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Smooth Transition of an IT Service from Idea to Production

Metropolia University of Applied Sciences

Bachelor of Engineering

Industrial Management

Bachelor's Thesis

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The objective of this thesis is to propose a Service Design and Transition process for the company which is aligned with the company's Development Project Management model. Thus, this thesis aims to ensure that the transition of the new and modified IT services from development to production is smooth in the company by ensuring that operational readiness is considered as an integral part of the development projects of IT services.

This thesis is based on the company's Service, Project and Release Managers' interviews, an external IT Service Management expert's insight, the company's internal documents and best practises defined by ITIL, which is a best practice framework in IT Service Management. Moreover, this thesis was conducted according to a structured approach that first investigates the current state of the company's Service Design and Transition process, then explores available knowledge and industry's best practices of Service Design, Service Transition and Project and Development Management, and finally builds a proposal for the company and validates it.

The key findings of this study showed that a Service Design and Transition process is not fully defined and standardized across the company. As a negative consequence, the design of IT services often concentrates too much only on the technical functionalities, the handover of the services to production is unstructured and the services are not comprehensively tested before their transition to production. In addition, the project documentation is not fully prepared and the operational roles responsible for the operational service management are too late nominated for the services within the development projects.

The outcome of this thesis is a proposal with three parts: a Service Design and Transition process model, Service Design and Transition templates and a roll out plan for the defined Service Design and Transition process.

This thesis supports the company in defining and deploying a Service Design and Transition process. After the Service Design and Transition process is implemented, the transition of IT services from development to production will be smoother as a result of the company's improved operational readiness.

Keywords	Service Design and Transition process, Operational Readiness, Project and Development Management, ITIL, ITSM

Tekijä Otsikko	Iina Makkonen IT-palvelun sujuva siirtyminen ideasta tuotantoon
Sivumäärä Aika	63 sivua + 9 liitettä 13.3.2019
Tutkinto	Insinööri (AMK)
Tutkinto-ohjelma	Tuotantotalous
Ammatillinen pääaine	Kansainvälinen ICT-liiketoiminta
Ohjaajat	IT-palvelunhallinnan asiantuntija Nina Hellman, Tuotantotalouden tutkintovastaava, Lehtori Sonja Holappa, Lehtori

Tämän insinöörityön tavoitteena on esittää kohdeyritykselle ehdotus palvelusuunnittelu ja -transitioprosessista niin, että se on yhdenmukainen yrityksen kehitysprojektimallin kanssa. Näin ollen tämä insinöörityö pyrkii varmistamaan, että IT-palveluiden siirtyminen kehityksestä tuotantoon on sujuvaa. Sujuvuus varmistetaan niin, että operatiivinen valmius tullaan huomioimaan olennaisena osana IT-palveluiden kehitysprojekteja.

Tämä insinöörityö perustuu yrityksen palvelu-, projekti- ja jakelupäälliköiden haastatteluihin, ulkoisen IT-palvelunhallinnan asiantuntijan näkemyksiin, yrityksen sisäisiin dokumentteihin sekä ITIL-viitekehyksen määrittämiin IT-palvelunhallinnan parhaisiin käytäntöihin. Tutkimus alkaa nykytila-analyysilla koskien yrityksen nykyistä palvelusuunnittelu ja -transitioprosessia, minkä jälkeen alan parhaat käytännöt palvelusuunnittelusta, palvelutransitiosta, projektinhallinnasta ja kehittämisen hallinnasta on tutkittu. Lopulta tämän insinöörityön tuotos rakennetaan sekä validoidaan.

Tässä insinöörityössä tehdyt löydökset osoittavat, että palvelusuunnittelu ja -transitioprosessi ei ole täysin määritelty ja standardisoitu kohdeyrityksessä. Sen seurauksena palveluiden suunnittelu ja kehittäminen keskittyy usein liikaa palveluiden teknisiin ominaisuuksiin, palveluiden siirtyminen kehityksestä tuotantoon on epäjärjestelmällistä, eikä palveluita testata kokonaisvaltaisesti ennen tuotantoon siirtämistä. Lisäksi projektidokumentaation tuottamisessa on havaittu puutteita, ja palveluista vastaavat operatiiviset roolit nimitetään usein liian myöhään palveluille niiden kehitysprojekteissa.

Tämän insinöörityön tuotos koostuu kolmesta osasta, jotka ovat palvelusuunnittelu ja -transitioprosessimalli, määritetyn prosessin käyttöönottosuunnitelma sekä määritetyt mallit tukemaan projektidokumentaation tuottamista palveluiden kehitysprojekteissa.

Tämä opinnäytetyö tukee yritystä palvelusuunnittelu ja -transitioprosessin määrittämisessä ja käyttöönotossa. Kun palvelusuunnittelu ja -transitioprosessi on käyttöönotettu, IT-palveluiden siirto kehityksestä tuotantoon tehostuu yrityksen operatiivisen valmiuden parantuessa.

Avainsanat	Palvelusuunnittelu ja -transitioprosessi, Operatiivinen valmius, Projektinhallinta ja kehittämisen hallinta, ITIL, IT-palvelunhallinta

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Key Concepts and Abbreviations

ITIL	Information Technology Infrastructure Library, a framework that includes best practices for IT Service Management
ITSM	IT Service Management, a set of specialized organizational capabilities for providing value to customers in the form of services
Operational Readiness	Capability of an organization to accept and support changes resulting from development projects or continuous development
Operational Readiness Checklist	A document through which the operational readiness of an organization is assessed throughout the development of an IT service
Service Design	A lifecycle stage of an IT service which includes the design of the services, governing practices, processes and policies, and their introduction into supported environments
Service Transition	A lifecycle stage of an IT service which ensures that new, modified or retired services meet the expectations of the business
Service Design and Transition Process	A process in ITIL framework that combines Project Management and Service Operations under same umbrella
SMO	Service Management Office, a back-end function which focuses on operational Service Management

1   Introduction

Nowadays, digitalization is changing every business and industry. The boundaries between business areas are blurring, and they are getting more integrated with each other. To respond to the demands of digitalization, companies must address how to improve internal business activities in order to ensure overall business success. Therefore, the role of IT has become more remarkable for organizations. By appropriately implementing, managing and supporting IT processes and services, the business success can be increased.

Thus, continuous and effective development of IT services for business is a cornerstone for every competitive organization. A good design of services responds to changing business needs by aligning IT both with business requirements and user expectations. A Service Design and Transition process ensures that IT services are well-designed and effectively transitioned into production in an interconnected business context.

1.1   Business Context

This study was carried out for a global company which operates in the elevator and escalator industry and is one of the market leaders in the field. Furthermore, the company manufactures elevators, escalators, automatic doors and auto walks. In addition to manufacture, the company provides maintenance and modernization services to serve the whole lifecycle of its products. (The company's website.)

Currently, the company has operations in 60 countries, it employs 55 000 people and serves 450 000 customers across the entire industry. The company's customers act in the residential, business and infrastructure segments. The revenue of the company in 2017 was 8.9 billion euros. (The company's website.)

This study was conducted for the company's Service Management Office (SMO). SMO is a back-end function which focuses on operational Service Management. The purpose of SMO is to improve the quality, effectiveness and efficiency of delivering IT services to the company's business. The company's SMO team consists of six persons.

1.2 Business Challenge, Objective and Outcome

Continuous and effective development of IT services for business is a cornerstone for every competitive organization. In the company, new and changing IT services are designed and developed in development projects, which follow a company-wide Development Project Management model. The purpose of the model is to ensure that the predefined project-related activities are performed during the development projects so that the services are effectively prepared for deployment.

However, the Development Project Management model does not define or take a stand on the service requirements from the IT point of view. The process, which ensures that these IT-related requirements are considered in the development projects, is not accurately defined or standardized in the company. The process is called Service Design and Transition process. The purpose of the process is to ensure that the new and modified IT services are well-designed, the transition from development to production is smooth and the live environment is prepared to accept and support the changes that result from the development projects.

Because of the inaccurate Service Design and Transition process, the company's live environment is currently not completely ready to adopt the developed IT services. Consequently, the services repeatedly face failures when being in production, the operational side's support teams who are responsible for managing, supporting and maintaining the services are not well-prepared and the end users do not know how to use the services. The ultimate negative consequence for the company is increasing costs and outages for the business.

The aim of this thesis is to smoothen the transition of the new and modified IT services from development to production by improving the operational readiness of the company. **The objective of this study is to propose a Service Design and Transition process for the company which is aligned with the company's Development Project Management model**. In practise, the existing project gates in the company's Development Project Management model will be aligned with improved IT-related activities, which are defined and documented as an Operational Readiness Checklist.

The outcome of this study consists of a proposal with three parts: (1) a Service Design and Transition process model which is aligned with the company's Development Project

Management model, (2) Service Design and Transition templates, which support the preparation of the development projects' documentation, and (3) a roll out plan for the defined Service Design and Transition process model. The Operational Readiness Checklist is not enhanced within this study, but it can be found from the attachments at the end of the study.

1.3 Thesis Outline

This study was carried out using qualitative research methods, including interviews, discussions and workshops with the company's internal and external stakeholders, exploring the company's internal documentation and continuously researching best practises of the topic of this study. Figure 1 below describes the scope of this study within the holistic roadmap of defining and deploying a Service Design and Transition process for the company.
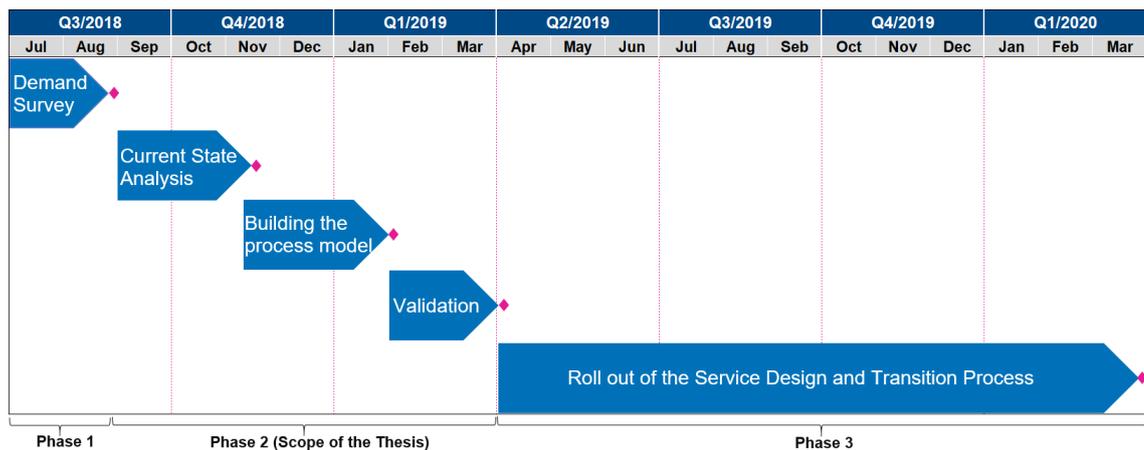
Figure 1.   Scope of the thesis

As Figure 1 illustrates, the Service Design and Transition process will be defined and deployed in three phases for the company. As seen, the scope of the thesis is limited to the second phase of the holistic roadmap, which includes conducting the current state analysis, building the Service Design and Transition process model and validating it.

Moreover, this study was built in seven sections. Section 1 contains a comprehensive introduction of the thesis and the company. Section 2 overviews the Research Design and introduces the methods and material utilized in this study. Section 3 analyses the current state of the company's Service Design and Transition process and considers

actions towards the outcome of the study. Section 4 investigates the available knowledge and industry best practices based on the results of the current state analysis. In addition, a conceptual framework is formed. Section 5 builds and presents the proposal for the Service Design and Transition process model, Service Design and Transition templates and roll out plan. Section 6 contains validation of the proposal and finally, whilst Section 7 includes the summary and conclusions of the study.

2   Method and Material

This section provides an overview of the methods and material utilized in this study. More specifically, this section consists of three components: (1) Research Design, (2) Project Plan and (3) Data Collection and Analysis. The Research Design illustrates the research strategy of this study. The Project Plan, in turn, describes the research strategy chronologically on a timeline. Finally, the Data Collection and Analysis describe the gathered data and the methods how the data was collected.

2.1   Research Design

Figure 2 below illustrates the Research Design of this study. Furthermore, it visualizes the triangulated data sources and outcomes of each stage of the study.
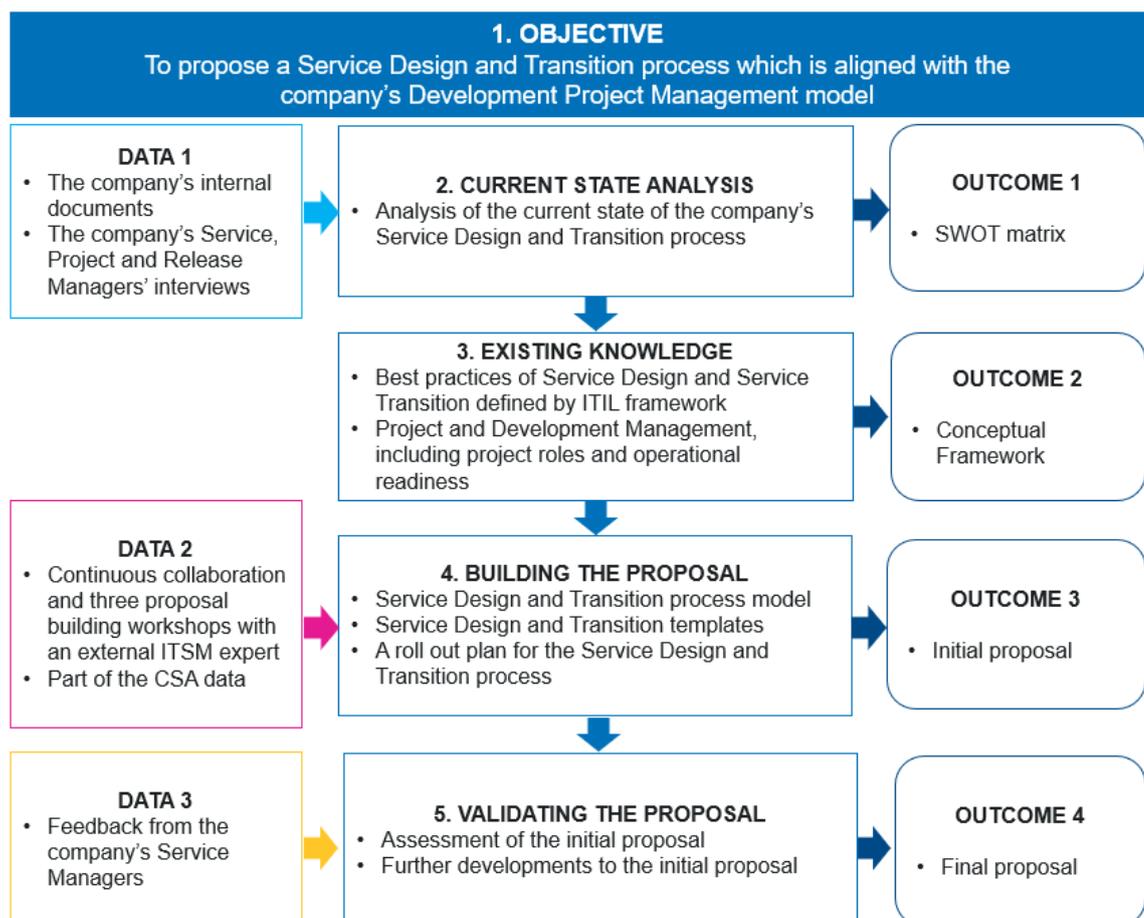
Figure 2.   Research Design of the study

As shown in Figure 2, this study starts by defining the objective for the quantified business challenge. Next, the current state of the company's Service Design and Transition process is investigated by examining the company's internal documentation and interviewing the company's Service, Project and Release Managers. Together they form Data 1 of the study. In addition to the current state analysis, part of Data 1 is also used for building the proposal for the study. The outcome of the stage is a SWOT matrix to point to relevant knowledge and best practices to build the best possible proposal.

In the next stage, available knowledge and industry best practices are explored based on the findings from the current state analysis. The exploration concentrates on the best practices of Service Design and Service Transition defined by ITIL framework. The outcome of the stage is a conceptual framework, which is a construct that presents the key elements of the knowledge and best practices needed for building the proposal and solving the identified weaknesses in the current state analysis.

Finally, the proposal is built with a continuous collaboration with an external IT Service Management expert. The proposal is based on the findings from the current state analysis, the best practices from literature and three proposal building workshops with the external IT Service Management expert. They form Data 2 of the study. After the initial proposal is built, it is presented to the company's Service Managers to collect Data 3 of the study. Based on the feedback given by the Service Managers, the initial proposal is validated and small enhancements to the proposal are made. The outcome of the stage is the final proposal.

2.2   Project Plan

This thesis was conducted as a Bachelor's Thesis in Helsinki Metropolia University of Applied Sciences as part of Industrial Management program. The study was carried out from the beginning of September 2018 until the end of March 2019. Figure 3 illustrates the more detailed timetable in which the study was carried out.
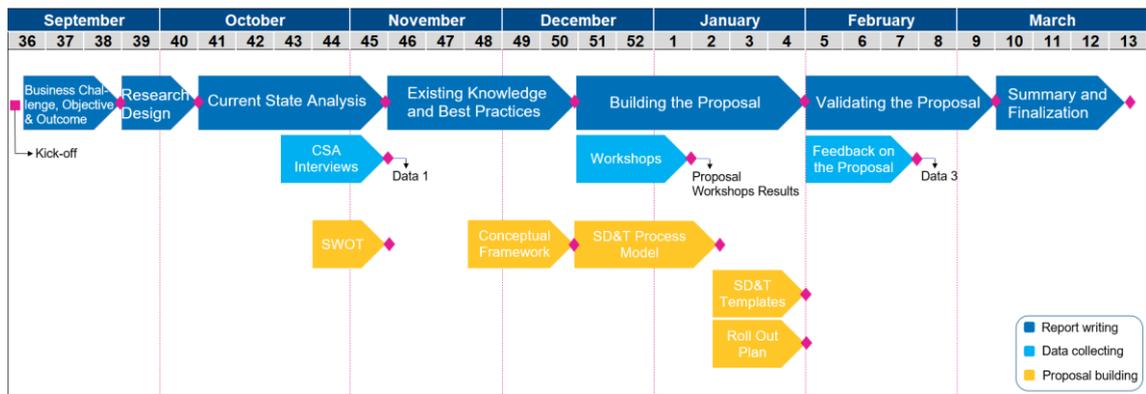
Figure 3.　Time table of the study

Figure 3 provides a weekly overview of the project progress. The activities included in the project were divided into three categories: report writing, data collecting and proposal building. As seen, the total duration of the project was 30 weeks. The timetable in Figure 3 was formed according to the Research Design stages.

This study was part of a real-life business project run by the company's Service Management Office (SMO). It was carried out in the company setting and was based on a variety of information inputs and analysis of several data sources. Next, the data sources are presented, and the data analysis is described in detail.

2.3　Data Collection and Analysis

The data for this study was gathered from multiple data sources, in three data collection rounds. The collected data was utilized for conducting the current state analysis, building the proposal and validating the proposal. The data collected for the study is shown in its entirety in Table 1 below.

Table 1.   Details of interviews, workshops and discussions, in Data 1-3. (*based on: Aittola 2015*)

	Participant / Role	Data Type	Topic, Description	Date, Length	Documented as
Data 1, for the Current State Analysis (Section 3)					
1	DH Service and Release Manager	Skype meeting	Current state of the company's SD&T process	23rd Oct 2018, 1 hour	Field notes and recording
2	CH Service Manager	Skype meeting	Current state of the company's SD&T process	23rd Oct 2018, 45 minutes	Field notes and recording
3	TA Project Manager	Face to face discussion	Current state of the company's SD&T process	31st Oct 2018, 40 minutes	Field notes and recording
4	SJ Manager, End User Support	Face to face discussion	Current state of the company's SD&T process	6th Nov 2018, 20 minutes	Field notes and recording
5	SD Service Manager	Skype meeting	Current state of the company's SD&T process	7th Nov 2018, 20 minutes	Field notes and recording
6	LZ Release Manager	Email survey	Current state of the company's SD&T process	13th Nov 2018	Field notes
Data 2, for Proposal Building (Section 5)					
7	NJ ITSM Expert	Workshop	A linkage between Section 3, Section 4 and Section 5	15th Dec 2018, 1 hour	Field notes
8	NJ ITSM Expert	Workshop	SD&T actions and templates and their placement along the SD&T process	18th Dec 2018, 1 hour	Field notes
9	NJ ITSM Expert	Workshop	Creating a roll out plan	7th Jan 2019, 1 hour	Field notes
Data 3, from Validation (Section 6)					
10	CH Service Manager	Skype meeting	Validation of the initial proposal and further improvement ideas	15th Jan 2019, 30 minutes	Field notes and recording
11	DH Service and Release Manager	Skype meeting	Validation of the initial proposal and further improvement ideas	16th Jan 2019, 1 hour	Field notes and recording

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As shown in Table 1, the data gathered in the first data collection round was used in the current state analysis. The purpose of conducting the current state analysis was to comprise a clear picture of the company's current Service Design and Transition process. Data 1 was collected by interviewing the company's Service, Project and Release Managers. The interviews were based on pre-defined questions, which are presented in chapter 3.6. Furthermore, each of the interviews were recorded and documented as field notes, and the results were analyzed through SWOT analysis. In addition to the interviews, several of the company's internal documents were explored in the current state analysis. They are listed in Table 2 below, and the actual analysis is carried out in chapters 3.1 to 3.5.

The next data collection round was carried out to build an optimal proposal for the study. The round consisted of three proposal building workshops with an external IT Service Management expert. In the workshops, all the key findings made during the study were discussed and assessed and combined with best practices based on the IT Service Management expert's previous experience. In addition, part of the insights given by the company's Service, Project and Release Managers in the current state analysis were used to build the proposal. Thereby, the Service Design and Transition process actions and templates were defined and the roll out plan created. The results of the workshops are presented in chapter 5.2.

In the last data collection round, Data 3 was collected to validate the created proposal. The proposal was presented to the same Service Managers who were interviewed for the current state analysis, since they were very familiar with the topic. Again, the discussions were recorded and documented as field notes. The results of the validation are presented in chapter 6.2. Finally, the final proposal was created with consideration of the validation results.

Table 2.   The company's internal documents used in the Current State Analysis, part of Data 1
             (Lapin 2014).

	Name of the Document	Extent	Description
A	IT Operating Model, v2.0.pdf	178 pages	A high-level description of the company's IT operating model and IT roles
B	The Company's Project Management Model Overview – Governance, Gates and R&R – Training Material.ppt	45 pages	A high-level description of the company's Project Management model
C	Operational Readiness Checklist.xlsx	1 sheet	The company's Operational Readiness Checklist
D	The Company's Intranet	7 folders	The company's policies for IT Service and Project Management

Table 2 shows the company's internal documents, which were utilized in the current state analysis. As seen from Table 2, the explored internal documents included high-level descriptions of the company's IT Operating model, IT roles and Project Management model. In addition, the company's current Operational Readiness Checklist was explored, as well as the company's policies for IT Service Management and Project Management.

The next chapter describes in detail the current state analysis carried out on the company's existing Service Design and Transition process.

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3   Current State Analysis of the Company's Service Design and Transition Process

In this section, the current state analysis of the company's Service Design and Transition process is carried out. First, an overview of the section is provided. Second, the core areas related to the company's Service Design and Transition process are presented in general. Third, a questionnaire for the company's representatives is formed. Next, the key findings from the current state analysis are presented as a SWOT matrix. Finally, at the end of this section, the summary of the selected development areas is provided.

3.1   Overview of Current State Analysis Stage

To gain a clear picture of the company's current Service Design and Transition process, the Current State Analysis stage was carried out by exploring the company's internal documentation and by interviewing the company's Service, Project and Release Managers. As a result, a SWOT matrix was created. Figure 4 below overviews how the current state analysis was conducted.

Figure 4.   Overview of the Current State Analysis stage

As visualized in Figure 4, the exploration of the company's internal documentations included the company's IT Operating model, Operational Readiness Checklist, Development Project Management model and IT roles. The purpose of examining them was to

understand how the company carries out its IT Service Management and Project Management, and how these are aligned with each other. In addition, the documentation was explored to understand how new or changed services are developed in the company.

In addition to exploring the company's internal documentation, the company's selected Service, Project and Release Managers were interviewed with a pre-defined questionnaire in chapter 3.6. to assess the current state of the company's Service Design and Transition process. From the interview results, a SWOT matrix was created and the development areas for the study were selected. Finally, a summary of the stage is provided at the end of this section.

3.2   IT Operating Model

The purpose of the IT Operating Model is to document the common policies for IT Service Management across the company. More specifically, the IT Operating model describes a lifecycle of an IT service, and it is based on ITIL framework. As Figure 5 below visualizes, the IT Operating Model is divided into three main IT process areas: Demand, Development and Services. All these main IT process areas include specific processes, roles and responsibilities and they all are led by Governance Model.
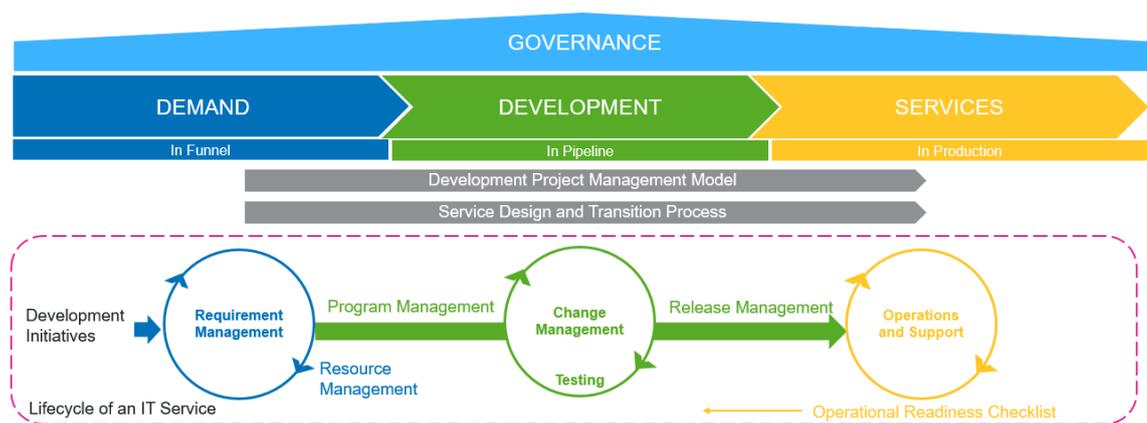
Figure 5.   The company's IT Operating Model (edited from the company's internal material)

As visualized in Figure 5, the lifecycle of an IT service begins from the Demand stage. In that stage, all the development initiatives are assessed and prioritized based on their alignment with the business strategy set by customer's management team and business

needs. In addition, the Requirement Management process identifies and captures the stakeholders' requirements towards the development initiatives. Also, the Resource Management process assesses and allocates the company's available resources against the resource requirements.

If it is agreed that the development initiative will produce the expected benefits and values with the needed investment, it is accepted into the Development stage. In this stage, the initiative is developed into an IT service. The development is done through a development project according to the company's gate-based Development Project Management model. All the interrelated projects are managed by Program Management Office. In addition, the Change and Release Management processes ensure that the developed service is tested and transferred into the Services stage successfully, without interruptions to running business operations.

Finally, the IT service enters Services stage where the actual value of it is attained. Hence, it is important that the developed service is carefully prepared before entering the Services stage. Therefore, the Services stage is responsible for creating an Operational Readiness Checklist, deliver it to Development and audit it before the IT service is handed-over into production environment. In addition, the Services stage is responsible for managing, maintaining and supporting the IT services being in operations to ensure efficient and uninterrupted business operations.

3.3   Operational Readiness Checklist

The Operational Readiness Checklist is a document created by the Services stage. The purpose of it is to define the operational requirements for the new or changed IT services. The Operational Readiness Checklist ensures that the operating environment is prepared to manage, maintain and support the upcoming services. Figure 6 below presents the company's current Operational Readiness Checklist.

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Operational Readiness Checklist

			Mandatory / create new	As needed / update				

GOVERNANCE — STATUS

Service Governance		Comments	Transfor-mation project	Enhance-ment project	Roll-out (incl SAP)	Implement-ation project	Continuous develop-ment	STATUS
Governance practises, participants	Governance practices are defined and documented.							OK / NOT OK
	Participants for governance meetings are named and confirmed and supplier(s).							OK / NOT OK
Roles and responsibilities	IT Solution Owner / IT Service Owner is named (Demand Mgmt is performed by this role).	LINK						OK / NOT OK
	Service Manager is named (Service Operational responsibility is with this role)	LINK						OK / NOT OK
	Solution Configuration owner is named	LINK						OK / NOT OK
	Business Solution Owner / Business Service Owner is named (Counterparts for IT).	LINK						OK / NOT OK
IT Service Criticality	IT Service / Solution / Application criticality has been classified based on IT Service Criticality							OK / NOT OK
Risk assessment completed	Risk assessment has been conducted							OK / NOT OK
SLAs and KPIs	SLA/OLA Template is filled in and formally agreed with business owner	LINK						OK / NOT OK
	IT Service performance Reports are available (when in operations) (=SLA with business)							OK / NOT OK
	OLA measurements for Vendor performance are available (when in operations)							OK / NOT OK
	Review Quality KPI's and identify if additional KPI's are applicable to support business needs							OK / NOT OK
	Defined KPI's are reported							OK / NOT OK

Sourcing and Financials		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
Application Management and support contracts	T2 Application support and testing is contracted according to sourcing AMS template (if purchased outside o							OK / NOT OK
	T3 Application support is contracted (if not part of License maintenance fee or SaaS agreements)							OK / NOT OK
Licenses	Required software licenses are in place.							OK / NOT OK
Budget and budget control	Solution / Service budgeted in department. Budget control practices are defined and agreed							OK / NOT OK

Architecture and Security		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
Architecture and Security	Architectural and security review has been completed with satisfactory results or exception request has been approved							OK / NOT OK

DEVELOPMENT — STATUS

IT Change Management		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	STATUS
IT Change and Release Management Model	Change and Release mangement model is utilized, or modified and agreed with parties involved on change management execution							OK / NOT OK
CAB (Change Advisory Board)	CAB is defined, agreed and communicated							OK / NOT OK
	The solution has been presented to the systems global CAB team.							OK / NOT OK
Development completion readiness	All developments (change request) have been closed according to the development guidelines							

Test Management								
Deliverables	Solution / application test Plan is created as per template							OK / NOT OK
	Test report created as per template							OK / NOT OK
Enablers	Test assets (test cases, automation test scripts, test data, test users and lessons learned) are available for future usage							OK / NOT OK
	Test environments are in place (eg. Pre-production, Development...)							OK / NOT OK
	Test automation framework in place (if applicable)							OK / NOT OK
Test completion sign-off	Test phases defined in test plan are accepted / signed-off by test manager							OK / NOT OK
	Open defects has been accepted / signed off by Solution owner							OK / NOT OK

SERVICES

Service Catalogue and Documentation		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
Service / Solution Catalogue	Solution description is created and published intranet							OK / NOT OK
	If applicable predefined service requests are published in Ask IT self-service portal							OK / NOT OK
GSD documentation	Knowledge Article(s) are created to Remedyforce and shared with Global Service Desk	LINK						OK / NOT OK
	Service Management Template for Installation and Set-up Guide to Global Service Desk is created and shared with Global Service Desk	LINK						OK / NOT OK
Solution documentation and knowledge transfer to Support	End-user instructions for the solution are available at least in English and stored in the agreed central repository.							OK / NOT OK
	End-user instructions are verified and sign offed by the IT Solution Owner / IT Service Owner.	LINK						OK / NOT OK
	Translation needs identified and translations signed off by the IT Solution Owner / IT Service Owner							OK / NOT OK
	FAQ (Frequently Asked Questions) are created	LINK						OK / NOT OK
	Knowledge articles are created by project team for the support team	LINK						OK / NOT OK
	Maintenance and Operations Guideline (MOG) document is created and agreed with all parties involved on Service Management	LINK						OK / NOT OK

Continuity Management		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
Major Incident Management and Key Contacts	Key contact persons are added into TSI LIM documentations. Major Incident Management process has been agreed and dry runned							OK / NOT OK
Business Continuity Plan	Business continuity plan has been developed by business and accepted by business (sign off). IT Continuity plan developed by : IT, and signed off by business							OK / NOT OK
Disaster Recovery Plan (DRP)	Does the platform / service have already defined DRP Yes/No? If yes, validate impacts of the new elements to existing DRP If no, validate if criticality requires DPR (sign off with ITO)							OK / NOT OK

Incident and Request Management		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
Support model	Users of the solution / service are identified with required support hours, locations (timezones) and support languages							OK / NOT OK
	Key users are identified, and structure is set-up to answer "how do I use system or process" questions from users							OK / NOT OK
	Solution / Service support scenarios are worked in the global support model, and variances are reported as change to end user support services	LINK						OK / NOT OK
	GSD agents have received and sign offed training for the solution / service.	LINK						OK / NOT OK
	2nd level team is defined and trained	LINK						OK / NOT OK
	3rd level team is defined and trained	LINK						OK / NOT OK
User Access Management	Solution / Service has a defined access request process and predefined access profiles and roles.							OK / NOT OK
	Access rights procedures are clear and understood by all parties							OK / NOT OK
	Removal of unnecessary access rights (& liberating licenses) is documented							OK / NOT OK

ITSM TOOL + CMDB + Configuration and Asset Management		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
ITSM Tool, CMDB, Configuration Mgmt.	CMDB with required relations is updated							OK / NOT OK
	ITSM Tool is configured for operational support	LINK						OK / NOT OK
	Locations where solution is implemented are defined in Asset and Configuration Mgmt.							OK / NOT OK

HYPERCARE

Hypercare Phase - in Project mode only		Comments	Transfor-mation	Enhance-ment	Roll-out	Implement-ation	Continuous develop-	
Hypercare (during and immediately after the rollout(s))	Solution / Service has a planned hypercare period to ensure smooth transition to operations.							OK / NOT OK

* Any mandatory action not completed by K4 needs to be explained on "why not completed"

Figure 6.   The company's current Operational Readiness Checklist (the company's internal material)

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As seen in Figure 6, the company's current Operational Readiness Checklist consists of 55 activities. Each activity is marked either as mandatory, considered or needless based on the type of a project. Moreover, the activities are grouped according to three IT process areas involved in the IT Operating Model: Governance, Development and Services. In addition, a Hypercare period is required for each project regardless of the type of the project. Hypercare is a predefined period after go-live when project team is still responsible of the service and is doing handover to Services team.

Despite of the structured content, the current Operational Readiness Checklist does not specify in which stage of the development project a certain activity must be considered. The current practice in the company is to review the entire Operational Readiness Checklist at the end of the development project, just before the IT service is deployed into operation. All the mandatory activities must have a DONE status before the deployment can be performed.

Moreover, some of the activities have a related link in the Comment column. These links direct to the company's internal documentation to give guidance for the project team concerning the related activity. These documents include description of the company's policies and procedures.

3.4   Development Project Management Model

As already described in chapter 3.2, the Development stage of the IT Operating Model is conducted according to the company's Development Project Management model. The aim of the model is to ensure that the new or changed service is ready for deployment by preparing all the changes and by producing the required documentation. As Figure 7 below presents, the Development Project Management model is gate-based, and it consists of several phases and stages.
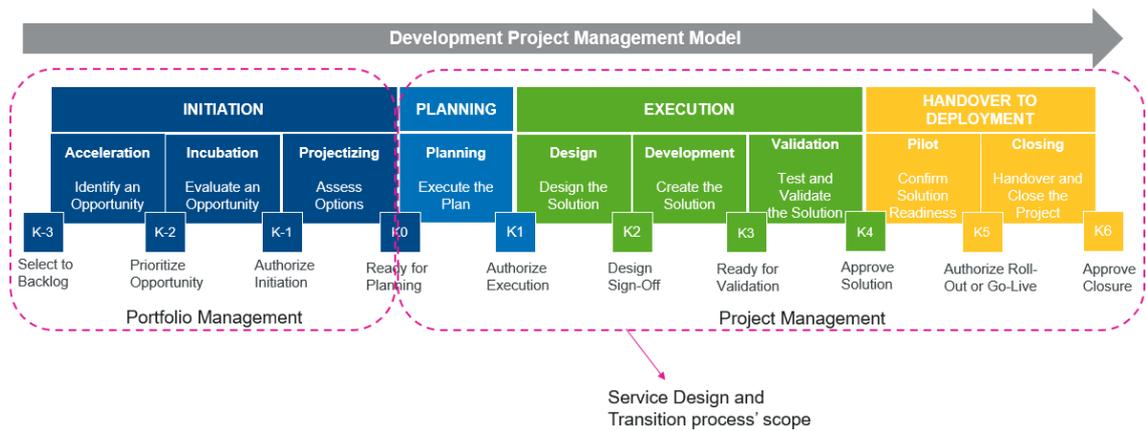
Figure 7. The company's Development Project Management model (edited from the company's internal material)

As visualized in Figure 7, the Development Project Management model consists of four phases: Initiation, Planning, Execution and Handover to Deployment. All the phases are executed according to a waterfall model. The Initiation phase identifies and evaluates development prospects and accept them for further phases by setting up a project team and steering. However, it is part of Portfolio Management and thus it is out of scope of this study. Second, the Planning phase creates a detailed plan for executing the development project. In the Execution phase the development is executed according to the plan. Lastly, the Handover to Deployment phase ensures that a roll-out of the developed element is carried out successfully.

Moreover, each phase is divided into smaller stages which define and structure the project tasks within a project: Planning, Design, Development, Validation, Pilot and Closing. In the Planning stage, the project execution is planned carefully, and all the involved parties are committed to finalizing the project. Next, in the Design stage the design methods of the project are defined, and it is ensured that the design can be executed without any technical or functional gaps. Following, in the Development stage, the developed element is prepared for implementation. In the Validation stage, the element's design and integrations are tested. In addition, the upcoming pilot is planned and tested. When the solution enters the Pilot stage, the organization's readiness is ensured, and roll-out plan is prepared. Finally, in the Closing stage, it is ensured that the element achieves the desired benefits after which the project handover is finalized.

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After each stage is a pre-defined gate (K) in which the project needs to fulfil a certain criterion to enter to the next stage. The gates inspect that the required actions in the previous stage are conducted and the progress is documented.

3.5   IT Roles

In order to efficiently and successfully manage the lifecycle of an IT service, each lifecycle stage includes pre-defined roles in the company. Each role has a specified purpose, defined responsibilities and key activities. The roles across the service lifecycle are presented in Figure 8 below.
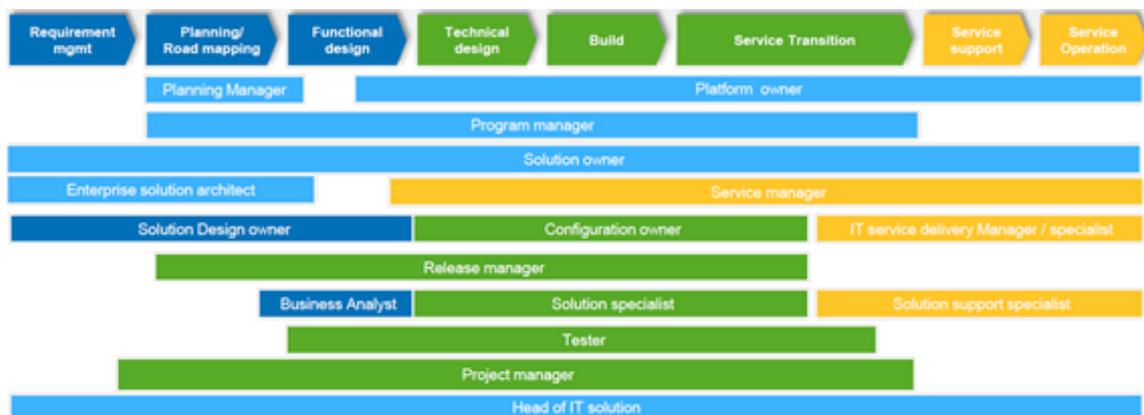
Figure 8.   The company's IT roles (the company's internal material)

As Figure 8 above illustrates, the lifecycle of an IT service includes 16 different roles in the company. As shown, the Demand stage includes two, the Development stage five, the Operation stage three and the Governance stage six IT-related roles. However, an individual role is not necessarily bound to a certain lifecycle stage but can be involved in various stages. The main responsibilities of each role are described in Figure 9 below.

Role	Main Responsibilities
Solution Design Owner	Requirement Management
Business Analyst	To capture requirements, functional designing
Planning Manager	To balance demand against resourcing and financials frame
Solution Owner	Accountable for the end-to-end lifecycle of an IT solution
Platform Owner	To manage the end-to-end lifecycle of an IT solution
Program Manager	To ensure a program is delivered according to the agreed scope and budget
Enterprise Solution Architect	To set future target within agreed domain from process, information, application and application technology perspective
Head of IT Solution	To lead, direct, develop and control activities of an IT function to ensure achievement of short-, mid- and long-term objectives
Configuration Owner	To validate and approve technical designs
Release Manager	To conduct release planning, design, build, validation and deployment
Solution Specialist	To design a solution which is in line with specifications given by Solution Design Owner
Tester	To review and contribute test plans, to identify test conditions and to create test designs, test cases, test procedure specifications and test data
Project Manager	Daily project management, communication and reporting
Service Manager	To run operations of the service, validate operational readiness, arrange support for the service, operational Supplier Management, Incident and Problem Management for the service
IT Service Delivery Manager	To manage IT Service Delivery
Solution Support Specialist	To resolve incidents, service request or minor changes

Figure 9.   The company's IT roles and their main responsibilities (edited from the company's internal material)

The main responsibilities of the company's roles across the service lifecycle are opened up in Figure 9 above. The colours indicate the lifecycle stages defined in the IT Operating Model. Following, the questionnaire for the company's representative is formed, and the key findings from the current state analysis are presented.

3.6   Summary of Key Findings from the Current State Analysis

To obtain an optimal image of the company's current Service Design and Transition process, the company's Service, Project and Release Managers were interviewed. The results of the interviews are part of Data 1 of the study. Table 3 below presents the questions explored in the interviews.

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Table 3.   Questionnaire for the company's Service, Project and Release Managers of the company's current Service Design and Transition process

Role	Question
Service Manager	How would you describe the current operational readiness of IT services which come from development into operation?
	How would you describe the transition of an IT service from development into operations? Is it smooth or cumbersome?
Project Manager, Release Manager	What actions are taken during the development projects to look after service readiness?
	How do you ensure that the new service fulfils its assumed benefits/cost savings/functionalities?
	How do you take the Operational Readiness Checklist into account during a development project?
	Is it clearly defined who is responsible for the different steps in a development project?
All	Do you have any key concerns regarding the current situation? What?
	What are the strengths of the current situation?
	What are the weaknesses of the current situation?

As shown in Table 3, the interview questions were divided based on the role of the interviewee. This was done because the roles of the interviewees represent different stages of the lifecycle of an IT service, and therefore all the interviewees were not able to answer all the questions. However, all the questions were reviewed with all the interviewees so that they had an opportunity to give input on any of the questions if desired.

Moreover, the questions were formed so that the results can be utilized both in the current state analysis and for building the proposal. Therefore, the questions allowed the responses to be open-ended, meaning that the interviewees were able to provide as

detailed response as they desired (Turner III, 2010, p. 756). On the other hand, the questions were designed so that they did not allow the interviewees to give only a yes or no answer. The results of the interviews are summarized in the next chapter.

3.7 SWOT Analysis

This section provides a summary of the key findings from the current state analysis. The key findings are presented in the SWOT matrix in Table 4 below. In addition, a part of the gathered data from the current state analysis is used for building the proposal. This data is presented in Section 5. Overall, the gathered data is part of Data 1, and it can be found from Appendices 1-7 in its entirety.

Table 4.   SWOT matrix of the company's Service Design and Transition process

STRENGHTS	WEAKNESSES
• The gate-based models work well in projects which follow waterfall methodologies • The Operational Readiness Checklist can be adopted both for small and large development initiatives • Project Managers are willing to use the Operational Readiness Checklist • Individual Tower Heads, Service and Release Managers are trying hard to look after service readiness	• The Operational Readiness Checklist is varyingly used in development projects • The key roles for the developed service are nominated too late • The development often focuses excessively on technical functionality of the service • Tests are not comprehensively performed or documented • The project documentation is not delivered to production • Handover of the services to production is not systematic
OPPORTUNITIES	THREATS
• Improved quality of IT services • Moderated workloads • Supported business objectives by IT • Improved transparency between development and operations	• If pre-defined tools are not utilized in the development projects, reporting and a holistic view towards performance will be corrupted • Increasing burocracy

As   seen in Table 4, a SWOT matrix consists of four components: Strenghts, Weaknesses, Opportunities and Threats. Furthermore, Strenghts and Weaknesses are internal factors while Opportunities and Threats are external ones.

As seen in the SWOT matrix, the identified strengths indicate that the company's gate-based models work well in projects which follow waterfall methodologies. In addition, the

current Operational Readiness Checklist is applicable to different size projects, and the Project Managers are willing to use the checklist. When it comes to the operational readiness, also Tower Heads and Service and Release Managers are working hard to look after the service readiness.

On the other hand, the identified weaknesses indicate that the Operational Readiness Checklist is not used in all the development projects or by all the Project Managers. In addition, the operational side's key roles, such as Service Manager, are too late nominated for the services. When it comes to the developed services themselves, in many times, a holistic view is missing from their development. The development most often concentrates on the technical functionalities of the services. In addition, the services are not comprehensively tested before they are transferred to production. Neither, the project documentation is created or handed over to production. Lastly, the handover of a service from development into operation is not systematic.

The identified opportunities, in turn, show that by defining and deploying the Service Design and Transition process, the quality of IT services could increase, workloads could be more equal, IT would support business objectives more efficiently and transparency between the development and operation sides could improve. The identified threats, in turn, indicate that the Service Design and Transition process should be carefully adopted in order to reach its benefits. In addition, burocracy may increase due to the Service Design and Transition process and the implementation of the process may face resistance in the company.

Table 5 below presents the available knowledge and industry's best practices addressed on the identified weaknesses from the current state analysis. The available knowledge and best practices described in Table 5 are explored in Section 4.

Table 5. Identified weaknesses addressed by available knowledge and industry's best practices

Key Findings from CSA	Reference in Section 4	Purpose of the Addressed Knowledge and Best Practices
The Operational Readiness Checklist is varyingly used in development projects	4.5.2 Operational Readiness	To explore best practices how to consider the operational readiness as an integral part of the development projects.
The key roles for the developed services are nominated too late	4.5.1 Key Roles in Development Projects	To explore best practices to define the key roles that should be nominated in the Service Design and Transition process.
The development often focuses excessively on technical functionality of the service	4.3 Service Design 4.3.1 Service Design Aspects 4.3.2 Service Design Activities	To explore best practices for defining the Service Design and Transition process' actions in every aspect.
Tests are not comprehensively performed or documented	4.4.2 Service Validation and Testing	To explore best practices of the types of tests, and to involve them to the Service Design and Transition process.
The project documentation is not delivered to production	4.4.3 Knowledge Management	To explore the purpose of Knowledge Management and to explore the knowledge that should be delivered into production.
Handover of the services to production is not systematic	4.4.1 Release and Deployment Management	To explore best practices for handing a service over from development into production.

As shown Table 5, most of the identified weaknesses are addressed by best practices of Service Design and Service Transition defined by ITIL framework. In addition, available knowledge of operational readiness and Project and Development Management are explored in the following section to cover the identified weaknesses and have inputs for building the proposal for this study.

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4 Available Knowledge and Best Practices of Service Design and Transition Process

In this chapter available knowledge and industry's best practices are explored to define a Service Design and Transition process, Service Design and Transition templates and a roll out plan. Since, the Service Design and Transition process is a fundamental process within the ITIL framework, this chapter mainly focuses on the best practices defined by ITIL. In addition, process and project management methodologies are discussed to cover the weaknesses identified from the current state analysis.

4.1 Overview

The purpose of this chapter is to describe the logic behind the selected knowledge and best practices for Section 4, *Available Knowledge and Best Practices of Service Design and Transition Process*. Figure 10 below illustrates the logic visually.
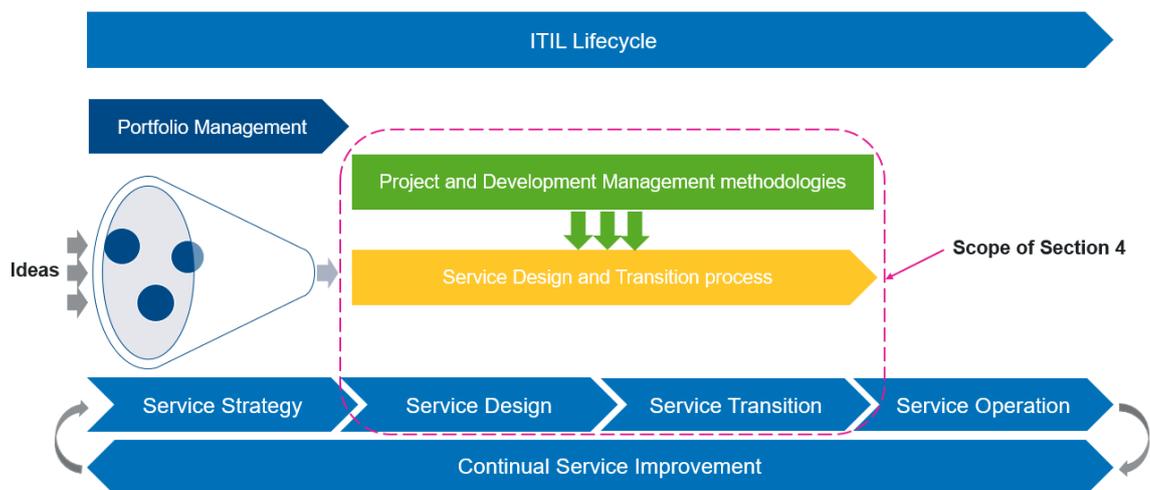
Figure 10. Overview of Section 4

As illustrated in Figure 10, all the ideas and other development initiatives first enter a funnel on their way to IT services. While being in the funnel, the ideas and other development initiatives are prioritized and analysed according to best practices defined by a company's strategy. While being in the funnel, it is considered whether the ideas and development initiatives are candidates for IT services. All the actions during the funnel

are controlled by Portfolio Management, as shown in Figure 10. From best practice point of view, the funnel covers Service Strategy stage from ITIL lifecycle.

If the idea is accepted into developed, Service Design and Transition process is followed during the development. The Service Design and Transition process expands throughout the five lifecycle stages of ITIL lifecycle but Service Design and Service Transition stages of ITIL together form a core of the process. Usually, the development is conducted as a project and hence, Project and Development Management methodologies are explored in this section as well. In the following, the ITIL lifecycle is opened up.

4.2   Information Technology Infrastructure Library

Information Technology Infrastructure Library (ITIL) is a best-practice framework in Service Management. Its main purpose is to give guidance on establishing and improving Service Management capabilities in the framework adapting organizations. (Lloyd et al 2011: 21.) By improving Service Management, the goal of ITIL is to maximize the value of services to the service providing organizations' customers (Sanker 2012).

To assist the ITIL adapting organizations to deliver valuable services, the ITIL framework includes descriptions of different organizational capabilities such as processes and functions (Lloyd et al 2011: 22). In addition, ITIL includes implementation guidance, metrics and success factors (Sanker 2012). However, ITIL is not a standard, conversely, it is a framework which can be adopted according to the organization's needs and maturity.

Moreover, the ITIL framework describes a lifecycle of an IT service. As Figure 11 below indicates, the lifecycle is iterative and multidimensional, and it is divided into five lifecycle stages: Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement. (Axelos.com 2011: 33.) Furthermore, each lifecycle stage includes different processes, activities and principles (Spencer 2018).

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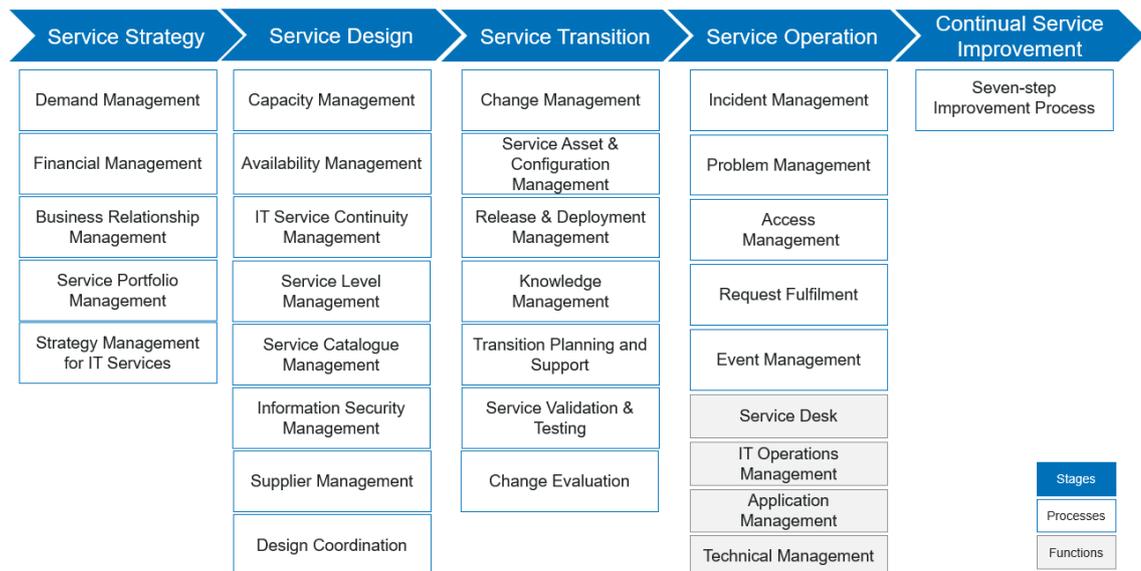
Figure 11. The ITIL lifecycle (Priyadharshini 2018)

Figure 11 describes the ITIL framework. The lifecycle of an IT service begins from the core of ITIL framework: Service Strategy. The aim of Service Strategy is to design, develop and implement Service Management to a service providing organization so that it is a strategic asset for the organization. Service Strategy ensures that organizations are able to handle risks and costs related to their Service Portfolios. Moreover, at Service Strategy stage opportunities for growth and development are identified, selected and prioritized. (Iqbal et al 2011: 25.)

In the Service Design stage, the strategic business objectives are transferred into services by designing and developing them. After the solution is developed, it is handed over to the Service Transition stage, where it is introduced into live environment. When the solution is in operation, the Service Operation stage manages and supports the solution's performance so that value for the customer and service provider is ensured. (Lloyd et al 2011: 24.)

Finally, the Continual Service Improvement stage continuously improve the alignment of services with changing business needs. The improvement possibilities of services are continuously identified and implemented across all the other lifecycle stages. (Case et al 2011: 31.) Next, the Service Design stage is opened in more detail.

4.3 Service Design

The main objective of Service Design is to design IT services that comply with the company's governing IT processes, practices and policies in a way that the company's strategy is realized. Furthermore, the aim is to design the services so effectively that they need minimal improvement during their lifecycle, and to facilitate the introduction of the designed services into the live environment. (Lloyd et al 2011: 17.)

A formalized Service Design ensures that the designed services correspond with the anticipated environment. Therefore, the designing of services should adapt incremental and iterative approaches. Without a formalized Service Design, the services tend to evolve organically by reacting to the environmental conditions without proper control. Consequently, the services are not completely aligned with business needs, they are prone to failures, expensive to run, and resources are going be wasted. (Lloyd et al 2011: 17.)

When designing IT services, a holistic approach should be adopted to the design. A holistic approach during Service Design ensures that the IT services have all the functional, management and operational requirements. Thereby, it is ensured that all the requirements are developed as a fundamental part of the design. As a result, the IT services have the required functionalities and quality, and they will be consistent and integrated with existing services, processes and activities across the organization. (Lloyd et al 2011: 31.)

4.3.1 Service Design Aspects

To ensure that the IT services are designed and developed holistically, five aspects of Service Design should be taken into account during the design. Moreover, these five aspects should always be considered in conjunction with each other instead of considering them in isolation, meaning that when making changes on any of the aspects, the impact of the change on all the other aspects must be reviewed simultaneously. (Lloyd et al 2011: 31.) These five aspects of Service Design are described in Figure 12 below.
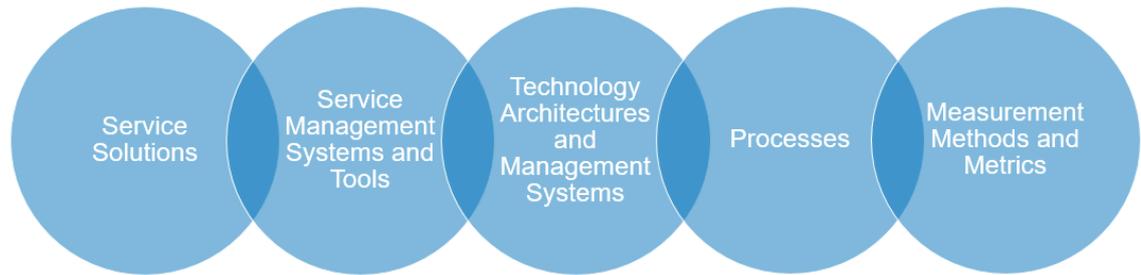
Figure 12. Five aspects of Service Design (Lloyd et al 2011: 31-33)

As shown in Figure 12, the five aspects of Service Design are (1) Service solutions, (2) Service management systems and tools, (3), Technology architectures and management systems, (4) Processes, and (5) Measurement methods and metrics.

First, the Service solutions aspect stands for all the functional requirements of the designed IT service. In addition, it considers all the resources and capabilities needed to build the IT service (Myitstudy.com 2013). Second, by considering the Service management systems and tools aspect, it is ensured that the designed IT service will be consistent with all the existing services and vice versa. (Lloyd et al 2011: 32-33.)

Third, the Technology architectures and management systems aspect looks after that the developed service is consistent with the existing technology architecture and management systems. In addition, it is ensured that the technology architecture and management systems have the required capability to operate and maintain the upcoming IT service.

Next, by considering the Process aspect, all the processes, roles, responsibilities and required skills will be in place to support, operate and maintain the designed service. Finally, the Measurement methods and metrics aspects ensures that existing measurement methods are applicable for the designed IT services when being in live environment. (Lloyd et al 2011: 33.)

Furthermore, the successful provision of IT services requires an appropriate level of design and planning to determine the processes, services and projects which will have the greatest impact, or the contrary, the greatest benefit to the business. Thus, risk assessment should be considered as an integral part of every action throughout all the Service Design aspects. (Lloyd et al 2011: 34-35.)

To dig deeper into to the five aspects of Service Design, Table 6 below opens the Service Design aspects in more detail and concrete level.

Table 6.   Service Design aspects (Lloyd et al 2011: 43)

Aspect	Description
Business Process	All the functional needs of the service to be defined
Service	The delivered service itself
SLAs/SLRs	The documents agreed with the customers in which the scope, level and quality of the service are specified
Infrastructure	All the necessary IT equipment in order to deliver the service
Environment	The environment needed to operate and secure the infrastructure
Data	The data required to support the service
Applications	The software applications required to manipulate the data
Support Services	The services necessary to support the operation of the service
OLAs and Contracts	The underpinning agreements necessary in order to deliver the quality of the service agreed within the SLA
Support Teams	All the internal support teams that prove second- or third-line support for the service
Suppliers	All the external third parties necessary to provide third- and fourth-line support for the service

Table 6 describes the aspect that must be considered during Service Design in order to design a comprehensive, effective and quality service that meets the needs of the business. Like the five aspects of Service Design described in Figure 12, these aspects should always be integrated with each other instead of considering them in isolation. (Lloyd et al 2011: 43.)

4.3.2 Service Design Activities

The Service Design activities are needed either as a consequence of changes in business needs or needs to improve existing services. To ensure that all the design aspects are considered during the design, and therefore to ensure that the introduction of the service to live environment is smooth, as well as the operation of the service, many activities must be completed during Service Design. (Lloyd et al 2011: 47, 52.) Table 7 describes the activities that should be considered during Service Design.

Table 7.   Service Design activities (Lloyd et al 2011: 56-57)

#	Service Design activities according to ITIL ®
1	Analyzing the agreed business requirements
2	Reviewing the existing IT services and infrastructure
3	Designing the service according to the agreed requirements
4	Incorporating the contents of the Service Acceptance Criteria (SAC) to the design
5	Agreeing the budget and expenditures of the design
6	Re-evaluating the Total Cost of Ownership (TCO) of the service
7	Re-evaluating the expected business benefits of the service, including the Return on Investment (ROI)
8	Agreeing the actual service, its targets in a form of Service Level Requirements (SLR) and outcomes
9	Checking that the service is consistent with the organization, IT strategies, policies, architecture and plans
10	Ensuring that an appropriate corporate, IT governance and security controls are in place for the service
11	Assessing the Operational Readiness (security, availability, continuity of the service, capability and maturity of the business and IT)
12	Assembling the Service Design Package (SDP)
13	Agreeing the necessary supplier and supporting agreements to maintain and deliver the service

4.4 Service Transition

The objective of Service Transition is to build, test and deploy a release into live environment within the predicted quality, cost and time scale by managing and coordinating the processes, systems, functions and resources. Moreover, the objective of the Service Transition stage is to ensure that the deployment causes a minimal unpredicted impact on the services being in live environment. In addition to deploying the service itself, the Service Transition stage is responsible for deployment of knowledge, training, release documentation and communication. (Lacy et al 2011: 38-39). The Service Transition stage includes seven processes. Below, the three most valid processes for this study are explored in more detail.

4.4.1 Release and Deployment Management

The goal of Release and Deployment Management is to deploy any release into production as specified by Service Design. Furthermore, Release and Deployment Management aims to establish any release so that it delivers value to the customer and accomplish all the stakeholders' requirements. Therefore, Release and Deployment Management also has a responsibility to define and agree a release plan, ensure that the release is built, tested and deployed efficiently and on time, ensure that the services in production are affected by a minimal unpredicted impact, and to ensure that knowledge and skills are transferred to operations. (Lacy et al 2011: 152.)

The deployment of any release can be done in multiple ways, and each release or deployment must be uniquely identified. "A release unit" is a commonly used concept to describe the portion of the released service that is released at once. When deciding the scope of the release unit, the ease of the deployment, the amount of time and resources needed for the deployment, the complexity of interfaces between the new and existing services and IT infrastructure, and the storage available for the deployment must be considered. (Lacy et al 2011: 154.)

Moreover, the most common options for deploying releases are "big bang" and phased deployment. In "big bang", the release is deployed to all organization's user areas at once. The application changes are often deployed as "big bang". In the phased deployment, in turn, the release is initially deployed only to a chosen part of the user base, after which the operation is repeated for all subsequent parts according to a pre-defined and

scheduled roll out plan. The phased deployment is commonly used for releasing new services to the organization. (Lacy et al 2011: 152.) Figure 13 below illustrates the phased deployment across multiple geographical locations.
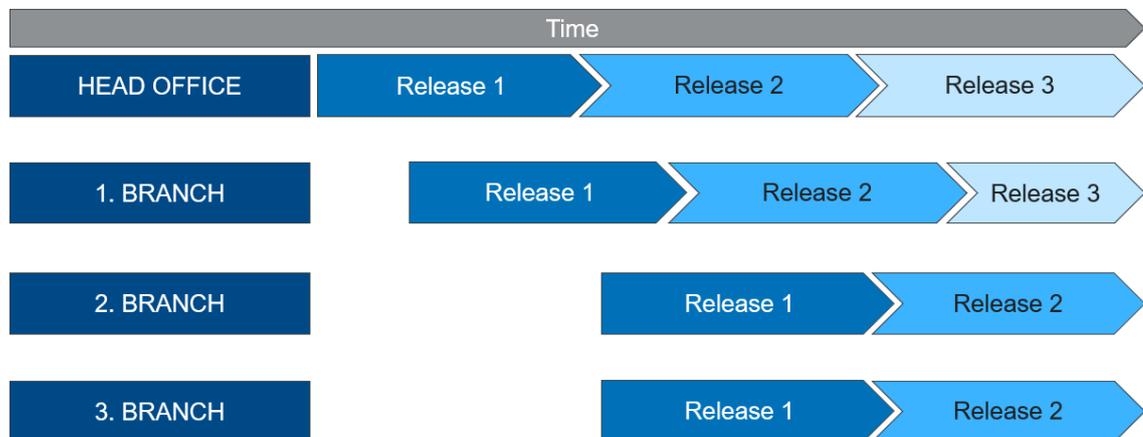
Figure 13. A phased roll out across multiple geographical locations (Lacy et al 2011: 156).

Figure 13 describes how the phased deployment is often conducted in organizations that have multiple geographical locations. In such organizations, the phased deployment usually starts from the head office of the organization, after which the other branches, including a pilot branch, follow. What is notable in such deployments, the new and old versions of the release must work concurrently, since the deployment to multiple locations might take a remarkably long time. (Lacy et al 2011: 157.)

4.4.2 Service Validation and Testing

The goal of the Service Validation and Testing process is to ensure that the developed services provide value to the customers and their business. Therefore, the Service Validation and Testing process aims to plan and implement a validation and test process to ensure the quality of the release, and to identify and assess risks and errors throughout Service Transition. The types of test that are used to verify whether the service meets all the stakeholders' requirements for supporting, managing and operating the service are presented in Table 8 below. (Lacy et al 2011: 207.)

Table 8.   Test types (Bmc.com 2016)

Test Type	Purpose
Utility Testing	To determine whether the service will deliver the required functionality
Warranty Testing	To determine whether the service will deliver the required level of availability, capacity, security, and continuity
Usability Testing	To determine whether the service will be usable by all the potential users
Contract and Regulation Testing	To determine whether the service will conform to applicable regulatory and contract requirements
Operational Readiness Testing	To determine whether the support functions, including the Service Desk, are staffed and trained to support the service

As shown in Table 8 above, the test types are Utility testing, Warranty testing, Usability testing, Contract and Regulation testing, and Operational Readiness testing. (Bmc.com 2016.) Before performing any of them, it is important first to collect all the likely user groups, and after that to test all the aspects of the service with these users (Lacy et al 2011: 226).

4.4.3   Knowledge Management

Knowledge Management is an entire service lifecycle-wide process which ensures that the right information is available in the right place at the right time. Furthermore, it enables organizations to make informed decisions, and to reduce the need of rediscovering knowledge which already exists. (Hyvönen 2018.) When conducting Knowledge Management appropriately, it is a powerful asset across the entire organization, since through the process data, information and knowledge are effectively shared between both individuals and teams (Lacy et al 2011: 257).

An organized Knowledge Management process maintains a central repository, a Service Knowledge Management System (SKMS). The main components of SKMS are Configuration Management System (CMS) and Configuration Management Database (CMDB). Hence, the SKMS includes for example the experience and skills of staff, organization's

performance figures, and requirements, abilities and expectations of suppliers and partners. (Lacy et al 2011: 259.)

The Knowledge Management process is significant especially within the Service Transition stage. A successful transition of knowledge trains the users, Service Desk, suppliers and support teams to understand the new or changed service. In addition, knowledge transfer is essential to achieve operational readiness, delivering the errors, workarounds and faults appeared before deployment, and capturing testing information and the entire implementation of the service. (Lacy et al 2011: 257-258.)

4.5 Project and Development Management

The design of new or changed IT services should be done according to a structured approach. Therefore, the significant changes to which the Service Design activities are adopted, are always conducted as projects. The projects, in turn, should be carried out according to each organization's individual Project and Development Management practises, which are commonly controlled by the Development Management Office (DMO) or the Project Management Office (PMO) (Huovinen et al 2015: 102).

Moreover, each project must be individually classified, since the difficulty, targets, duration, budget and staffing vary in every project. On the other hand, the business case validity, goals, scope, constraints, timetables, costs, tasks, deliverables, resources, quality, risks and compliance with Enterprise Architecture must be managed in each project. (Huovinen et al 2015: 102-103.)

In addition, each project needs to have an appropriate management model, Steering Group and project plan. The project plan should describe the roles and responsibilities, Project Management methods, must-have deliverables, documentation methods, owners and other stakeholders, Key Performance Indicators (KPIs) and reporting practices. (Huovinen et al 2015: 108.) Following, the key roles in the development project are explored.

4.5.1 Key Roles in Development Projects

To successfully conduct a development project, the roles and responsibilities must be defined at early stage of the project. Furthermore, it is recommended that the roles are nominated at latest in the Planning stage (Huovinen et al 2015: 106). When it comes to the roles and responsibilities, they often vary between different organizations, depending on the volatility and size of the organization. However, it is important that the roles are clearly defined and scoped for every organization. (Lloyd et al 2011: 327.)

The key roles within the development projects are Project Owner and Project Manager. The Project Owner has the responsibility of the progress and quality of the project and has the main responsibility for tracking that the business benefits are realized. In addition, the Project Owner is responsible for approving the project deliverables. Project Manager, in turn, is responsible for the daily project management by ensuring that the project is completed on the right time and schedule. In addition, Project Manager is responsible for the project management communication and it ensures that the agreed deliverables of the project are produced. (Huovinen et al 2015: 104-106.)

In addition to Project Owner and Project Manager, the development projects need other roles as well to successfully complete the project. Typically, these roles include representatives from the end-user side (Key User), Service Owner, Service Manager, Process Owners, Technical Lead and people responsible for quality assurance, communication, training, testing and competence development. (Huovinen et al 2015: 106, 141.)

4.5.2 Operational Readiness

The purpose of Service Design is to design new or changed services. Service Design must adopt a holistic approach in designing, and hence, various perspectives from different stakeholders should be incorporated into designing. Service Transition, in turn, ensures that the transition of the designed services into a live environment is as smooth as possible. In addition, the aim of Service Transition is to ensure that the service meets a predefined criterion of operational readiness. (Huovinen et al 2015: 141, 148.)

Operational readiness means a state that is moved forward incrementally throughout the project lifecycle by performing various tasks and creating desired deliverables. By considering the operational readiness as an integral part of the project lifecycle, the project

team ensures that the operating, live environment, is prepared to accept and support the changes that result from the project. (Gardner 2001.)

Understanding of the operational requirements of the service enables setting the appropriate objectives for Service Transition. Therefore, it is ensured that all the activities required for achieving the operational readiness can be planned, listed, managed and resourced during Service Design. The activities can be listed as an Operational Readiness Checklist and managed through a service acceptance gate approach. (Huovinen et al 2015: 148.) Figure 14 below illustrates how the operational readiness can be managed during Service Design.
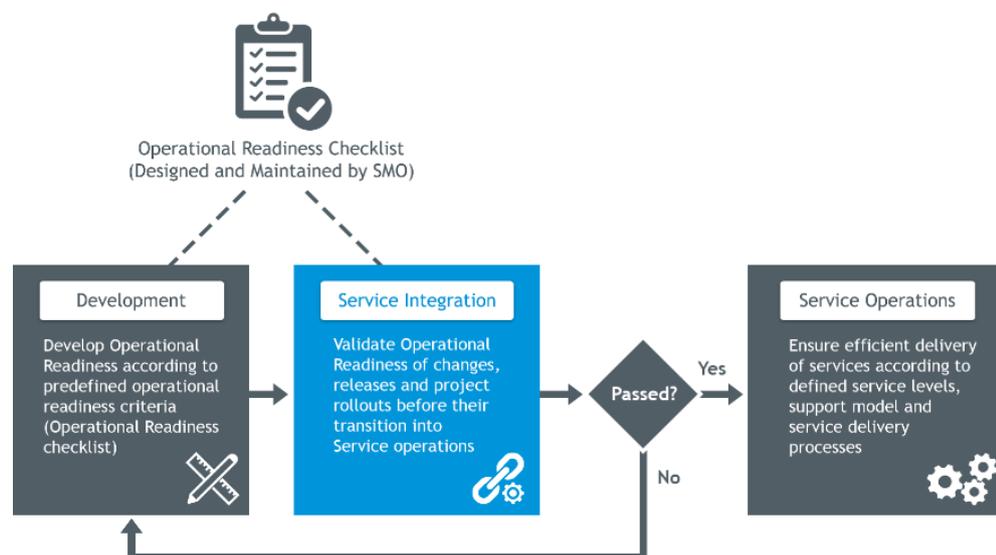
Figure 14. Operational Readiness as part of Service Design (Huovinen et al 2015: 149)

As shown in Figure 14, the operational readiness activities can be listed as an Operational Readiness Checklist, which is designed and maintained by Service Management Office (SMO). The operational readiness is developed according to the activities defined in the Operational Readiness Checklist. Service Integration is responsible for validating the operational readiness which can be done through service acceptance gates. If the service acceptance gate is accepted, the project can proceed to following stage. If not, the project can be rolled-back to previous stage to close the observed gaps. Once all the service acceptance gates are passed, the service can be launched into a live environment. (Huovinen et al 2015: 148.)

4.6 Conceptual Framework

The available knowledge and industry's best practices explored in Section 4 were used to build the proposal for this study and to simultaneously address the key findings from the current state analysis. The explored knowledge and best practices are compiled in a conceptual framework, which is described in Table 9 below.

Table 9.   Conceptual framework of the study (based on the selected knowledge and industry's best practices)

Key Findings from CSA	Addressed Topic from Literature	Reference in Section 4	How the Literature Source is Used?
The development often focuses excessively on technical functionality of the service	**Service Design (ITIL)** - The purpose of Service Design is to design and develop IT services for live environment (Lloyd et al, 2011).	4.3 Service Design 4.3.1 Service Design Aspects 4.3.2 Service Design Activities	To define all the Service Design aspects
Tests are not comprehensively performed or documented	**Service Transition (ITIL)** - The purpose of Service Transition is to transfer the designed IT services to production while protecting the live environment from disruption (Bmc.com, 2016; Lacy et al, 2011).	4.4.2 Service Validation and Testing	To define the types of tests
The project documentation is not delivered to production		4.4.3 Knowledge Management	To define what knowledge should be delivered to production
Handover of the services to production is not systematic		4.4.1 Release and Deployment Management	To create a roll out plan for the Service Design and Transition process
The key roles for the developed service are nominated too late	**Project and Development Management** - The development of IT services should be done according to agreed practices within the agreed resources, time frame and value creation expectations (Huovinen et al, 2015).	4.5.1 Key Roles in Development Projects	To define the key roles of IT services and to determine when the roles should be nominated
The Operational Readiness Checklist is varyingly used in development projects		4.5.2 Operational Readiness	To embed the development of operational readiness an integral part of development projects

As shown in Table 9, the conceptual framework of the study consists of three topics from literature, which are Service Design, Service Transition, and Project and Development Management. All the topics are based on best practices defined by the ITIL framework.

First, the industry's best practices regarding Service Design were inspected to find out the Service Design principles, and to understand the considerable actions and activities when designing IT services. Second, best practices of Service Transition were investigated. Within the Service Transition topic, best practices of Release and Deployment Management and knowledge transfer were explored, as well as the types of tests when testing IT services. Third, best practices of Project and Development Management were inspected. More detailed, best practices of development project roles, operational readiness and project classification were explored within the third topic.

Next, the building of the proposal based on the current state analysis and existing knowledge is described.

5 Building Proposal for Service Design and Transition Process

This section covers building the initial proposal for the company. The proposal consists of three entities: (1) a Service Design and Transition process model, (2) Service Design and Transition process templates and (3) a roll out plan for the defined Service Design and Transition process. First, the steps taken to build the proposal are presented, after which the key findings made during this study are described. Finally, the actual proposal is created.

5.1 Steps for Building the Proposal

The purpose of this chapter is to describe the logic of building the initial proposal for this study. Figure 15 below illustrates the steps taken for building the proposal.

Figure 15.   Steps for building the proposal

As seen from Figure 15, the proposal for this study was built in four steps. First, the current state of the company's Service Design and Transition process was examined (Section 3, Data 1). Second, the available knowledge and industry's best practices were explored based on the findings from the current state analysis (Section 4, Conceptual Framework). Third, proposal workshops were held with an external IT Service Management expert to build an optimal proposal for the company (Section 5, Data 2). Figure 16 below presents the content and purpose of the steps in more detail.
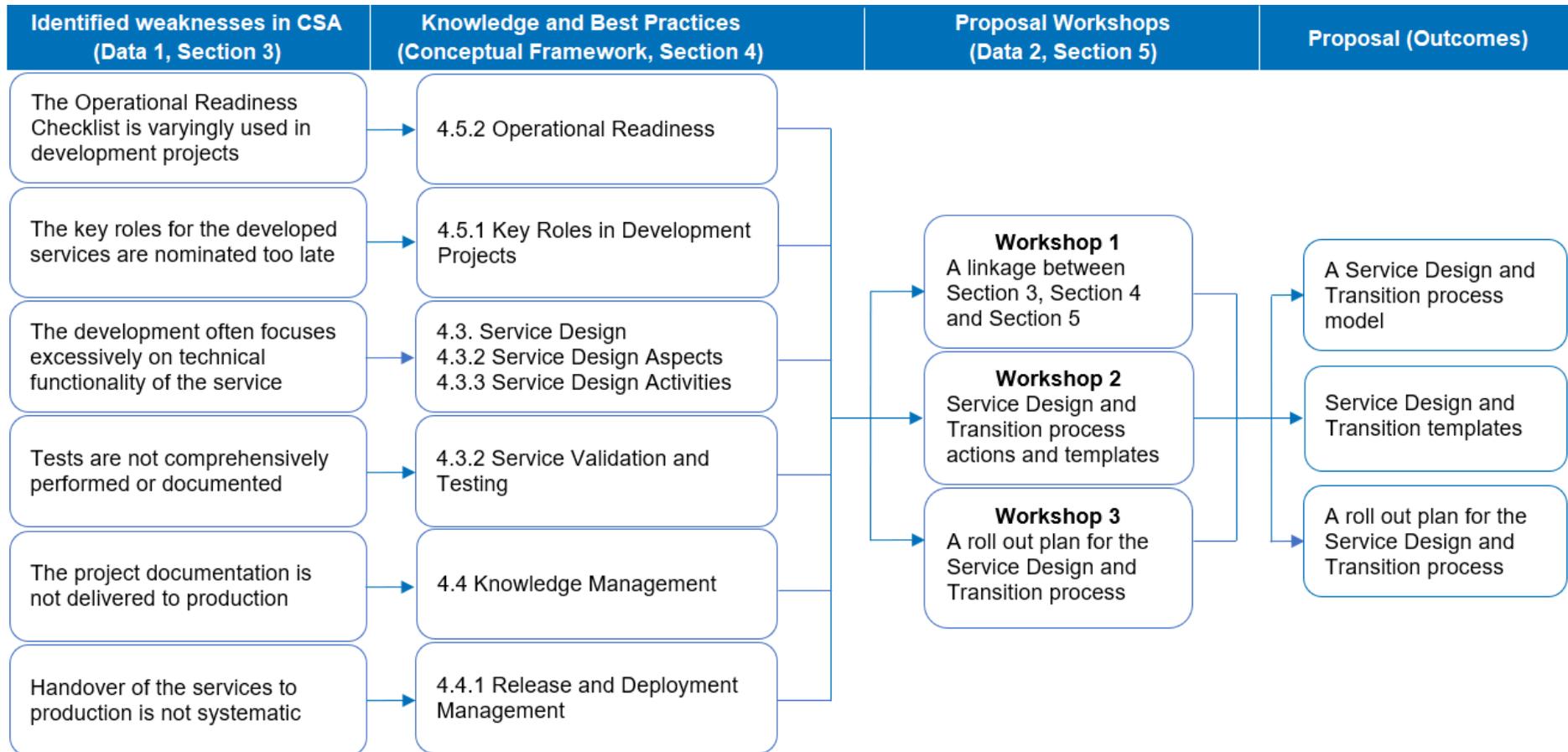
Figure 16. The contents of the proposal building steps

Figure 16 presents the content of the proposal building steps. First, Data 1 was collected from the current state analysis through examining the company's internal documentation and interviewing the company's selected Service, Project and Release Managers. Data 1 revealed the strengths and weaknesses of the company's current Service Design and Transition process. The identified weaknesses are shown in Figure 16 above.

Second, the explored knowledge and best practices were chosen based on the identified weaknesses in the current state analysis. The exploring focused on the best practices of Service Design and Service Transition defined by the ITIL framework. In addition, available knowledge of Project and Development Management, including Operational Readiness was explored.

Third, based on the studied topics, the contents of the proposal workshops were formed. The workshops were held with an external IT Service Management expert regarding the best practices for defining Service Design and Transition process, Service Design and Transition templates, and creating a roll out plan for the defined process. Finally, based on all the mentioned steps, the proposal for the study was built. Following, the key findings from each step are presented.

5.2 Key Findings for Building the Proposal

This chapter presents all the key findings made during this study that have had an impact on the proposal. The key findings are presented according to the proposal building steps: Current State Analysis of the Company's Service Design and Transition process, Available Knowledge and Best Practices for Defining Service Design and Transition Process and Data 2 presented in Section 5.

5.2.1 Key Findings from the Current State Analysis

The current state analysis in Section 3 was conducted by examining the company's internal documentation and by interviewing the company's selected Service, Project and Release Managers. The examination of the company's internal documents provided an understanding of the company's IT Operating Model, Development Project Management model, the current Operational Readiness Checklist and the company's roles across the

lifecycle of an IT service. The held interviews, in turn, revealed the strengths and weaknesses of the company's current Service Design and Transition process. The key findings are presented in Table 10 below.

Table 10.   Key findings from the Current State Analysis (part of Data 1)

Strengths	Weaknesses
The gate-based models work well in projects which follow waterfall methodologies	The Operational Readiness Checklist is varyingly used in development projects
The Operational Readiness Checklist can be adopted both for small and large development initiatives	The key roles for the developed service are nominated too late
Project Managers are willing to use the Operational Readiness Checklist	The development often focuses excessively on technical functionality of the service
Individual Tower Heads, Service and Release Managers are trying hard to look after service readiness	Tests are not comprehensively performed or documented
	The project documentation is not delivered to production
	Handover of the services to production is not systematic

Table 10 presents the strengths and weaknesses of the company's current Service Design and Transition process. The results were given by the company's Service, Project and Release Managers in the current state analysis. They are opened in more detail in Section 3.

In the current state analysis, the interviewees also provided valuable insights on the activities that should be considered within a Service Design and Transition process. These activities were targeted especially for the company's context and they were given based on the interviewees' personal experience. These findings include to Data 1 of the study, and they are presented in Table 11 below.

Table 11. The company's Service, Project and Release Managers' insights on the considerable activities within a Service Design and Transition process (part of Data 1)

#	Activity
1	Roles and responsibilities must be nominated in the beginning of the project
2	A project documentation must be prepared by the project team
3	Users and key users must be trained
4	Knowledge Articles, user instructions and user manuals must be created
5	The new service solution must be added into CMDB
6	IT Service Management tool must be updated
7	The service must be thoroughly tested, including scenarios, functionalities, regression, integrations, performance, user acceptance and loads
8	Businesses requirements should be comprehensively collected and validated
9	The benefits the service is expected to deliver should be clarified
10	A key user network should be established

Table 11 shows the key findings from the company's Service, Project and Release Managers' interviews regarding the actions to be considered within a Service Design and Transition process. The findings indicate that the roles and responsibilities for the developed service must be nominated early enough, a project documentation must be prepared by the project team, users must be trained, Knowledge Articles and user manuals must be created, CMDB and IT Service Management tool have to be updated, the developed service must be thoroughly tested and business requirements must be comprehensively collected and validated, as well as the expected benefits of the service.

5.2.2   Key Findings from Available Knowledge and Best Practices

In chapter *(4.3) Service Design* it was noted that a holistic approach should be adopted when designing IT services to ensure that the designed services have the desired functionalities and quality, and they are consistent and integrated with existing services, processes and activities. The five aspects that must be considered during Service Design were described in chapter *(4.3.1) Service Design Aspects*. They are: Service solutions,

Service management systems and tools, Technology architectures and management systems, Processes and Measurement methods and metrics. In following chapter, the practical Service Design activites were described *(4.3.2) Service Design Activities*. All of these aspects and activities will be taken into account when building the proposal for the Service Design and Transition process.

In chapter *(4.4.2) Service Validation and Testing* the types of test were mentioned: utility, warranty, usability, operational readiness and contract and regulation testing. The key roles of development projects, in turn, were noted in chapter *(4.5.1.) Key Roles in Development Projects*. They are Project Owner, Project Manager, Key User, Service Owner, Service Manager, Process Owners, Technical Lead and people responsible for quality assurance, communication, training, testing and competence development. The types of tests and the key roles are considered in the proposal for Service Design and Transition process.

In chapter *(4.4.1) Release and Deployment Management*, the two most common release and deployment methods were noted, which are "big bang" and a phased approach. In the phased approach, the release is initially deployed only to a chosen part of the user base, after which the operation is repeated for all subsequent parts according to a pre-defined and scheduled roll out plan. This approach will be used for building the proposal for the roll out plan of Service Design and Transition process in this study.

5.2.3   Results of the Proposal Building Workshops

In the proposal building stage, three workshops were held with an external IT Service Management expert who has plenty of experience on defining a Service Design and Transition process. The purpose of the workshops was to assess and combine the key findings made during the study with the best practices based on the IT Service Management expert's experience. Thereby, the objective of the workshops was to build an optimal proposal for the company.

In the first two proposal building workshops, the Service Design and Transition process model was formed by specifying the Service Design and Transition actions and setting them along the company's Development Project Management model. In addition, the Service Design and Transition templates were defined accordingly. Finally, in the third workshop, the roll out plan for the defined process was created.

5.3 Proposal

In this chapter, the initial proposal is presented in three separate parts: (1) Service Design and Transition process model, (2) Service Design and Transition templates, and (3) Roll out plan.

5.3.1 Service Design and Transition Process Model

The initial proposal for the Service Design and Transition process was created through continuous collaboration with an external IT Service Management expert. Moreover, the proposal was built by combining the activities from the company's current Operational Readiness Checklist with the IT Service Management expert's expertise and experience, the explored knowledge and best practices, collected data and conducted analysis. Therefore, the proposal for the Service Design and Transition process model was created through several iterations.

The created proposal for the Service Design and Transition process model is a full version, meaning that it includes all the possible Service Design and Transition process activities designed for the company's environment. In other words, the proposed Service Design and Transition process model can be adopted especially in projects, in which large scale development initiatives are developed. Nevertheless, the process model can be scaled for any size of development initiatives.

Moreover, the purpose of the proposed Service Design and Transition process model is to act as a guideline for project teams and give them guidance when preparing new and changed services for live environment. In other words, the purpose of the proposed Service Design and Transition process model is not to slow the development projects down or slavishly force the project teams to follow each action in the process model.

The initial proposal for the Service Design and Transition process model is presented in Figure 17 below.
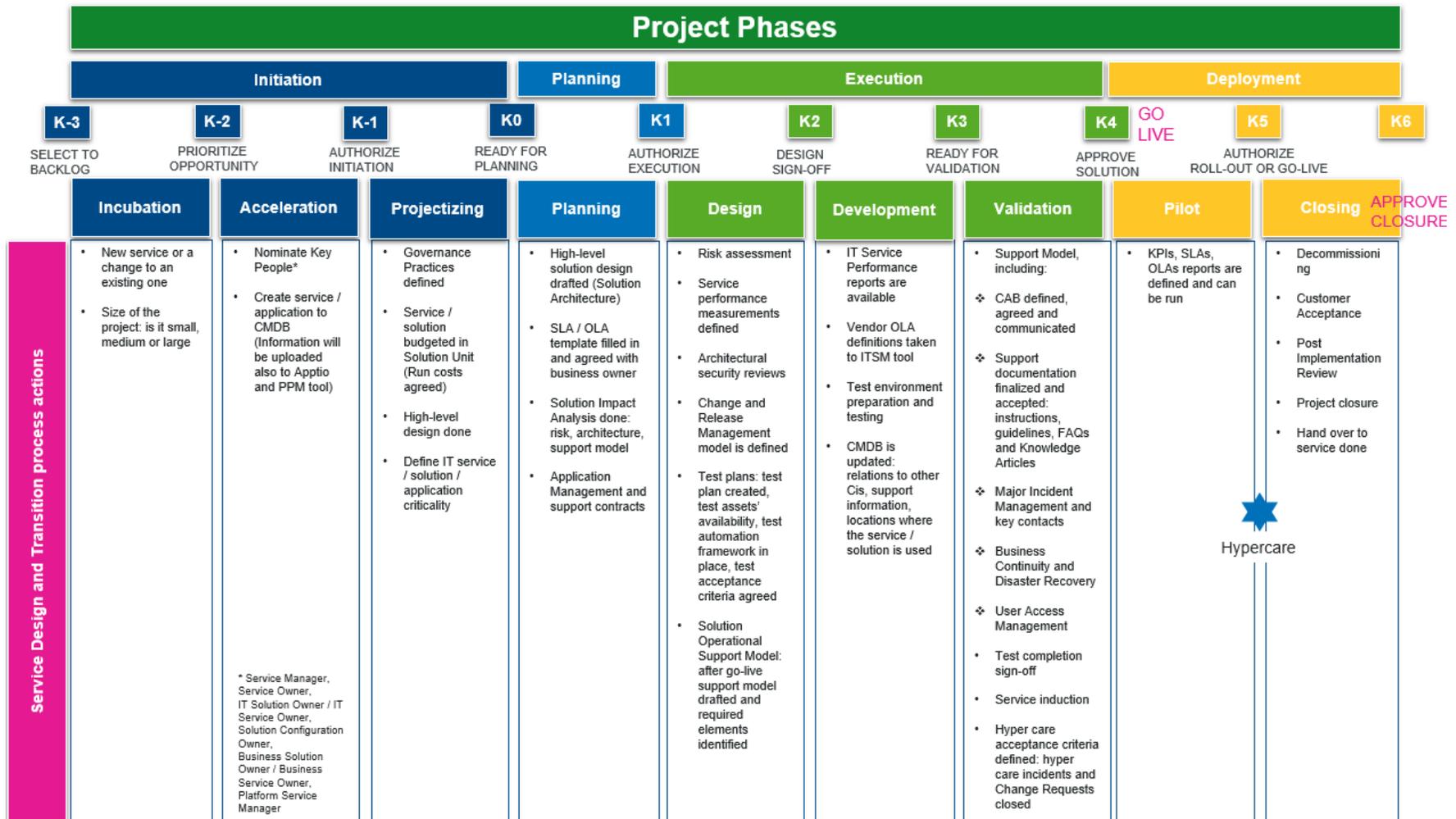
Figure 17. Initial proposal for the Service Design and Transition process model

Figure 17 presents the initial proposal for the Service Design and Transition process model. As shown, the proposed Service Design and Transition process actions have been spread along the company's Development Project Management model. As a result, it is ensured that the operational readiness of the company's new and modified services is considered as an integral part of development projects. Thereby, it is also prevented that the tasks do not accumulate to the end of the project, as identified to happen in the current situation. The Service Design and Transition process actions were defined and set along the project phases by utilizing the information obtained from chapters *(4.3.3) Service Design Activities, (5.2.1) Key Findings from the Current State Analysis* and *(5.2.3) Results of the Proposal Workshops.*

Furthermore, the proposed Service Design and Transition process ensures that the key roles for the service are nominated at early stage of the development projects. By nominating the key roles at the Initiation phase as proposed, it is guaranteed that the support teams from the operational side are conscious of the upcoming service, and therefore are prepared to appropriately support the service. In addition, as a result, they have the visibility to the service when being in development and possibility to influence the service before it is transferred to production. The key roles were defined according to section *(4.5.1) Key Roles in Development Projects*, *(5.2.1) Key Findings from the Current State Analysis* and *(5.2.3) Results of the Proposal Building Workshops.*

The proposed Service Design and Transition process model also ensures that the design of the new or changed service is holistic. Hence, it is ensured that the developed services are consistent with the company's environment. When in the current situation the design was focusing mostly on the technical functionalities of the service, the proposed Service Design and Transition process model also considers the architecture, infrastructure, support model, impact, risks, suppliers, agreements and contracts of the developed services. The aspects of holistic design were explored in chapters *(4.3.1) Service Design Aspects*, and *(4.3.2) Service Design Activities*, *(5.2.1) Key Findings from the Current State Analysis*, and *(5.2.3) Results of the Proposal Workshops.*

Moreover, the proposed Service Design and Transition process guides the project teams to comprehensively test the developed service before its deployment to live environment. Guidance is also given to appropriately document the test results, when previously the testing was not comprehensively performed nor documented. The types of tests and test methods were defined according to the chapters *(4.4.2) Service Validation and Testing*,

(5.2.1) Key Findings from the Current State Analysis, and *(5.2.3) Results of the Proposal Workshops*.

Lastly, the proposed Service Design and Transition process ensures that the service-related knowledge gained during the development projects is available for the operations side. As explored in chapters *(4.3.3) Knowledge Management*, *(5.2.1) Key Findings from the Current State Analysis* and *(5.2.3) Results of the Proposal Building Workshops*, the documentation to be created and then transferred from development to production includes instructions, guidelines, Frequently Asked Questions (FAQ) and Knowledge Articles. In addition, the knowledge transfer covers the training and preparation of the upcoming users and suppliers of the service and the company's Service Desk.

5.3.2 Service Design and Transition Templates

Like the Service Design and Transition process model, the initial proposal for the Service Design and Transition templates was created in the proposal building workshops by combining the IT Service Management expert's expertise with the explored knowledge and best practices in chapter *(4.3.3) Knowledge Management.*

The purpose of the proposed Service Design and Transition templates is to support and guide the project teams to prepare the project documentation. As a result, the knowledge gained during the development projects will be documented and handed over to production. Thereby, it is ensured that the production side's support teams are aware of all the aspects of the upcoming services and they have the visibility to the steps taken during the development. In addition, as a result, the support teams, including the Service Desk, can support the services and the end users know how to use them.

Like the Service Design and Transition process model, the Service Design and Transition templates are aligned with the company's Development Project Management model. In that way, the project teams are instructed when a certain document's preparation is recommended to be started.

Figure 18 below shows the initial proposal for the Service Design and Transition process templates.
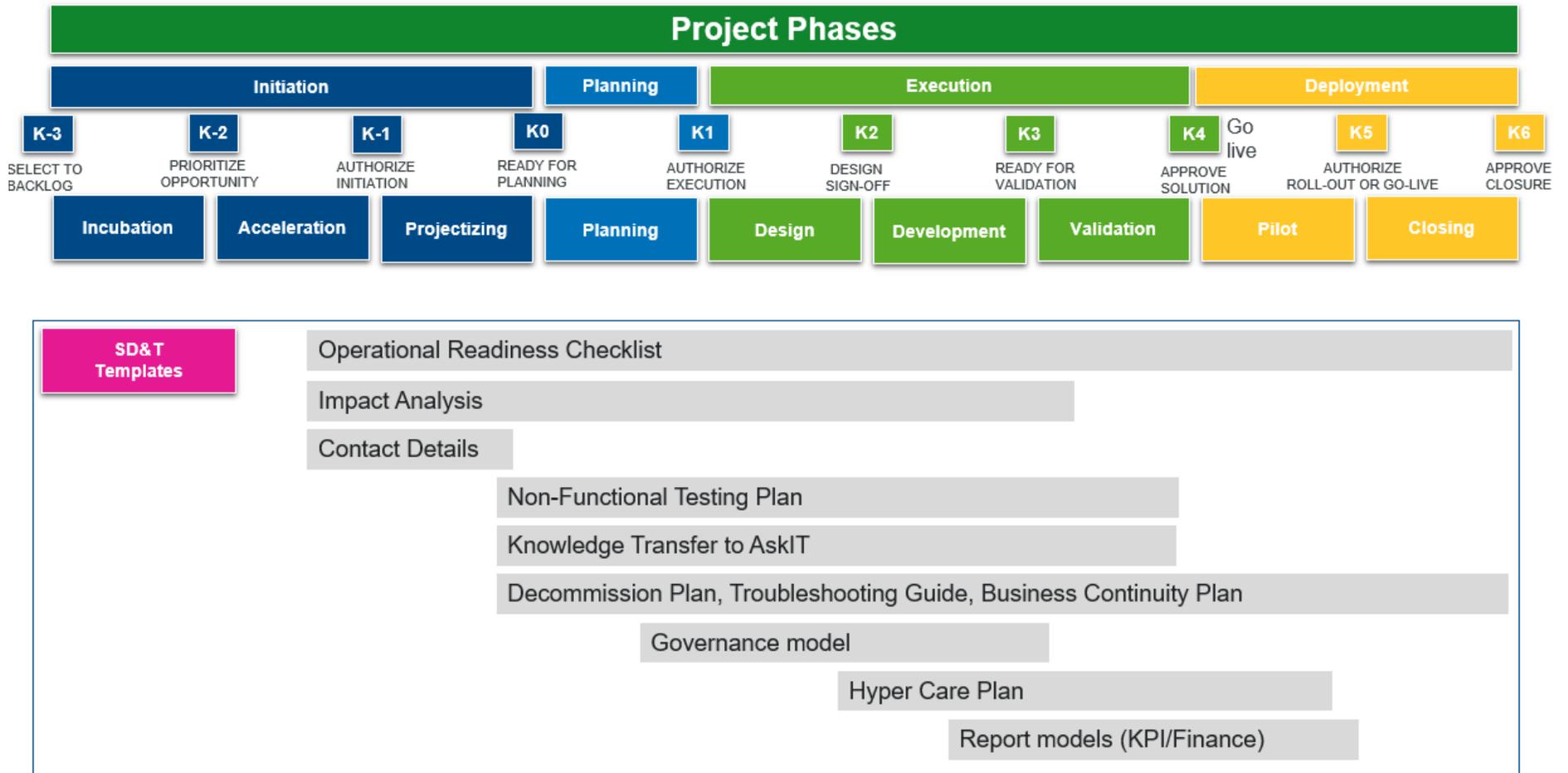
Figure 18. Initial proposal for the Service Design and Transition templates

5.3.3   Roll Out Plan

The initial proposal for the roll out plan of the proposed Service Design and Transition process was created in the proposal building workshops based on the explored best practices in the chapter *(4.4.1) Release and Deployment Management* and the IT Service Management expert's insights. The initial proposal is presented in Figure 19 below.

Q1/19			Q2/19			Q3/19			Q4/19			Q1/20		
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Seb	Oct	Nov	Dec	Jan	Feb	Mar

Setup and Proof of Concept

Finland

The rest of Central and North Europe

The Americas

South Europe, Middle East and Africa

Asia Pacific and Greater China
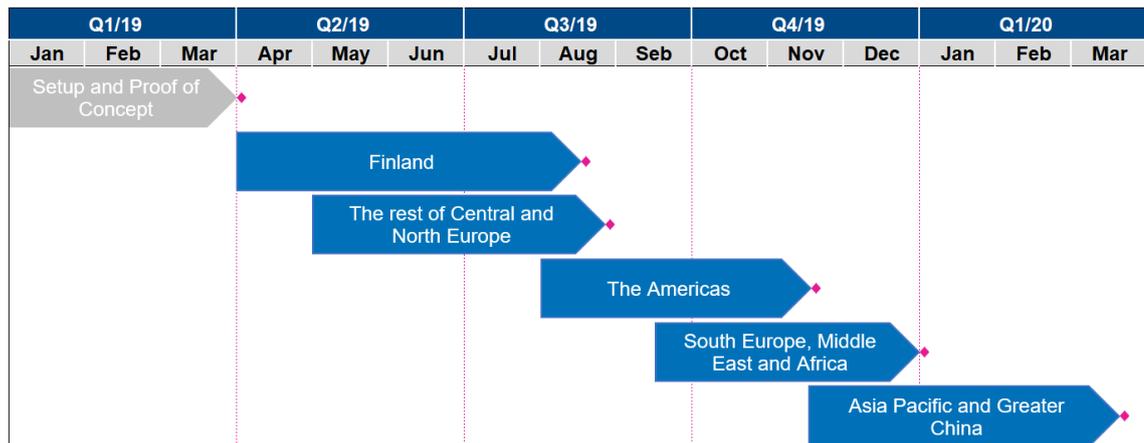
Figure 19. Initial proposal for the roll out plan of the Service Design and Transition process

As shown in Figure 19, the roll out of the Service Design and Transition process is proposed to be executed according to a phased approach, as explored in the chapter *(4.4.1) Release and Deployment Management*. The roll out phases are divided according to the regions in which the company has its operations.

The first proposed step within the roll out of the Service Design and Transition process, is setting up the project organization. In the setup, the project team is chosen and trained for the process. In addition, a Proof of Concept (POF) trial is carried out during the setup. In the POF, it is tested whether the created Service Design and Transition process is valid for the company by ensuring that the process works in the company's environment. In addition, an approval for the proposed Service Design and Transition templates is attained in the POF.

After the project organization has setup and the POF has successfully performed and approved, the actual roll out will start. The roll out is proposed to start from the company's headquarters in Finland, as explored in the chapter *(4.4.1) Release and Deployment Management*. After the process is successfully deployed in Finland, it is proposed that

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the roll out is executed for the rest of the regions in the following sequence: the rest of the Central and North Europe, the Americas, South Europe, Middle East and Africa, and finally Asia Pacific and Greater China.

Moreover, it is proposed that the Service Design and Transition process is deployed only for the upcoming development projects. In other words, the ongoing development projects are excluded from the scope of the deployment and can be finished according to the existing methodologies.

5.4   Expected Benefits of the Proposal

The objective of this study was to propose a Service Design and Transition process model for the company so that it is aligned with the company's Development Project Management model. When comparing the built proposal to the objective of this thesis, the objective can be stated to be met. The expected benefits of the proposal are presented in Figure 20 below.

Key Findings from CSA	Proposal	Expected Benefits
The Operational Readiness Checklist is varyingly used in development projects	The Service Design and Transition process model	1. The development of IT services is structured and standardized across the company
The key roles for the developed services are nominated too late		2. The new and modified IT services are high-quality and they face a minimal number of outages when being in production
The development often focuses excessively on technical functionality of the service		3. The new and modified IT services have the required functionalities and they are consistent and integrated with existing IT services, processes and other activities
Tests are not comprehensively performed or documented		4. Support teams are able to support the new and modified IT services by having appropriate knowledge and skills
Handover of the services to production is not systematic		5. The end users know how to use the new or modified IT services
The project documentation is not delivered to production	The Service Design and Transition templates	6. The project documentation is produced and knowledge is transferred to production

Figure 20. Summary of the expected benefits of the proposal

As described in Figure 20, the proposal for the Service Design and Transition process model is expected to ensure that the development of IT services is structured and standardized across the company. As a result, the transition of IT services from development to production is expected to be smooth. In addition, it is ensured that the operational requirements for the services are considered as an integral part of each development

project. Thereby, it is ensured that the company will have the required operational readiness to accept and support the changes resulting from the development projects.

The required operational readiness, in turn, is reached by transferring the knowledge gained during development to operations concurrently with the service. The proposed Service Design and Transition templates are expected to support the preparation of the project documentation, and therefore the knowledge transfer. As a result, the operational support teams, including the Service Desk, have the appropriate knowledge and skills to support and manage the services and the end users know to use the services.

In addition to the knowledge transfer, the operational readiness is ensured by designing and developing the services holistically and testing them before going live environment. As a result, the developed services will be high-quality. Therefore, they are expected to face minimal number of outages when being in production and have all the desired technical, operational and management functionalities. In addition, the services are expected to be consistent with the company's environment by having the required integrations with the existing services, processes and activities.

As an ultimate benefit it is expected that the developed services will support the company's business. Next, this initial proposal is validated through feedback from the Service Managers in the following section.

6   Validation of the Proposal

This section validates the initial proposal built in Section 5. First, an overview of the validation stage is presented. Following, the results of the validation of Service Design and Transition Process model, Service Design and Transition templates and the roll out plan are described. Finally, the final proposal is built with consideration of the validation results.

6.1   Overview of the Validation Stage

In the validation stage the proposal was presented to the company's Service Managers to gather feedback on the proposal. Based on the validation results, the proposal was iteratively enhanced with the company's internal IT Service Management expert. The purpose of the validation was to ensure that the proposal meets the company's expectations and requirements for it. Figure 21 below presents the steps of the validation stage.
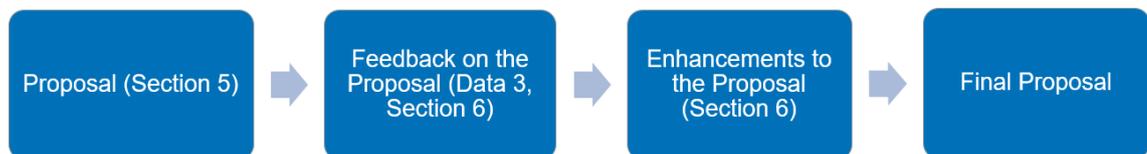
Figure 21. Overview of the validation stage

As shown in Figure 21, the validation was conducted in four steps. First, the proposal for the Service Design and Transition process model, the Service Design and Transition process templates and the Service Design and Transition process' roll out plan were assessed by the company's two internal Service Managers. The gathered data form Data 3 of this study, as described in *Table 1* and *Figure 2*, *Research Design* in Section 2. After the validation data was collected, the final proposal was built with consideration of the validation results.

6.2   Key Findings of Validation

In the validation of the proposal for the Service Design and Transition process model, it was verified that the proposed process model is aligned with the company's Development Project Management model. In addition, it was noted that the proposed process model will provide guidance and clarification to multiple obscurities the company is currently facing, such as clarification on agreement of run costs of the service and decommissioning of services. In addition, it was stated that the process successfully ensures that the IT-related actions are considered early enough the development projects.

According to the feedback given by the Service Managers, some actions may be considered too early within the Service Design and Transition process model. Especially, the action points of creating a service or application to CMDB, involving Service Manager in the development project, filling in the SLA/OLA templates and measuring the IT service performance were noted in this context.

In addition, some actions were suggested to be added to the process model: (1) action point of making a decision of how the service performance will be monitored and measured when being in production, (2) reviewing the nominated roles in the Validation stage, since the roles might change during a long project, (3) adding Service Requests in support documentation, (4) an action point of creating a plan how to collect the Knowledge Articles from various stakeholders and (5) an action point of planning trainings for the service also in a longer run.

Finally, the defined Service Design and Transition templates were stated to be very useful, and according to the other Service Manager, the templates were already asked to be taken into use by the company's internal and external project teams.

The final version of the Service Design and Transition process model is provided in Appendix 11, since only minor changes were made to the initial proposal. The final proposal was created based on the initial proposal, with consideration of the validation results. The changes to the initial proposal were conducted in the validation stage.

In the next section, the summary and conclusions of the study are provided.

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7 Summary and Conclusions

This section provides the summary and conclusions of the thesis. The section consists of four parts which are an executive summary, next steps of the proposal, evaluation of the thesis and final words.

7.1 Executive Summary

Nowadays, digitalization is significantly changing the role of IT in every industry. Moreover, the role of IT has become so remarkable for organizations that the business success has been recognized to be dependent on how well IT succeeds to be a business enabler. Therefore, continuous and effective development of IT services for business is the cornerstone for every competitive organization.

This thesis was carried out as part of a real-life business project run by the company's Service Management Office (SMO). The aim of this thesis is to smoothen the transition of the new and modified IT services from development to production by improving the operational readiness of the company.

The objective of the thesis was to propose a Service Design and Transition process for the company which is aligned with the company's Development Project Management model. The outcome of this study consisted of a proposal with three parts: (1) a Service Design and Transition process model which is aligned with the company's Development Project Management model, (2) Service Design and Transition templates, which support the preparation of the development projects' documentation, and (3) a roll out plan for the defined Service Design and Transition process model.

This thesis was conducted in seven stages. The project started by familiarizing with the business challenge and for setting the objective for the study. In addition, the outcomes of the study were defined during the first stage, as well as the scope of the thesis.

In the second stage, a current state analysis was conducted to investigate the current state of the company's Service Design and Transition process. The current state analysis was performed by investigating the company's internal documentation and by interviewing the company's Service, Project and Release Managers. The key findings from the

analysis were presented as a SWOT matrix. The key weaknesses identified regarding the current Service Design and Transition process were: (1) a varying use of an Operational Readiness Checklist, (2) a late nomination of key roles, (3) consideration of only technical functionalities of the service under development, (4) inadequate testing, (5) the project documentation was not delivered into operation and (6) an unstructured handover of services from development into operation.

Based on the key findings, available knowledge and industry's best practices were explored to address the identified weaknesses and to support the proposal building for the company. The exploration of literature concentrated mostly on the Service Design and Service Transition stages of the service lifecycle, defined by ITIL framework. In addition, Project and Development Management methodologies were investigated. A conceptual framework, a structure which summarizes the knowledge and best practices to be used for the proposal building, was formed at the end of the third stage.

Following, the initial proposal was built by combining the knowledge, best practices, discussions and other observations obtained during the previous stages. In addition, in the proposal building stage, three workshops were held with an external IT Service Management expert to combine knowledge and best practices of both representatives and to build an optimal proposal. Finally, in the last stage, the initial proposal was validated by the company's expertise Service Managers, and the final proposal was polished according to the validation results.

The proposed Service Design and Transition process, including the related templates, ensures that the development of IT services is structured and standardized in the company. As a result, it is expected that the transition of the new and modified IT services to production is smoother and the operational readiness of the company is improved. Therefore, it is expected that the company's business is supported by the new and modified IT services.

7.2   Next Steps of the Proposal

This thesis defined the needed Service Design and Transition templates. However, these templates were not created within this thesis. Hence, as a next step, it would be suggested to create the defined templates. As a result, the templates would be available for

project teams immediately when the Service Design and Transition process is implemented for the company. What is more, the templates could guide the project teams already before the defined Service Design and Transition process is fully implemented.

Furthermore, the proposal for the Service Design and Transition process is gate-based in order to be aligned with the Development Project Management model. Therefore, the process fits best for projects that follow waterfall methodologies. After implementing the proposed Service Design and Transition process, as a next step, an agile model for a Service Design and Transition process should be created, since the project management methodologies often also follow agile methodologies. Moreover, an agile model of the Service Design and Transition process would possibly be less bureaucratic compared to the gate-based.

Thirdly, the proposed Service Design and Transition process model is designed for full scale developments. In other words, it includes all the possible activities to be performed within a development project. Since the size and difficulty vary between each development project, as a next step for the proposal, a lighter version of the process model could be created for more straightforward and light development projects.

7.3   Thesis Evaluation: Objective vs. Results

The objective of this thesis was to propose a Service Design and Transition process for the company which is aligned with the company's Development Project Management model. In addition, needed Service Design and Transition templates and a roll out plan for the defined process were defined in this study.

The proposal was built with continuous and close collaboration with the company's stakeholders. As these stakeholders consisted of Service, Project and Release Managers, it was ensured that the proposed Service Design and Transition process model was influenced by the key people across the lifecycle of an IT service. As a result, it was ensured that the proposed Service Design and Transition process fits for the company's environment by being consistent with the company's policies and procedure across the organization.

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Furthermore, what is worth of mentioning, the objective of this thesis was changed during the project. This change of the objective can be stated to be a consequence of the company's internal changes. Originally, the objective of this thesis also included deployment of the defined Service Design and Transition process and changed to defining a deployment plan. Therefore, the final proposal of this thesis, cannot be implemented within the scope of this thesis.

Overall, when comparing the proposal created as a result of this study to the quantified objective, it can be stated that the results meet the expectations of this thesis. The outcome of this study corresponds with the objective determined in beginning of this study. In addition, the proposal created is ready to be implemented as is. However, the value of the proposal will be attained after it is comprehensively implemented in the company.

7.4   Final Words

Conducting this thesis has been a huge learning experience for me. It gave me an invaluable opportunity to develop my professional skills in the field I am extremely passionate about. During this project I have gained valuable understanding of one of the core topics of IT Service Management, and I genuinely believe that I can utilize the key learnings in my career in the future. Therefore, as final words, I would like to thank all the people who have helped me during this project and made it possible.

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Appendix 1: Field notes of CSA interview – Service Manager

Interviewee	Service Manager
Date and Time	23rd Oct 2018, 45 minutes
Type of Interview	Skype Meeting

QUESTION	FIELD NOTES
How would you describe the current operational readiness of IT services which come from development into operation?	At the moment, in India, there is one person who contacts Service Managers when the project is approaching K4. Usually he asks if the operational readiness is in place. In the Service Managers' point of view, this is the first time they even hear of the project. After the guy has contacted from India, Service Managers need to figure out what the project is about, who is the Project Manager and who will be the users of the service. Also, at this point, the Operational Readiness Checklist is reviewed together with Service and Project Manager at the first time. Lastly, regardless the Service Managers' should approve K4, the interviewee has never received a request to do the approval.
How would you describe the current transition of an IT service from development into operations? Is it smooth or cumbersome?	The handover to Service Managers is not systematic. In many times, the subcontractor has only one person who develops the new service. However, the same person is in many times also involved in other projects at the same time. Due to that, the person working for the subcontractor's, cannot fully concentrate on all the projects, and there are a lot of blank parts in the Operational Readiness Checklist. For example, the growing usage amount is not considered which leads that the existing infra can't sustain the load. In addition, usually the support person is so busy that when we face problems with the new service, we are not able to contact the person.
How do you take the Operational Readiness Checklist into account during a development project?	Operational readiness checklist is not well involved into projects even though it is part of the Project Management process.
What are the strengths of the current situation?	When the Operational Readiness Checklist is defined in a process, people are willing to use it. Also, it is well specified both small and big projects.
What are the weaknesses of the current situation?	Roles are not defined in beginning of the project, the project team does not start to look for the Service Manager until K4, and licenses may still lack at the pilot stage.
Do you have any key concerns regarding the current situation? What?	In many times, developers consider only the technical side of the new service. They test only the service's technical features, but not for example integrations between other systems (architecture) or loads it needs to carry on. However, the tests are not well documented.

Appendix 2: Field notes of CSA interview: Service and Release Manager

Interviewee	Service and Release Manager
Date and Time	23rd Oct 2018, 1 hour
Type of Interview	Skype Meeting

QUESTION	FIELD NOTES
How would you describe the current operational readiness of IT services which come from development into operation?	Not fully matured yet. The operational readiness of services varies between different Project Managers.
How would you describe the current transition of an IT service from development into operations? Is it smooth or cumbersome?	Somewhere in the middle. We are not there yet, even though there have been very positive trends during the last two to three years.
What actions are done during the development project to look after service readiness?	The application's criticality, in other words business impact, is assessed during the project. This needs to be done in early phase so that a backup system can be nominated on time.
What are the strengths of the current situation?	Operational readiness of IT services has improved during the last two to three years. Also, most Project Managers are involving Service Management, the operational part, to the development in early phase (i.e. at K2). Due to that, Service Managers are aware of the involved partners, support and operations. By so, the Service Managers can set up processes, configure the ticket system and set up the queues early enough. Moreover, Service Managers are in a larger phase involved in setting up a new service i.e. participating meetings during the project, setting up the support structure and service desk stuff.
What are the weaknesses of the current situation?	An inadequate handover of documentation to operations leads to an operations team to chase the project team after the project has ended and ask them i.e. high-level design drawings or user manuals. Also, projects tend to come into operations already with ready-made partnerships. If the partner companies are small, from our side, we can friendly force our methodologies to them. However, there are also partners who say that don't use our i.e. ticketing tool even though they have to. In other words, discussions with operational partners do not always go as desired in our point of view.
Do you have any key concerns regarding the current situation? What?	Workloads. Also, from an operational point of view when looking back to the time when a pilot was running, Service Managers did not have a transparency to look back to the project and see what the typical issues during the project have been. Service Managers would have very often learned from these issues. Also, issues which appear in operations have often appeared already during the pilot. Moreover, every project has an issue list in their own systems. If the project has an issue during the project, they should be gathered into a centralized ticketing system.

Appendix 3: Field notes of CSA interview – Project Manager

Interviewee	Project Manager
Date and Time	31st Oct 2018, 40 minutes
Type of Interview	Face to face discussion

QUESTION	FIELD NOTES
How would you describe the current operational readiness of IT services which come from development into operation?	According to my experiences, the outcome has been good, and no bigger surprises have appeared.
How would you describe the current transition of an IT service from development into operations? Is it smooth or cumbersome?	The transition of the project I was involved went relatively well. There were some small difficulties but not any impossibly challenging. Also, the project type affects the transition: the existing gate models serve moderately well the waterfall model adapting projects but not agile adapting ones. Even though, our project was close to waterfall model, we took some exemptions in the transition. This approach has worked pretty well but it requires understanding from the stakeholders, steering group and project team where the exemptions can be taken.
What actions are done during the development project to look after service readiness?	Regardless, the Operational Readiness Checklist and Must Have Deliverable lists be far from perfect, they have been good tools to estimate that all the relevant actions are done on time. However, we have taken exemptions especially with the Must Have Deliverable list and thought what actions on the list really are important and would bring added value for the project.
How do you ensure that the new service fulfils its assumed benefits/cost savings/ functionalities?	The overall process starts by understanding the needs and requirements. Many times, the Requirement Management or collection is done too lightly at the beginning of the project which leads that the project plan does not completely fit to the needs and requirements. In addition, the needs and requirements need to be set so that they can be validated with some metric, for example KPIs. Also, I assume that the project documents are only randomly reviewed after the project has reached K5 or K6 and the project is closed.
How do you take the Operational Readiness Checklist into account during a development project?	At K4 but I have also intermittently reviewed and updated the content of it before K4. I have also aimed at ranking the action points on the list: which are the necessary ones to be considered and which one not completely fit to the project.
Is it clearly defined who is responsible for which step in a development project?	Most likely. The biggest challenge is the sufficiency and availability of resources since people are very busy and having multiple tasks and roles at the same time.
What are the strengths of the current situation?	The project model and tools are worked well.

What are the weaknesses of the current situation?	The Operational Readiness Checklist and Must Have Deliverable lists are clumsy and heavy. The Must Have Deliverable list includes links which are not up to date and templates which are offhandedly created, heavy and out of date.
Do you have any key concerns regarding the current situation? What?	The availability of resources when transferring the service into operation. Despite of the roles are well defined in the models, it is hard to fulfil the roles. People do not want to commit for the roles and due to that, the service goes live with a lighter man power. Later may transpire that the team fails. What is more, one person cannot be nominated more than one role.

Appendix 4: Field notes for Proposal building - Service Manager

Interviewee	Service Manager
Date and Time	23rd Oct 2018, 45 minutes
Type of Interview	Skype meeting

QUESTION	FIELD NOTES
What are the things that should be considered before transitioning an IT service from development into operation?	The content of the Operational Readiness Checklist.
What are the key success factors in your point of view when developing an IT service?	First, we need to have clear specifications and the service needs to be developed based on them. In other words, the requirements come from the business and IT people transfer them into operations, not vice versa. After the service has developed according to the specifications, it should be tested thoroughly: all the scenarios, functionalities, regression, integrations and loads. Key users could be involved into user acceptance tests. Then they would know what is coming, they know how to use the system before it is in operations and are able to guide other users as well.
What and how would you change compared to current situation?	Roles need to be defined in the beginning of the project, tasks in the Demand, Development and Service "boxes" should be separated clearly, businesses requirements should be collected and validated comprehensively, the benefits of the service should be clarified, Service Managers should be conscious of the specifications and they should receive all the test scenarios and reports. Lastly, the Service Managers should be involved in the project so that they know what changes are coming and what kind of support is expected and needed.
Who are the stakeholders that you should discuss with about service readiness?	When going into operations, Project Manager (the Operational Readiness Checklist is reviewed at K4), developers, and Solution Design Owners (technical aspect). Moreover, Service Managers should establish a key user network, train the key users, write knowledge articles and user instructions.

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Appendix 5: Field notes for Proposal building - Service and Release Manager

Interviewee	Service and Release Manager
Date and Time	23rd Oct 2018, 1 hour
Type of Interview	Skype meeting

QUESTION	FIELD NOTES
What are the things that should be considered before transitioning an IT service from development into operation?	Documentation and ownerships.
What is the minimum baseline when a service can be handed over from development into operation?	Documentation needs to be done, CMDB has to be setup, instructions need to be on the Knowledge Base, user manuals have to be created and user trainings need to be held.
What are the key success factors in your point of view when developing an IT service	The service needs to satisfy internal and external customers, it has to have high availability, it should facilitate everybody's needs, be always there, be operational, reliable, stable and fit the users' needs.
What and how would you change compared to current situation?	Before the IT service comes into operations, the supplier organizations need to make aware that we will ask them to work in our tools. Due to that, suppliers need to train some key support people to use them. SMO could make a video or tutorial where are presented our processes and way of working on a high-level so that the suppliers can train themselves. The other thing is that the projects need to land at K6, since very often projects do not do so. Meaning, that the deliverables are not really getting out of the projects. The projects should land, and Project Managers should handover the deliverables further (i.e. storing ownership to SharePoint where the documentation is stored in a decent format). Third observation is to get projects to work together in ticketing tool. There should be a centralized repository where is stored all the issues related to all the projects. We are also looking at demand and development in operations side. When talking about a project the interviewee is talking about any change which is coming into operations. Lastly, there should be documentation of a certain application's integrations to other applications.
Who are the stakeholders that you should discuss with about service readiness?	Call center agents, call center managers and key users.

Appendix 6: Field notes for Proposal building - Project Manager

Interviewee	Project Manager
Date and Time	31st Oct 2018, 40 minutes
Type of Interview	Face to face discussion

QUESTION	FIELD NOTES
What are the things that should be considered before transitioning an IT service from development into operation?	The key for a successful transition is to clearly define in which step certain outputs, for example security-, architecture-, and legal-related, need to be considered so that they are involved in the project early enough, and their contribution is considered in the overall process.
What is the minimum baseline when a service can be handed over from development into operation?	It is a big risk to leave certain things out of the project scope and facilitate them to operations side, since the know-how will be left after the project ends. Also, the resourcing may not be adequate on the operations side. To sum up, the minimum baseline is hard to define.
What are the key success factors in your point of view when developing an IT service?	Requirement gathering. Meaning that the requirements are correctly understood and prioritized. It brings concreteness to the project and time the time it takes to gather the requirements will be paid back later on. Changes are hard to do on the project's later stages since the input may be hard to get. At the beginning of our last project we gathered the requirements by having conversations around 20 people. After that we sent them to supplier to be evaluated, how their tool would match the requirements.
What and how would you change compared to current situation?	Could the Operational Readiness Checklist and Must Have Deliverable list be combined? Also, the templates and model could be simpler, and the models should be scalable to different size projects. Lastly, the Operational Readiness Checklist is a bit unclear by including different columns and mandatory deliverables for different project types.
Who are the stakeholders that you should discuss with about service readiness?	Solution Owner and Service Manager are the closest. Also steering groups and the upper management level are important stakeholders for decision making and getting approvals. However, in many cases the stakeholders have been IT people. I would ask, how the business side would also be considered? In other words, how to ensure that business is also contributed along the project so that value will be concretized for the business and end user? On the other hand, presenting things to many steering groups takes a remarkably amount of time.

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Appendix 7: Field notes for Proposal building - Release Manager

Interviewee	Release Manager
Date and Time	13th Nov 2018
Type of Interview	Email survey

QUESTION	FIELD NOTES
What are the things that should be considered before transitioning an IT service from development into operation?	Roles and responsibilities: who should run the transition and therefore owns the transitions. The actual task list should include: 1. what needs to be transitioned: is it a design document, a testing document, or some else, 2. when should the transition happen, 3. how to sign off the transition and 4. who should be involved for the transition?
What is the minimum baseline when a service can be handed over from development into operation?	Testing (UAT, regression, performance) is signed off. All the development technical review is signed off by Configuration Owners. All the solution functional design review is signed off by solution team.
What are the key success factors in your point of view when developing an IT service?	Solution team, development team and configuration / architecture team need to have a common understanding on what needs to be developed and how. Communication needs to be clear. Time schedule / time lines need to be respected by all parties.
What and how would you change compared to current situation?	Provide a company-wide instruction, detailing down the user guide in each single process the SMO owns. Also, I would create a runbook for both projects and continuous development which everybody must follow. Monthly audit should take place to check if the instructions are followed for the beginning period.
Who are the stakeholders that you should discuss with about service readiness?	Project Steering, Project Team, including Development Team, Service Integration, Service Managers, Support Team

Appendix 8: Enhanced Operational Readiness Checklist

Operational Readiness Checklist

				Mandatory / create new	As needed / update existing					

GOVERNANCE — STATUS

Service Governance and Support Model		Gate	Comments	Transfor-mation project	Enhance-ment project	Roll-out (incl SAP)	Implement-ation project	Continuous develop-ment		STATUS
Governance practises, participants	Governance practices are defined and documented.	K1								
	Key roles are nominated - SDO, SO, SM	K-1								OK / NOT OK
	Participants for governance meetings are named and confirmed by _____ and supplier(s).	K2								OK / NOT OK
Project type	Small, medium or large project	K-2								
Roles and responsibilities	IT Solution Owner / IT Service Owner is named (Demand Mgmt is performed by this role).	K0	LINK							OK / NOT OK
	Service Manager is named (Service Operational responsibility is with this role)	K0	LINK							OK / NOT OK
	Solution Configuration owner is named	K0	LINK							OK / NOT OK
	Business Solution Owner / Business Service Owner is named (Counterparts for IT).	K0	LINK							OK / NOT OK
IT Service Criticality	IT Service / Solution / Application criticality has been classified based on IT Service Criticality	K0								OK / NOT OK
Risk assessment completed	Risk assessment has been conducted	K2								OK / NOT OK
SLAs and KPIs	SLA/OLA Template is filled in and formally agreed with business owner	K1								OK / NOT OK
	IT Service performance Reports are available (when in operations) (=SLA with business)	K3								OK / NOT OK
	OLA measurements for Vendor performance are available (when in operations)	K3								OK / NOT OK
	Review the company's Quality KPI's and identify if additional KPI's are applicable to support business needs	K2								OK / NOT OK
	Defined KPI's are reported	K5								
Support porcesses identified and										
Support model defined	Support model set up, key users trained	K4								OK / NOT OK

Sourcing and Financials			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement-ation	Continuous develop-		
Solution budget	Run costs agreed with IT	K1								
Impact Analysis	Solution impact analysis done - risk, architecture, support model	K1								
Application Management and support contracts	T2 Application support and testing is contracted according to sourcing AMS template (if purchased outside of the company)	K1								OK / NOT OK
	T3 Application support is contracted (if not part of License maintenance fee or SaaS agreements)	K1								OK / NOT OK
Solution Operational Support Model	After go-live operational support model drafted and required elements identified	K1								
Licenses	Required software licenses are in place	K1								OK / NOT OK
Budget and budget control	Solution / Service budgeted in department. Budget control practices are defined and agreed	K0								OK / NOT OK

Architecture and Security			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement-ation	Continuous develop-		
Solution requirements analysed	Based on criticality/SLA, what requirements they set to the environement (HA)	K1								
High level solution design	High level Solution design drafted	K1								
Architecture and Security	Architectural and security review has been completed with satisfactory results or exception request has been approved	K2								OK / NOT OK

DEVELOPMENT — STATUS

IT Change Management			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement-ation	Continuous develop-		STATUS
IT Change and Release Management Model	The company's IT Change and Release mangement model is utilized, or modified and agreed with parties involved on change management execution	K2								OK / NOT OK
CAB (Change Advisory Board)	CAB is defined, agreed and communicated	K4								OK / NOT OK
	The solution has been presented to the company's - global CAB team.	K4								OK / NOT OK
Development completion readiness	All developments (change request) have been closed according to the development guidelines	K4								

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Test Management

				Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement ation	Continuous develop-	
Deliverables	Solution / application test Plan is created as per the company's template	K2							OK / NOT OK
	Test report created as per the company's template	K4							OK / NOT OK
Enablers	Test assets (test cases, automation test scripts, test data, test users and lessons learned) are available for future usage	K2							OK / NOT OK
	Test environments are in place (eg. Pre-production, Development…)	K3							OK / NOT OK
	Test automation framework in place (if applicable)	K2							OK / NOT OK
	Test accpetance criteria agreed	K2							OK / NOT OK
Test completion sign-off	Test phases defined in test plan are accepted / signed-off by test manager	K4							OK / NOT OK
	Open defects has been accepted / signed off by Solution owner	K4							OK / NOT OK

SERVICE

Service Catalogue and Documentation

			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement ation	Continuous develop-	
Service/Solution/Application	Solution Criticality defined	K0							
Service / Solution Catalogue	Solution description is created and published at intranet	K4							OK / NOT OK
	If applicable predefined service requests are published in Ask IT self-service portal	K4							OK / NOT OK
GSD documentation	Knowledge Article(s) are created to Remedyforce and shared with Global Service Desk	K4	LINK						OK / NOT OK
	Service Management Template for Installation and Set-up Guide to Global Service Desk is created and shared with Global Service Desk	K4	LINK						OK / NOT OK
Solution documentation and knowledge transfer to Support	End-user instructions for the solution are available at least in English and stored in the agreed central repository.	K4							OK / NOT OK
	End-user instructions are verified and sign offed by the IT Solution Owner / IT Service Owner.	K4	LINK						OK / NOT OK
	Translation needs identified and translations signed off by the IT Solution Owner / IT Service Owner	K4							OK / NOT OK
	FAQ (Frequently Asked Questions) are created	K4	LINK						OK / NOT OK
	Knowledge articles are created by project team for the support team	K4	LINK						OK / NOT OK
	Maintenance and Operations Guideline (MOG) document is created and agreed with all parties involved on Service Management	K4							OK / NOT OK

Continuity Management

			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement ation	Continuous develop-	
Major Incident Management and Key Contacts	Key contact persons are added into TSI LIM documentations. Major Incident Management process has been agreed and dry runned	K4							OK / NOT OK
Business Continuity Plan	Business continuity plan has been developed by business and accepted by business (sign off). IT Continuity plan developed by the company's IT, and signed off by business	K4							OK / NOT OK
Disaster Recovery Plan (DRP)	Does the platform / service have already defined DRP Yes/No? If yes, validate impacts of the new elements to existing DRP If no, validate if criticality requires DPR (sign off with ITO)	K4							OK / NOT OK

Incident and Request Management

			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement ation	Continuous develop-	
Support model	Users of the solution / service are identified with required support hours, locations (timezones) and support languages	K3							OK / NOT OK
	Key users are identified, and structure is set-up to answer "how do I use system or process" questions from users	K4							OK / NOT OK
	Solution / Service support scenarios are worked in the global support model, and variances are reported as change to end user support services	K4	LINK						OK / NOT OK
	GSD agents have received and sign offed training for the solution / service.	K4	LINK						OK / NOT OK
	2nd level team is defined and trained	K4	LINK						OK / NOT OK
	3rd level team is defined and trained	K4	LINK						OK / NOT OK
User Access Management	Solution / Service has a defined access request process and predefined access profiles and roles.	K4							OK / NOT OK
	Access rights procedures are clear and understood by all parties	K4							OK / NOT OK
	Removal of unnecessary access rights (& liberating licenses) is documented	K4							OK / NOT OK

ITSM TOOL + CMDB + Configuration and Asset Management

			Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement ation	Continuous develop-	
ITSM tool, Apptio, PPM tool	Service/Application creation to CMDB; data flows from CMDB to Apptio and PPM	K1							
ITSM Tool, CMDB, Configuration Mgmt.	CMDB with required relations is updated	K3							OK / NOT OK
	ITSM Tool is configured for operational support	K3	LINK						OK / NOT OK
	Locations where solution is implemented are defined in Asset and Configuration Mgmt.	K3							OK / NOT OK

Handover to Production

Service Induction	Service introduced to support team and Service Desk	K4							
Open CR'S	All open CR's are completed and closed	K4							

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HYPERCARE				Comments	Transfor-mation	Enhance-ment	Roll-out (incl SAP)	Implement ation	Continuous develop-	
Hypercare Phase - in Project mode only										
Define Hypercare acceptance criteria	How to handle possible open Incidents created during Hypercare? ......?	K4								*OK / NOT OK*
Warranty terms	Define what is included in warranty and how long period warranty is valid. Involve legal if necessary	K3								
Hypercare (during and immediately after the rollout(s))	Solution / Service has a planned hypercare period to ensure smooth transition to operations.									*OK / NOT OK*

* Any mandatory action not completed by K4 needs to be explained on "why not completed"

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Appendix 9: Final Proposal for the Service Design and Transition process model

Project Phases							
Initiation			**Planning**	**Execution**			**Deployment**

K-3	K-2	K-1	K0	K1	K2	K3	K4 GO LIVE	K5	K6
SELECT TO BACKLOG	PRIORITIZE OPPORTUNITY	AUTHORIZE INITIATION	READY FOR PLANNING	AUTHORIZE EXECUTION	DESIGN SIGN-OFF	READY FOR VALIDATION	APPROVE SOLUTION	AUTHORIZE ROLL-OUT OR GO-LIVE	

Service Design and Transition process actions

Incubation	Acceleration	Projectizing	Planning	Design	Development	Validation	Pilot	Closing / APPROVE CLOSURE
• New service or a change to an existing one • Size of the project: is it small, medium or large	• Nominate Key People* • Create service / application to CMDB (Information will be uploaded also to Apptio and PPM tool)	• Governance Practices defined • Service / solution budgeted in Solution Unit (Run costs agreed) • High-level design done • Define IT service / solution / application criticality	• High-level solution design drafted (Solution Architecture) • SLA / OLA template filled in and agreed with business owner • Solution Impact Analysis done: risk, architecture, support model • Application Management and support contracts	• Risk assessment • Service performance measurements defined • Architectural security reviews • Change and Release Management model is defined • Test plans: test plan created, test assets' availability, test automation framework in place, test acceptance criteria agreed • Solution Operational Support Model: after go-live support model drafted and required elements identified • Monitoring set up documentation created	• IT Service Performance reports are available • Vendor OLA definitions taken to ITSM tool • Test environment preparation and testing • CMDB is updated: relations to other Cis, support information, locations where the service / solution is used	• Support Model, including: ❖ CAB defined, agreed and communicated ❖ Support documentation finalized and accepted: instructions, guidelines, FAQs and Knowledge Articles ❖ Major Incident Management and key contacts ❖ Business Continuity and Disaster Recovery ❖ User Access Management • Test completion sign-off • Service induction • Hyper care acceptance criteria defined: hyper care Incidents and Change Requests closed • Verify Key People	• KPIs, SLAs, OLAs reports are defined and can be run Hypercare	• Decommissioning • Customer Acceptance • Post Implementation Review • Project closure • Hand over to service done

* Service Manager, Service Owner, IT Solution Owner / IT Service Owner, Solution Configuration Owner, Business Solution Owner / Business Service Owner, Platform Service Manager

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