review all the existing services in accordance with this model, and all identified deviations should be corrected. Although this is a lot of work, it provides all services to work according to the same model, and this clarifies the operational activities.

In addition to these three recommendations, other development suggestions are listed in the final proposal. However, the most important recommendation is to have the proposed model implemented.

### 7.3 Evaluation of the Thesis

The final proposal presented in this thesis is built on the basis of best practice and strengths and weaknesses found in the case company. Best practice is mainly based on ITIL, which is considered as best practice with IT service management around the world. In addition to ITIL, ISO 20000 requirements were also taken into account. Thus, it can be said that, from the perspective of best practice, the final proposal of this study is well grounded in available knowledge.

However, the best practice can only lead to providing a general overview model of IT service management. The company itself needs to define the ways how to put these models in action. Therefore, in this study, the case company employees were interviewed to find the correct ways to implement the proposed model, which was found through best practice. The interviewed employees were chosen from different parts of the organization for understanding the different point of views of Service Design and Service Transition in the case company. Thus, it can be said that the final proposal of this study is a model, which is tailored for the case company but can be used for learning purposes by similar companies.

Although the final model proposed in this study can be used as an example with other companies, it is very unlikely it would fit in other company activities as it is. This is due to the fact that every IT service provider has slightly different manners to provide services. The model presented in this study contains detailed requirements for Service Transition in the case company. If another company is struggling with the same problems as the case company, the Operative Service Transition Model presented in this study can be used as an example. However, this company would still need to define their own specific operative requirements for Service Transition.

The final proposal of this study is expected to be implemented in the case company. In order for the proposed model to work, the entire Offering unit must commit to follow it. It is also recognized that when the model is piloted for the first time, a lot of improvement areas are going to be identified. In particular, Operative Service Transition Checklist

should be updated with new requirements as they are identified. The most important thing, however, is that there is a systematic model that can be piloted.

### 7.3.1 Outcome vs Objective

The objective of this study was to propose improvements for the Service Design and Service Transition phases of the case company Service Management System. Separate proposals for these phases were not presented. The final proposal for improvement is a single model, which encompasses both of these service life cycle phases. Also, if the final proposal is implemented as recommended, it is expected to have a considerable positive effect on the Service Operations day-to-day work.

### 7.3.2 Reliability and Validity

Section 2 of this study presented the validity and reliability plan for this study. This subsection examines, whether the plan was followed and is this study reliable.

The first part of the plan relates to internal validity, which is to tell that was the research performed as it was designed in the research design. This study was carried out as planned and therefore it can be said that regarding internal validity, this study has been considered as internally valid. The second part of the validity and reliability plan, external validity, seeks to clarify that can the research results be utilized in other similar studies, even though the context of the case would be different. The same research plan can be used in other IT companies. However, it is very unlikely that the research would end up in the same final proposal as this study did. If someone else carries out a similar study, as has been carried out in this study, to other company, it is unlikely that they end up in the same conclusion. Each company is always on different maturity level with IT service management. Which means that each company has their own problems with IT service management. Specific problems in each company can be found by carrying out current state analysis. Each IT service provider has their own internal problems in providing services, and current state analysis points out these problems. However, the best practice investigation presented in this work is good material for other companies also, since it consists of best practice like ITIL and ISO 20000. Therefore, it directs other companies to work with the same best practice and, in this case, the study can be considered as externally valid.

Reliability plan aims to answer the following question: "If the research would be repeated or conducted by some other party, would the end result be the same?". If someone else would carry out the same research with the same company and with the same methods, he/she would not necessarily end up with the same final proposal. The scope of this study was specified as the study progressed and the author's personal interests and position in the case company affected in this scope. For example, the operative point of view was selected as a scope because the author of this study works for Service Operations unit. There were several other weaknesses found in the current state analysis, and any of these could have been picked as the main weakness for this study. However, if someone else would carry out this same study with the same main weakness, it would have probably ended up with a similar kind of solution, because the final proposal presented in this study comes from best practice (ITIL and ISO 20000).

### 7.3.3 Closing Words

As companies grow, the amount of IT services often also grows. In this equation, it is important to deliver the services in the same manners. This means that the amount of service-specific operating models should be reduced as much as possible. The less service-specific operating models are in use, the more effective it is to provide the services.

In order to provide IT services efficiently, the Service Design really is the phase in the service lifecycle, which is worth the investment.

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**Data 1: Interview questions:**

## General

- How familiar are you with ITIL and what does service lifecycle mean to you?
- In your own words, what does Service Design and Service Transition mean?

## Service Strategy

- How does the Portfolio Management work in the case company?
- Who makes the decision for designing a new service in the case company?
- What data is used when the PSG makes decisions for designing new services?
- How the profitability of new service is evaluated?
- Is the new service evaluated later when the service is already approved for sales?
- What would you do differently in the Service Strategy phase?

## Service Design

- What organization unit is responsible for Service Design?
- How does the Service Design work presently in the case company? Please provide an example.
- What requirements are considered when new service is designed? Is there a list of requirements available?
- How is the service developed after it has been approved for sales?
- Does the Service Design receive any feedback on the designed services? If yes, how is this feedback processed?
- Does the Service Design have any criteria for well-designed services? Does the case company know what services are well-designed?
- How does the Service Design project model develop?
- How would you develop the Service Design phase in the case company?

## Service Transition

- How does the Service Transition work in the case company? Please provide an example.
- Does the Service Design project or customer transition project receive enough information for launching the project?
- Is the new service tested before it is transitioned?
- In your own words, what are the biggest problems in Service Transition in the case company?
- How would you develop the Service Transition phase in the case company?

## Service Operations

- How well designed services are transitioned into production? Does this cause problems?
- When the service is in production, is the profitability of the service followed up at any time?
- Do the Service Operations give any feedback to the Service Design or Service Transition?

**Data 2: Workshop #1****16.3.2016**

Duration: 1h

## Participants:

Person 1 - Manager/Offering, Member of PSG

Person 2 - Manager/Offering

Person 3 - Manager/Project Office

## Discussed topics

- Offering unit has already started to develop Service Design as a whole. It takes a long time until it is ready.
- Agreed that CDC services should be left out of the scope of this thesis. CDC services are currently designed in a different manner, so first version of operational Service Transition checklist should not include CDC services. However, it is important to use this or similar list with CDC services later.
- One business manager has already made fairly good design of firewall service. This could be used as an example for technical service description.
- Agreed that model created in this thesis should include requirement that new services must have named owner in Offering unit.

**Data 2: Workshop #2****31.3.2016**

Duration: 1h

## Participants:

Person 1 - Manager/Offering, Member of PSG

Person 2 - Manager/Offering

Person 3 - Manager/Project Office

## Discussed topics:

- Differences between technical service description, which is created during Service Design, and customer solution description, which is written in customer transition project. It is difficult to decide which information belongs in which document. This needs to be clarified when the model is piloted.
- Went through the technical requirements of Operative Service Transition Checklist. Several adjustments were done regarding patch management, vulnerability management, device management, monitoring and so on.
- Test plan should be its own document in the requirements list.
- Agreed that the owner of the Operative Service Transition Model should be in Offering unit.
- Agreed that the model should include post implementation review for Service Design projects.
- Also discussed that the case company has several different kinds of services. It will be very difficult to manage all services with same checklist. However, one checklist seems to be the correct way to proceed with this model.
- Discussed the initial version of the Operative Service Design Project Model.

**Data 2: Workshop #3****18.4.2016**

Duration: 1h

Participants:

Person 1 - Technical Business Manager / Offering

Person 2 - Technical Specialist / Service Platforms

Discussed topics:

- Reviewed technical details of Operative Service Transition Checklist.
- Made some modifications to technical details during the meeting
- Operative Service Transition Check and Operative Service Design Project Model were considered as good documents.

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**Data 3: Interview 1**

Date: 4.4.2016

Time: 12:00 - 12:20

Interviewee position in the case company: Director - Member of Portfolio Steering Group

Received feedback on initial proposal:

- Overview picture of Operative Service Design Model is good. It does not require anything else at this time.
- Also the Operative Service Transition list is good and no improvement ideas came to the interviewees mind.
- The Service Design project model should include some KPI's for measurement. Now the case company does not know that are they doing our Service Design well or bad.

**Data 3: Interview 2**

Date: 5.4.2016

Time: 10:35 - 11:00

Interviewee position in the case company: Director - Member of Portfolio Steering Group

Received feedback on initial proposal:

- Overview picture of Operative Service Design Model was considered well enough.
- Interviewee thought that it would be very important to add information security as requirement in the Operative Service Transition Checklist, because the case company is an IT security company.
- Also discussed about the "big picture" of the future of the Service Design in the case company. Model presented in the initial proposal enables "quick wins" before the whole Service Design is developed better.

**Data 3: Interview 3**

Date: 6.4.2016

Time: 9:20 - 9:55

Interviewee position in the case company: Director - Member of Portfolio Steering Group

Received feedback on initial proposal:

- Overview picture of Operative Service Design Model is good. It describes well how the process should work.
- Operative Service Transition Checklist is also ok. However, similar check should be done regarding commercial matters. Also it was discussed that could it be done with the same checklist or should it be different file. In any case, PSG should receive commercial information about the service, how it has been sold and so on.

**Data 3: Interview 4**

Date: 6.4.2016

Time: 15:00 - 15:35

Interviewee position in the case company: Director - Secretary of Portfolio Steering Group

Received feedback on initial proposal:

- Overview picture of Operative Service Design Project Model is good. It could include an arrow from Service Design project PIR to Offering unit, because it is responsible for Service Design. However, maybe it is enough that PSG receives the feedback because managers of Offering unit are represented in the PSG.
- Operative Service Transition Checklist was considered good, but following improvements should be done. First, checklist should include information security requirements. Second, checklist should include part where all unfinished tasks are written and their risk evaluated. This way PSG could see what requirements are not met and what risks are caused by this. Third, test requirements should be double checked from ISO 20000. Fourth, the excel sheet should include a column, where the status of the requirement is visible.
- Also, discussed that next three PSG meetings are almost fully booked. Initial proposal was considered very good and it deserves at least half an hour of time in PSG. Therefore, it was decided that at least half of PSG members will be interviewed separately for this study and the final proposal will be presented to PSG later in the spring/summer 2016.

**Data 3: Interview 5**

Date: 14.4.2016

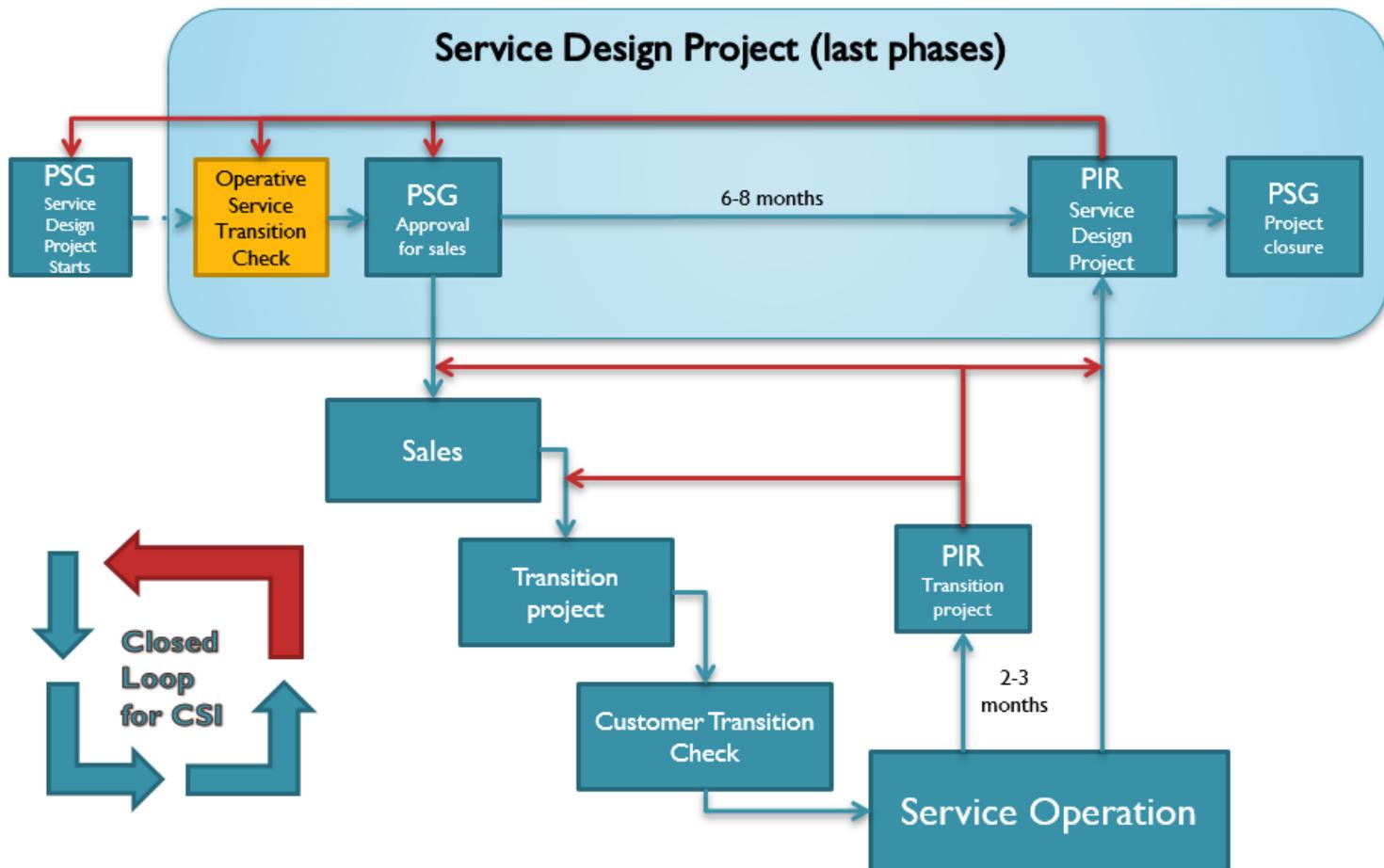
Time: 12:30 - 13:00

Interviewee position in the case company: Director - Member of Portfolio Steering Group

Received feedback on initial proposal:

- Overview picture of Operative Service Design Project Model is good picture. No need for improvement for this document.
- Operative Service Transition Checklist was considered good. No improvement ideas came to mind.
- All current services should be revised with this checklist.

## Initial and final proposal of Operative Service Transition Model



# Operative Service Transition Checklist - Initial proposal

Participants: Stakeholders from SO, SP, PS, Offering

## Stakeholders

		Comments
<b>Stakeholders</b>	List of people who has been involved developing this service and short description of their role in the project	

## Technical Service Description

**NOTICE!** Some of the required information here is going to be described in the customer transition project. Only the recommended models for providing service is described here.

		Comments
<b>Management</b>	What kind of management connections are used with the service? How are the different devices managed? What kind of authentication is used? Does the customer have access to the devices? If yes, what level of access? What is the recommended protocol for managing the service/devices?	
<b>Monitoring</b>	List of monitored assets and services? What is monitored? How the monitoring is done? What thresholds are in use with alarms? What logs are collected? Where are they stored? Instructions for new alarm types. How Service Desk should perform with them?	
<b>Standard Changes</b>	List of defined standard changes Instructions for all standard changes	
<b>RMA</b>	Who acts as a onsite support for this service? Is it needed? Is the OnCall person used for RMA? Are spare parts available? If yes, where? What kind of support contracts the devices have?	
<b>Version management</b>	Description of how is the version management is handled with this service?	
<b>Vulnerability Management</b>	Description of how vulnerability is handled with this service	
<b>Virtualized devices</b>	Who is responsible for the platform? Who acts as a second and third level support for this platform and service? Contact information needed if third parties involved.	
<b>Physical devices</b>	Where are the devices located? Address and detailed location inside datacenter	
<b>Third parties</b>	List of third parties involved (onsite support, vendors, etc.) Also contact details and response times.	

<b>Backups</b>	How does the backup procedure work? How often are backups taken? Where are they stored? How are the backups restored? (detailed instructions)	
<b>Reporting</b>	What is reported of the service and how often? Does the customer have access to the reports? If yes, where and how?	
<b>Customer views</b>	How is the service available in customer portal? Does the customer have access to some other parts of the service (dashboard etc?)	
<b>Licenses</b>	Does the service include licenses that expires? If yes, what is the process to re-activate them in time? Does the service include licenses that limit the performance? If yes, are the licenses big enough?	
<b>Certificates</b>	Does the service include certificates that expires? If yes, what is the process to re-activate them in time?	

### Test Document

		Comments
<b>General Description of tests done</b>	How the service has been tested? What has been tested? Who has done the testing? When has it been tested? Are the tests enough? What needs to be tested during customer transition project regarding this service?	
<b>Service Continuity testing</b>	Are High Availability Tests done?	
<b>Backups</b>	Are backups tested? Were the tests ok?	
<b>Monitoring</b>	Are the alarms tested? Are the alarms validated in the monitoring system?	
<b>POC/Pilot users</b>	Have pilot users used the service? What was learned?	

### Other Documents / Instructions

		Comments
<b>Production Document System</b>	Does this affect in current customers? If yes, check that all customer documents are updated. Does the service include instructions for OnCall persons?	
<b>Network Diagrams</b>	Does the service include network diagrams? If yes, make them available in production documentation system or update existing documentation.	
<b>SLA</b>	Does the service include some SLA's that are not normal for production?	

<b>TAC</b>	If new vendor is involved, create instructions for TAC-cases in the production documentation system. Who is allowed to open TAC-cases? What credentials are used for TAC-cases?	
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### Other Related Matters

		Comments
<b>CMDB information</b>	Are all assets in CMDB? Including: Serial numbers Notification lists Service categories service and asset owners	
<b>Monitoring in CMDB</b>	Check that the service is monitored as described in the technical description document	
<b>Customer Transition Check</b>	Does service include something that should be taken into account in Customer Transition Checklist? If yes, update the customer transition checklist.	
<b>Responsible persons</b>	Are all responsible persons (service owners, platform owners, experts etc) listed in the company intranet?	
<b>Billing</b>	How is the billing done regarding this service? If it includes anything extraordinary, process needs to be developed.	

### Transition Plan

		Comments
<b>For Service Operations</b>	Who is going to train production employees? And when? Do production environment desktops need updating regarding this service (ie. management software installation)?	
<b>For whole company (if needed)</b>	How is the staff trained? Is email enough or is training needed? Instruction page in Intranet? Is it needed?	

### Post Implementation Review

		Date for Post Implementation Review
<b>Post Implementation Review</b>	Date for Post Implementation Review needs to be reserved for 6-8 months from now	

# Final Proposal of Operative Service Transition Checklist

Participants: Stakeholders from SO, SP, PS, Offering

<b>Business Manager:</b>	ie. Jane Doe
<b>Technical Business Manager:</b>	ie. John Doe

List of all stakeholders and their roles on the Service Design project

## Stakeholders

<b>Stakeholders</b>	List of people who has been involved developing this service and short description of their role in the project	Not OK	
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## Technical Service Description

**NOTICE!** Some of the required information here is going to be described in the customer transition project. Only the recommended models for providing service is described here.

			Comments
<b>Management</b>	What kind of management connections are used with the service? How are the different devices managed? What kind of authentication is used? Does the customer have access to the devices? If yes, what level of access? What is the recommended protocol for managing the service/devices?	Not OK	
<b>Monitoring</b>	List of monitored assets and services? What is monitored? How the monitoring is done? What thresholds are in use with alarms? What logs are collected? Where are they stored? Instructions for new alarm types. How Service Desk should perform with them?	OK	
<b>Standard Changes</b>	List of defined standard changes Instructions for all standard changes	OK	
<b>RMA</b>	Who acts as a onsite support for this service? Is it needed? Is the OnCall person used for RMA? Are spareparts available? If yes, where? What kind of support contracts the devices have?	Notice (Must write comment)	
<b>Version management</b>	Description of how is the version management is handled with this service?	Not relevant (Why? Must write comment)	

<b>Vulnerability Management</b>	Description of how vulnerability is handled with this service	Not OK	
<b>Virtualized devices</b>	Who is responsible for the platform? Who acts as a second and third level support for this platform and service? Contact information needed if third parties involved	Not OK	
<b>Physical devices</b>	Where are the devices located? Address and detailed location inside datacenter	Not OK	
<b>Third parties</b>	List of third parties involved (onsite support, vendors, etc) Also contact details and response times.	Not OK	
<b>Backups</b>	How does the backup procedure work? How often are backups taken? Where are they stored? How are the backups restored? (detailed instructions)	Not OK	
<b>Reporting</b>	What is reported of the service and how often? Does the customer have access to the reports? If yes, where and how?	Not OK	
<b>Customer views</b>	How is the service available in customer portal? Does the customer have access to some other parts of the service (dashboard etc?)	Not OK	
<b>Licenses</b>	Does the service include licenses that expires? If yes, what is the process to re-activate them in time? Does the service include licenses that limit the performance? If yes, are the licenses big enough?	Not OK	
<b>Certificates</b>	Does the service include certificates that expires? If yes, what is the process to re-activate them in time?	Not OK	

### Testing Document

Comments

<b>General Description of tests done</b>	How the service has been tested? What has been tested? Who has done the testing? When has it been tested? Are the tests enough? What needs to be tested during customer transition project regarding this service?	Not OK	
<b>Service Continuity testing</b>	Are High Availability Tests done?	Not OK	
<b>Backups</b>	Are backups tested? Were the tests ok?	Not OK	
<b>Monitoring</b>	Are the alarms tested? Are the alarms validated in the monitoring system?	Not OK	
<b>POC/Pilot users</b>	Have pilot users used the service? What was learned?	Not OK	

**Information Security Requirements**

Comments

	<i>Not part of the scope of this study. This is updated later on in the case company.</i>	Not OK	
	<i>Not part of the scope of this study. This is updated later on in the case company.</i>	Not OK	
	<i>Not part of the scope of this study. This is updated later on in the case company.</i>	Not OK	
	<i>Not part of the scope of this study. This is updated later on in the case company.</i>	Not OK	

**Other Documents / Instructions**

Comments

<b>Production Document System</b>	Does this affect in current customers? If yes, check that all customer documents are updated. Does the service include instructions for OnCall persons?	Not OK	
<b>Network Diagrams</b>	Does the service include network diagrams? If yes, make them available in production documentation system or update existing documentation.	Not OK	
<b>SLA</b>	Does the service include some SLA's that are not normal for production?	Not OK	
<b>TAC</b>	If new vendor is involved, create instructions for TAC-cases in the production documentation system. Who is allowed to open TAC-cases? What credentials are used for TAC-cases?	Not OK	

**Other Related Matters**

Comments

<b>CMDB information</b>	Are all assets in CMDB? Including: Serial numbers Notification lists Service categories service and asset owners	Not OK	
<b>Monitoring in CMDB</b>	Check that the service is monitored as described in the technical description document	Not OK	
<b>Customer Transition Check</b>	Does service include something that should be taken into account in Customer Transition Checklist? If yes, update the customer transition checklist.	Not OK	
<b>Responsible persons</b>	Are all responsible persons (service owners, platform owners, experts etc) listed in the company intranet?	Not OK	
<b>Billing</b>	How is the billing done regarding this service? If it includes anything extraordinary, process needs to be developed.	Not OK	

<b>Transition Plan</b>			Comments
<b>For Service Operations</b>	Who is going to train production employees? And when? Do production environment desktops need updating regarding this service (ie. management software installation)?	Not OK	
<b>For whole company (if needed)</b>	How is the staff trained? Is email enough or is training needed? Instruction page in Intranet? Is it needed?	Not OK	

### Remaining tasks and risks

Remaining tasks  
+ schedule and  
plan for complet-  
ing them

<b>Remaining tasks and risks</b>	Were some tasks unfinished? If yes, schedule with responsible person must be agreed and written in this document. What are the risks if tasks are not finished? Remaining risks are approved/denied by PSG	Not OK	
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### Post Implementation Review

Date for Post Im-  
plementation Re-  
view

<b>Post Imple- mentation Re- view</b>	Date for Post Implementation Review needs to be reserved for 6-8 months from now	Not OK	
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### Approval

<b>Approval</b>	Are all listed requirements ok? Is this service approved for sales from the perspective of production?	Not OK	
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