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Developing Service Design & Management Processes Towards ITIL Compliance

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Now that this long and rewarding process is almost behind me it's time to look back and see how I got here. When I started this program I had no idea where it would lead or about the amount of work that would be needed to complete everything. From the start the amount of work related to the thesis seemed an unsurmountable task in the assigned timeframe. During the coursework preceding the thesis work I feel I have learnt numerous new things about Industrial Management, Service Business and it has given me a wider understanding of business and management in general.

Now I would like to thank everyone who made this possible:

My colleagues at work understanding and supporting me with my workload, while I was sitting at lectures and workshops, when I should have been working. Thank you for picking up the slack at the office.

My professors and other teachers for enabling me to succeed with this endeavour. Thank you for your guidance.

My friends in the classroom for just being there. Thank you for creating a great and supporting atmosphere to be on this journey with you, both in and outside of the classroom.

And finally my family and friends for understanding why I can't go somewhere or do something with them because I'm sitting home writing and researching. Thank you for supporting me.

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<p>The objective of this thesis is to provide new and improved processes along with supporting standard documentation, for Service Design and Management in the case company. This is done to enforce uniformity in the company's service offering and to enable further global growth in Service based business.</p> <p>These issues were approached with an action research approach due to the iterative and collaborative nature of the research. While researching these issues in the case company I was also actively part of a team working on changing some of the researched issues.</p> <p>The outcome of this thesis is an intertwined set of processes and documents in the field of Service Design and Service Strategy. The specific fields covered are Service Strategy, Design Coordination, Service Catalogue management and Service Level management.</p> <p>Once the processes and documentations are implemented as suggested they will provide a solid grounding for the company to embark on the road towards ITIL and ISO compliant productive and unified Service Design. This, in turn will enable faster and more structured growth in the Service market.</p>	
Keywords	ITIL, Service Design, ISO, Service Catalogue, Processes, Service Management

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ACRONYMS

AMIS	Availability Management Information System
BIA	Business Impact Analysis
BRM	Business Relationship Management
CAPA	Corrective and Preventive Action
CI	Configuration Item
CMDB	Configuration Management Database
CMS	Configuration Management System
CPO	Chief Portfolio Officer
CQO	Chief Quality Officer
CSA	Current State Analysis
CSI	Continual Service Improvement
DNV	Det Norske Veritas
ESM	Enterprise Service Management
HR	Human Resources
ICT	Information and Communications Technology
IEC	International Electrotechnical Commission
IMO	International Maritime Organization
ISO	International Organization for Standardization
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITSCM	Information Technology Service Continuity Management
ITSM	IT Service Management
KPI	Key Performance Indication
OLA	Operational Level Agreement
PDCA	Plan-Do-Correct-Act or Plan-Do-Check-Act
PSO	Projected Service Outage
SAAS	Software as a Service
SCM	Service Catalogue Management
SDP	Service Design Package
SIAM	Service Integration and Management
SIP	Service Improvement Plan
SKSM	Service Knowledge Management System
SLA	Service Level Agreement
SLM	Service Level Management
SLR	Service Level Requirement
SLT	Service Level Target
SMS	Service Management System
SOR	Statement of Requirements
UC	Underpinning Contract
VBF	Vital Business Function

1 Introduction

This thesis discusses service design processes and how they could be implemented in the case company. The main objective of the thesis is to create comprehensive service design processes in the case company for both new and existing services. This will include the creation of a complete service catalogue that reflects the real offering of the company.

Service focus can be seen as a trend in the field. When looking at the offering of competitors it can also be seen that it's more and more service solution based. Customers are more inclined to buy a clearly defined and established service that offers the results they are after, than cobble together a plethora of products from different providers to achieve the same goal. Therefore service design should be an integral part of any modern company's processes and practices if they want to be on the forefront. Services are replacing the product oriented offerings of companies and almost any traditional product can be in one form or another made into or be a part of a service. This is especially true in IT related offerings where the market is and has moved from product based offering to a more service oriented approach.

As IT evolves from a technology provider to a service provider to a true partner of the business, the concepts of Service Management become ever more important to allow the business to excel in a competitive environment. [Orand 2013]

As stated above by Orand, the evolution of information technology has made the old providers of products expand into the service provider business and switch from being just a simple provider to a partner on the business side. This growth in possibilities has forced companies to either expand or wither to irrelevance. From statistical data available online we can see a multiplying of turnover in the service activities of companies over the last two decades as seen below.

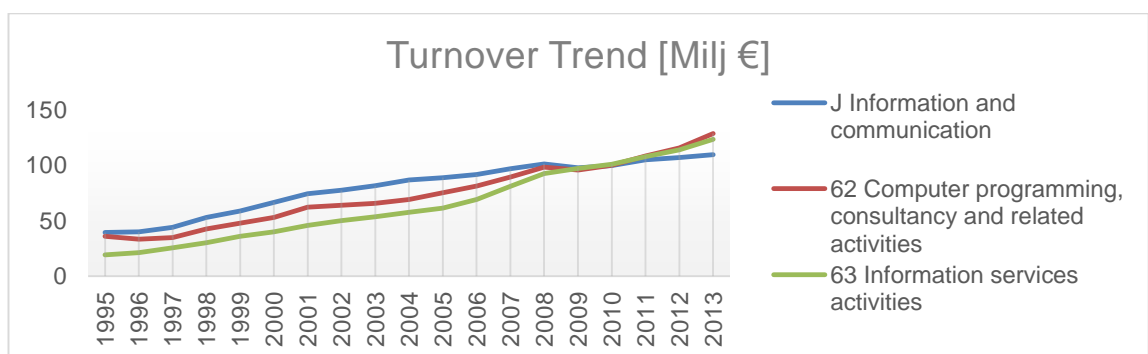


Figure 1. Service Turnover Growth [Statistical Finland, 2015]

A similar trend can be noted in a multiple articles and as stated by one “companies who still think of themselves as builders of things ... are in serious peril today” (Allmendinger et al 2005).

1.1 Case Company Background

The case company is a mid-sized software company in Finland concentrating on providing software solutions for the shipping industry, established in 1989 with around 200 employees around the world. The company has existed for a couple of decades and has been working on the same field for the whole time, periodically expanding operations and coming up with new innovations. Operationally customers are divided into two large segments that are offered clearly distinctive services; design customers and operational customers. As the name states design customers are mainly concerned about the design aspect of ships but have in recent years become more interested in the operational aspect of the ships they design as well. The other segment, i.e. the operational customers, is concerned about the safe and economical operation of their vessels.

1.2 Business Challenge

The case company is undergoing a process of organizational renewal and at the same time updating its strategy to meet the market demand and status. To this date the company's service offering has been built on an ad-hoc basis due to its small size. As the company has grown larger and operations are constantly evolving to the global marketplace a need for unified processes in the field of service have been seen as an important development target. Currently the different services are designed and maintained separately and follow different paths from conception to customer. As the company is going through an organizational renewal it is beneficial to perform the upgrade of service related processes at the same time. This way synergic benefits can be achieved as other functions are also moving towards more structured processes and following ITIL or similar framework principles. In the case company the stated strategic goal is to move from product oriented into more service oriented business because market demand is also moving to a service/solution oriented mind-set.

1.3 Key Concepts

Service management, and more precisely the subsection of service design are issues that should concern all service providers and also product oriented companies planning

to make the change to a more service oriented approach. Service Management concerns the overall management of services from inception to the grave. Service design covers the “how” part of service management, concentrating on procedures and processes to get from an idea to a service and then gives guidance on how to operate after the service has been created. Both service management and design are covered in the Information Technology Infrastructure Library, ITIL for short, which is a set of practices for Information Technology Service Management or ITSM. In this thesis the implementation of ITIL based Service Design is applied to cover the whole field of service offering provided by the case company.

The following four topics are addressed in this Thesis: *Service Strategy*, *Design Coordination*, *Service Catalogue Management* and *Service Level Management*. Section 1 of this thesis introduces the case company and the business challenge to provide a backdrop for the Thesis. Section 2 describes the methods used to make the Thesis more reliable. Section 3 concentrates on the current state analysis of the case company to find out the key improvement areas that should be targeted. This is followed by Section 4, which covers the best practice on the field of service design culminating in the conceptual framework. This is done to provide solid grounding for the proposals in available knowledge. Section 5 shows the initial proposal based on best practice and the current state analysis followed by piloting and improvement. Section 7 includes the final proposal and recommendations that should be implemented to address the issues that were identified during current state analysis. This is followed by Section 8 with discussion and conclusions to briefly showcase and highlight the findings and implications of the Thesis.

2 Method and Material

This section discusses the way the research is constructed and what kind of methods are utilized. First the research approach is discussed followed by the research design. After that data collection and analysis methods are presented, followed by the validity and reliability plan.

2.1 Research Approach

Action Research is a way to approach research without distinguishing between research and action (Coughlan et al. 2002). Research is carried out utilizing the action research approach within the case company's Services function, concentrating on service design. Action research is described as being the approach for researchers who want to improve their organizations (Coughlan et al. 2014). Action researcher is not a passive listener but an active participant in the process to improve it and be an interactive part of the development. This method is characterized by the cyclical nature of the approach; planning, taking action and evaluating. It has also been described as a participative method where being engaged in a rigorous series of these abovementioned cycles is encouraged and expected. Figure 2 below shows an example of a possible action research cycle.

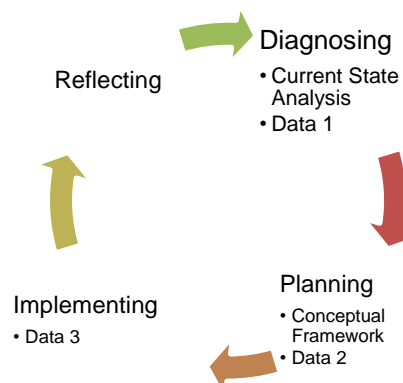


Figure 2. Action Research Concept.

As can be seen in Figure 2. the process starts with collecting data as part of the current state analysis. This is followed by the plan, a conceptual framework of the research built based on the available theory and best practice gathered and studied after the current state analysis is completed. The plan is developed as new data becomes available from implementing the plan. Multiple phases iterating back and forth between plan, implementation and reflection are used to further define the plan and improve the implementation in consecutive steps throughout the research. Good action research should contain three main elements, a good story, and rigorous reflection of that story and extrapolation of

the usable theory from the reflection on the story. [Coghlan et al 2014] This can also be phrased in three distinctive questions. What happened? How to make sense of it? Why should we care what happened?

2.2 Research Design

The research design follows the common approach starting with the Current State Analysis followed by Best Practice study. After this the Initial Proposal is presented, followed by piloting and feedback solicited from the stakeholders culminating in the Final Proposal. The basic framework is presented in Figure 3 below.

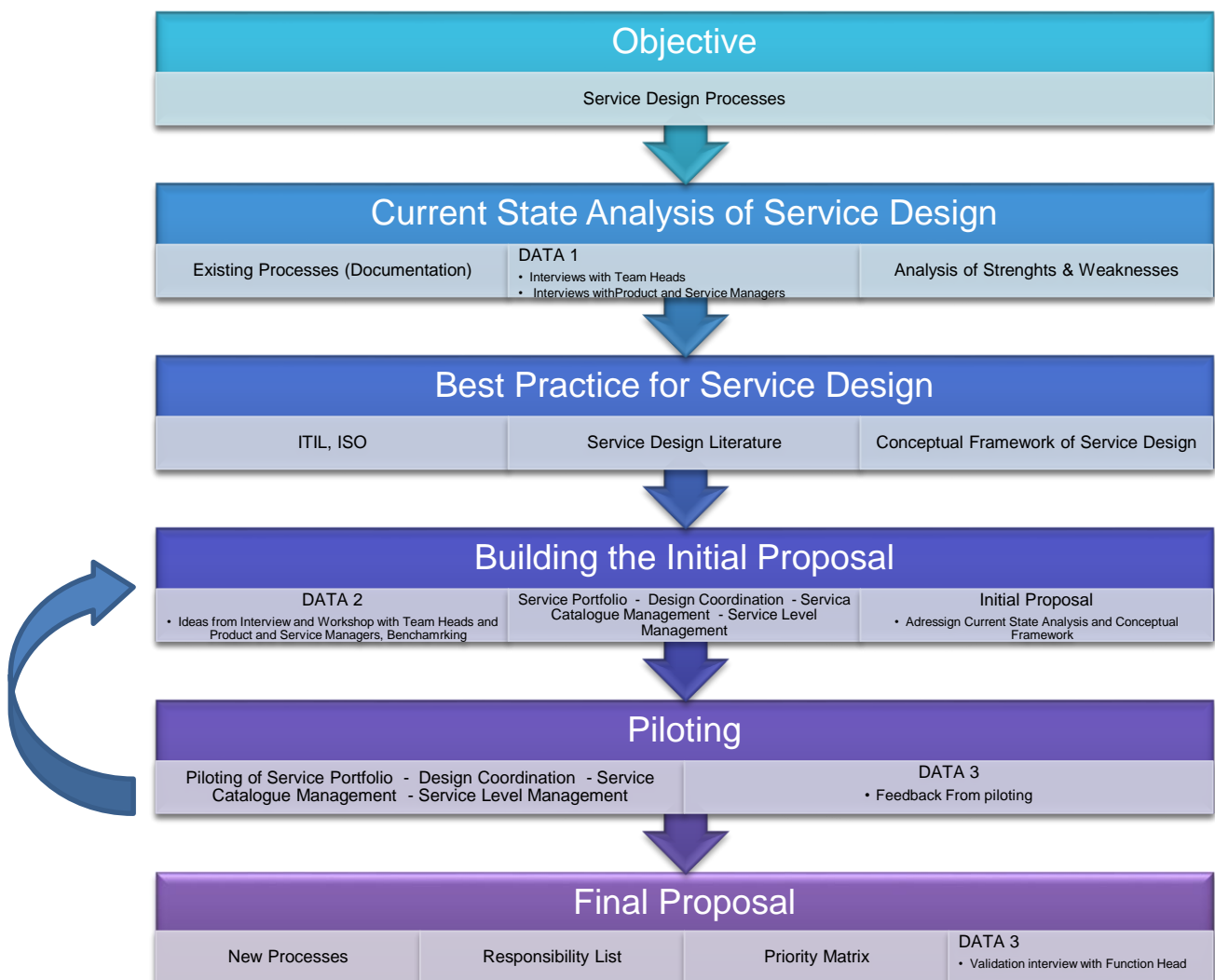


Figure 3. Research Design of this Study

This study aims at the creation of Service Design Processes as shown in Figure 3 to approach the business problem, which is the lack of processes to design new services and maintain the existing ones. The goal of the thesis is to provide the case company

with processes and guidelines on how to develop and move forward in the field of service design using the ITILv3 model as a guideline. The actual first step of the Research Design is the current state analysis of the case company where existing documented practices and processes are collected and analysed followed by interviews with the persons responsible for the documented processes and practices. Interviews will be conducted with the stakeholders suggested by the initial interviewees. A strengths and weaknesses analysis is performed based on the acquired documentation and completed interviews. This will create Data 1 of the thesis. The data gathered in the CSA is used as a basis to see what should be the main improvement areas and what areas the best practice study should be concentrated on. In the best practice search the main focus is on ITILv3 Service Management and Design material, looking into both Official ITIL Foundation literature and best practice as well as case studies and existing implementation plans. In addition to ITIL documentation other competing and complementary views are explored. These include ISO which is already partly used in the case company (ISO 9001:2008 Quality System Certification by DNV). Conceptual framework for Service Management for this study became the outcome of the literature review.

The initial proposal is built on conceptual framework and findings from the CSA. In addition ideas received from stakeholders during the initial interviews, Service functions Management Team workshop and a benchmarking done with another company on how their Service Management Office is working. These three sources are Data 2 of the thesis. After the Initial Proposal has been created by the undersigned it will be piloted with one ongoing service development project. After the piloting has been concluded the final proposal will be built based on it. The final proposal will be validated in collaboration with the stakeholders utilizing the data gathered during piloting. This is the third data collection phase creating Data 3. The final proposal will be based on that feedback, and it will be used to upgrade the pilot to a second iteration. The final proposal will be shown as individual processes and how they interact with each other.

2.3 Data Collection

In this study, the data is collected in three distinctive phases, starting with the current state analysis.

Data Collection 1

During the current state analysis data is collected through interviews and looking into existing processes and practices which are documented. Data 1 consists of interviews

with internal stakeholders in both Service and product management. Interview particulars are shown below in Table 1.

Table 1. Data 1 Interviews.

#	Situation	Participant(s)	Duration	Questions	Documents
1.	Interview [29.1.2015]	Service, Manager	1 hour 45 minutes	Appendix 1	Interview Transcript [13 p]
2.	Interview [2.2.2015]	Service, Manager	2 hours	Appendix 1	Interview Transcript [14 p]
3.	Interview [3.2.2015]	Service, Manager	1 hour	Appendix 1	Interview Transcript [9 p]
4.	Interview [19.2.2015]	Service, Manager	30 minutes	Appendix 1	Interview Transcript [3 p]
5.	Interview [19.2.2015]	Service, Manager	1 hour	Appendix 1	Interview Transcript [5 p]
6.	Interview [13.2.2015]	Product, Manager	1 hour	Appendix 1	Interview Transcript [7 p]
7.	Interview [9.2.2015]	Product, Manager	1 hour	Appendix 1	Interview Transcript [5 p]

As seen in the above table people from two different functions in the company were interviewed. Both of these functions are greatly involved in the processes utilized in service design and management. Additionally a large sampling of internal documents were reviewed to find out what processes existed and how they were documented. A list of these documents can be found in the appendices under references. The data gathered is analysed and built into a model of the current state of Service Design and Management in the case company.

Data Collection 2 and 3

Data 2 is collected to help construct the initial proposal. Data 2 consists of development ideas collected during the CSA phase interviews concerning Service Design and Management. Internal workshop for the Management Team of the Service function was also arranged and notes and documents from that are also referred to. In addition, Data 2 also includes a benchmark made on how service management is handled in a medium sized service company. Data 3 is collected to gather feedback from piloting the initial proposal in practice and meeting with the service management team and a workshop with the stakeholders. After this the final proposal is built brought to a validation discussion with the head of the Service function of the case company. This discussion will be held over a phone due to schedule limitations.

2.4 Data Analysis

This subsection describes how the collected data was analysed. Each data group [1, 2, 3] is analysed separately, as they are clearly separate and gathered in different phases of the work process.

In Data 1, the interviews were carried out one-on-one, face-to-face. All the interviews were conducted in Finnish, and are therefore not included as appendices in this thesis. The initial interview questions that were done concentrated just on directly Service Design related issues, but during the interviews it was noted that the original questions did not completely address all the issues raised during the first interviews. Due to this the interview questions were adjusted to cast a wider net, not just looking at service design but also how product design is conducted. The first step after concluding the interviews was to transcribe them from the recordings taken during the interview. The transcribed texts were first streamlined and any non-relevant data was filtered out. Secondly the data was divided into distinctive groups. This was done because during the interviews the discussion went back and forth between different subjects, following the thought processes of the person being interviewed.

In Data collection 1, the following three main investigative areas can be identified; *Portfolio Management*, *Product Management* and *Service Management*. The main focus is on service management. These other subjects provide important insight and best practice from existing processes, that need to be taken into account when talking about service management in the case company. Thirdly, when each of the interviews data was divided into these three groups, the data from each interview was combined to the groups creating three distinct data pools. These groups were the previously mentioned Portfolio Management, Product Management and Service Management, and as can be seen these pools were used as material to write them out in the current state analysis. In addition to the interviews, supporting documents that were either freely available in the company internet or received from interviewees during and after interviews were used. Main points from these documents were identified and included in the Current State Analysis.

In Data 2, which is created based on additional data gathered during the initial interviews, Service Management Team workshop notes and documents and benchmarking another

company, the process was similar to Data 1. From the initial interviews data was identified that was not relevant to the current state of the case company, but could be used when building the proposal. This data is improvement ideas and dreams told by the interviewees. It was similarly gathered and compiled as one pool of information. The Service Management Team workshop was arranged on the subject while I was not present, but the notes were made available for me. Additionally, a benchmarking session was arranged with a representative of a mid-sized company that has in recent years used a considerable amount of resources to improve their internal service management procedures. A list of questions was provided to the person who works as a head of the company's Service Management unit, so they could prepare for the meeting. During the meeting different ways and approaches on how the company had addressed and tackled these issues were discussed. This discussion was recorded and transcribed to be used as Data 2, with the workshop and interviews to build the initial proposal.

Data 3 is divided into four parts. First part, the Management Team meeting notes and materials, were utilised as they were, due to the already condensed nature of data included in them. The Second part, the piloting session notes were made to the printed out processes and standard documents. Discussion during the piloting process was also recorded. These notes were collated and usable ideas were applied towards the final proposal. The third part was a workshop regarding the way forward with ITIL in the case company. Official meeting minutes were made with accompanying diagrams and figures. These were utilised on those parts that were relevant to the scope of the thesis. The fourth, and final, part of Data 3 was the validation of the Final Proposal. This was handled over Skype, where both participants could see the same material. Discussion was recorded and relevant parts included into the validation of the Final Proposal.

2.5 Validity and Reliability Plan

Validity is a concept used to ascertain if the study in question meets the requirements of a scientific research method. Validity can be divided into four different types; *internal validity*, *construct validity*, *external validity* and *reliability*. [Quinton et al. 2008]

With internal validity the goal is to see that the research question that has been introduced is answered during the research process. This is addressed by the research design where clear scopes of interviewees are defined in an effort to get answers from people close to the issues. This will not be a major issue as the research approach is action research giving the opportunity to go over issues again to improve the scope of

questions. Construct validity is also irrelevant when using the Action Research approach. In external validity the question is to see if the results can be applied to other context or situations. The proposal, built based on the CSA and CF will be piloted in a setting where it can be monitored and seen how applicable it would be to similar situations elsewhere. The validity of this study will be secured by using multiple sources from both theoretical papers and case studies. This is done to ensure a chain of reliable evidence where data is supported by multiple sources.

Reliability is often posed as a question that, if the research was repeated would the same results be achieved. This is addressed by documenting the methods and practices used in a precise way to give the possibility to replicate the methodology for further study. In addition the reliability of this study is ensured by the following steps. First, with interviews and workshops performed during the data gathering for the thesis, all discussions will be recorded and transcribed. Second, by the transcriptions given to participants for review to make sure no misinterpretations were noted. Finally, reliability is ensured by using multiple data sources and data collection tools mainly interviews, workshops and existing documentation and seeing if the established frameworks can be applied from other fields.

Due to choosing the action research as the research approach for this study, certain other points have also been taken into account; *Framing* suggests that the purpose should be explicitly stated to clarify the dilemma that is under scrutiny. *Advocating* suggests to explicitly state the goal to be achieved. *Illustrating* advises to tell a concrete story to ground the advocating to concrete issues. *Inquiring* suggests to question the participants to understand their views and perspectives [Coughlan et al 2002]. The guiding principles in doing research in a valid and reliable way are trustworthiness and authenticity which can be safeguarded by applying a few simple rules. *Trustworthiness* is built upon *credibility*, *transferability*, *dependability* and *conformability*. *Credibility* is achieved by using multiple sources that are deemed reliable, widely available publications and academic journals. *Transferability* is addressed by using methods that are documented and thus can be replicated to use them elsewhere. *Dependability*, is taken into account by keeping the context of the study clear, explaining how possible changes in the setting affect the study. *Conformability*, or the level on which the results can be corroborated or confirmed by others, is addressed by documenting all procedures to enable clear review of the used data.

3 Current State Analysis

This section covers the current state of Service Design in the case company based on data gathered from interviewing stakeholders and internal documentation. The section is divided into six parts starting with general information and then concentrating on the functions and processes related to service management. First this section deals with the relationships between the functions, and after that it covers portfolio management and product management. Second, portfolio and product management are investigated because of their greater level of maturity in the company when compared to service management. After covering the service management the current strengths and weaknesses are analysed.

3.1 Service Function in the Case Company

The case company is a software house providing software and services in the field of shipping and ship design. The two fields have had a distinctively different and separated approaches on how they are handled. Currently the company is in a process of integrating the two fields to one and creating one cohesive approach for the market. The case company structure is divided to five distinct functions, which can be seen on the diagram below [Data 1, Document 5]. The same structure is followed in all of the local offices around the world, shown in Figure 4.

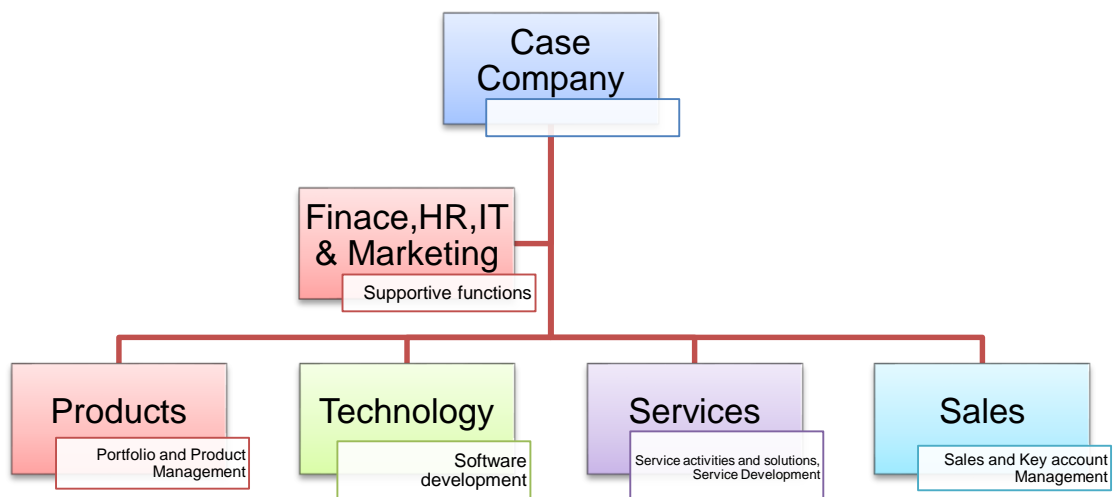


Figure 4. Case Company Functions.

As shown in the picture above the functions are Products, Technology, Services, Sales and the supportive function containing Finance, Human Resources, Information Technology Infrastructure and Marketing.

Responsibilities and roles between the functions are defined as follows. The unit of “Finance, HR, IT & Marketing” provides all the supportive tasks needed for the smooth running of the other functions providing the services related to finance, human resources and marketing and providing in-house IT support and infrastructure to enable smooth operations. Sales function is tasked to sell the offering defined by Products and Services functions, engage in continuous sales development and take care of key customer account management. Technology function is responsible for developing the software products excluding SaaS offering. Products function is in charge of portfolio management for both products and services and regulatory relationships. Service function, divided into teams as shown below, is responsible for providing the customer with support, aftersales, commissioning and SaaS-solutions. In addition they are tasked with developing the Service Catalogue together with Products function, to provide standard, scalable and efficient services according to the agreed quality level and support the whole organization in developing a “*One Overall Customer Experience*”. Figure 5 below shows the Service function organisation.

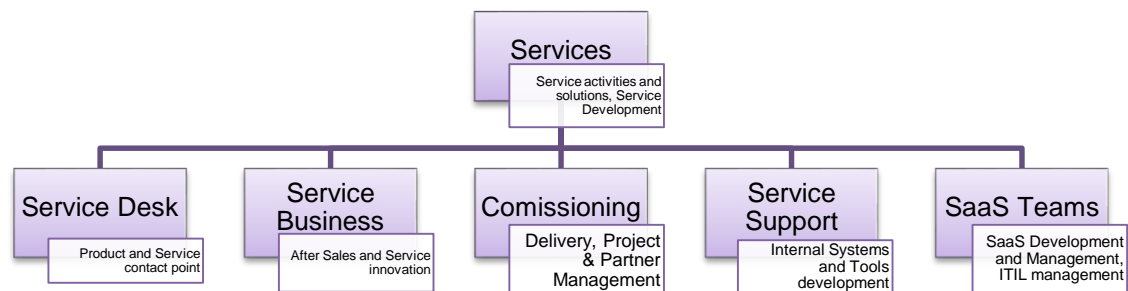


Figure 5. Service Function Teams.

As seen in Figure 5 above, the Services function is divided into 5 teams. Service Desk is the single point of contact for all products and services, following the 3-tier Service Operations ITIL approach. This approach includes Request Fulfilment, Access Management and Incident Management. The Service Business –team is responsible for the service provisioning to existing customers, providing after sales and operational product maintenance to existing customers. Lice-cycle service-catalogue and new service innovation and design is under their management. “SaaS teams” are responsible for all Software as a Service development and production and owners of ITIL Service Transition and overall framework and its implementation, following the continuous deployment process. The Commissioning team is responsible for sold product/service customization and delivering that solution to the customer. Additionally, the team is responsible for Partner network development and management. Lastly the Service Support team is responsible

for management and development of all internal tools used by the above listed teams. Additionally the responsibilities include hardware purchasing and logistics, Research and Design functions related to new hardware and testing required IT related equipment and facilities.

Portfolio management that guides the service development is defined in the Products function of the case company. The function is a parallel function to Services and consists of Product Management and Regulatory Relations units. The Function is headed by the case company's Chief Portfolio Officer. The Product management team is also responsible for the portfolios management with a service manager included from the Service function. The organisation is shown in Figure 6 below.

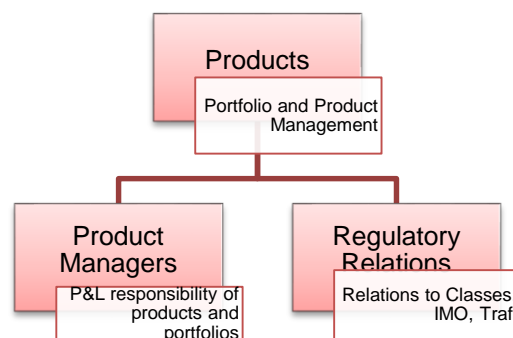


Figure 6. Products Function.

Due to the low maturity of the Service function and the overlaying responsibilities during the transition of service management responsibility to the Service function, a similar parallel function of Product Management is also considered.

3.2 Companywide Relevant Processes

The case company has some internal guidelines that must be followed when devising new processes. The companywide continuous Improvement Process, which is the company's most high level PDCA cycle (Plan-Do-Check-Act) [Data 1, Documents 1,14]. The Process follows the ISO standard 9004:2009.

ISO 9004:2009 provides guidance to organizations to support the achievement of sustained success by a quality management approach. It is applicable to any organization, regardless of size, type and activity [ISO 2015].

This process is owned by the Chief Quality officer, who is also the head of the Service function. The purpose is to systematically coordinate any organizational level process and practices improvement efforts through the work of a Quality Team. The key goal is to optimize the whole management system and achieve balanced value-stream flow

through the organization. The key support tools defined for achieving this are; Group KPI (Key Performance Indicators) and process metrics, audits, management reviews and CAPA (Corrective and preventive action) procedures. These functions and processes are verified by Internal and external audits to confirm that the ways of working are according to ISO9001:2008 standard [Data1, Document 10].

ISO 9001:2008 sets out the criteria for a quality management system and is the only standard in the family that can be certified to (although this is not a requirement). It can be used by any organization, large or small, regardless of its field of activity. In fact ISO 9001:2008 is implemented by over one million companies and organizations in over 170 countries. This standard is based on a number of quality management principles including a strong customer focus, the motivation and implication of top management, the process approach and continual improvement. Using ISO 9001:2008 helps ensure that customers get consistent, good quality products and services, which in turn brings many business benefits. [ISO, 2015]

The internal audits to verify that the company stays ISO compliant are held on annual basis and managed by the Quality team.

3.3 Portfolio Management

As explained earlier, Portfolio Management is included in the Products function of the case company and is the responsibility of the head of the function, the Chief Portfolio Officer. Portfolio management is defined as “*managing the current and future offering of*” the case company. Portfolio is defined as the case company’s offering of products and services. Portfolio Management links the Company Strategy to product roadmaps and backlogs and the main goal of the portfolio is to secure and maximize the value of the company’s offering and the use of resources in an optimal way. As phrased by one of the interviewees;

... when talking about portfolio management, in all its simplicity it is just management, that is concentrating on our offering at a certain point in time. [Data 1, Interview 7]

The portfolio is the responsibility of the Chief Portfolio officer but most of the decisions are done during the Portfolio Management Team meetings that take place bi-monthly. The team consists of Product Managers, Chief Product Owners, Release Manager, Development Process Owner, Head of Technology Function (secr.) and President of company (chair) [Data 1, Document 6]. The responsibilities are shown in Table 2 below.

Table 2. Portfolio Management Team Responsibilities [Data 1, Document 6].

Company Portfolio "Portfolio Owner"	Chair: President of the company
	Portfolio Management Meeting Product Managers and Chief Product Owners
	Portfolio Management Group: <ul style="list-style-type: none"> • Secures Portfolio is up to date • Sets priorities • Follow-up & Feedback from Release Management • Meets twice/ Release cycle and when needed
	Release Management Release Manager

As can be seen from above the definitions are quite broad and not clearly defined. In internal documentation the following is stated:

The starting point for good portfolio management is to define and analyse the present offering. The next step is to think about how to develop the offering. It is good to note the development also contains the possibility to decrease scope or kill projects and/or functionality [Data 1, Document 6].

The goal of managing the company portfolio is summarized to the following four points. Maximizing the value and clarity of company portfolio; securing focus to secure a lean production and fast throughput; securing and balancing the actions related to portfolio by including a mix of initiatives including, short term, long term and strategic platform projects; and securing and verifying strategic alignment of activities and investments. [Data 1, Document 6] These portfolio management initiatives and processes are quite new and closely tied to the product management of the company. As such they are mainly built with a product centric approach in mind. The idea of portfolio management in the case company is quite new. The official function has existed for over a year and the processes and practices have been mainly built during the last two years.

Portfolio management is the first process segment in the current state analysis because it's the governing function above Service management in the case company and functions also as a link between Case Company's Strategy and Service Management. When talking about Portfolio Management in the case company, the first term that is mentioned is the funnel. The funnel, or the funnel-phase of the process, is the idea gathering and gestation phase of portfolio management. It is the place where new business ideas and

improvements for the existing offering are sent for development and grooming. For existing offering the submittal to the funnel is based on the level of suggested development, while smaller changes are handled in the product manager level. Only changes that require a larger investment or cause changes in the “Product Master” document, explained in more detail under Product Management, need to go through the portfolio management process [Data1, Interview 7]. These new ideas can freely be submitted by any employee of the company. However currently this has not been widely advertised and thus most of the new ideas come from the persons closely tied to product and portfolio management. This was an issue that was worryingly brought up during the interviews conducted with the members of Product function [Data1, Interview 6]. It seems that the process of getting your ideas to the funnel is felt to be too cumbersome. In practice most of the ideas that are submitted to the funnel come from the product managers of the company. Since all cases that are submitted to the funnel need to be prepared by product managers before they can advance from the funnel onwards, this heightens the threshold for anyone else than a product manager to submit ideas. It was also said that;

... with this process there is a risk of losing valuable ideas from the employees as the current amount of product managers might not have the resources to handle all the possible ideas if it was more highly publicized” [Data1, Interview 6].

When an idea is submitted to the funnel, which is, simply put, a list of all the ideas for future development of the existing offering and ideas for new offerings that have not yet been approved by the portfolio management team. As stated above, everyone can submit an idea to the funnel, but for it to move any further than this a business case must be prepared by a suitable product or service manager based on the type of the proposal, optimally in co-operation with the individual who submitted the original idea. This is sometimes a problem, because an idea can bridge two existing offerings or fall outside the scope of the current offering so it is hard to define who it would belong to. The same principles apply if an existing offering is further developed. [Data1, Interviews 1,2,6,7] For this, the portfolio management team has a prepared form, detailing the required information needed to form the business case that can be presented to them.

The idea of the form is to make the people preparing it think about the issues related to the idea and not just fill a bureaucratic need. Filling in the form is not an issue of just sitting down and filling it up but a longer iterative process that requires in-depth thinking of the proposal and its effect on the whole business and portfolio [Data1, Interview 2].

The form is divided into three major sections; *Summary*, *Market and Value Proposition* and *Investment Summary*. In the *Summary* the first thing to specify is if the idea is a completely new one or if it is related to an existing item in the portfolio, is it a new offering

or a development idea for an existing offering. This is followed by a brief description of the idea answering the simple question of “what is done?” This is the technical segment, explaining what is suggested. Following the description, the risks and major assumptions of the proposal need to be addressed. Under the *Market and Value proposition* a more business oriented approach is taken and the following issues must be addressed: Target/affected segment; target market size and targeted market share, what is the actual problem that is being solved; and what is the value proposition. Quite often this is the phase when its noted that “*this idea just does not fly*” or that it is unclear who would be the customer and how much would they be willing to pay to get this problem solved, or if it even is a problem to be solved. The final segment, *Investment Summary*, is concentrating on the financial aspects of the proposition, looking into the required investment, both monetary and time wise. A five-year estimation of revenue and/or cost savings resulting from the investment must also be prepared. [Data1, Interview 6]

We are usually quite far in the process if the idea fails at the financial calculation stage. [Data 1, Interview 7]

Due to these matters that require special knowledge on the field, it would be quite difficult, if not impossible, for an employee not working in the Portfolio Management organization to prepare these documents successfully.

Before this process was taken into use the documents were created to support a decision that had already been made, and not as now, to enable the involved people to make an informed decision. [Data 1, Interview 7]

Once the idea has been fine-tuned and grown in the funnel to an actual business case it is presented in the next portfolio management team meeting. These meetings occur, by design, once every six week but it is not unheard of to have an ad-hoc type of meeting if the situation so requires. In every meeting they are supposed to look at the ideas in the funnel and consider if there is something that is ready for further development. When deciding if an idea is worth pursuing the portfolio management team must address the portfolio management goals stated earlier in more detail, in addition to the issues included in the provided form. [Data 1, Interview 7] Currently the Portfolio Management Team addresses, in average, one new proposition from the funnel a month and the ideas receive in average a 50% approval rate. The ideas that are not approved can be dropped completely or returned back to the funnel for further gestation and revisited in a later meeting. The approved ideas are assigned to and appropriate product or service manager’s roadmap for development.

In practice this is realized by development starting to work on something new or a larger investment to an existing product. [Data 1, Interview 2]

Product and service managers are not allowed to develop their product and/or services to a direction that's not in the roadmap and all changes to the roadmap come through the Portfolio Management Team. So far all the proposals that have passed through the Portfolio funnel process have been products, no services have passed through the process yet, but there are already some that have been submitted to the funnel and are under work. The process is built so that it should work for both services and products, and should not differentiate with them in any way other than who it will be assigned to for business case preparation and development if approved by the portfolio management team. [Data 1, Interviews 6,7] One key points with this approach is summarised aptly during the interviews: *"In the process we only talk about a product and it could be either a "service"-product or a "software"-product"* [Data 1, Interview 7].

3.4 Product Management

Product management is investigated to provide information and guidance to service management as product management processes are much more mature. The product family also includes multiple offerings that could be considered as services. The case company's product management is currently divided into five product families. Each of these families are managed by a product manager. In the internal documentation they are sometimes referred as Product/Service Managers but they do not currently have any official services to manage as they are designated to be products. Each Product Manager has Product Owner's for their respective products inside the Technology function that are actually managing the day to day development issues. Product Managers are concentrating on the larger scope of things. Product Management Team consists of five Product Managers and the function head. Below Figure 7 shows how this is practically arranged [Data 1, Document 8].

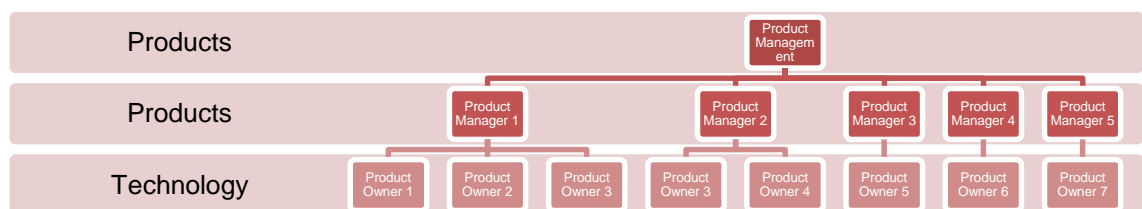


Figure 7. Product Management

As can be seen, the amount of different products per Project Manager varies between different product families. Each Product Manager has at least one Product Owner below

them to handle the day to day development of the products. The process followed from idea to development through portfolio management can be seen in Figure 8 below.

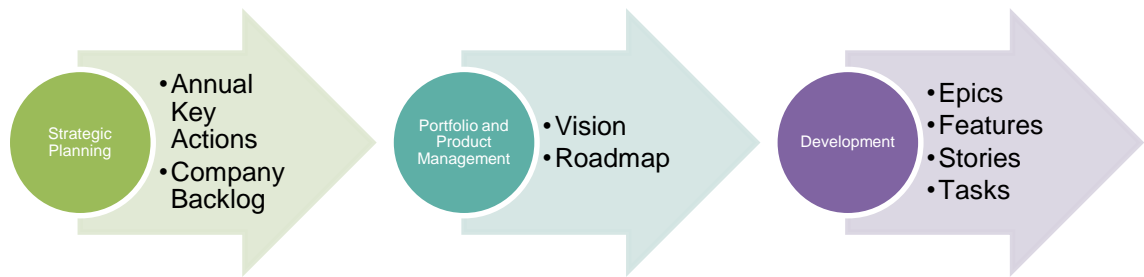


Figure 8. From Strategy to Development [Data 1, Document 7]

As can be seen in the above picture Portfolio and Product management are intertwined quite closely, with portfolio management working as a link between Strategy and Product Management. Especially in the case company many of the people involved in the process sit on both sides of the process. When new ideas are approved in portfolio management, they are assigned to Product Managers roadmaps and then refined by the Product Managers to development items for the product owners and development teams. Development can only work on issues that are included in the roadmap. This is an iterative, circular, process that can be seen on Figure 9 below [Data 1, Interview 6].

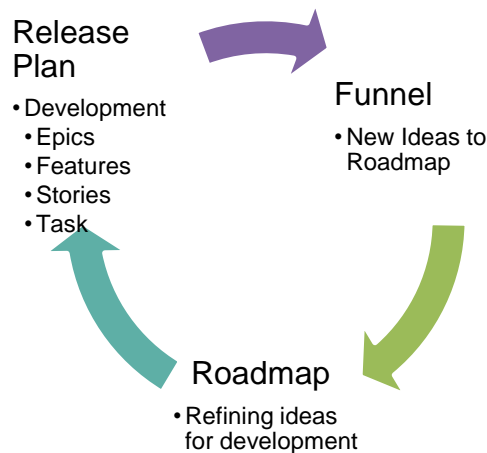


Figure 9. Development Circle [Data 1, Document 7]

As seen above, after agreed ideas have been completed the process returns back to the funnel to look for new ideas and improvements that have either come from the things noted during development or new ideas. Then Product Manager again prepares the idea from the funnel to a form that can be developed and the cycle repeats. Product Managers concentrate on the offering of their solution or a family of products they are in charge of.

3.4.1 Product Management Processes

For product management there aren't that many defined official processes which are related to product management directly, in addition to the portfolio funnel process that ties to product management.

We do not really have any other processes. There are no process descriptions. [Data 1, Interview 7]

In fact there are quite many common ways of working around the *Funnel* → *Roadmap* → *Release Planning* -process that are not directly part of it and are not documented but are generally followed. In the case company, product management is considered to be on a quite mature level. Before this model was implemented it was seen that development was making all the decisions and product management was unaware of what product development was doing. With this new process the largest goals of development come from product managers who get them from the roadmaps that get them from the portfolio management. [Data 1, Interview 7] Pragmatic Marketing framework is used as a guiding tool to address issues related to product management. And is described as follows: "*The market-driven model for managing and marketing technology products*" [Pragmatic Marketing, 2015]. It is seen in the case company as a "*useful tool when somebody asks what product management should do*". It is not implemented as is, but utilized to address identified problem areas. The framework is so large that not all of it could be implemented with a reasonable effort. Only the relevant parts are implemented.

Product management has identified around 50 processes that they would like to officially implement in the company, but are unable to do so due to time and resource constraints. [Data 1, Interview 7]

The processes, as seen from above, are still very much under development, even though they are seen as quite mature inside the case company. In addition product management follows a process called "*Excellence in Product Management*", that can be defined as a continuous improvement process, owned by the function head. According to "*Excellence in Product Management*" product management consist of three important but connected facets; *Product Strategy*, *Product Planning* and *Product Marketing*. [Data 1, Document 2] This is shown in the Figure 10 below.



Figure 10. Product Management [Data 1, Document 2]

The three facets shown above illustrate the responsibilities of the product managers on their respective products; First, *Product Strategy*, which is the product(family) lifecycle planning on a longer timeframe. Secondly, *Product Marketing*, which is providing material and guidance on how to market and sell the product(s). Finally, *Product Planning*, which concentrates on the shorter term development of the products. In addition to this they also have profit and loss responsibility on their product families. There are six main focuses in the company's *Excellence in Product Management* agenda, three of them are mentioned above. The other three focuses are *scalability*, *tools* and *competency development*. The current process also includes the following decided limitations of excluding the implementation of additional frameworks (for example ITIL) and ignoring a big part of service development. Service development and transformation from a product oriented approach to service oriented are also noted to be the biggest challenges of the coming years. [Data 1, Document 2]

3.4.2 Product Catalogue

The Product Catalogue is maintained by the Product Managers. The current *Product Master* document (catalogue) contains currently 228 distinct items that are divided to 49 different families/products [Data 1, Document 9]. Below is a short excerpt of the *Product Master* –list in Table 3.

Table 3. Product Master [Data 1, Document 9].

GrpID_	Grp_	GrpID	Grp	ProdID	Product	ProductTy	Status
1103	Subsystem X						
		1103	Subsystem X	110300	Solution	Software	Inactive
		1103	Subsystem X	110301	Additional Function 1	Software	Active
		1103	Subsystem X	110302	Additional Function 2	Software	Active
		1103	Subsystem X	110303	Additional Function 3	Software	Active
		1103	Subsystem X	110304	Additional Function 4	Software	Active
1104	Subsystem Y						
		1104	Subsystem Y	110400	Solution	Software	Inactive
		1104	Subsystem Y	110401	Additional Function 1	Software	Active
		1104	Subsystem Y	110402	Additional Function 2	Software	Active
2100	Software Maintenance						
		2100	Software Maintenance	210000	Software Maintenance	Software	Active
		2100	Software Maintenance	210001	Software Maintenance, re-entry fee	Software	Active
4100	Training						
		4100	Training	411000	Training	Services	Active
4130	Analysis services						
		4130	Analysis services	413000	Analysis services	Services	Active
4140	Consulting services						
		4140	Consulting services	414000	Consulting services	Services	Active
1241	Product B						
		1241	Product B	124100	Software 1	Software	Inactive
		1241	Product B	124101	Software 2	Software	Active
		1241	Product B	124102	Additional Feature 1	Software	Active
		1241	Product B	124103	Additional Feature 2	Software	Inactive
		1241	Product B	124104	Additional Feature 3	Software	Inactive
		1241	Product B	124105	Additional Feature 4	Software	Inactive
		1241	Product B	124106	Additional Feature 5	Software	Inactive
1242	Product J						
		1242	Product J	124200	Software 1	Software	Inactive
		1242	Product J	124201	Software 2	Software	Active
		1242	Product J	124202	Additional Feature 1	Software	Active
5260	Hardware K						
		5260	Hardware K	526000	Hardware, generic	Hardware	Inactive
		5260	Hardware K	526001	Hardware K1	Hardware	Active
		5260	Hardware K	526002	Hardware K2	Hardware	Active
		5260	Hardware K	526003	Hardware K3	Hardware	Active

In some cases the subsections represent different configuration options available for that specific group. This list also contains the current service offering of the case company. It has been said that this;

...document is too long and contains too many products. [Data 1, Interview 6]

The document includes all existing active and inactive offerings, products, solutions and services. It could be more precisely described as the portfolio master document. The document is also used as a sales tool, as it includes rudimentary cost calculations and shows what products can and cannot be sold with the active/inactive field. How and when new lines, products or services, are added to the master document is somewhat unclear. The overall consensus seems to be, that the Product ID for a new offering should be added to the list at the time, when it is ready for sales purposes. When the Product Manager is confident that the product is in a deliverable state. Previously this has not always been the case and new products have been added already once development has started. [Data 1, Interviews 6,7]

Based on internal documentation, all products should have a technical specification document that describes for what purpose the product is made, how the product works, how

it is used and what value it gives to the customer. Especially how the product is used is just a brief description and actual user instructions are a separate document. These documents are divided to multiple different levels. These documents are seen more as marketing and sales material than product definitions, but they are maintained by product management. Example can be seen in Figure 11 below.

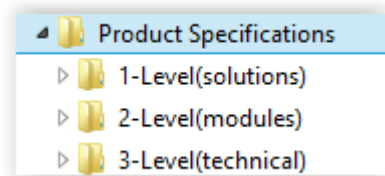


Figure 11. Product Definitions [Data 1, Interview 6]

On the highest level, level 1, there is the *Solutions* offering documents that show the value proposition to the customer. Below that, level 2, is the *Modules* level that showcases the features and value provided by each separate component of the solution. These are the functional description documents covering the functions and features of each module (product). On the lowest level, level 3, there are *Technical* documentations that cover the functionalities of the products that run in the background and are not visible directly to customer. This level of documentation is not available on all products. There is no one document or system including the whole product offering of the case company. Due to historical reasons the offering is split to two major sections that have handled the documentation differently. [Data1, Interview 2,6,7] The only common document is the earlier shown product master, but that is not a catalogue, it is a list of products and their available features, there are no descriptions included in it.

3.5 Service Management

In this segment, the current state of Service management is analysed. It is already known that it is on a low maturity level in the case company. This has been identified even before this current state analysis and is one of the main drivers for this thesis. Below, in Figure 12, is the model used the case company utilizes showing how the maturity level is defined.

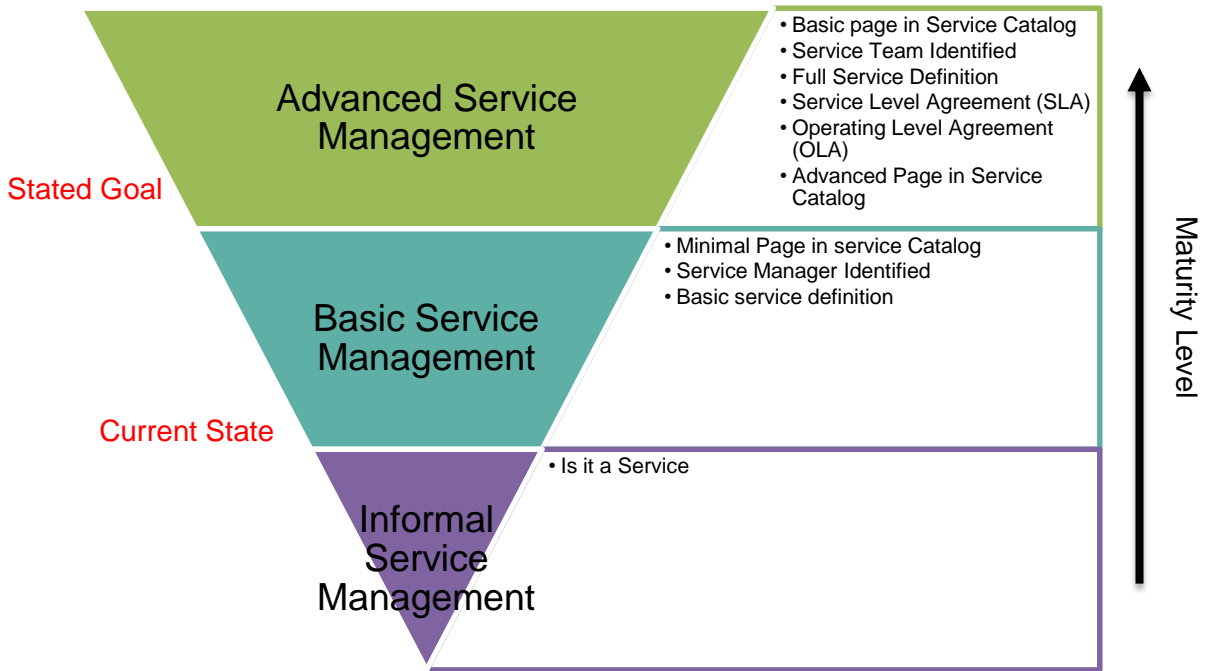


Figure 12. Utilized Service Maturity Tool [Data 1, Document 15]

Based on the interviews with the service function managers it was noted that the current level is barely in the “Basic Service Management“ level. Even though the company has implemented some characteristics of “Advanced Service Management” it is still missing features on the Basic level.

The goal for this year is to slide from basic to advanced. [Data1 Interview 2]

Another interviewee noted that on a scale from zero to five the case company is at level one [Data1, Interview 1]. The Service Management Team consist of five Service Team Managers and the function head. Service Management is still on its infancy in the case company, which can quite clearly be identified by looking at the service management organization on the Figure 13 below.

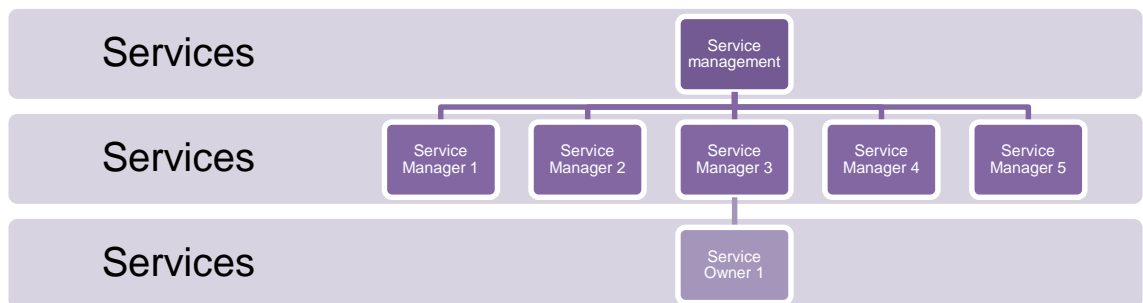


Figure 13. Service Management

When comparing the above Figure to the Product Management organization (explained earlier in Section 3.4 and Figure 6) a drastic difference can be seen. In Products there are five Product Managers and each has at least one Product Owner for their products. In Service there is the same amount of Service Managers but there is only one Service Owner, in one Service family. The other services have no service owners and subsequent development teams to support them in the development of services. There are currently no dedicated tools to facilitate the service management processes. The company has JIRA for development work and bug tracking but there are no tools to monitor the level of service the company is providing [Data1, Interview 1]. Below is an excerpt from the company's Service Management manual on how to define a service and what it should include.

What is a service?

- A means of delivering value to customers by facilitating outcomes customers want to achieve without the ownership of specific costs and risks.
- Services create value of some form for the customer.
- If the service has no associated value, there will be no customers.
- Services remove the risk of ownership from customers.
- Services facilitate outcomes that customers want to achieve.
- Services are provided to facilitate some outcome that the business desires (which must be well understood).
- Costs, knowledge, and abilities are a few constraints that can be reduced through the delivery of services. [Data 1, Document 15]

As stated above the main requirement of a service is that it provides value for the customer while relieving them from the risk of ownership specific cost and risk. The services are offered to facilitate outcomes that the customer requires.

3.5.1 Service Design

Service design in the case company has not traditionally been identified as service design. It has followed the same processes and guidelines as product design. During one interview it was said that the company is a service provider seeing itself as a software provider [Data1, Interview 1]. General knowledge of what service design is and what it should include is also quite low.

Service Design, as a term would be something akin to Hebrew to most of our people. [Data1, Interview 3]

The official company definition for Service Design is as follows:

“Designs services in a holistic manner based on the requirements, standards, and constraints in the service charter from service strategy.” [Data1, Document 15]

Currently service design follows the same procedure as products, from idea to the portfolio management funnel, where, if deemed sufficiently beneficial, it will be assigned to a Service Manager for development. [Data1, Interviews 1,2,7] Currently the only Services that has been made to match the requirements set by the Portfolio Management Team are the Software as a Service platform “Office” and Performance Analysis. These “*products*” were conceived before the funnel process was created but they have been retroactively made to fulfil all the requirements set by the funnel. Currently they have been identified as services, but they still follows the same software development framework as the products with some minor differences in release schedules and deployments. The main difference being that services are aiming for continuous deployment instead of a set release cycle. [Data 1, Interviews 1,2,5,6,7]

I would say we have no experience on how to design services. [Data1, Interview 6]

In Service Design there are no recorded ways of working or official processes in the case company. Simply put, when designing new services the case company adheres to the following principles. First they look at what is the market need and after that look at the suitable pain-points for the company and build solutions for those identified pain-points. Or put in another way, using the know-how and tools that the company already possesses and look at the market to find a target that would be financially beneficial and go for it. [Data1, Interview 1] As an example of how existing services are currently developed the process would go as follows.

There is a need for the Service Desk to improve their customer experience. Suggested idea is to lower their response time. It would be identified that there are two simple ways to develop the service speed for customer.

1. The company can either add more personnel to be available to answer calls and thus decrease wait time. T
2. The service desk could try to answer the questions faster and thus most probably decrease the quality of the answers.

Then it would be a question of what customer appreciates more, receiving some answer fast or a better answer in a bit longer time. [Data1, Interview 1]

The main point is to map the customer need and expectations before making any drastic changes or development to a service.

3.5.2 Service Catalogue

The Case Company’s service catalogue is currently at a low maturity level. A general layout has been created and some services have been included into the list. The Service

catalogue is owned by one of the Service Managers. Below, in Table 4, can be seen the complete Service Catalogue.

Table 4. Service Catalogue [Data1, Document 15]

Category	Service Name	Service Owner	Service Definition link	Other information
<i>Service Group 1</i>	Service 1	Product Owner X		
	Service 2	Service Manager Y		Continuous service
	Service 3	Service Manager Y		Continuous service
	Service 4	Service Manager Y		
	Service 5	Service Manager Y		Continuous service
<i>Other Services</i>	Service Desk	Service Manager C	Service Definition [Link]	Continuous service, part of maintenance
	User Training			
	Analysis			
	Consulting			
	Commissioning	Service Manager Z		
	Product H maintenance and support			Continuous service, option for Product H
	Subscription service for a feature on Product P	Product Owner X		Continuous service, part of Product P

The official place for this information is still the Product Master document shown earlier. According to the documentation this catalogue “contains all active services which are visible and available to customers. Planned services in the pipeline are handled through normal Portfolio Funnel.” [Data 1, Document 15] The Portfolio Funnel is a part of Portfolio Management as explained in an earlier section.

All services in the catalogue shall have a Service Definition and related documentation as applicable, such as Vision, Roadmap, Service Description, Provisioning Process Description, etc. Use this Service Definition Template for basic documentation of each service product in the catalogue. See picture below for indicative maturity level framework. [Data1, Document 15]

As stated above all services included in the service catalogue should have a definition and other documentation. This is currently not the case, as only one of them has an official, form fitting service definition. Last time this was addressed the scope of current services was broadly speaking identified and the result was the service catalogue shown in Table 4. The catalogue includes the main persons in charge from most of the services and a first version of a Service Definition template was created. The information required by the service definition template is show in the Table 5 below.

Table 5. Service Definition Template [Data1, Document 16].

Field	Explanation
Service Manager	Responsible for service provisioning and operation
Customer	Who are the customers using this service?
Contacts and Procedures for Getting Service	Contact details of service owner/manager, documentation on how to get/buy the service.
Brief Service Description	Value proposition, business justification, customer benefit, what customer problem does the service solve, outcome of service, service level(s)
Variations	e.g. different service levels in different regions/time zones
Dependencies	Required tools and infrastructure, other services depending on this service etc.
References	Links and reference to further document, if not available below.
Provisioning and Support	How do we support the service and how is it provided/delivered to customer, e.g. link to process descriptions?
Measurement	How is the service provisioning/production performance and/or service level measured?

According to the interviews the template is supposed to be a tool for all service managers to help them define what their service is. The template in question has only been used for one service so far, as can be seen in Table 4 Table 4. Service Catalogue [Data1, Document 15], which quite clearly demonstrates the current status of service design implementation in the case company. [Data1, Interview 2]

The Service Managers have been defined for the most important services, but the responsibilities and mandates related to them have not been defined. [Data1, Interview 2]

The other documents listed earlier under Product Management, *Vision*, *Roadmap*, *Service Description* and *Provisioning Process Description* are partially available for some services, but in no standardised format. *Vision* and *Roadmap* are available for those services that have been developed as products, following the company's product management guidelines.

Note that internal and supporting services, such as IT Support, Amazon cloud ..., and Software production systems, are not part of this Service Catalogue (since they are not customer-facing). [Data1, Document 15]

In the case company's current service catalogue only customer facing services are included, to provide a clear list of available, sellable services. The service definition should answer five questions. Firstly, what is the service and how to get it? Secondly, how to use the service and how to get help? Thirdly, what does it cost and how to claim if a

service level is not fulfilled? Fourthly, how is the service being supported? Finally, How are we providing this service? There is a clear and agreed service definition format that should be followed, but as stated earlier, this has currently only been done for one of the offered services, and unfortunately even that is a bit outdated. Additionally it became apparent that the location where these kind of documents should be stored in the company level was mostly unclear, and conflicting answers were received. Of the current product offering there are quite a few “products” that could be seen as services, or might be converted to services in the near future. [Data1, Document 15]

In fact quite a large part of one of our product families are de-facto service-products. ... In our product hierarchy we have different kind of services, but they are nothing too large, and mostly undefined.” [Data1, Interview 6]

The current service catalogue and actual amount of services are not completely matching, and the scope of services we currently offer varies based on who is asked, mainly due to the fact that some products are seen as services by some, but not by others. The following have been identified by some interviewees as services or service families in the case company. Service Desk, Training Services, After Sales, Consulting Services, Software as a Service Solutions, Commissioning service and adjoined Services for Software Customization and Pre-Commissioning Survey. [Data1, Interviews 1,2,3,4,5,6,7] Out of these 6 service families none have a complete set of documentation available, some have most of them. Not all of these are currently seen as actual services and included in the service catalogue.

3.5.3 Service Level Management

Officially the case company does not offer any Service Level Agreements for its customers. The general terms stipulate that the services are provided with a best effort approach. In some agreements there are sentences promising replies to emails during the next business day and some older maintenance agreement type contracts have some service level agreement type phrasing, but they are considered as faults in the contracts.

These have been seen as a problematic issues, as we do not currently have sufficient tools to measure our own internal service levels, how could we provide them to customers. [Data1, Interview 5]

Especially on the Software-as-a-Service segment this has been identified as a key issue to be addressed, and the company is planning to develop the processes and tools related to service level measurements and monitoring quite rapidly. This will first be used to set internal Service Level Requirements and later expanded to service level agreements that

can be agreed with customers. [Data1, Interview 1,5,6] As the company is still quite small, there are issues with providing strict Service Level Agreements on Service Desk and other similar services.

“As long as we have relatively little mass on this function we have no possibility to provide a global 24/7 service.” [Data1, Interview 5]

Currently these services involving people are operated 8-17 in the office's local time zones. As the service definitions for most services are missing it is also impossible to define accurate and truthful Service Level Agreements with customers, as the definitions of services are unclear. In addition it is legally a bit unclear who has the right to sign these binding Service Level Agreement contracts. Most probably they come from somewhere else than inside the Service function providing the services to customers, in worst case leading into a situation that a new contract is signed but the persons who should provide the agreed service are unaware of it. [Data, Interview 1] As the Service Level Management maturity level is low, there aren't yet any official measurements defined to be followed. Software-as-a-Service solutions have internal monitoring tools but they are not used in any official capacity inside the company and as they are unofficial the validity of their data is sometimes questioned. [Data 1, Interview 5] Some of the services provided are also dependent on services provided by other companies, a study of contracts between these companies and the case company is needed before the company is able to offer service-level agreements to its customers, and be able to reliably say that they can be upheld. [Data 1, Interview 2]

3.6 Summary, Strengths & Weaknesses

The case company has for a long time seen itself as a software-product provider. Services have been just a necessary evil that are needed to make some products more easily sellable. The company's product management and to a certain extent the whole organisation has gone through drastic changes in the last couple of years. New Portfolio Management processes were implemented about two years ago and at the same time the product management structure was renewed. Last year the service organisation was created from multiple, previously separate service and product adjacent teams.

Since this change the company has tried to renew its processes and practises to match the new strategic requirements that have been given to them, but are still also partially under work. Product Management, having existed longer, has matured into a level that can be considered as stable. The new Service function is struggling to reach the same

level of maturity and to exceed it in a considerably shorter time. The strategic focus of the company is shifting to a more service oriented approach on its offering and existing processes and structures, including people, are struggling to keep up with the changes.

I would say we have no experience on how to design services. [Data1, Interview 6]

The main issue has been identified as a lack of unified processes on the service function. This is seen as a major issue slowing down the shift to service oriented business. Work has started on preparing these processes, mostly from scratch with some exceptions in the older service solution families. As shown earlier the product and portfolio levels of the company are in a much more mature state so they provide guidelines and best practice on how to move forward. Everything that works for products might not work for services, but there are definitely connection points that can be utilized for the benefit of both. Furthermore the distinction between products and services, and why they should be treated differently is not clear to all stakeholders. The link between Portfolio Management and the lack of a defining portfolio documentation hinders the creation of a service catalogue as well as a product catalogue. The current product master document is not seen as that useful or user-friendly. Lack of central storage of information regarding these matters also causes confusion and usage of older, not up to date documentations.

As seen earlier, Service Level Management is almost non-existent in the case company. There are some initiatives and tools being developed but it can be said that currently there is nothing officially defined. There also exist some conflicting documents and agreements referring to different agreements that could be in a wider view considered as Service Level Agreements. In practice no Service Level Requirements have been agreed nor defined on and thus no Service Level Agreements can be done. It is also unclear who would have the right to agree such levels with the customers. In addition there are no internal targets or agreements set on required service levels not with external partners who provide underpinning services for some of the services provided by the case company. Finally there is no link between these Service Level Management initiatives to Service Operations like Service Desk.

Table 6. Strengths and Weaknesses.

	<i>Strengths</i>	<i>Weaknesses</i>
<i>Portfolio Management</i>	Process that in theory suites both service and products.	Never been tested with services. Overall linkage between portfolio and service and product catalogues unclear.
<i>Service Management</i>	Defined goals. Need has been identified.	Low level of implementation. Lack of internal knowledge. Lacking documentation. Differences between products and services not clear. No link to day to day operations.
<i>Service Catalogue</i>	Exists.	Limited. Does not cover all services. Does not define nor provide minimum required information about service. No link to day to day operations.
<i>Service Level Management</i>	Need identified.	Not defined. Conflicting agreements. No link to day to day operations.

Another identified issue is the lack of general internal knowledge on service management and Service Design practises in general. As the company has seen itself as a product oriented software provider it has not cultivated the knowledge in a level that would be required now. This has also been seen and external consultants are used to hasten the process at the same time as internal work is ongoing.

4 Best Practice on Service Design

This section discusses the best practice available in the field of service design. Based on the current state analysis done on the case company, it can be clearly seen that the processes and practices related to Service Management, and especially Service Design, require further development. In this section Service Design is investigated from a general level and then four aspects are looked at with a deeper focus; *Service Strategy*, *Design Coordination*, *Service Catalogue Management* and *Service Level Management*. This is completed by the *Conceptual Framework*, which is presented after the above subjects have been covered.

ITIL or Information Technology Infrastructure Library is a framework of IT service management related best practice. The framework does not document how to do things, it just documents what can and should be done. ITIL's owned and maintained by The Cabinet Office of the British HM Treasury, but was originally developed by Central Computer and Telecommunications Agency in the mid 1980's, developed in collaboration with the subject matter experts from the field. [Orand 2013: 43] Service Design is one out of five major parts of ITIL framework on Service Management the other four being Service Strategy, Service Transition, Service Operations and Continual Service Improvement.

The second major source is ISO, the International Organization for Standardization, and IEC, the International Electrotechnical Commission, and the standards they have created on service management. The relevant information is included ISO/IEC 20000 standard. This Standard is divided into multiple parts, and the relevant information is included in parts one and two, respectively, *Service management system requirements* and *Guidance on the application of service management systems*. Part 1 covers the integration of service management system, SMS, to company's other management systems like for example with a quality management system based on ISO 9001. The standard specifies requirements for the service provider on how to design, monitor and improve services to fulfil set service requirements [Finnish standard association 2011]. Part 2 of ISO/IEC 20000 provides guidance on how to implement the principles outlined in Part 1:

Coordinated integration and implementation of an SMS provides ongoing control, greater effectiveness, efficiency and opportunities for continual improvement. It enables an organization to work effectively with a shared vision." [Finnish standard association 2014: 13]

ISO/IEC defines service as means to deliver value for the customer by facilitating results the customer wants to achieve. This service is generally intangible and can also be delivered to the service provider by a supplier and internal group or a customer acting as a supplier. In service design the guiding principle is to provide value to the customer from the usage or consumption of the service.

As designers when we build services based on genuine insight into the people who will use them we can be confident that we will deliver real value [Polaine et al 2013: 18].

In practice service design has as many definitions as the number of people if one asks the question. “What is service design?”

Service design is an interdisciplinary approach that combines different methods and tools from various disciplines [Stickdorn et al 2011: 29].

Service design is the activity of planning and organizing people, infrastructure, communication and material components of a service in order to improve its quality and the interaction between service provider and customers [www.service-design-network.org].

.. a design of systems and processes around the idea of rendering a service to the user. [Lockwood 2010: 198]

Service design is a holistic way for business to gain a comprehensive, empathic understanding of customer needs – Frontier Service Design, 2010 [Stickdorn et al 2011: 32].

In this study, service design refers to the overall processes and practices needed for the successful design and management of services. In the book *Design Thinking* it is suggested the goal of service design is to create services that are useful, usable, desirable, efficient and effective. It is also said that a single strict definition for the term would constrict creativity and hinder service design development [Lockwood 2010: 161]. Stickdorn suggests that there should be a dynamic way to talk about service design and presents his five core principles of Service Design. Based on Stickdorn it's impossible to take all eventualities into account when designing these touchpoints, but that “*the intention should always be to see the wider context in which the service process takes place*”. It is also said that service design thinking should support the co-operation of different disciplines. [Stickdorn et al. 2011] In the ITIL framework the purpose of service design is defined as follows:

Design IT services, together with the governing IT practices, processes and policies, to realize the service provider's strategy and to facilitate the introduction of these services into supported environments ensuring quality service delivery, customer satisfaction and cost-effective service provision. [Orand 2013: 109]

Service design, as defined by ITIL, must take a holistic approach to design. The objective of service design is to design services in such a way that minimal improvement after the initial design is required. [Hunnebeck: 2013] According to ITIL the value show gained from the framework comes, among others, from improved quality and consistency of service and alignment of the service to the business. [Orand 2013: 110] As such Service design isn't a stand-alone function but a part of the larger ITIL framework explained earlier. It receives information for Service Strategy and is also tied to the three other parts of ITIL. The Service Design part in the ITIL lifecycle begins with demand for a new or modified service and it ends when the service is designed to satisfy the requirements. [Bon et al 2010: 70]

According to ITIL, Service Design can be seen from two distinctive viewpoints. One of them is "Five Aspects of Design". These Five aspects are *Service Solution* being, the solution itself and the supporting components; *Tools and technologies* required to manage the service; *Architectures* ensuring that the service is in line with existing services and architectures; *Measurements and metrics* to ensure that the service meets its requirements and is being properly managed; *Processes* required to design, transition and operate the service. The second approach is called "The 4 P's of Service Design", as show in the diagram below, showcasing the four elements needed to provide a service effectively and efficiently.

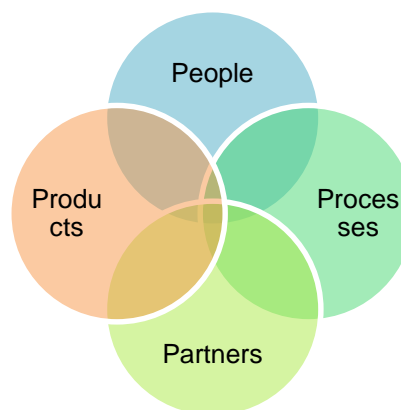


Figure 14. 4 P's of Service Design.

These four elements shown in Figure 14 are essential. Firstly *people* are needed for design, transition, support, and improvement of the service according to their assigned roles and responsibilities. Secondly services also require support from *partners* to design, operate and support the service as it is not always efficient for the service provider to do everything. Thirdly service requires *products* in the form of the underlying technology to design, transition, operate and improve the service in question. Finally *processes*

are required for the other three to do their work efficiently. When designing a new service a structured design approach that can be iterative and incremental is needed.

When adhering to the ITIL principles, the analysis of agreed business requirements and clear specifications of Service Design Packages should be taken into account in addition to deciding on the desired solutions, results and objectives [Bon et al 2007: 71]. The points brought up by Bon et al affect each other and thus the iterative and incremental approach is needed when designing services. As in all service, so also in the ITIL definition, the main driver is to provide value for the customer. In ITIL this value is divided into two parts, utility and warranty. Utility answers the question, what it does, describing the functionality offered by the product or service to meet a particular need. Warranty is the promise or guarantee that the product or service will meet the agreed requirements, answering to the question how it is done. These have already been described with the terms “fit for purpose” for utility and “fit for use” for warranty.

With ISO/IEC 20000, Service Design is defined as part of the SMS, Service Management System. Service process consist of three major parts, shown in the Figure 15 below.

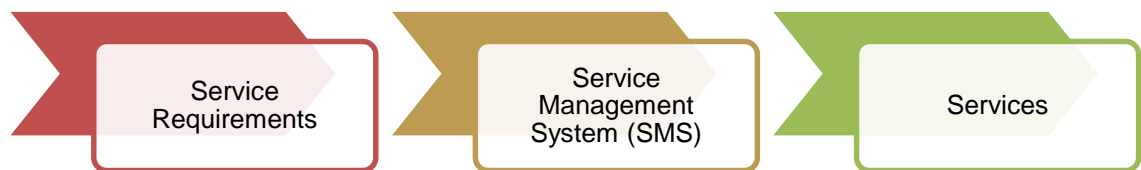


Figure 15. Role of Service Management System [Finnish standard association 2014: 1].

As seen above, the first part is Service Requirements that come and are created based on information from customers and other interested parties. Service Management System as show in the Figure 16 below, is a more comprehensive part.

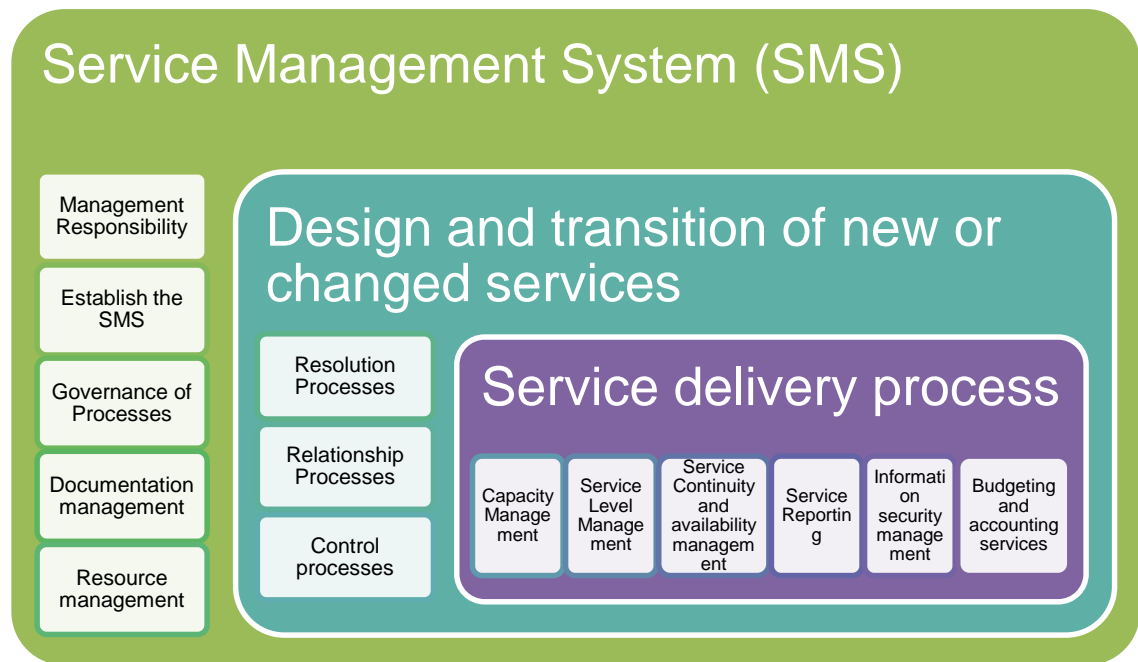


Figure 16. ISO Service Management System Framework.

The SMS, as defined by ISO/IEC 2000, is divided into four sub-parts and management processes. The management processes define the common guidelines and responsibilities of service management covering the areas defined in ITIL as Service Design and expanding a bit into Service Transition with some of the Design and Transition processes. The *Service Delivery process* items will be covered in more detail in later parts of the best practice section. Generic service management objectives defined in the ISO/IEC standard suggest the following four examples as service management objectives. Firstly enabling higher business agility through *faster delivery* of new or changed services. Secondly *reducing unplanned availability issues* for business critical services. Thirdly *optimizing service costs* through operational efficiency. Finally increasing the *service quality* while reducing risk. These objectives, defined on a company specific level should be defined so that achievements against objectives can be measured.

These objectives should be periodically reviewed and updated to reflect the company's strategic goals. It must also be said that these processes and practices that are defined to achieve these goals are never completely ready, and must be renewed and reviewed on a constant basis to improve them [Lloyd 2013].

4.1 Service Strategy

From a strategic point of view service design is a small element in a larger set of value adding elements. As such it is suggested that, when considering service design from a company strategic point of view, from the traditional perspective in strategy service is firstly seen as an attribute of a product rather than something that is shaping the nature of the industry. Secondly service is seen as a means of differentiation more than a financial issue or a potential benefit maker. Based on this it can be said that with the traditional strategy models there is no sufficient drive for growth in the service design culture. [Stickdorn et al. 2011: 94-101]

“...what designers need to learn is ...the language of the business world. Only by learning the language can you effectively voice the argument for design. [Peter Gorb – Lecture 2001]”

Finally Beuker suggests that service design logic should be integrated to management thinking [Lockwood et al 2010: 173]. It should also be noted that there are multiple studies showing that investing in service design is beneficial and companies that do this usually outperform their competition. Service markets are continuously developing and changing, and as such companies need to keep up with that change. Lockwood suggests ten steps on how to make a company more design minded. Most relevant of them are, that the company should understand customers unarticulated needs, create processes that are continuous and iterative and allows for interaction and collaboration. Additionally he notes that companies should *set design strategy and policy*, meaning in practice, that all activities that are done should be properly designed. Finally pointing that the companies should *empower creativity* and strive to *be a design leader*, developing a competitive advantage through the use of design. In summary he answers the question on what is the added value of design in business. [Lockwood 2010]

The trick is to determine which problems are the right ones to solve, and then focus on the task of designing the right solutions [Lockwood 2010].

From the ITIL framework point of view nothing can be done on Service Design before it has been discussed and decided on the Strategic level in Service Strategy. Aligning Strategy to deal with service design is important both on practical and procedural level. [Orand 2013: 107] Service Strategy in ITIL, as in any context, is an integral part of companies operations. Strategy guides all other functions to the agreed direction. The main touchpoint between Service Design and Service Strategy, from ITIL viewpoint, is the Service Portfolio, that is managed under the strategy. Service Design will only be applied to services that are addressed in the service strategy. [Cannon 2013]

The essence of strategy is choosing what not to do. [Porter 1996]

Thus, in its most simple level strategy is a plan of what the company does and does not do. In service strategy the company should specifically define how they will use services to achieve the business outcomes their customer desire thereby enabling themselves as the service provider to meet their objectives. According to Cannon [2013], when the initial service objective is defined in the strategic level multiple viewpoints should be considered. The market should be defined and customers identified and their needs understood. Opportunities and the market space should be understood and desired outcomes quantified. The service should be classified and visualized based on the desired outcomes and service models and more detailed units and packages should be defined. All the above points brought up by should be considered before the service is deemed strategically ready for development. [Cannon 2013: 35] Without the understanding of business desired outcomes that the service is designed to satisfy, the services value to the customer is minimized. The ultimate value of the service is always determined by the customer on the basis of whether or not it meets their needs. This value is never constant and changes based on changes in the customer need. Company's service portfolio is part of their service strategy, its represents the complete set of services managed by the company. The service portfolio consists of three distinct parts; *the service pipeline*, *the service catalogue* and *retired services*. [Orand 2013]. Figure 17 shows the principles behind this division.



Figure 17. ITIL Service Portfolio

As seen from Figure 17 above, the three parts are distinctively different. Service Pipeline is the sum of the company's growth and strategic outlook for the future reflecting the extent of which new ideas or concepts are developed. A new concept can enter to the pipeline through multiple channels, generally entrants into the service pipeline can roughly be divided into two categories, new ideas and improvements. New ideas are, as

the name states new business ideas that can come from internal or external sources and have been deemed strategically relevant for further development. Improvements are changes or improvements to existing service offering. Service catalogue is a part of the Service Design and will be covered in more detail in section 3.5.2. Simply put service catalogue is the only part of the service portfolio that should be visible to customers and it only contains operational services. Retired services are services that are no longer operational and no longer available to be sold to the customer. Retiring services is part of the Service Transition part of ITIL. [Cannon 2013]

The development and application of Service Strategy requires constant revision. If the strategy is effective, then the efforts that are expended in all of the other phases of the lifecycle will be successful [Bon et al 2010]

As seen in the above quotation, service strategy should be constantly evolving, and when done well it should provide benefits for the whole company. In traditional companies, services, if identified, are treated quite often much like product. This can have problematic side effects.

Applying the same mind set to designing a service as the design of a product can lead to a customer-hostile rather than user friendly results [Polaine et al 2013: 19].

It has been said that products usually specialize in one function and operate in silos. In service oriented companies this can cause issues, as for the customer the service is seen as one entity, and if it's developed within silos in the company, the user can see multiple different facets of the same service. This happens because each silo operates a bit differently and the whole built from these different silos does not give a comprehensive, cohesive view of the service, but multiple slightly different components. The differences between silos can also have effect on quality aspects of the service. This might work fine in a product company where each silo provides a separate product, but not in service companies. The service experience can be affected by multiple touchpoints compared to products that usually have only one. [Polaine et al 2013: 22]

Marketers and designers often talk of products having personalities, but an iPhone or a Volkswagen doesn't wake up with a hangover, worry about paying the rent, or care who is using them. People do, which is why understanding people is at the heart of service design. [Polaine et al 2013: 22]

It is also said that services differ from products in major ways, which are sometimes presented with the "SHIP" –model; *Simultaneity* (customer contact), *Heterogeneity*, *Intangibility* (tangibility), *Perishability* (storability) [Hollins et al 2006]. A clear difference between designing services versus designing products is that services only create value

when they are used. This is a difference that is often missed by product oriented organizations. During the era of industrial production it was not customary to sell services, and if they existed, they were usually and ad-on to a product. Recently product oriented companies have been seen to create more hybrid products, where the service has been designed as an integral part of the product. Product design is almost always linked to manufacturing process, and there might be a large number of other adjacent processes participating in the creation of the final product. When designing a new product all these aspects must be taken into account. This is not usually the case when designing new services. There are of course adjacent services and processes, but the manufacturing part can normally be ignored. [Stickdorn et al 2011: 56-66] In the end taking a pragmatic view can be advisable with finding a suitable middle ground between products and services and offer a combination of products and services. [Macintyre et al 2011]. Once the service guidelines have been decided in the service strategy, they need to be implemented. One of the main implementing functions in Service Design is Design Coordination

4.2 Design Coordination

Service design is the process for defining the specifications of services but it is also a process in its own right that must itself be designed [Slack et all 2009]. Design coordination, which is also one of the eight processes of Service design as defined by ITIL is one way to address this. It comprises of policies and methods, resource planning and risk and issue management. The function of design coordination is to provide comprehensive guidelines on how individual designs should follow the set norms in the company. The goal is that appropriate designs are created to meet the needs of the business. It can quite clearly be summed up with its own version of the Deming cycle, including four steps shown in Figure 18.

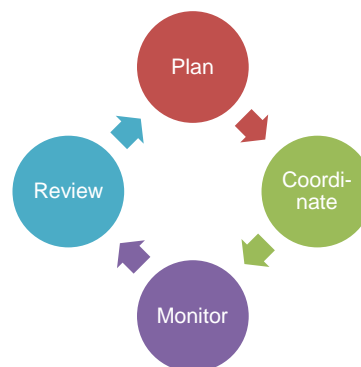


Figure 18. Design Coordination Cycle [Hunnebeck 2013]

The design coordination cycle shown in Figure 18 is emblematic of the Design Coordination approach in ITIL. Processes should be iterative and include elements on continual improvement. It is also said that in general all Service Design activities should be done in stages, iteratively developing them until they are complete [Slack et al 2009]. *The 4 P's* and the *Five Aspects of Service Design* approaches presented earlier with Service Design are in the ITIL framework part of Design Coordination.

The Purpose of design coordination is to ensure the goals and objectives of the design stage are met by providing and maintaining a single point of coordination and control for all activities and processes within the service design stage of the service lifecycle. [Orand 2013: 118]

The scope of design coordination covers all design activities. In ITIL it is defined that each organization should define their own criteria and rigor applied to design coordination. When deciding on the needed level of design coordination, the following points should be considered. These processes should ensure that services, service management systems, architectures, technologies, processes and information metrics meet the current and evolving business outcomes and requirements. This could be achieved by centrally coordinating all design activities across projects by maintaining policies, guidelines and standards for service design activities and processes [Hunnebeck 2013: 86-87]. In ISO/IEC 20000 it is specified that the service provider will identify service requirements for both new and changed services, and that the services should be planned to fulfil agreed service requirements. The requirements should be agreed with customer('s) and other involved parties.

When planning the new or improved service, the following issues should be considered in addition to the ones listed earlier. Responsible persons should be defined for design development to define the required activities and resources. This planning should also include schedules and risk assessment and management followed by dependencies charting and testing methodology. Finally an acceptance criteria for the ready service, with expected outcomes in measurable terms, should be defined. Following the above points a standardized document expressing these issues for the service in question should be prepared. In correlation with the above requirement planning the following points should be addressed. Firstly, how is the service used and how the Service Level Requirements are defined. Second, what would be the quality criteria for the service. Thirdly, what would be the priorities for it, if it was considered business critical? And finally, what kind of other requirements are there in regards to availability, regulations and security? No direct answer is given in theory for the above questions, and they can

be seen as usage specific issues [Finnish Standard association 2014]. Lockwood poses similar questions on the subject. Firstly, asking how should service design be organized? And secondly, how are people introduced into the process of creating and introducing services? He suggests that practitioners must look at the entire ecosystem rather than isolated problems. Instead of protecting the design from interference in certain phases of the design project information should be available for all connected persons and processes. Design architectures should also be kept open and solutions developed as open-ended to allow for gradual improvements and change. Design solutions would need to be highly adaptable over time. Service design practitioners need to understand strategy and have an in depth knowledge of key touchpoints when designing services. [Lockwood 2010]

Some benefits promised by ITIL design coordination include minimizing rework and unplanned cost with redesigning due to poor initial planning and support to achieving higher customer satisfaction. Additionally it should ensure that all services conform to a consistent architecture, enabling higher level of integration between services and improving the efficiency and effectiveness of all service design activities, while providing greater agility and quality in the design of services. [Hunnebeck 2013: 87] The above outcomes are mainly achieved with the set of consistent quality solution designs and SDP's that will provide the desired business outcome. According to ITIL these can be achieved by adopting a structured and holistic approach to design activities. [Hunnebeck 2013] Design coordination activities can be divided into two categories, actions related to overall service design lifecycle and actions related to the support of individual products. It can be said that there should be two separate Design Coordination processes, the general one, monitoring and maintaining all Design Coordination actions and the actual Design process for individual service design. These actions shown above should be coordinated by the design coordination process. Activities related to overall service design lifecycle stage focus on coordinating the actual design activity across projects and changes. Activities related to individual design focus on guaranteeing that each individual design and SDP conforms with the defined practices and provides the desired business outcome [Hunnebeck 2013].

When the service is being designed following ISO/IEC 20000 principles, the following aspects should be decided and documented. Defining *responsibilities*, *activities*, *procedures* and *measures* related to the delivering of a new or a changed service with the *resources* and *technologies* needed to complete them. Following this new or changed

policies, contracts and agreements need to be prepared in conjunction of *updating relevant changes* in Service Catalogue and Service Level Management. According to ISO it's the responsibility of the service provider to ensure that the above shown issues are addressed and that the service requirements are fulfilled. All new services should be developed in accordance with the documented design procedures. The tool or function to address the above mentioned issues is called a Service Management Plan.

The service management plan should facilitate the coordination of all SMS initiatives to ensure the achievement of the service management objectives. The plan and policies should also be aligned. [Finnish Standard association 2014: 5]

This plan, or process, should enable the utilization of resources in a best possible way while preventing incompatible initiatives from being approved nor implement. The plan can consist of one single plan or a collection of multiple plans. All plans can be locally implemented but should be centrally managed and documented.

The plan should not be considered to be completed when the SMS is implemented. It should exist indefinitely by being amended to accommodate the changing business needs, customer requirements or priorities of the service provider. [Finnish Standard association 2014: 5]

Service Management Plan should follow the PDCA methodology, and should be designed so that it ensures that the agreed objectives and service requirements will be achieved. ISO sets clear standards on what should be included. When a service design project is initiated all steps should be clearly defined and documented. The document used for this design and development planning can be a single document, or a document library of several documents. These plans should be reviewed periodically and amended when appropriate [Finnish Standard association 2014]. Output from when these processes and plans are followed should be the SDP's, Service Design Package's, which would contain uniform documentation for each of the services. This should be enforced by managing quality criteria's between different states of service design and requiring that all service models and design conform to a strategic and other corporate requirements. This is especially important in regards to utility and warranty requirements. [Hunnebeck 2013] When design coordination is implemented and applied according to ITIL principles the following outputs should be expected;

A comprehensive and consistent set of service design and SDP's, a revised enterprise architecture, revised management systems, revised measurement and metrics methods, revised processes, updated service portfolio and updated change records. [Hunnebeck 2013]

Service Design Package, as defined in ITIL, is part of the Design Coordination unit of Service Design. This package is a set of documents defining all aspects of a service and

its requirements through each stage of its lifecycle. The SPD is produced for each new service, major change or service retirement. In addition to specifying the five aspects of design, *service solution itself; tools and technologies; architectures; measurement systems and metrics; processes*; explained earlier, the service design package should include; *service functional requirements; service level requirements; service and operational management requirements* [Orand 2013: 113]. Sources for these are explained in the later sections of the thesis. Service Design Package is also the main input to ITIL Lifecycles Service Transition as it includes all the information needed to manage the entire lifecycle of a service. [Rance 2013: 47] As such the service design package should be produced during the design stage for each new service or change to an existing service, be it further development or retirement. As defined by ITIL Service Design [Hunnebeck 2013: 303] the service design package should contain the items show in the table below with more detail given on items related to service design.

Table 7. Service Design Package [Hunnebeck 2013: 303-305]

Category	Sub Category	Description
Requirements	Business requirements	The initial agreed and documented business requirements.
	Service applicability	Definition how and where the service would be used.
	Service contacts	Business, customer and other stakeholder contacts.
Service Design	Service functional requirements	Utility of the service including planned outcomes and deliverables in a formally agreed SOR.
	Service level requirements	SLR representing the desired warranty of the service SLA's including service and quality targets.
	Service and operational management requirements	Requirements for managing the service including all supporting services and agreements, control, operation, monitoring, measuring and reporting.
	Service design and topology	<ul style="list-style-type: none"> • Service definition, model, packaging and service options. • All service components and infrastructure including version numbers and relationship. • All user, business, service, component, transition, support and operational documentation. • Processes, procedures, measurements, metrics and reports. • Supporting products, services agreements and suppliers.

Organizational readiness assessment		Detailed report and plan on the readiness of the company to provide such a service.
Service Lifecycle plan	Service programme	An overall programme or plan covering all stages of the lifecycle of the service.
	Service transition plan	Overall transition strategy, objectives, policy, risk assessment and plans.
	Service operational acceptance plan	Overall operational strategy, objectives, policy, risk assessment and plans.
	Service acceptance criteria	Development and use of service acceptance criteria for progression through each stage of the service lifecycle.

As seen from table 7, the requirements may vary between different kinds of services, but the points shown in the table should be considered, at the minimum level of service design. Similarly to the ITIL Service Design Package ISO/IEC 20000 Part 2 defines a standard set of outputs that should be created. These include all Service Level Agreement related documents as well as Service Level Management reviews. These are covered more in detail under Section 4.4 Service Level Management. Additionally the outputs include Service Catalogue and the processes for its management, which are covered in the next Section 4.3 Service Catalogue Management.

4.3 Service Catalogue Management

Service Catalogue and Service Catalogue Management are key concepts in ITIL based Service Design. Services within the service catalogue should reflect the service strategy and principles set there.

The service catalogue provides a source of consistent information regarding services that are available ... and is one of the most important concepts in the effective and efficient operation of services. [Orand 2013; 122]

The service catalogue should contain the details of all operational and planned services getting ready to be operational. Provide a single source of consistent information about the services being offered [Hunnebeck 2013]. It is important to make a clear distinction between service portfolio, which “*represents all active and inactive services in the various phases of the lifecycle*” and service catalogue which “*is a subset of the service portfolio and contains only the active and approved services*”. [Bon et al 2010: 193-194]

When creating the process for Service Catalogue Management it should be defined to contribute to the definition of services and service packages and develop and maintain them when appropriate. The process should also be linked to other processes and functions for maintenance of the Catalogue. This includes interfaces and dependencies to multiple other systems, including Service Portfolio Management, which is part of Service Strategy, and Configuration Management System, CMS, which is part of Service Transition [Hunnebeck 2013]. When following the Service catalogue standard set by ISO/IEC 20000 the service provider should define all services it provides in a catalogue. This should be done by using terms that are understandable to those without detailed technical understanding of the subject matter. The catalogue should be a collated presentation of all active service definitions [Finnish Standard association 2014: 33].

The value of service catalogue management can be summed up to four points. Firstly it should ensure common understanding of offered services between service provider and customer. Secondly service catalogue management should improve service provider's visibility to customer's outcomes by linking service asset to actual business outcomes. Thirdly it should improve effectiveness and efficiency of adjacent service management processes by leveraging the information included or adjacent to the service catalogue. Finally it should improve knowledge, alignment and focus on the business value of each service. [Hunnebeck 2013]

There are multiple ways to build a service catalogue, starting from a text file on the lower end and looking like a web shop on the higher end. Brady Orand shows two different approaches in his book "Foundations of ITIL Service management with ITIL 2011" [Orand 2013: 123-125] starting with the statement that "there is no right way to produce a service catalogue". In his "two-view service catalogue" approach the service offering is divided into two distinct parts; business services visible to the customer and technical services that support the business services. This divide is shown in Figure 19, below.

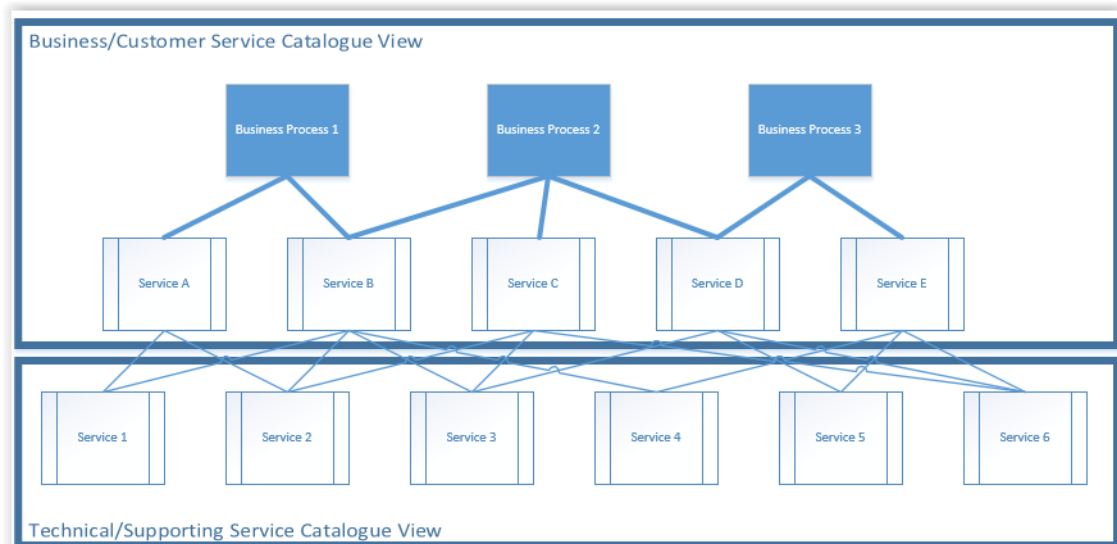


Figure 19. Two-view Service Catalogue [Orand 2013: 124]

As seen from the figure above the services are divided into two parts. Above are the business processes visible to the customer and the services which they are based on. This forms the Customer service catalogue view. Below that are the underpinning or supporting services that are not visible for the customer, but are necessary for the other services to work. This is the Technical/Supporting service catalogue view.

The service catalogue should be produced and maintained by an assigned responsible person. The service catalogue must be kept up to date so that all operational and transitioning services are recorded in to it. This should be done periodically to maintain the validity of the catalogue. There are six key activities defined in ITIL that should be considered in service catalogue management. Firstly a *service definition* should be agreed and documented for each service in the catalogue. Secondly there should be a *defined interface between service portfolio management and service catalogue management* to agree their respective contents. Thirdly the service catalogue should be produced and maintained in a way that it's *accurate and corresponds with the overall service portfolio*. Fourthly all services contained within the service catalogue should have their *dependencies defined* in regards to other services or business functions. Fifthly service catalogue should be *interfaced* with support teams and service asset and configuration management and dependencies between these and the services should be mapped and documented. Finally service catalogue management should be interfacing with business relations management and service level management to *ensure information is aligned and available for the business processes*. [Hunnebeck 2013: 103]

As seen earlier, the service catalogue management processes and scope are tied to multiple other processes and functions in the service management field. SLM or Service Level Management will be covered in section 4.4. The main sources of information to Service Catalogue are variable but the most relevant are listed below. The most important of those sources is *Service Strategy* providing current and future plans about the offering. Another important source is the information gathered during the *operational lifecycle* of the service, this includes customer feedback and SLR metrics that can be used to improve the current service or used as ideas for new services. Based on these and other inputs the following outputs, or updates to existing outputs should be produced: *Service Definition*, followed by a corresponding updates to *Service Portfolio* and *Service Catalogue*, which should contain the up-to-date status of all services and their dependencies [Hunnebeck 2013: 104]. Each service should be defined in a scope that is relevant to the customers' business activities. According to the standard the service catalogue should include at least the information show in the table below for all the services.

Table 8. Information Included to Service Catalogue [Finnish Standard association 2014: 33]

Type of Data	Explanation
Name and description of the service	
Service targets	E.g. time to fulfil a service request, time to set up a service for a new user, time to reinstate a service after a major failure.
Contact points	
Service hours	Support hours and exceptions.
Security arrangements	
Current services	
Dependencies between the services and service components	E.g. a service supporting a user's laptop includes support of applications, support for internet access and support of the hardware, each of which can be provided by different suppliers or internal groups.

The service catalogue should be designed in such a fashion that the information is easy to maintain and logically and efficiently grouped. Dependencies between services and supporting services, or underpinning services, should also be clearly shown. There should be clear procedures defined on how to make the service catalogue readily available to those who would need to modify it. The catalogue must be able to be kept current and up-to-date without any specialized knowledge. [Finnish Standard association 2014: 35]. All changes to the service catalogue should be initiated and managed through the

change management process to ensure that changes are not applied without the overall effect being known.

4.4 Service Level Management

ITIL defines Service Level Management, SLM, process as a conduit between service provider and the business to represent the operational capabilities of the service provider to the business. Or as defined officially in ITIL documentation

Ensure that all current and planned ... services are delivered to agreed achievable targets [Hunnebeck 2013: 106].

This is achieved by a constant cycle to define, document, agree, monitor, measure, report and review the level of service provider with the representative of the business [Orand 2013: 127].

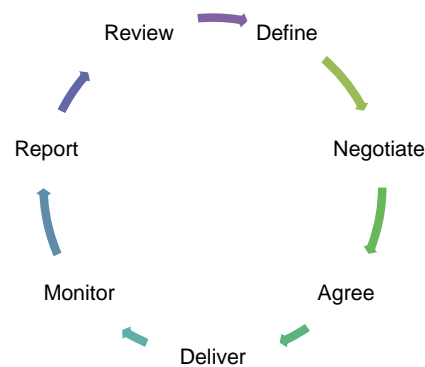


Figure 20. ITIL Service Level Management Cycle [Orand 2013: 127].

As shown in Figure 20, the idea behind the SLM process is a continuous loop. When requirements change or new services are created SLM defines the requirements of service levels which are then negotiated with customer to obtain service level agreements or SLA's. SLM should provide information on regular intervals to both customer and internal stakeholders on how SLM is progressing and how SLM goals are being met. The six objectives as defined in ITIL include clear documentation and monitoring of all agreed services and assurance that both service provider and customer have clear and unambiguous expectation of the level of service being delivered [Hunnebeck 2013: 106]. Service Strategy should provide the guiding framework for Service Level Management in the form of higher level targets that both services and service levels should meet. Strategy's purpose is to identify customer's needs, both utility and warranty, and ensure that the service provider is able to meet those needs. The Purpose of SLM in this instance is to provide a framework and standards, based on which it is possible to negotiate Service

Level Agreements, warranty terms, with the customer. Additionally ensuring that all related processes and documents are appropriate for the agreed Service Level Targets. [Cannon 2013: 257] Key concepts in ITIL Service Level Management are plentiful and five of them are briefly explained in the table below to provide more in-depth understanding to the intricacies of SLM.

Table 9. Service Level Management Key Concepts [Orand 2013: 130].

1.	Service Level Agreements (SLA's)	Written agreement between Service provider and customer to define key service targets and responsibilities of both parties.
2.	Service Level Requirements (SLR's)	Customer requirement specification for an aspect of the service.
3.	Service level Target (SLT)	Commitment for a specific level of service derived from SLR.
4.	Operational Level Agreements (OLA's)	An agreement between internal parties (inside the service provider company) to support services.
5.	Underpinning Contracts (UC's)	OLA between service provider and an external third party.

As seen from Table 9, when defining the activities within the Service Level Management Process the following key activities should be addressed. First determining, negotiating, documenting and agreeing requirements for new or changed SLR's, and managing and reviewing them through the service lifecycle into SLA's for operational services. Secondly, monitoring and measuring that service performance achieves the levels defined in the SLA's. Thirdly producing serviced reports based on findings from item number two. Fourthly conducting reviews and identifying improvement opportunities in regards to customer satisfaction and contracts. Finally providing appropriate management information to aid performance management and demonstrating service achievement. In addition to the key points listed the following supporting activities should also be implemented. Designing and maintaining SLA frameworks inside the up to date and maintained SLM process and providing both standardised documentation and assistance to Design Coordination and Service Catalogue Management [Hunnebeck 2013: 109]. According to ISO/IEC 20000, SLA's should be managed with the Service Level Management, SLM, process.

The SLM process should define, agree, document, monitor, report and review the services delivered. In order to ensure that delivery of the services is achievable, managed and in alignment with customer requirements and business needs. [Finnish Standard association 2014: 32]

The SLM process should encourage both service provider and customer to develop a proactive attitude towards service improvement and foster joint responsibility on the service in question. Customer satisfaction can be identified as one of the most important parts of SLM, but it has to be considered as a subjective measure. The service targets set within the SLA are more objective measures for the service performance. [Finnish Standard association 2014: 35]

SLM process should work closely with the business relationship and supplier management processes to manage both customer satisfaction and to achieve service targets. [Finnish Standard association 2014: 36]

The SLM process interfaces with business relationship management and supplier management to ensure that “*delivered services and service targets are aligned with business needs and customer requirements*”. [Finnish Standard association 2014: 32]

The scope of Service Level Management should enable it to ensure that all services are designed and delivered to meet their targets. This should include both services currently being delivered and future services potential requirements.

SLM needs to manage the expectation and perception of the business, customers and users and ensure that the quality (warranty) of service delivered by the service provider is matched to those expectations and needs [Hunnebeck 2013: 106].

SLM also provides value to the business in the form of “*ongoing review of service achievements to ensure that the required and cost justifiable service quality is maintained and gradually improved*” [Bon et al 2010: 197] To achieve this SLM should create and maintain SLA’s for all current services and manage the level of service provided based on these SLA’s.

When developing the service level requirements, SLR’s, which are the basis for SLA’s, the higher level goals usually come from the strategic level, in ITIL from Service Strategy’s Portfolio Management and Business Relationship Management. The SLM process continues to refine and determining additional SLR’s to the detailed, measurable level needed for designing of the service. When defining the Actual Service Level agreements this information from SLR’s is required. The SLA should be developed alongside the service development process and should be close to finalization when the service is introduced into live use. When the SLA is developed the SLM process must work in accordance with it to ensuring that targets are achievable and that all involved parties have unambiguous expectations of what is required of them in regards to the SLA. SLA’s are an iterative document and might change during the lifecycle of the service, but only

based on mutual agreement following agreed procedures between provider and customer. When the service and the SLA related to it are in use, the performance of the service against its set service level targets should be monitored. Any discrepancies should be addressed and rectified according to the agreed processes. [Hunnebeck 2013: 112] This also involves the Service Operation function of the ITIL lifecycle where response to issues should follow the agreed steps in SLM process and SLA, OLA and UC documents [Steinberg 2013: 53].

When both SLM process and SLA guidelines have been created there are many issues that will trigger an action from the SLM process. The main triggers would be a change in the service specification requiring a change in the active contracts and service level and a breach of agreed service levels on an active service. When SLM process is running it is dependent on multiple sources of information, in this context they are Service Strategy, Service Portfolio and Service Catalogue. Multiple other processes and functions are also dependent on the SLM process. These are for example service performance reports on how well the Targets in agreed SLA's are being met and improvement suggestions based on this information. Another important output are the standardised SLR, SLA, OLA and UC standard templates and frameworks used in Service Design and Development. With these and other outputs the SLM process provides accurate information about services and their interfaces and dependencies to Service Catalogue Management including identifying customers that need to be engaged by SLM to communicate regarding the service provided. Regarding design coordination SLM plays a critical role in this through the development of agreed SLR's and the assigned service targets the service must be designed to achieve. [Hunnebeck 2013] The process should also provide the supplier management process with information related to new service requirements that might result into changes in the supplier contacts. In addition SLM should provide other management information to ensure that service reviews can be conducted. Finally the SLM process should:

Negotiate, agree and document requirements for new or changed services through service level requirements documents, and should then manage and review them through the service lifecycle, creating signed SLAs for operational services [Finnish Standard association 2014: 32].

As shown earlier, according to ISO/IEC 20000 each service should be listed in a catalogue of services. In addition to the issues addressed earlier for each service which is being delivered to customer, one or more SLA's or Service Level Agreements should be agreed with the customer. In the SLA the, service provider should take into account

agreed service targets, workload characteristics and exceptions. The agreements should be reviewed with the customer upon pre-agreed intervals. Changes caused by these meetings or other reasons should be controlled by the change management processes of the service provider. The service catalogue should include information about SLA's to make sure they are aligned with the general offering. Service provider should also monitor trends and performance of the services against agreed service targets, both internal and external, at planned intervals. SLA's may also require additional contracts between the service provider and external suppliers or other internal groups. These supporting contracts with external entities are known as underpinning contracts and internal contracts are known as operational level agreements or OLA's. Both of these possible constraints should be taken into account before agreeing on a final SLA with the customer. [Finnish Standard association 2014: 32] SLA is a document that describes the service and service target specifying responsibilities for both service provider and the customer. The SLA should cover all the necessary components to complete the delivery customer requirements, business needs and the capabilities of the service provider. They should be the defining characteristics of the SLA document. The targets set in the SLA should be defined from the customer's perspective. Information in the SLA should follow at least the minimum requirements shown in the Table 10 below. Some of the information should also be included in the service catalogue document and can be referred from in the SLA. [Finnish Standard association 2014: 33]

Table 10. Minimum Service Level Agreement Detail According to ISO/IEC 20000 [Finnish Standard association 2014: 33]

Information		Additional explanation
1.	Brief service description	
2.	Validity period and/or SLA change control mechanism	
3.	Change approval details	
4.	Brief description of communications	Including reporting, review frequency and schedule.
5.	Service hours	E.g. 09:00 h to 17:00 h, date exceptions, e.g. weekends, public holidays, critical business periods and out-of-hours coverage.
6.	Scheduled and agreed interruptions to services	Including notice to be given and number per period.
7.	Customer responsibilities	E.g. correct use of systems, adherence to the information security policy.
8.	Service provider liability and obligations	E.g. security.

9.	Impact and priority guidelines	
10.	Escalation and notification process	
11.	Complaints procedure	
12.	Service targets	
13.	Upper and lower workload limits	E.g. the ability of the service to support the agreed number of users/volume of work, system throughput.
14.	High level financial management details	E.g. charge codes.
15.	Actions to be taken in the event of a service interruption	Including both incidents and disasters, are normally referenced from the SLA.
16.	Glossary of terms	
17.	Supporting and related services	
18.	Any exceptions to the terms given in the SLA	

The above eighteen issues, shown in Table 10, are defined by ISO/IEC 20000 as integral parts for any SLA. Not all of the above mentioned issues need to be included in the same document, but could also, for example, be provided as additional standard document, which are common for all services. This is only viable if the additional documents are under some sort of change management processes that maintains and keeps them up to date. This could be for example the SLM process. [Finnish Standard association 2014: 34]

4.5 Conceptual Framework

As shown in the preceding section, the best practice of service design is greatly concentrated around the ITIL framework and ISO standards. The fields identified as needing to be improved are knowledge about service design in the company – *Service Strategy*, common service design processes, called *Design Coordination* by ITIL, *Service Catalogue Management* to make these changes visible and *Service Level Management* to enforce and monitor the performance of the services once they have been defined and specified in a unified format.

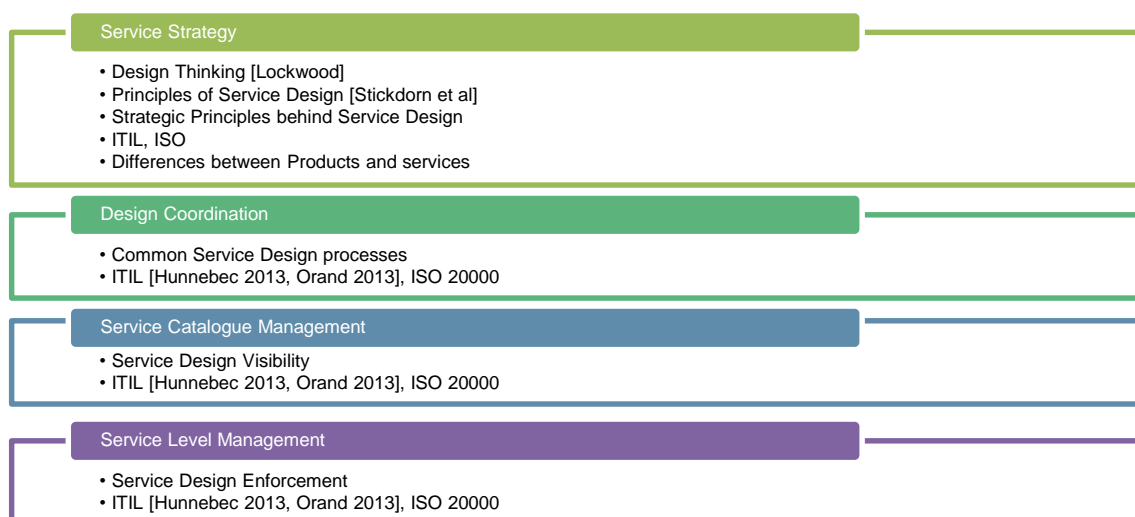


Figure 21. Conceptual Framework

The main function of Service Designs is to provide services that provide both value to the customer and benefit, usually financial, to the service provider. In ITIL this value is divided into two separate but connected components; utility and warranty. Utility defines if the service is suitable for the intended purpose and warranty defines if the service is suitable for use. [Orand: 2013] Service design being a holistic viewpoint with user-centred, co-creative approach based on evidencing and sequencing it can be seen as an idea open for co-operation with different disciplines. [Stickdom et al 2011] As noted above, based on ITIL, service design is part of a larger complement of ITIL framework, which can be implemented in a suitable level to the case company and expanded later if deemed appropriate [Hunnebeck 2013]. From a management point of view Service Design can be seen as an extension of company's strategic vision, especially on Service Strategy, being the implementing arm of it. Companies should have a clear design strategy and policy for services and it should be aligned with business strategy to bring design thinking to support it. [Lockwood 2010] Traditionally services are treated much like a product and this can have problematic side-effects, it has been said that products usually operate in silos and specialize in only one thing. This should not be the case with services as it will result in a broken user experience and diminished value for the customer, and thus also for the provider. [Polaine et al 2013]

Design coordination based on ITIL should cover and govern all processes related to service design, providing a common framework and reference on how the services should be run and designed. Assisting and supporting each project through all the service design activities and processes. This is done by creating, maintaining, reviewing, measuring and improving the performance of all service design activities and processes. This is

greatly supported by ensuring that all services and service models conform to strategic, architectural and other corporate requirements. There are two different kind of activities in design coordination, general ones for the overall management of service design and specific for each service being designed. These are all incorporated in the service specific output, SDP's, Service Design packages, which should provide all the necessary information for the lifetime management of a certain service. In ISO/IEC 20000 it is said that standard documentation and processes should be created, maintained and enforced for all design activities. In ISO standard it's called Service Management System in ITIL it's known as Design Coordination. With both of these approaches a PDCA cycle should be observed.

Service Catalogue Management in ITIL is the process where all services are listed, and information about them is maintained. It is said to be "*one of the most important concepts in the effective and efficient operation of services*" [Orand 2013: 122]. Service catalogue management concentrates on defining and documenting service definitions and descriptions for all services and interfacing between service design and service strategy to receive information and provide input to the service portfolio management. The primary output from service catalogue management is the service catalogue, which should be the single source of consistent information about the service provider's service offering. Service catalogue should be built in a way that's clear to understand and easy to access for all stakeholders. What information should be made available in the service catalogue is clearly defined within ISO/IEC 20000 and explained earlier in best practice.

Service Level Management as defined by ITIL is a process where the service levels agreed with the customers are monitored and enforced and the goal is to make sure that all services are delivered to the agreed targets. This is maintained and enforced by internal and external requirements, contracts and agreements, SLA's, SLR's, SLT's, OLA's and UC's. It is the responsibility of SLM to keep them in balance from the design to the operation of the service. These defined service levels are a compromise between customer value, service design limitations, reasonable cost, and agreed upon levels between customer and provider.

Combining these four topics, *Service Strategy, Design Coordination, Service Catalogue Management and Service Level Management* will provide any company with solid grounding on where to expand their Service Design and Management capabilities further.

5 Building Initial Proposal

This section merges the findings from the Current State Analysis with the Best Practice compiled on the Conceptual Framework and additional ideas and suggestions gathered with Data 2 into the Initial Proposal.

This Section starts with *findings from Data 2* being explained. This is followed by the *reasoning behind the Initial Proposal*. The third part is on the *Initial Proposal*. The Proposal and the reasoning behind it are presented in four distinctive but intertwined parts. These parts are: *Service Strategy* including general knowledge about Service Design; *Design Coordination* including guidelines for service design processes and practices; *Service Catalogue Management* concentrating on how the case company's service offering should be presented and maintained; and *Service Level Management* suggesting how the service levels and management could be handled in the case company. Following the completion of the Initial proposal, it is *piloted* in part four, with a service to see how well the theoretical models work in practice. This section ends with the *feedback* gathered from the Piloting, which starts Data 3.

5.1 Findings From Data 2

Data 2 is a summary of three separate data sources. Its basis is on the initial interviews carried out for the CSA. Improvement suggestions and ideas received during those interviews are presented here followed by data received from a workshop arranged by the Management team of the Case Company's Service function. The third leg for this tripod of data is a benchmarking session arranged with a mid-sized service provider company. One of the main issues raised during the Interviews was the lack of defined processes for the Service Design and Development. No actual new service design has been done in the company yet but the following process has been suggested. The flow of the suggested process would go as shown in the figure below.

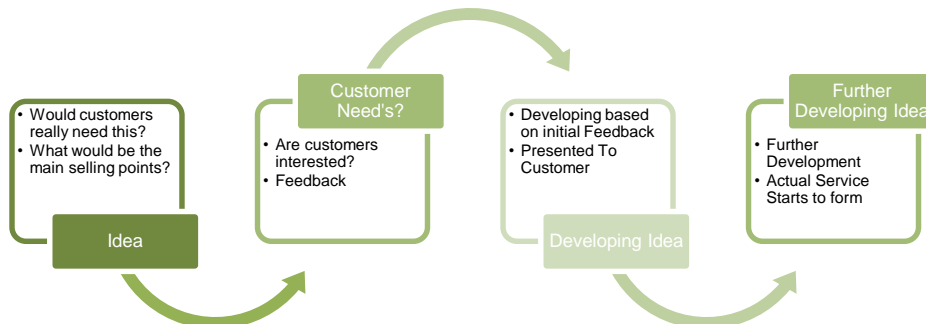


Figure 22. Iterative Service Development [Data2, Interview 1, 6].

As shown in Figure 22, the process is incremental starting with the initial concept of an idea that would be introduced to a specific customer or a group of customers to see how they react to it initially. Based on the feedback the idea is then developed further and presented again or scrapped if the customer reaction is not positive enough. The driving force behind the process is a perceived customer need. If no need can be identified with the targeted customers then the service idea is not worth pursuing. Provided that the customer response continues to stay positive the iterative process also continues until a viable service has been created. This approach is the opposite of the traditional product development approach where the provider builds a completely ready product based on a perceived customer need, before releasing it to customer comments. As phrased by one of the interviewees:

I would start service design with customer need and move onward from there, trying to move the initial idea towards the customer's vision of most added value. [Data2, Interview 1]

There is always the risk that the customer does not actually know what they want. With this suggested approach there is the possibility to fail fast, with minimal risk, if no common ground can be found. A similar type of approach has also been recently tried in the company's product design, successfully. [Data2, Interview 1,6] Another open issue is the cut-off point. When a certain service is under development, what is the point when the service can be considered to be ready? Is it when the solution is coded and ready according to development? Who is in charge of the transition from development to service deployment? [Data2, Interviews 1,2,3] A third issue is how to handle intangible services like consultations and trainings [Data2, Interviews 1,4]. In the current model, each Service Manager is responsible for their own services, which are identified as services. There is no designated person for transitions. Currently it would be the owner of the whole Service Management framework, i.e. one of the Service Managers. The lack of defined processes after Service Design has been completed is another major issue for further study, but will not be covered in this thesis. Another issue, which was noted during the workshop, was how to divide responsibility between "Service Manager" and "Service Owner". And the suggested approach can be seen below. [Data 2, Workshop]

Service Manager (SM) Responsibilities	Service Owner (SO) Responsibilities
<ul style="list-style-type: none"> • Pricing model & product codes (*) • PMT approval (needs business case) • Product Manager and Service Owner defined • Contract/Agreement template (*) • Marketing material (*) 	<ul style="list-style-type: none"> • Product description (*) • Value Proposition Canvas • Service Definition, including: <ul style="list-style-type: none"> • Blueprint/instruction/checklist • Manual/user guide (*) • Service Level agreed internally (with SM) • Resourcing / Production plan • Personnel training arrangement

Figure 23. Service Responsibilities [Data 2, Workshop]

As suggested in Figure 23 above the responsibilities should be clearly defined. Another issue that was raised during the interviews was the minimum required information in the Service Catalogue, in regards to customer facing services. In this, the points that were brought up were *Service Name*, *Service Owner*, *Product Manager* and if the Service is included in *Service Revenue* calculations. In addition it was suggested that the Service Design Package should include the following documentation in addition to the standard ITIL/ISO scopes: *Pricing Model* and *Product code*, *Marketing Material*, *Contract/Agreement Template*. [Data 2, Document 23]

From the benchmarking company's perspective the approach is quite similar to the ideas suggested by the best practice review. They are following ITIL enhanced by SIAM (Service Integration and Management), which is a framework built around ITIL but from the perspective of the customer. In their case the main driver has been an outsourcing process, which requires that everything related to services and their processes is properly documented. From a top down approach their portfolio management processes are not yet on the desired level, as the only parts of the portfolio are the new development items list and a service catalogue, which are not directly linked. This is an issue they saw as needing improvement in their organization to get a comprehensive view of the current and future offering. [Data2, Benchmark]

The process from idea to development follows a clear process, starting from Demand Management where the initial idea is prepared to a presentable form, using standard documentation. This is followed by processing it in the Strategy and Architecture unit where the general guidelines and framework for the project is set. At this time the decision to continue or drop the idea is also made. If the development is decided to be taken further, a project development team is formed by bringing together suitable experts from around the company. The roles of Project Manager and Service Owner are assigned. Actual development is usually done by subcontractors. In regards to documentation related to service design, they have set certain milestones for their process flows when a certain set of documents needs to be ready. To a certain extent, these can be updated and amended later if changes occur. Initially these documents should be prepared during the strategic phase of service planning. [Data2, Benchmark]

We try to minimize the amount of documents, in an agile sense, because it can often kill the whole process if there's too much bureaucracy [Data2, Benchmark]

In this documentation, which is stored in an ESM system's CMDB. They include general information about the service and it links to documentation stored in other systems like

contract management for SLAs and UCs. The Service Level Management responsibility is divided between Service Managers who have the overall responsibility of their Service and Service management Office that has the responsibility to monitor the overall performance of all services and provide assistance to Service managers if needed. Regarding service level monitoring they also noted that they should be tied to KPIs so that they can more easily be shown to have business relevance. The benchmarking company is about a year ahead of the case company in their implementation of a centralised service design and management. [Data2, Benchmark]

5.2 Reasoning Behind Initial Proposal

As was clearly visible during the current state analysis the company's service design initiatives are, at this time, in a low maturity level. The knowledge about service design is also limited. The first step would then be to educate the involved personnel in the field of service design. This applies to both standards and frameworks like ITIL and ISO and general service design thinking as well. Stakeholders cannot be expected to make informed decisions if they do not possess the necessary background information in the fields in question. This infusion of knowledge should start from the strategic level in the case company. Knowing the difference between products and services and how those differences should be spread onward from the strategy and addressed, throughout the company. If there is no higher level support for this kind of development, changing the way things are done and perceived is close to impossible.

Service Strategy

As seen in the Current State Analysis the company is undergoing a strategic renewal and update process. While all details of the new strategy are not clear yet, it can be seen that the goals are to be more service oriented and service minded. This should provide the strategic support for the changes proposed in this section, but as strategy decisions are outside the sphere of influence this thesis can affect, this is the most we can hope for from the strategy perspective. The case company has a relatively new process for portfolio management. This process as explained in the CSA has so far been only used for product development projects and is seen internally as quite ready for service development also. As product and services development differ on some parts it is not completely ready for service development, but can be adjusted to meet those requirements with some minor modifications. As said earlier this is outside the scope of the matters the thesis can directly affect and as such can be considered as suggestions to improve and no ready-made processes are suggested for portfolio management.

Design Coordination

When talking about designing new services, or improving the old, the case company has no defined processes. Some basic principles, like the portfolio funnel explained and adjusted earlier in this section can be, with small modifications co-opted to support Service Design and Design Coordination. During the CSA it was seen that even though no processes have been defined, some ideas have been thrown around and considered as to how the process for designing new services should be coordinated and approached.

Service Catalogue Management

As seen in the Current State Analysis, the Service Catalogue management, as well as Portfolio management, which was addressed earlier in this section, are not in an optimal state in the case company. The Service Catalogue is one half of the Current Offering part of the case company's Portfolio and based on the strategic goal of the company, it will be the faster growing part. As stated in best practice the service catalogue is the primary source of consistent information on all operational services. The main function of the service catalogue management process is to maintain and keep the Service Catalogue up to date and aligned with the portfolio.

Service Level Management

Currently the case company does not offer any Service Level Agreements to customers, but in preparation for it, internal Service Level Requirements and Targets should be set. The case company should also conduct a full survey of all services and products that are provided by suppliers and chart the currently agreed levels of services and dependencies for each of them to make sure no requirements are set tighter than what is specified with suppliers in underpinning contracts.

Summary

As stated above four problem areas were identified based on the Current State Analysis that were investigated and addressed in the Conceptual Framework.

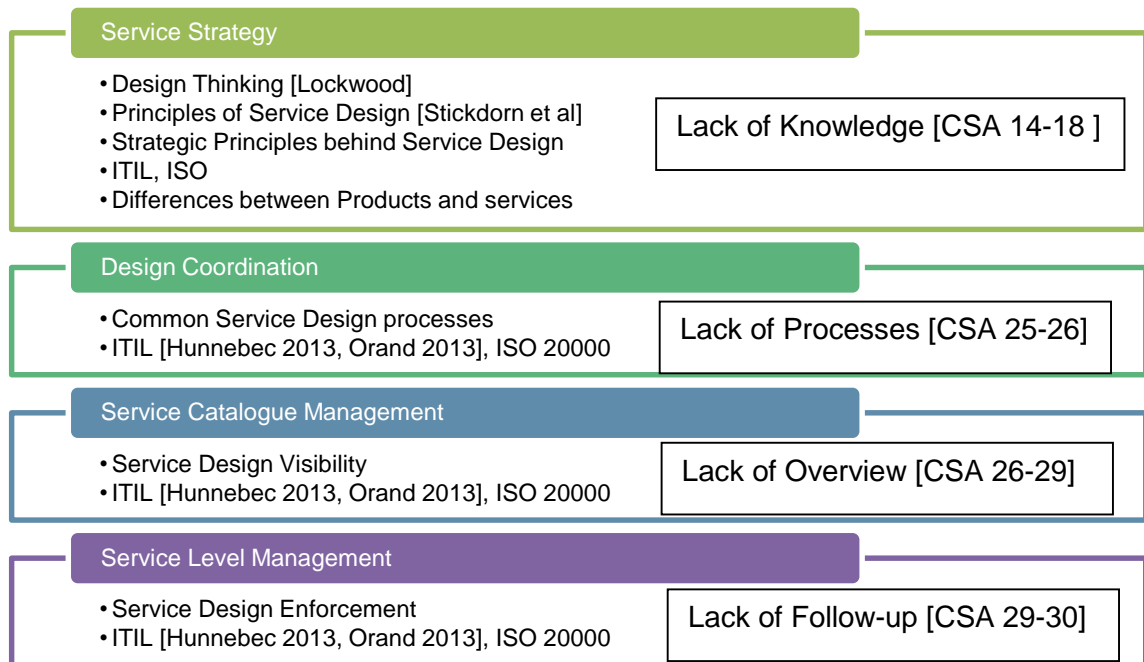


Figure 24. Development Areas Identified.

Service Strategy addresses the lack of knowledge about Service Design and Management in the case company. *Design Coordination* addresses the lack of processes in the field of Service Design. *Service Catalogue Management* helps to showcase and clarify the current status of the service offering in the case company, and highlights the successes from *Design Coordination*. *Service Level Management* addresses the lack of follow-up in service related activities in the case company by providing ways and means to monitor and report on the Service Levels and performance once they have been agreed on.

5.3 Initial Proposal

As explained above, in the reasoning, the proposal is divided into four categories. In addition to this it is divided to two major improvement types, processes and documentation.

5.3.1 Initial Proposal Processes

Service Strategy

Firstly in the process it should be clearly defined who should take part in the Portfolio Management Team meetings, both as permanent members and as experts of a certain field when a need arises. This should include, in addition to the current ones listed in CSA, the Service Managers and Chief Service Owners, if such a role is created in the

case company, to mirror the same structure used on the Products side. It should be clearly defined whether services are being discussed or, in fact products. The ambiguity serves no one, and is bound to cause confusion when talking about different requirements. Secondly the process on how new ideas are added or submitted to the portfolio funnel should be slightly updated. As seen in Figure 25 below, the process has changed from the existing, but not clearly documented, Funnel process. Changes can be seen in green and they include adding the initial distinction between Services and Products and requiring tighter interaction with the Service Portfolio documentation. In addition, the Service Design Package creation should be started as early in this process as possible.

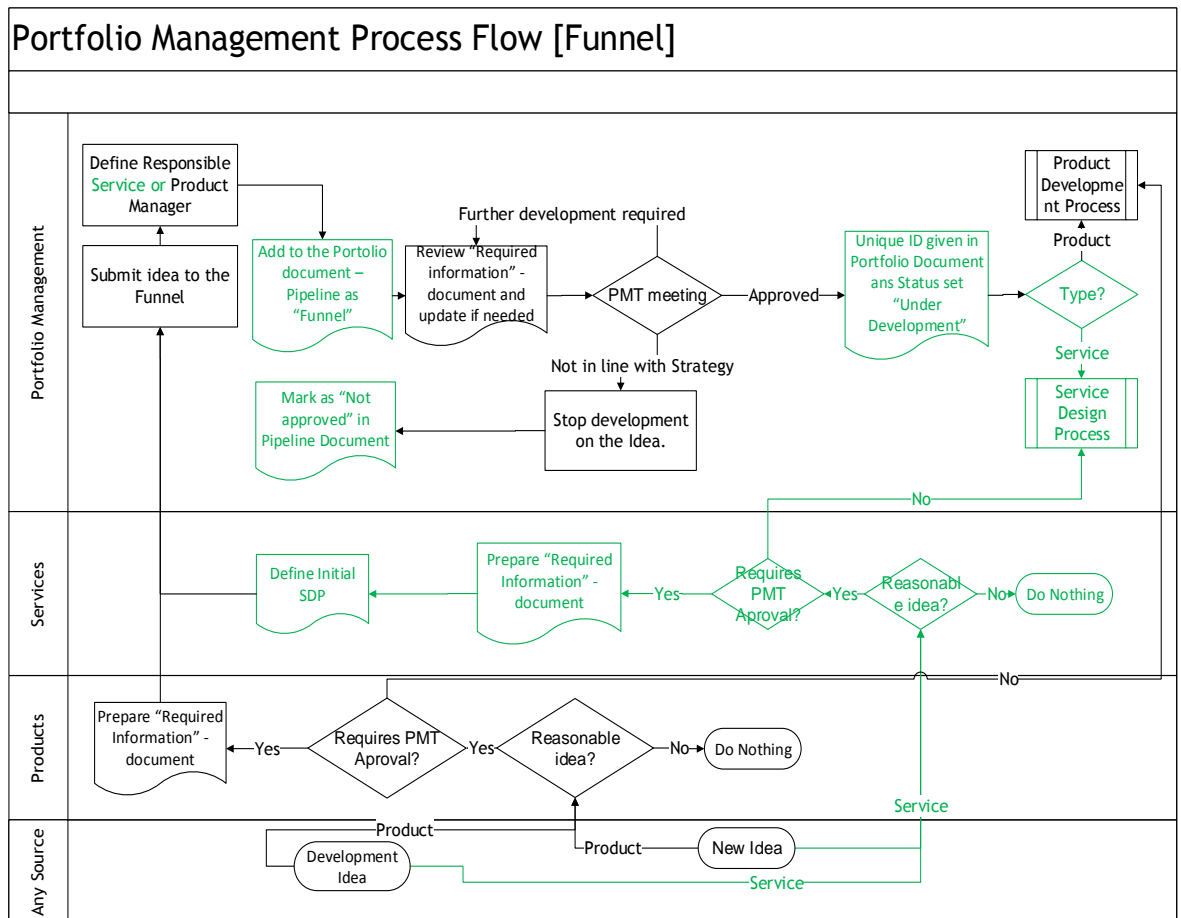


Figure 25. Portfolio Management Process Flow [Funnel] – [Old = Black; New=Green]

When possible, the distinction if the new idea is a service or a product should already be known, but could also be adjusted later on during the portfolio funnel process. This becomes easier once the knowledge of the differences between products and services is more widely known inside the case company. As such the following changes should be made to the “required information” –form for funnel submissions. In the summary page there should be a box to tick if the new or changed idea is a product or a service. The document should not refer directly to products or services, but concentrate on the idea.

If it's not clear if the final outcome is a product or a service this could be left blank. At this point, if the idea is identified as a service, the following points should also be considered under risks: What would be the initial requirements for service levels and what if any of the current services are related to the new service or what existing services this new service will be dependent on? How would these new required service levels affect existing services and their service levels, and what would be the needed investment to maintain the existing service's levels when a new service is introduced? In addition to the "required information" –document if the idea is identified the creation of a Service Design Package should be started, which will be explained in more detail later in the proposal, when talking about Design Coordination. This whole process should also be made more transparent to the rest of the company to lower the threshold to solicit and submit new ideas from employees as well as directly from customers to some extent.

Design Coordination

Firstly, there should be clear and distinct processes for how a new idea is taken from an idea to service. This is covered in the section about *Strategy Process* with the modifications suggested to the existing Portfolio Funnel process. Additionally the Funnel -> Roadmap -> Release plan approach framework used in Product development currently, explained in the Current State Analysis and shown below, can be used as such for the development of software based services.



Figure 26. Service Software Development Cycle

The only major difference when using this approach for Software as a Service should be the timing and added communication with the potential customers. Services are developed and deployed in a much faster pace than products, and that should be taken into account. When developing any service the following process should be taken into use.

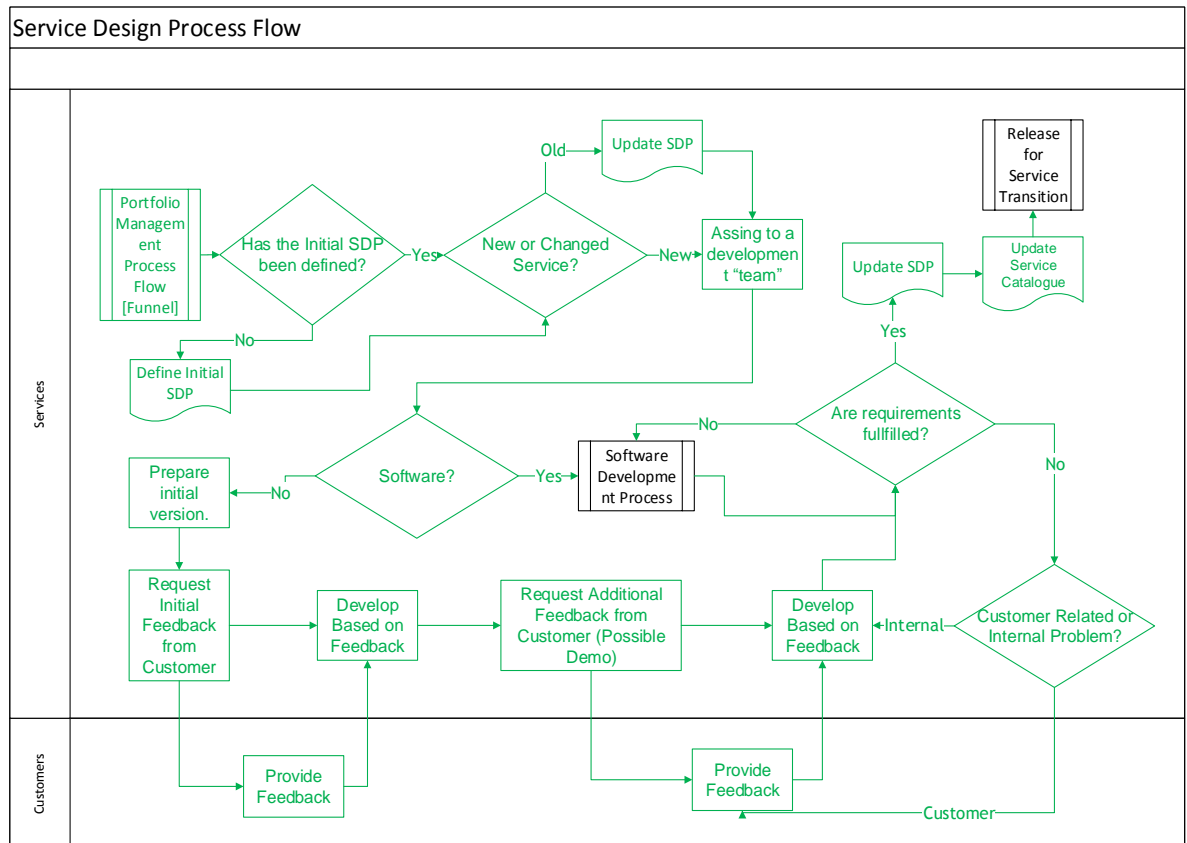


Figure 27. Service Design Process Flow – [Old = Black; New=Green]

As shown above, there is a distinctive division between services developed as a software versus other type of services. Secondly it should be clearly defined, who is in charge and responsible for maintaining and implementing these processes. The person in charge of Design Coordination should ensure that the decisions made in the strategy are reflected in the Service Design processes and coordinate that all service design activities and resources ensure a consistent design. This can be most clearly seen from the produced service design packages, SDPs, which should be the main output from Design Coordination. The case company should define processes to design, monitor and maintain the service development. The highest level process should be the Service Management Process or Design Coordination Process as defined by ITIL.

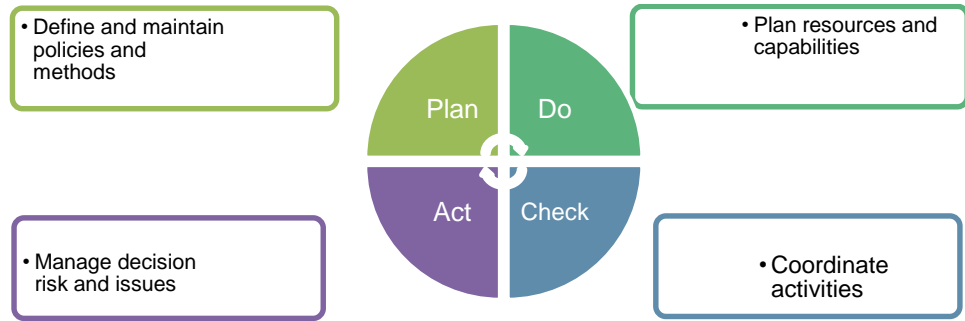


Figure 28. Design Coordination Process

This process is the overlying process which monitors that individual service design processes follow the commonly approved guidelines and processes in a traditional PDCA cycle. Each individual Service Design should follow the Service Design Process that gets its input from the Portfolio Management Process and provides a ready service with a complete Service Design Package included. As seen in the Service Design Process Flow in Figure 27, SDP is an integral part of the Service Design process and must be kept up to date during the course of service development, starting from the Portfolio Management process up to individual Service Design Process until Service Retirement. The composition of the Service Design Package is explained in the Documentation part of the Initial Proposal.

Service Catalogue Management

In the case company, the Service Catalogue Management process actions should be tied to the general level Design Coordination Process as most changes to Service Catalogue originate from either minor changes made during service development or major changes made through Portfolio Management, both affecting the SDP's that are monitored by the Design Coordination process.



Figure 29. Service Catalogue Management Process.

When SDPs are correctly prepared and maintained, and Design Coordination processes followed the Service Catalogue will maintain itself almost automatically by being updated every time a change is made to any SDP.

Service Level Management

As the Service Level Management process is also specified as circular, though a bit more complex process than the Design Coordination Process suggested earlier, its functions could be also included in the same overall Service Management Process. Defining the service specific Service Levels should be a separate sub-process run in conjunction with the Service Design Process, which would be triggered by any changes made to the service('s) its related to. The Service Level Management Process cycle that would be built alongside the Design Coordination process and Service Catalogue Management Process to create the higher level Service management Process would in general terms look like the cycle shown below.



Figure 30. SLM Process for Managing Service Levels.

The cycle shown in Figure 30 is a circle process than runs indefinitely to define, monitor and improve the SLR's and other SLM components continuously.

Processes Summary

As seen earlier each of the supporting processes are continuous cycles with some outputs and inputs to other processes. With these processes requirements are defined, agreed, monitored and reported on a continuous agreed upon time interval. Based on the gathered information processes and definitions should be constantly improved and developed to provide added value for the customer and efficiency improvements to service provider, the case company. There are in total five new suggested processes and one updated process. These processes and their interconnectivity is shown below.

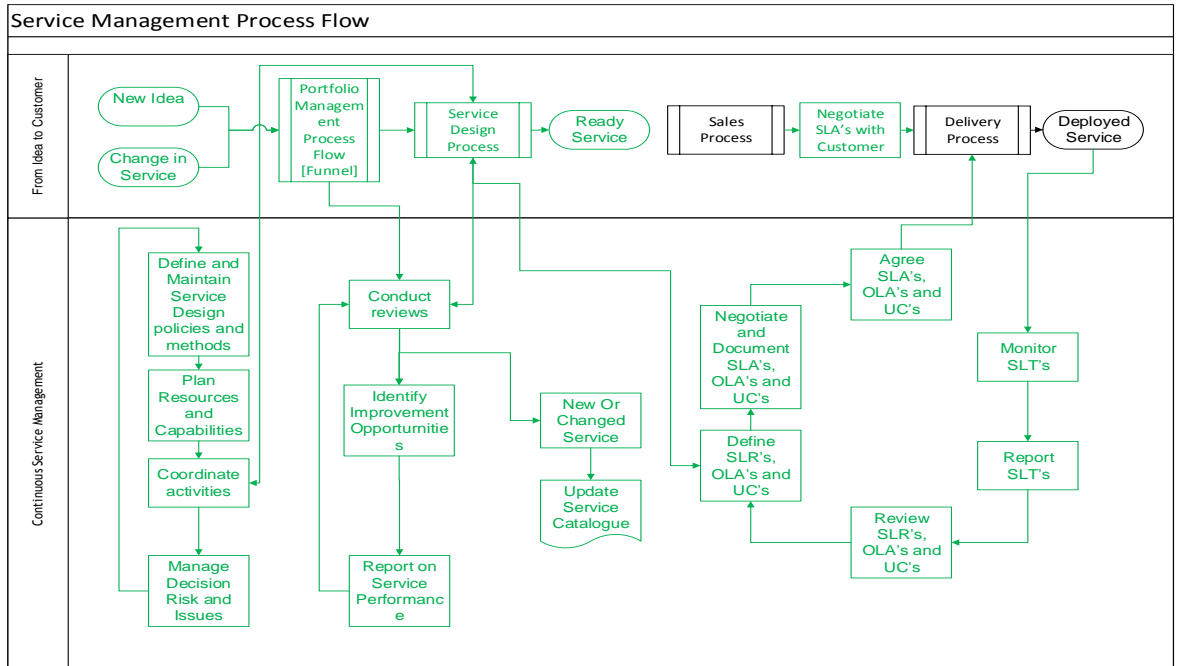


Figure 31. Service Management and Adjacent Processes – [Old = Black; New=Green]

Four of the above shown processes are circular in nature, and should be run on a continuous basis. They are also triggered by changes in other processes such as the newly suggested Service Design Process, which triggers changes in all four.

5.3.2 Initial Proposal Documentation

Service Strategy

The case company should develop a clear and consistent Service Portfolio Management system. Currently the only document containing most of the information that should be included in a Service Portfolio is scattered between multiple locations, upcoming services shown in required information documents and PMT meeting memorandums. Current and retired services, and products, are scattered to two distinct places, the “Product Master” and the first draft of the Service Catalogue. The product master currently containing the sales related codes for all the products and most of the services could be the basis for a future portfolio document for both products and services. The refined document should be divided into three major sections, as shown in Figure 32.



Figure 32. Portfolio Offering

As seen in the Figure 32 above, the first part of the new document is the pipeline, which would contain information about the services, and products currently in the company's portfolio funnel process. Each line item would be linked to a required information document for both services and products, which was explained earlier and additionally include a link to Service Design Package draft version, which was created during the initial Portfolio Funnel Process. The second part would be the current offering. It should include each of the offering items, be it a product or a service, as a simple line item with its unique ID-number that is used for sales purposes. It should also include links to other general information, for products to the Product Definitions and for services to the Service Catalogue, which will be addressed later in this proposal. The third and final part would be the retired services, or products, that are no longer being sold but information on them should still be stored for possible future development or other uses. These line items should have links to the same items as the current offering, but they should be stored on a separate location to avoid confusion between different services, or products, and should be clearly marked as retired.

The three faceted approach suggested above for portfolio management follows the ITIL principles for Service Portfolio Management and expands based on it, to include the current way the case company is offering both its Products and Services. With this approach the benefits of the Service Portfolio approach can be taken into use without adversely changing the current way of working in regards to Products in the case company. This approach also gives a better overview of the whole offering of the company, compared to the current approach where information is scattered to multiple locations in multiple formats. Due to this better overview the Portfolio Management team for example can see all ideas in the pipeline (funnel), and compare how they complement or conflict with the

current offering. This also increases transparency of the case company's service and product development targets, when these documents and processes are visible to a larger part of the company. This also supports a more open view to the lifecycle management of the case company's offering.

Design Coordination

The initial defining of the Service Design Package should start as early in the lifecycle of the Service Design as possible. Optimally this means already before the Portfolio Management Funnel phase, if the Idea has at that point been identified as a service. At the latest, the defining should start after the funnel process when it's clear it is a Service. The SDP can be one or multiple documents per service, but it can quite clearly be divided into four distinct segments that would create five separate documents. The First segment, Initial Service Requirements, would be the continuation of the "Required Information" –document created during the Portfolio Funnel Process. This document should contain information about the initial documented and agreed business requirements and a definition on how and where the service would be used. Additionally it should contain information about the stakeholders of the service, including business and customer contacts. Combining the existing "Required Information" document and the SDP guidelines would result in the following information, shown in Table 11, being included in the Initial Service Requirements document.

Table 11. SDP: Initial Service Requirements

	Category	Sub Category	Description
Summary		Idea	[New or existing line item in Portfolio Master]
		Author	
		Date	
		Type	[Service or Product]
		Short description	What is suggested?
		Risks	[Effect on the whole offering]
		Major assumptions	[SLR's]
Market and Value proposition		Target Segments	
		Affected Segments	
		Problem	What problem does this idea solve?
		Value Proposition	
		Market size	[billable units]
		Targeted market share	[billable units]

Investment Summary	Job Size	[story points]
	SLR Cost/Effect	[€]
	Other Direct Costs	[€]
	Revenue	Revenue or/and cost savings resulting from investment for the next 5 years (link to separate calculation)
	Pricing Model	
	Other value to consider	

As shown in Table 11, This Initial Service Requirements document will have some corresponding fields in the Service Design document. This should be handled so that the Initial Service Requirements documents have the information agreed upon during Portfolio Management Team approval of the service and that the following segment is the living and updatable document. The second segment, which is concentrated on Service Design, would be two or more separate documents, i.e. the main service definition and the service level documentation related to it. The case company has its initial Service Definition template covering the basics needed for Service Definitions. This Table 5 can be found in the Current State Analysis section of the thesis. In addition to the currently included information, it should be amended to include more information. In addition to the Service Manager in charge, the document should contain information about the Service Owner and a development team, if applicable.

The Initial Service description is already included in the Service Requirements part of the SDP, but the current, and possibly evolving, description should be part of the Service Definition. This part should also include the functional requirements of the service including utility and planned outcomes and deliverables in a clear and standardised Statement of Requirements. This should be followed by management requirements, stating all the required information needed to manage the service including all supporting services and agreements followed by how to control, operate, monitor, measure and report the service. This should be followed by the actual functional definition of the service, including different packaging and service options, components and infrastructure. This information should include all dependencies to other services, products, processes and procedures. In addition documentation prepared for the transition, and operation of the services should be included, or links to them in other systems. In addition to all of the above the Service Level Requirement and Management documentation should be included. This is covered in more detail under Service Level Management section later in the thesis.

Table 12. SDP: Service Design

Category	Sub Category	Description
<i>General Information</i>	ID	[Unique ID from Portfolio Management]
	Name	
	Category	
	Status	"Funnel" / "In Development" / "In Transition" / "In Operation" / "Retired" / "Not Approved"
	Service Type	"Consulting" / "SaaS" / "Training" / "Commissioning" /
	Service Manager	
	Service Owner	
	Development Team('s)	
	Customer Profile	Who are the customers using this service?
	Included in Service Revenue?	"Yes" / "No"
<i>Management Information</i>	Service Description	
	Value Proposition	
	Utility	
	Planned Outcomes	
	Deliverables	
	Marketing Material	[Link]
	Contract/Agreement Template	[Link]
	Service Hours	"24/7" / "8/5" / ...
	Service Level Agreements [Warranty]	[Link to SLR and SLA documentation]
<i>Technical Information</i>	Model, packaging and service options	
	Supporting Services	Dependencies including version numbers and relationship.
	Supporting Agreements	Internal and External Suppliers.
	Supporting Infrastructure	Dependencies including version numbers and relationship.
	Service Components	Dependencies including version numbers and relationship.
	Related Processes	How is service provided/delivered to customer? E.g. link to process descriptions.
	Reporting	Measurements and Metrics, KPI's.
	Usage instructions	Links to manuals, user instructions etc.

The third segment would be an organizational readiness assessment, containing a detailed report and plan on the readiness of the company to provide such a service to customers. This would be followed by the fourth and final segment, the service lifecycle plan, which consist of the four main points seen In Table 13 below.

Table 13. SDP: Lifecycle Plan

Category	Sub Category	Description
Service programme	Programme or a plan	Covering all stages of the lifecycle of the service.
Service transition plan	Operational strategy	
	Objectives	
	Policy	
	Risk assessment	
	Plans	
Service operational acceptance plan	Operational strategy	
	Objectives	
	Policy	
	Risk assessment	
	Plans	
Service acceptance criteria	Acceptance Criteria	Acceptance criteria for progression through each stage of the service lifecycle.

The four points that are part of the fourth segment of the SDP currently fall outside of the scope of the thesis, but are brought up as a part of the package for later consideration. In general the SDP should include documents to cover the whole lifecycle of the product, from the idea to retirement. These documents should follow a standard structure and layout and be built in a uniform manner to make them easily understandable and maintainable. These layouts and standards should be created and maintained as well as their usage monitored by the Design Coordination Process.

Service Catalogue Management

Service Catalogue should contain one line for each provided service with the general information taken from the relevant Service Design Package and a link provided to it for further details. In the case company the Service Catalogue should also be divided into Service Groups to represent the different service families offered by the company. One service group should also be created for the supportive services that are not directly

visible to customers but which the customer services are dependent on. The Service Catalogue should contain the following columns for each service as shown in Table 14.

Table 14. Service Catalogue Columns

Field	Explanation
Category	The Service group the service in question belongs to [From SDP]
Service	Service Name [From SDP]
Type	"Consulting" / "SaaS" / "Training" / [From SDP]
ID	Unique ID linking service to Service Portfolio [From SDP]
Status	"In Development" / "In Transition" / "In Operation" [From SDP]
Brief Service Description	[From SDP]
Service Owner	[From SDP]
Service Manager	[From SDP]
Service Design Package	[Link to SDP]
Service Levels	Link to SLM documents [in SDP]
Dependencies	List of services, products etc. the service is dependent on [From SDP]
Included in Service Revenue?	"Yes" / "No" [From SDP]

In addition to creating the Service Catalogue in a list type format, it should also be visualized to clearly show the dependencies and identify the weak links and single points of failures. In the suggestion the service catalogue is created as a part of a Portfolio document that contains *Pipeline*, *Product Catalogue*, *Service Catalogue* and *Retired* solutions. This is done in Excel due to the appropriate specialized systems not being available in the case company.

Service Level Management

When defining these SLR, and especially when defining SLA's the agreement templates should be made by a legal contracts expert, but from a service design view the following issues should be included in the documentation when creating the internal Service Level Requirements. A Service Level Requirement document should be part of the SDP for each service offered by the case company. If the service has multiple services that it's dependent on, these should also be included or linked to.

Table 15. SLR Required Fields

Field	Explanation
Service ID	ID of the service this SLR is related to [Links to SDP and Service Catalogue].
Brief service description	[from SDP]
Validity period	[Timeframe when said SLR is valid.]
SLA change control mechanism	When SLR is updated, what is the procedure to change active SLA's with customers?
Change approval details	How are changes for the SLR approved?
Brief description of communications	How communication related to SLR is handled internally and externally, including reporting, review frequency and schedule. (Could be a separate general document for all SLR's.)
Service hours	When is this service offered and what are the response times in case of an incident?
Scheduled and agreed interruptions to services	Scheduled maintenance breaks and procedures how to inform customers about them. Procedure on how to do and inform about unscheduled maintenance.
Customer responsibilities	What parts of the service levels are the customer responsible, why and how?
Service provider liability and obligations	e.g. security, legal requirements.
Impact and priority guidelines	
Escalation and notification process	
Complaints procedure	
Service targets	Agreed, Measurable Service Level Targets.
Upper and lower workload limits	e.g. Min and max user amounts for SaaS.
High level financial management details	e.g. charge codes
Actions to be taken in the event of a service interruption	including both incidents and disasters, are normally referenced from the SLA.
Glossary of terms	Explanations of terms and abbreviations used.
Supporting and related services	List of services, with ID's that the service in question is dependent or related to.
Any exceptions to the terms given in the SLA	Terms deviating from General terms, etc.

Maintenance and updating these documents should fall under the Service Management Process specified earlier in this section. The parties responsible for this process should

also in addition to the actions specified in the process interact with BRM and other stakeholders to get feedback and provide them with statistics on the actual reached service levels.

5.3.3 Initial Proposal Summary

The initial proposal consists of four parts that are intertwined and highly dependent on one another, and as such are presented as one proposal. As shown in Figure 33 below, there are two different kinds of outputs from this proposal.

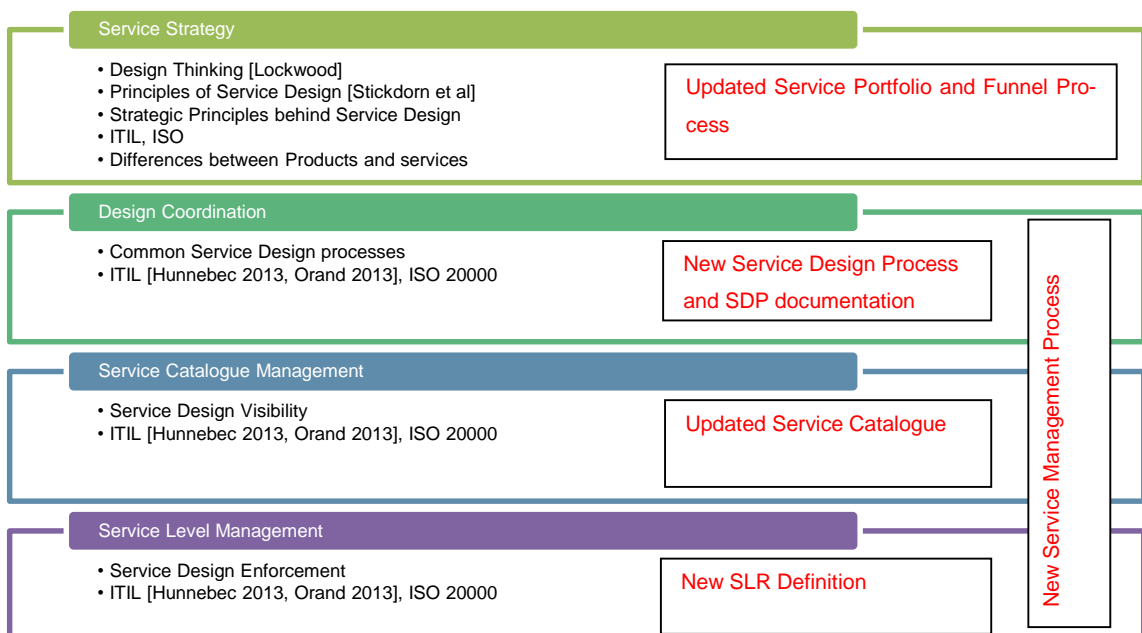


Figure 33. Initial Proposal Summary

The tangible outputs from this proposal include an *Updated Service Portfolio* as part of an updated Company Portfolio. This new Service Portfolio also includes an updated *Service Catalogue*. Updated and documented *Portfolio Funnel Process* as the existing one was not clearly documented and didn't distinguish between Services and Products. This is followed by a new *Service Management Process* that encompasses also the maintenance processes for Service Catalogue Management and Service Level Management. Additionally a new *Service Design process* is introduced as previously none existed. Finally as one of the primary outputs from both Funnel process and Service Design process a new approach to *Service Design Package* is included, which covers the service lifecycle from idea to retirement including Service Level Management documentation.

5.4 Piloting Initial Proposal

This section discusses the piloting process for the initial proposal. It covers all the proposed improvements and changes through the lens of a “new” idea going through the proposed processes. The Idea in question is the case company’s Commissioning “service”. This has not been seen as a service ever before, but more a part of a sold product to the customer. During this piloting it will be transitioned from a part of the product sales to an independent sellable service.

The Piloting was conducted in three phases. The initial phase was a meeting with the Management Team of the Service Function in the case company. During this phase the Initial Proposal was presented to all stakeholders. This was followed, in the second phase, with the actual piloting of the processes and documents suggested in the Initial Proposal. Finally, as the third phase after the Piloting was concluded another workshop was arranged to discuss the usage and future of ITIL in the case company.

During the initial phase the suggested processes were gone through in a chronological fashion, starting with the *Service Strategy* process, followed by the *Service Design* process for *Design Coordination* and the three continuous monitoring and maintenance processes for *Design Coordination*, *Service Catalogue Management* and *Service Level Management*. This was followed by a presentation of the suggested new *Service Portfolio* document and the approach behind it. After this the *Service Catalogue*, which is an integral part of the Service Portfolio, was gone through followed by the *Service Design Package* documentation, including *Service Level Requirement* document. During this initial meeting not that many comments were received, other than in the form of general comments like “looks good” and “this is going to the right direction”. One issue noted was that the Service Definition Package should go into more detail in regards to the Service blueprints and touchpoints, which are not currently addressed in those terms. Additionally it was noted that the Service Portfolio and the Funnel process might be harder to change, as they are part of the whole company’s portfolio, which is managed and maintained by the Products function. [Data 3, Management Team Meeting - Services]

The second phase, which was the actual piloting of the suggested processes and documentation, was done with the designated service owner of the planned Commissioning service. The piloting started with going through the Service Management process, which is the master process containing all the other suggested Service Design processes. The

Process immediately leads to the Portfolio Management Process, which is internally known as the Funnel. In this piloting case it had been decided that a Portfolio Management Team approval was not needed to move forward with this services development. As a direct result of this, the Funnel process was only briefly visited, but in general the only difference to the existing old Funnel process is the division to products and services and more ingrained linking to the portfolio. The flow was gone through and considered to be reasonable. It was noted that the different states of service will have to be more clearly defined. After this the Service Management moves to Service Design Process.

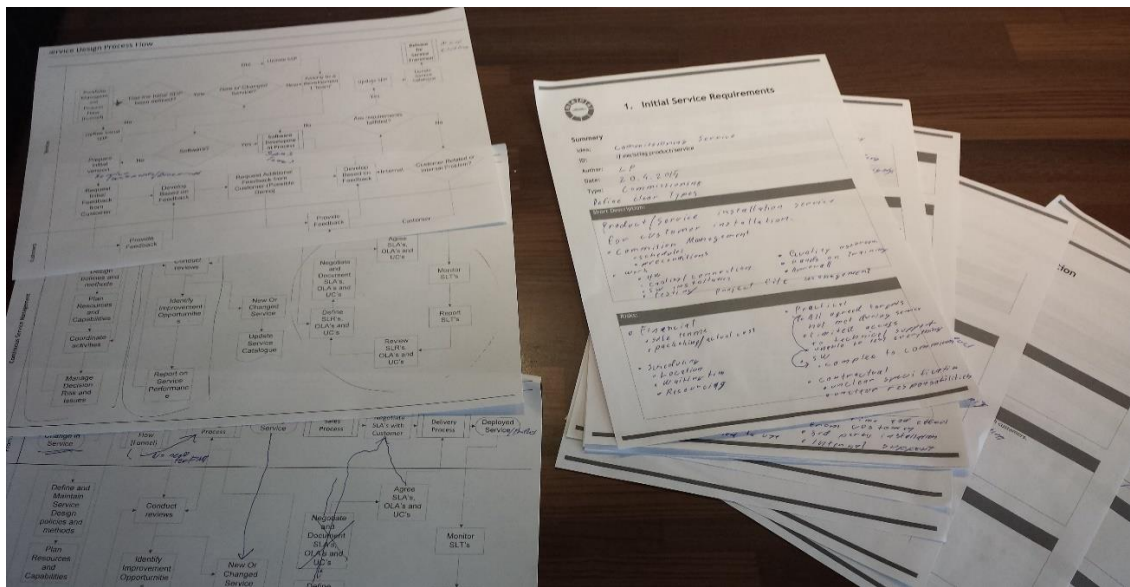


Figure 34. Piloting Material

When going through the process, the first step is to see if the Service Design Package has been defined. In this use case it was not prepared, so the first order of business was to fill in the five Service Design Package documents. Document 1. Should be renamed to be Initial requirements, as then it could also be used as a generic document to replace the “Required information” document used for Portfolio Management Team presentations. Additionally the Risks slot should be divided to at least the following five groups: *Financial*, *Scheduling*, *Practical*, *Software* and *Contractual*. In addition to this also *Value Proposition* should be divided into seven sub segments: *Customer Wants*, *Need and Fears*; *Product/Service Benefits*, *Features and Experience*; *Substitutes*.

In Document 2. it was noted that the Status field is redundant, as the same information is recorded in the Category -field. In practice it was also seen that the *Value Proposition* and *Utility* fields can be removed as they are already set in Document 1. Within Docu-

ment 3. no changes were made, it was noted to be too heavy to do and maintain *Readiness Assessments* currently in the case company. For Document 4. it was noted that an additional field for *Service Retirement Plan* would be needed. For Document 5. no needed changes were noted. Once the documents were filled in the next step in the Service Design process was to assign the development to a team. In the process there are two ways for service development, *software development* and *non-software development*. It should be clarified that software development refers to SaaS-development. Additionally when doing other than software service development the initial version preparation should be changed to *Service Blueprint and touchpoint preparation*. Other than these points explained above, the Service Design process was deemed acceptable. In regards to the smaller processes defined in Service Management process they should be clearly named and some flows streamlined. [Data 3, Piloting]

The third and final phase of the piloting was the workshop with additional stakeholders and future service owners. The scope of the workshop was ITIL usage in the case company's Service function. Part of it was directly discussing the way to move forward with Service Catalogue Management. During the workshop it was discussed which services should be included in the Service Catalogue and how they should be grouped. It was decided that only services that are customer facing should be included and that they should be grouped to service families, which currently would be *Training, Consulting, Service Desk, Commissioning, SaaS, Performance Analysis* and *Lifecycle*. Additionally the following changes were suggested to the *Service Manager* and *Owner* responsibilities, shown red in the figure below. [Data3, Documents 24,25]

Service Manager (SM) Responsibilities	Service Owner (SO) Responsibilities
<ul style="list-style-type: none"> • Pricing model & product codes (*) • PMT approval (e.g. business case, Value proposition canvas) • Service Owner (and Service Manager) defined • Contract/Agreement template (*) • Marketing material (*) 	<ul style="list-style-type: none"> • Product description (*) • Service Definition, including: <ul style="list-style-type: none"> • Blueprint/instruction/checklist • Manual/user guide (*) • Service Level agreed internally (with SM), other performance & satisfaction metrics • Resourcing / Production plan • Personnel training arrangement

Figure 35. Service Responsibilities [Data 3. Document 25]

As can be seen above the value proposition preparation was suggested to be moved from *Service Owner* to *Service Manager* as it would be the service manager's job in the initial *Idea to Funnel* phase of service preparation. [Data 3. Documents 24,25]

6 Final Proposal and Recommendations

This section merges the results of the feedback received from the first proposal and piloting to the final proposal, followed by recommendations on what should be done.

As seen in the piloting phase the scope of suggested or needed changes isn't that broad, mainly concentrating on the fine-tuning of the suggested processes and documentation to make them fit better to the current ways of working in the case company.

6.1 Final Proposal

As was done in the Initial Proposal, the Final Proposal also follows the model of dividing the proposal into two parts; *Processes* and *Documents*. The proposal starts first by going through the processes followed by the documents and culminating in a brief summary of the final proposal. In the Initial Proposal the processes and documents were following the order shown in the Best Practice section. The same practice is followed within the final proposal, as seen in Figure 36 below.

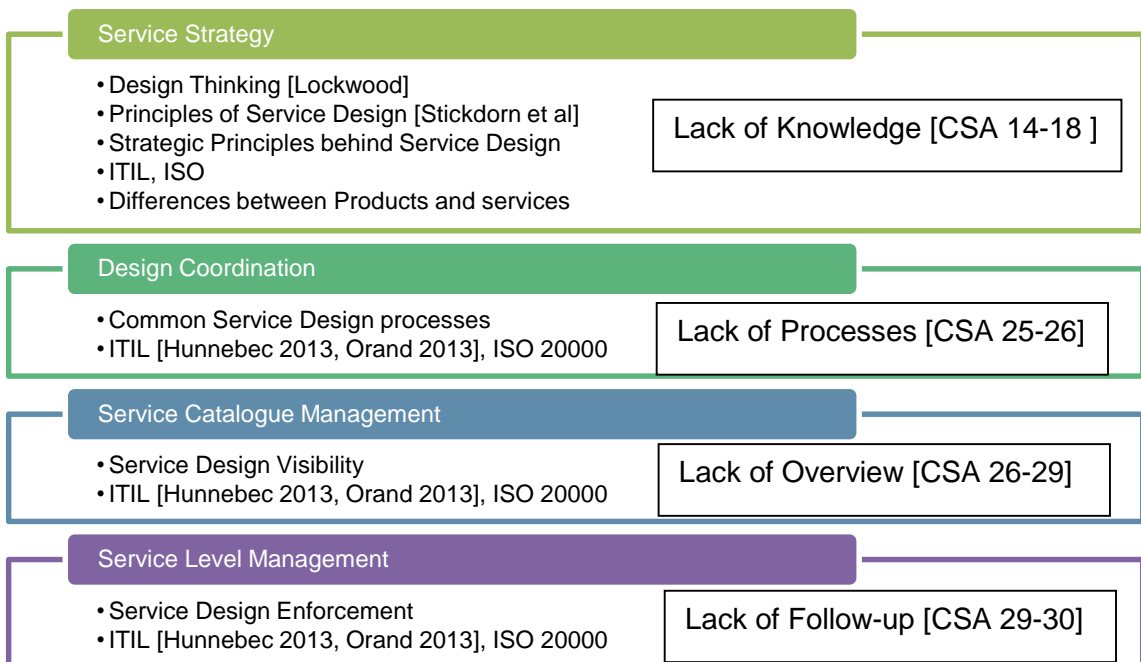


Figure 36. Final Proposal Parts

As seen in the Figure 36 above, the building blocks are still the same: *Service Strategy*, *Design Coordination*, *Service Catalogue Management* and *Service Level Management*.

6.1.1 Final Proposal Processes

Service Strategy

Service Strategy, being the guiding hand behind all decisions made in service management and design is the natural place to start. New service ideas have to be handled in a strategic level before any actual development work can be started. With the process depicted below the way both new and further developed services and products are being handled can be standardised and made more efficient. This can be done while still containing and collecting all the information needed.

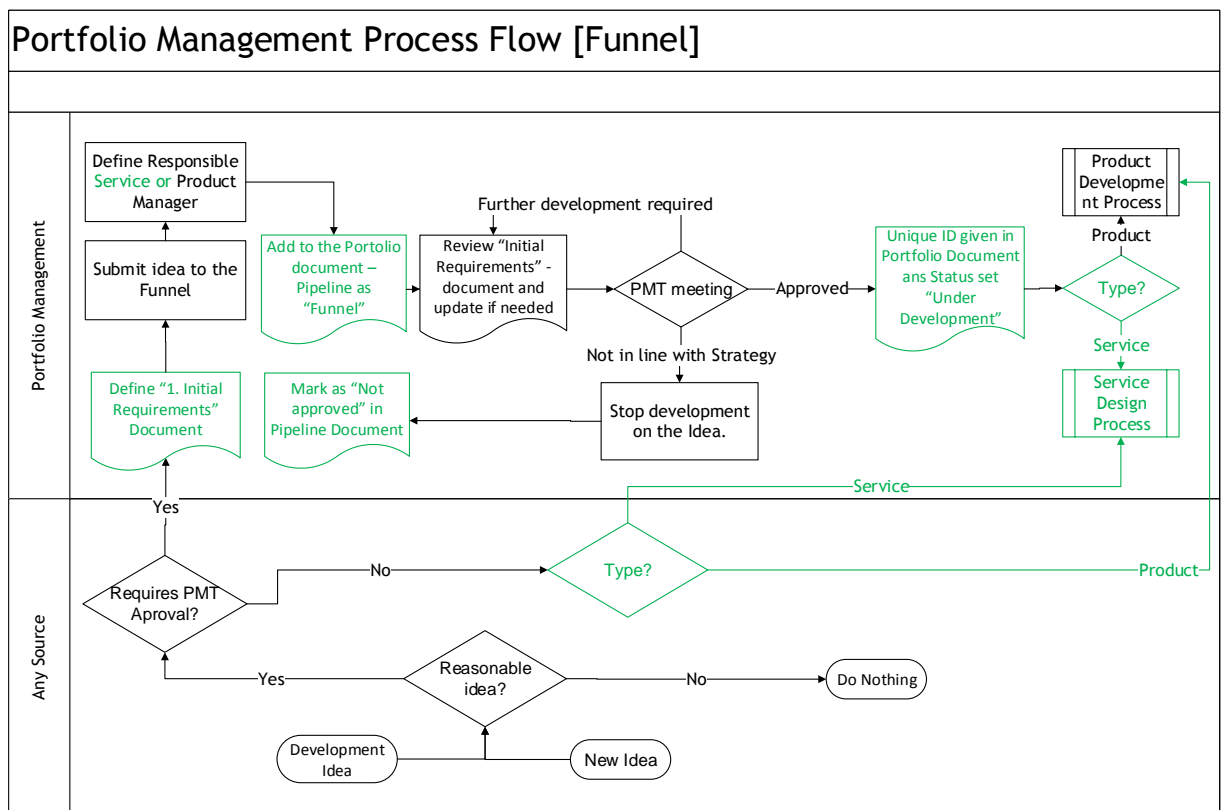


Figure 37. Portfolio Management Process Flow – Final [New/Changed = Green, Old=Black]

The above process flow, in Figure 37, is a simplified and streamlined based on feedback received during the piloting phase. *Idea* is handled as an idea until it becomes necessary to define if it is a *Service* or a *Product*. This needs to be known at the latest when the Idea is approved, or deemed as not needing approval and sent forward to further development.

Design Coordination

Once an idea has been deemed appropriate for further development it enters the design coordination phase of the process. With these processes, the purpose is three-fold, i.e. managing the overall service design processes, managing individual service development and monitoring both for continuous improvement. The overall management and monitoring of the service design is shown in the processes described below, in Figure 38.

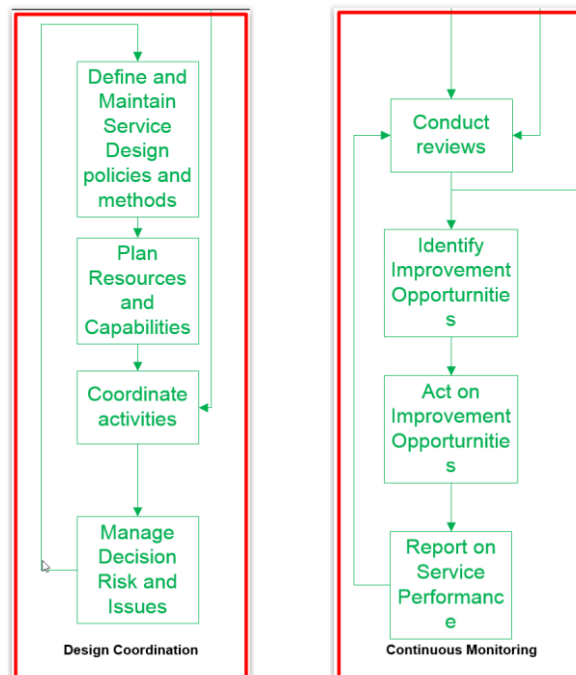


Figure 38. Design Coordination and Continuous Monitoring Flow's.

As can be seen on the left-hand side of the Figure above, the process is a four-step continuous loop. This loop consists of *Defining and Maintaining Service Design policies and methods*, *Planning resources and capabilities*, *Coordinating activities* for the above-mentioned and *Managing Decision Risk and Issues*. This circle, as well as the *Continuous Monitoring* circle should be used to monitor all activities related to Service Design in the case company to monitor, maintain and improve the set quality levels. The *Continuous Monitoring* process, also shown in the above Figure, on the right side, is a similar four step continuous loop aimed to continuous improvement of all related activities. This is achieved with the common approach of; *Review, Identify, Act and Report*. The third process included in the proposal from the field of Design Coordination is the process used when designing or developing individual services, the Service Design Process, shown in the Figure 39 below.

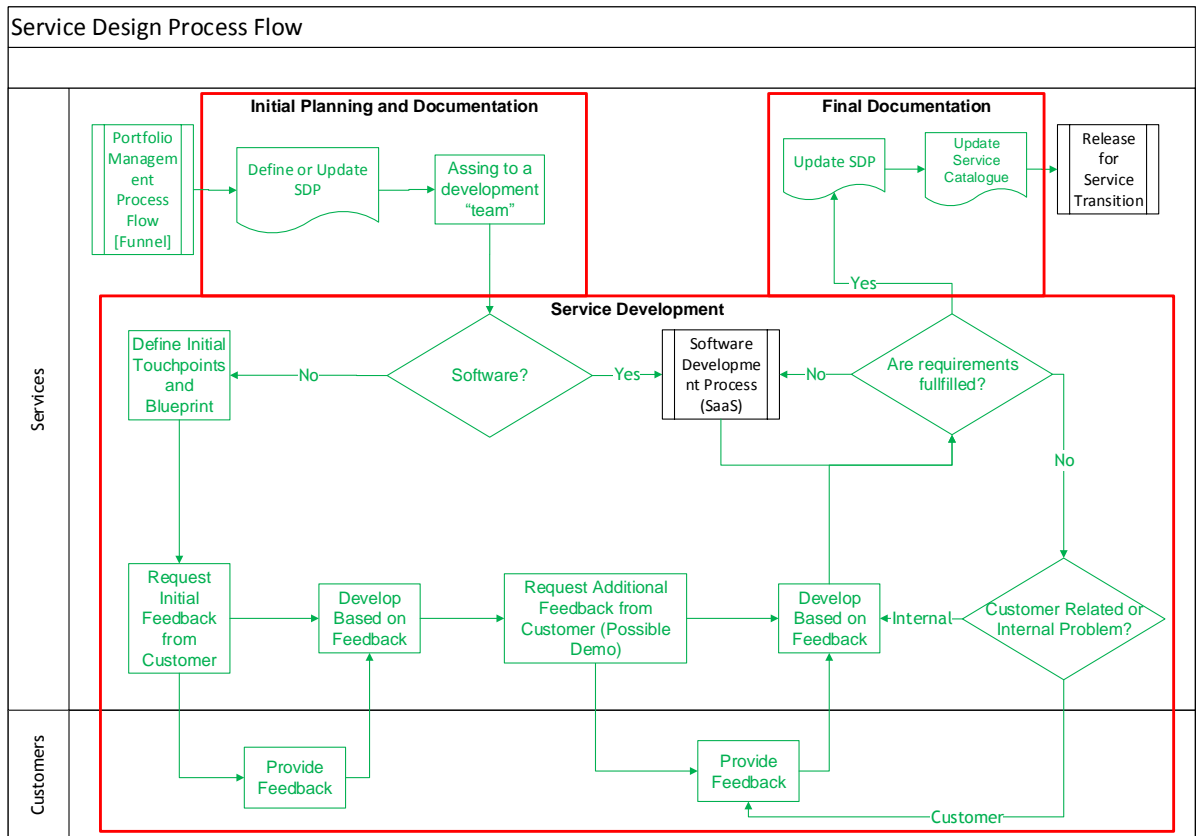


Figure 39. Service Design Process Flow – Final [New/Changed = Green, Old=Black]

During this process the *Service* is formed out of the *Idea* that was received from Portfolio Management. The Process is divided into three steps. The first one is the initial documentation and planning part, where the Service Design Package is created. The second part is the actual development part where either a SaaS or a non-software service is developed. Depending on which kind of service is in question a different path is followed. The third and final part is the Final updating of documentation before the service is considered to be ready for transition towards actual use.

Service Catalogue Management

Once the Service is deemed ready from the Service Design perspective it should be included in the case company’s Service Catalogue. This simple process is shown in the Figure 40 below.

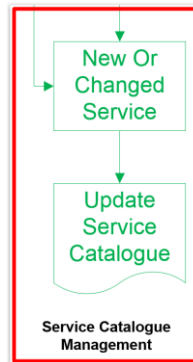


Figure 40. Service Catalogue Management Process - Final

As seen in the Figure above, the Service Catalogue should be updated always when there is a new service or when an existing service has been changed. When a service is changed, the Service Catalogue needs to be checked and updated every time when something in a Service Design Package Changes.

Service Level Management

Defining and managing the *Service Level Requirements* and related *Agreements* is the responsibility of Service Level Management. The different phases that should be addressed are shown in the Figure 41 below.

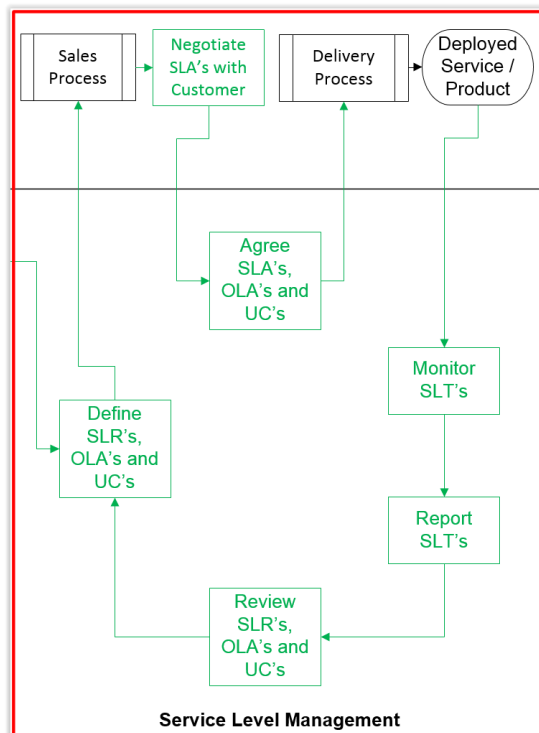


Figure 41. Service Level Management Process – Final [New/Changed = Green, Old=Black]

As can be seen in the Figure above the Service Level Management Process is divided into nine parts in this process. The amount of Service Level Management actions is only seven. This is due to the fact that it was not deemed reasonable to open both the *Sales* and *Delivery* processes to include *Negotiation* and *Agreeing* in their correct places somewhere inside these processes. They are therefore shown between *Sales and Delivery* processes to show that they belong between them. Service Level Management is a continuous process of *Defining, Applying, Monitoring, Reporting* and *Reviewing* new or changed agreements based on new or changed services. *Service Level Management* is tightly integrated with *Design Coordination* as the defined *Service Level Requirements* and *Agreements* need to be a part of the *Service Design Package*.

6.1.2 Final Proposal Documents

Service Strategy

The case company should define a clear and concise way to present their whole portfolio from *Idea to Retirement*. This can be achieved by adopting the three pronged approach shown in the Figure 42 below.

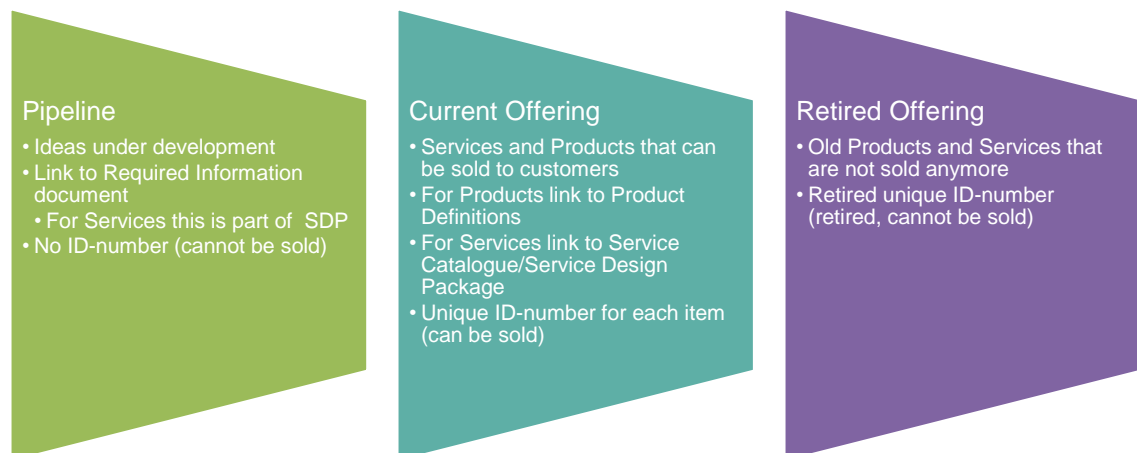


Figure 42. Portfolio - Final

The three sided approach shown above, in Figure 42, should actually consists of four parts in the case company's situation. Each part would be viewable both on their own or as a combined view showing the whole portfolio of the case company. These four parts would be *Pipeline, Product Catalogue, Service Catalogue* and *Retired*. The *Pipeline* should contain all the ideas that have been submitted to the Funnel process but have not yet been approved for development. The Pipeline part should contain the information shown in the table below.

Table 16. Pipeline - Final

Category	Idea	Type	Status	Brief Description	Owner	Manager	SDP	SLR	Dependencies
Family 3	Deployment Service 1	Service	Funnel	Service to deploy X	Matt	Nick	LINK	LINK	Service D, Product X
Family 3	Deployment Service 2	Service	Funnel	Service to deploy Y	Mick	Naomi	LINK	LINK	Service D, Product Y
Family 3	Material Creation	Service	Funnel	Service to Create Material for B	Mark	Nigel	LINK	LINK	Product B
Family 2	Idea P	Software	Funnel	Revolutional SW idea	Mandy	Noor	LINK	LINK	

As seen from Table 16 above, the amount of information in the pipeline is quite minimal. Additional information is available behind the link, but is not needed for the general overview. This same approach is used with both Product and Service Catalogues, which will be covered in more detail under Service Catalogue Management. Retired section would be identical to Pipeline shown above with the added field of *ID* and the Status being *Retired*.

Service Catalogue Management

As noted under the Service Strategy segment, Service Catalogue is a part of the Service Portfolio where it is viewed as one part of a larger whole. From the operational and Service Design viewpoint Service Catalogue is a document or tool that shows all the currently active (sellable) and under development services. An example of the Service Catalogue can be seen in the Table 17 below.

Table 17. Service Catalogue Final

Category	Service	Type	ID	Status	Brief Service Description	Service Owner	Service Manager	SDP	SLR	Dependencies	Service Revenue
Lifecycle	Service Visit and Work	Service	123466	Active	On site work	Joan	Joanna	LINK	LINK	Products	Yes
Lifecycle	Software Update/Upgrade	Service	123467	Active	SW update/upgrade	Joan	Joanna	LINK	LINK	Products	Yes
Lifecycle	Other Services	Service	123468	Active	Unspecified	Joan	Joanna	LINK	LINK	Products	Yes
Service Desk	Service Desk	Service	123469	Active	Service Desk	Jack	Julia	LINK	LINK	Products	
Service Desk	Safety Solutions - Service Agreement	Service	123470	Active	Service Agreement	Jack	Jane	LINK	LINK	Service Desk	
Service Desk	Shipping Solutions - Service Agreement	Service	123471	Active	Service Agreement	Jack	Julia	LINK	LINK	Service Desk	
Service Desk	Design Maintenance Agreement	Service	123472	Active	Maintenance agreement	Jack	Jane	LINK	LINK	Service Desk	

As seen on Table 17 above, all the services are set with the *Status active*, but they could also be *Under Development*, meaning they are not yet ready for Sales. As with the whole portfolio, this view should just contain the minimum information and link to further details in the Service Design Package.

Design Coordination

Service Design Package, as shown in the earlier sections, is an integral part of almost all of the processes and documentation schemas explained earlier. Based on best practice and results from the initial proposal piloting the following four part Service Design package is deemed suitable for the case company. The first part is the Initial *Requirements* document, which is prepared during and before the funnel phase of Service Design. This document is used as a tool to sell the idea to the Portfolio Management Team

and get it into development. This document should contain the information shown in the following table.

Table 18. SDP: Initial Requirements – Final

Category	Sub Category	Description			
<i>Summary</i>	Idea	[New or existing line item in Portfolio Master]			
	Author				
	Date				
	Type	[Service or Product]			
	Short description	What is suggested?			
	Risks	Financial: Scheduling: Practical: Software: Contractual:			
	Major assumptions	What are the major assumptions in support of this idea?			
<i>Market and Value proposition</i>	Target Segments				
	Affected Segments				
	Problem	What problem does this idea solve?			
	Value Proposition	Cus- tomer	Wants		
			Needs		
			Fears		
		Service	Benefit		
			Features		
			Experience		
			Substitutes		
Market size	[billable units]				
Targeted market share	[billable units]				
<i>Investment Summary</i>	Job Size	[story points]			
	SLR Cost/Effect	[€]			
	Other Direct Costs	[€]			
	Revenue	Revenue or/and cost savings resulting from investment for the next 5 years (link to separate calculation)			
	Pricing Model				
	Other value to consider				

Based on this information the Portfolio Management Team should be able to make their decision to support or decline the further development of the *Idea* to *Service*. Once the idea has been approved for further development Documents 2. and 3. should be prepared. Document 2. is the actual *Service Definition* and its required information is shown in the Table 19 below.

Table 19. SDP: Service Definition - Final

	Category	Sub Category	Description
General Information		ID	[Unique ID from Portfolio Management]
		Name	
		Category	
		Status	“Funnel” / “In Development” / “In Transition” / “In Operation” / “Retired” / “Not Approved”
		Service Manager	
		Service Owner	
		Development Team(‘s)	
		Customer Profile	Who are the customers using this service?
		Included in Service Revenue?	“Yes” / “No”
Management Information		Service Description	
		Planned Outcomes	
		Deliverables	
		Marketing Material	[Link]
		Contract/Agreement Template	[Link]
		Service Hours	“24/7” / “8/5” / ...
		Service Level Agreements [Warranty]	[Link to SLR and SLA documentation]
Technical Information		Model, packaging and service options	
		Supporting Services	Dependencies including version numbers and relationship.
		Supporting Agreements	Internal and External Suppliers.
		Supporting Infrastructure	Dependencies including version numbers and relationship.
		Service Components	Dependencies including version numbers and relationship.
		Related Processes	How is service provided/delivered to customer? E.g. link to process descriptions.
		Reporting	Measurements and Metrics, KPI’s.
		Usage instructions	Links to manuals, user instructions etc.

Document 2. is the longest and most comprehensive of these Service Design Package parts. A bit shorter but no less important is Document 3. *Lifecycle Plan*, the contents of which are shown in the table below.

Table 20. SDP: Lifecycle Plan - Final

Category	Sub Category	Description
Service programme	Programme or a plan	Covering all stages of the lifecycle of the service.
Service transition plan	Operational strategy	
	Objectives	
	Policy	
	Risk assessment	
	Plans	
Service operational acceptance plan	Operational strategy	
	Objectives	
	Policy	
	Risk assessment	
	Plans	
Service acceptance criteria	Acceptance Criteria	Acceptance criteria for progression through each stage of the service lifecycle.
Service Retirement Plan	Retirement Plan	Plan how the service will be retired

This plan should cover all the foreseen changes in the service for its *Lifecycle*, and how they should be addressed and handled. In the case company these kind of changes would be moving the customer responsibility from Delivery of the service to Service Desk and from Service Desk to Retirement.

Service Level Management

The fourth and final part of the Service Design Package is Document 4. *Service Level Requirements*. This document should be prepared in conjunction with the Service Design/Development process and adjusted during the service *Lifecycle* to meet changing specifications and needs of both the service provider and the customer. The Table 21

below shows the minimum level of information that should be considered when creating the SLR document.

Table 21. SLR Required Fields - Final

Field	Explanation
Service ID	ID of the service this SLR is related to [Links to SDP and Service Catalogue].
Brief service description	[from SDP]
Validity period	[Timeframe when said SLR is valid.]
SLA change control mechanism	When SLR is updated, what is the procedure to change active SLA's with customers?
Change approval details	How are changes for the SLR approved?
Brief description of communications	How communication related to SLR is handled internally and externally, including reporting, review frequency and schedule (Could be a separate general document for all SLR's).
Service hours	When is this service offered and what are the response times in case of an incident?
Scheduled and agreed interruptions to services	Scheduled maintenance breaks and procedures how to inform customers about them. Procedure on how to do and inform about unscheduled maintenance.
Customer responsibilities	What parts of the service levels are the customer responsible, why and how?
Service provider liability and obligations	E.g. security, legal requirements.
Impact and priority guidelines	
Escalation and notification process	
Complaints procedure	
Service targets	Agreed, Measurable Service Level Targets.
Upper and lower workload limits	E.g. Min and max user amounts for a SaaS.
High level financial management details	E.g. charge codes.
Actions to be taken in the event of a service interruption	Including both incidents and disasters, are normally referenced from the SLA.
Glossary of terms	Explanations of non-standard terms and abbreviations used.
Supporting and related services	List of services, with ID's that the service in question is dependent or related to.
Any exceptions to the terms given in the SLA	Any differences to the General terms.

The factors listed above should be included in the documentation of all services, be they visible to customer or not. This is because internal SLR's and the services they refer to are supporting other services and their agreed service levels, which are visible to customer. All the forms generated based on the SDP recommendations can be found in the appendices.

6.1.3 Final Proposal Summary

The Final Proposal is divided into two distinct parts, processes and supporting documentation. The documents and processes are both divided between four categories: *Service Strategy*, *Design Coordination*, *Service Catalogue management* and *Service Level management*. The categories and adjacent processes and documents are shown in the Figure 43 below.

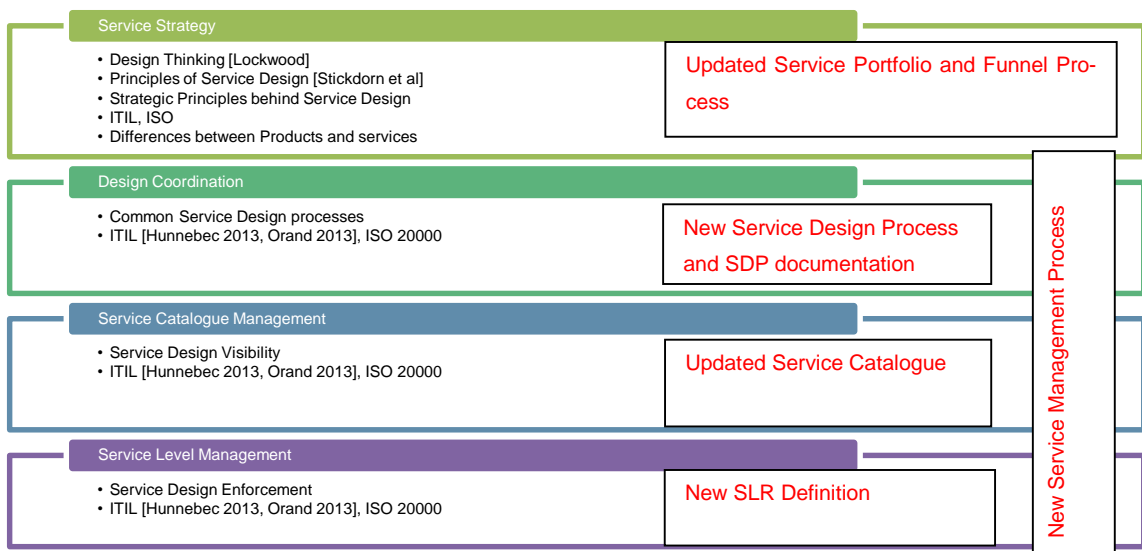


Figure 43. Final Proposal Summary

The different processes and documents were explained in the two previous sections and the way everything is interconnected can be seen in the figure below.

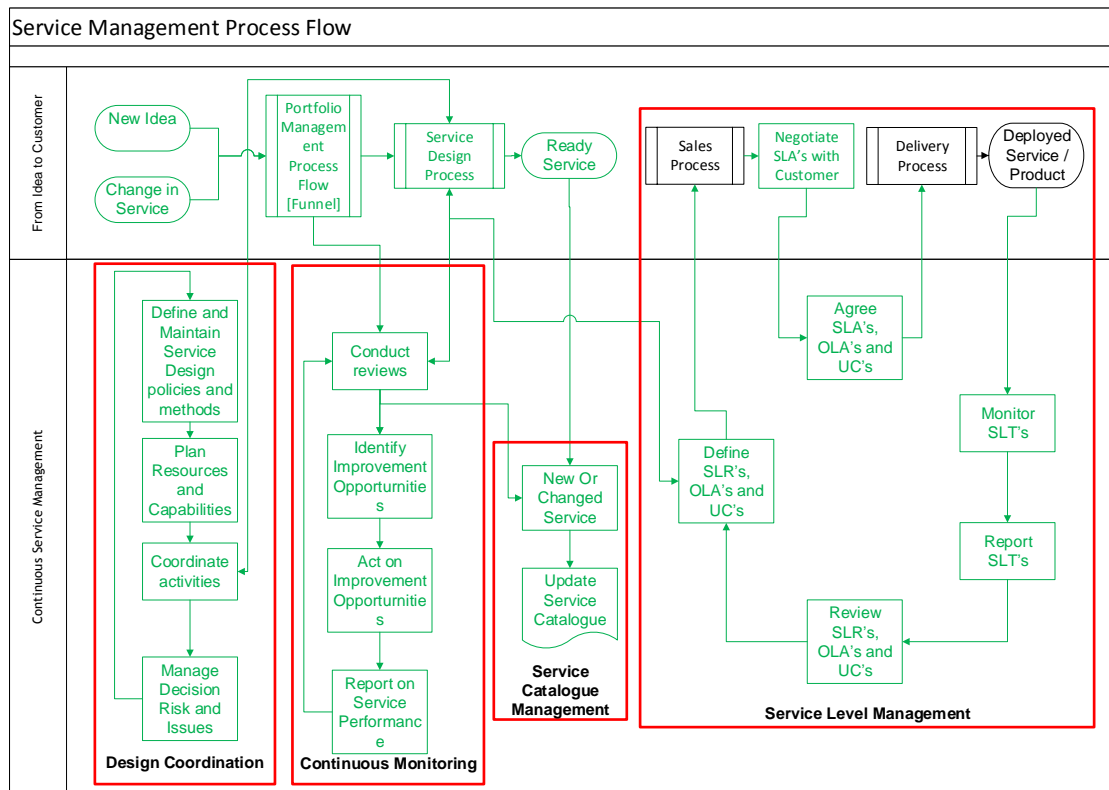


Figure 44. Service Management Process Flow - Final

Everything is interconnected, as can be seen from the Figure 44 above. Portfolio is the source of all changes to the Service Catalogue and these changes trigger other processes to react and act based the initial changes.

6.2 Recommendations

Based on the findings during the *Current State Analysis*, to the theory shown in *Best Practice* followed by *Initial Proposal* and *Piloting* and culminating in the *Final Proposal* a certain trend can be seen. The case company needs to invest time and effort to implement and follow practices and processes in the field of Service Design and Management.

These practices should include the following items:

- Defining a standardised *Service Catalogue* with set inputs
 - Standard documentation on how to define and specify *services* and their *targets*
 - Process to *Define and Manage set Service Levels*
 - Process to screen *Ideas*
 - Process to develop and design *Ideas* to *Services*

- Process to *Monitor and Improve* the performance of *Service Catalogue* and adjacent Processes

All of the above mentioned issues have been addressed in the Final proposal of this thesis. A centralised way to create and maintain both Service Portfolio and Service Catalogue have been suggested. This is supported by a standardised format of documents that was given in the form of a Service Design Package that includes the management information for the whole lifecycle of the service from an *Idea* to *Retirement*, including *Service Level Requirements*. All these documents will be created if the proposed processes are implemented.

7 Discussion and Conclusions

This section discusses the implications, outcomes and conclusions of the thesis. The section starts with the Summary of the thesis. This is followed by Managerial Implications. The thesis ends with the Evaluation, including Outcome vs Objective comparison and Reliability and Validity study.

7.1 Summary

The thesis was built around a challenge of developing a service design process that was identified in the case company. There were no decided processes and practices on how Services should be Designed, Developed and Managed. This thesis seeks to provide solutions for this. First, answers are found through an extensive *Current State Analysis* of the case company, which identifies the areas that would most benefit from improvement. The main areas were identified as *Service Design Processes and documentation*. Following the findings identified from the current state analysis, these areas were investigated in the *Best Practice* review that was conducted concentrating on four intertwined aspects in the field of Service Design, namely: (a) *Service Strategy*, (b) *Design Coordination*, (c) *Service Catalogue Management* and (d) *Service Level Management*. Based on exploration of these four topics, a *Conceptual Framework* was built, which addressed the identified areas for improvement.

The Proposal process was executed in two parts. The Initial proposal was drafted based on ideas received during CSA, a benchmarking session and an internal workshop. This was followed by the piloting phase where the proposal was first presented to the involved stakeholders for feedback and then piloted with the Commissioning “Service”. Following this, a larger workshop was held where additional ideas were gathered. This culminates in the *Final Proposal*, which is a combination of new or changed processes and standard documentation. The Final Proposal consists of six processes and a new approach to Service Management in the form of updated Portfolio and Service Catalogue, supported by the service specific Service Design Packages. These are gone through in a bit more detail under the Managerial implications next.

The key practical outcomes from this thesis are the Service Design Package and six processes to be used to manage and streamline the service management and design in the case company.

7.2 Managerial Implications

The Final Proposal, as explained above, is a mixture of new and changed processes supported by new standard documentation. Until they are implemented successfully they are just *Ideas* on a piece of paper.

In the *Final Proposal*, the following actions and changes are suggested.

Firstly, an updated approach needs to be taken to Portfolio Management that takes into account the inherent differences between *Services* and *Products*. This approach should also include an updated view on the portfolio and how it's documented and maintained. These *Ideas* are showcased under *Service Strategy* in the *Final Proposal*.

Secondly, new processes and practices need to be taken into use when designing and developing new services. Overall processes should be created to monitor and maintain these practices which should include *Design Coordination*, *Continuous Monitoring*, *Service Catalogue Management* and *Service Level Management*. New Services should be *Designed* and *Developed* in a standardised way, following a set process for *Service Design* and including a standard form of documentation prepared for all the services in the form of a *Service Design Package*.

The first part requires further discussion with the Portfolio Management Team, as well as with both Product and Service managers. The second part is a matter of agreeing on common ways of working inside the Services function. In both cases, the Final Proposal can be used as a roadmap or at least a conversation starter. If this proposal is fully implemented and applied for all the existing and upcoming services, then the case company should move from "*Informal Service Management*" to "*Basic Service Management*", and be well on its way to fulfil "*Advanced Service Management*" milestones, as categorised in Figure 12 in the Current State Analysis section.

7.3 Evaluation of the Thesis

In this section the outcomes and results achieved from this thesis are evaluated and discussed.

7.3.1 Outcome Versus Objective

The planned outcome of the thesis was stated as “Service Design” processes. This can be seen as quite a broad definition. As can be seen from the *Final Proposal* the outcome includes both proposals and supportive documentation. In practice the outcome includes five new and one updated process. So it can be stated that the objective was clearly met.

7.3.2 Reliability and Validity

At the beginning of this thesis a validity and reliability plan was presented (Section 2). In this section the requirements and principles set there are revisited and seen how well the thesis creation process has adhered to them.

The plan starts with *Internal* validity where the purpose is to make sure that the research question, or objective is reached. This can be said to have been reached as can be seen from the earlier Outcome versus Objective comparison. From the *External* validity point of view the question is how repeatable the results and methods used are in other fields. To address this the used interview methods and questions used during data collection are clearly documented and included in the thesis. The best practice section uses a fair number of sources to guarantee the validity of the sources and information used but more sources could have been utilised.

When looking at the thesis from the reliability point of view the following three points were raised in the plan, i.e. documenting the methods and practices used to allow for replication for further study, clear documentation on verification of gathered data and using multiple data sources to guarantee the reliability of the data used. These were addressed with the documentation of all sources and other tools used. Interview data accuracy was verified by providing the interviewees with the transcriptions of their interviews for verification. The literary data and concepts used were always tried to be verified from two or more sources. This was not always possible, but it was achieved on high number of use cases.

Additional aspects that needed to be addressed were also included into the plan. *Framing* and *Advocating* were addressed by aiming for clear and measurable targets and

stating them in a clear manner. *Illustrating* and *Inquiring* were addressed by involving multiple stakeholders and gathering information and feedback from them and compiling it in a form that showcases different views. Finally *Trustworthiness* was addressed by using multiple documented sources and methods, while keeping the scope clear and concise. In hindsight it should have been scoped even more clearly. And more wide scope of sources could have been used.

7.4 Closing words

From a bird's eye view, changing a way an organisation has seen services for multiple decades can seem like a daunting task. All changes are monumental when they are looked from a wider perspective. This principle is valid on any change being planned, be it the complete re-invention of service management, or implementation of new processes and practices. The goal is to modify the monumental change into increments that are more achievable, while still keeping the stated end goal in mind.

Rome was not built in a day, but it was built.

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2. Excellence in Product Management - 5 Pages - Process Documentation
3. Internal Audit Procedure - 3 pages - Process Documentation
4. ISO 9001 Certificate - 2 pages - Certificate
5. Organizational overview - 68 Pages - Company organizational structure explained
6. Portfolio Management - 4 Pages - Process Documentation
7. Process Interaction - 5 Pages - Process Documentation
8. Product Management - 2 Pages - Process Documentation
9. Product Master - 9 pages - Product Catalogue
10. Quality Policy - 3 Pages - Process Documentation
11. Release Process - 7 pages - Process Documentation
12. Roadmap Template - 4 pages - Template
13. SAAS Hosting Process - 1 Pages - Process Documentation
14. Scope of the management system - 2 Pages - Process Documentation
15. Service Catalog - 2 Pages - Service Catalogue
16. Service Definition Template - 1 Pages - Template
17. Service Desk - 4 Pages - Process Documentation
18. Service Desk Process - 1 Pages - Process Documentation
19. Service Pricing and descriptions - 8 pages - Process Documentation
20. Strategic Planning - 3 Pages - Process Documentation
21. Training Documents - 8 pages - Training leaflets
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Interview 1: Questions

General

1. Is the term ITIL familiar to you and what's the extent of your knowledge?
2. How is ITIL currently implemented in the company?

Portfolio Management

3. How is product and portfolio management handled currently?
4. What would you change?
5. What's is the organization for Portfolio Management?
6. Are the defined processes for Portfolio Management?
7. What does Service Portfolio Management mean to you?
8. How is Service Portfolio Management visible in your daily work?
9. Would you have a business case to use as an example?

Service Management and Design

10. What is our organization for Service Management and Design?
11. What does service design mean to you?
12. How is Service Design visible in your daily work?
13. Do you have a business case to use as an example?
14. How is Service Design currently handled?
15. Are there any standard procedures followed, if so could you elaborate?
16. Is it clearly defined who's in charge of each step?
17. There are 5 Aspects of Design; *Service Solution, Technology, Processes, Service Management* and *Measurement*. How would you say these are handled currently?
18. Another approach is the 4 P's; *People, Process, Products* and *Partners*. What's your opinion on how the company is doing from this perspective?

Service Catalogue

19. Do we have a service catalogue?
20. How is it maintained?
21. How about a product catalogue?
22. How are these services documented?
23. Is there a template/process when designing new services?

24. Do we offer SLR's or SLA's to our service customers?
25. How is this defined/documented?
26. How is the monitoring and reporting handled? Are there processes?
27. Is there a link to Service desk/Service Operations? Please elaborate.

Transition/Operations

28. How is availability and capacity monitored and managed?
29. How about change management?
30. When releasing new versions to customers what is the process, could you describe it?

Benchmarking: Questions

Service Design

1. How would you define a service?
2. What kind of services do you provide?
3. Do you follow some kind of known framework in your company in regards to service design/management?

Design Coordination

4. What kind of processes and guidelines do you have when developing a new service or developing an existing one further?
5. What kind of documentation do you have for service design?
6. How is the abovementioned documentation created, maintained and stored?

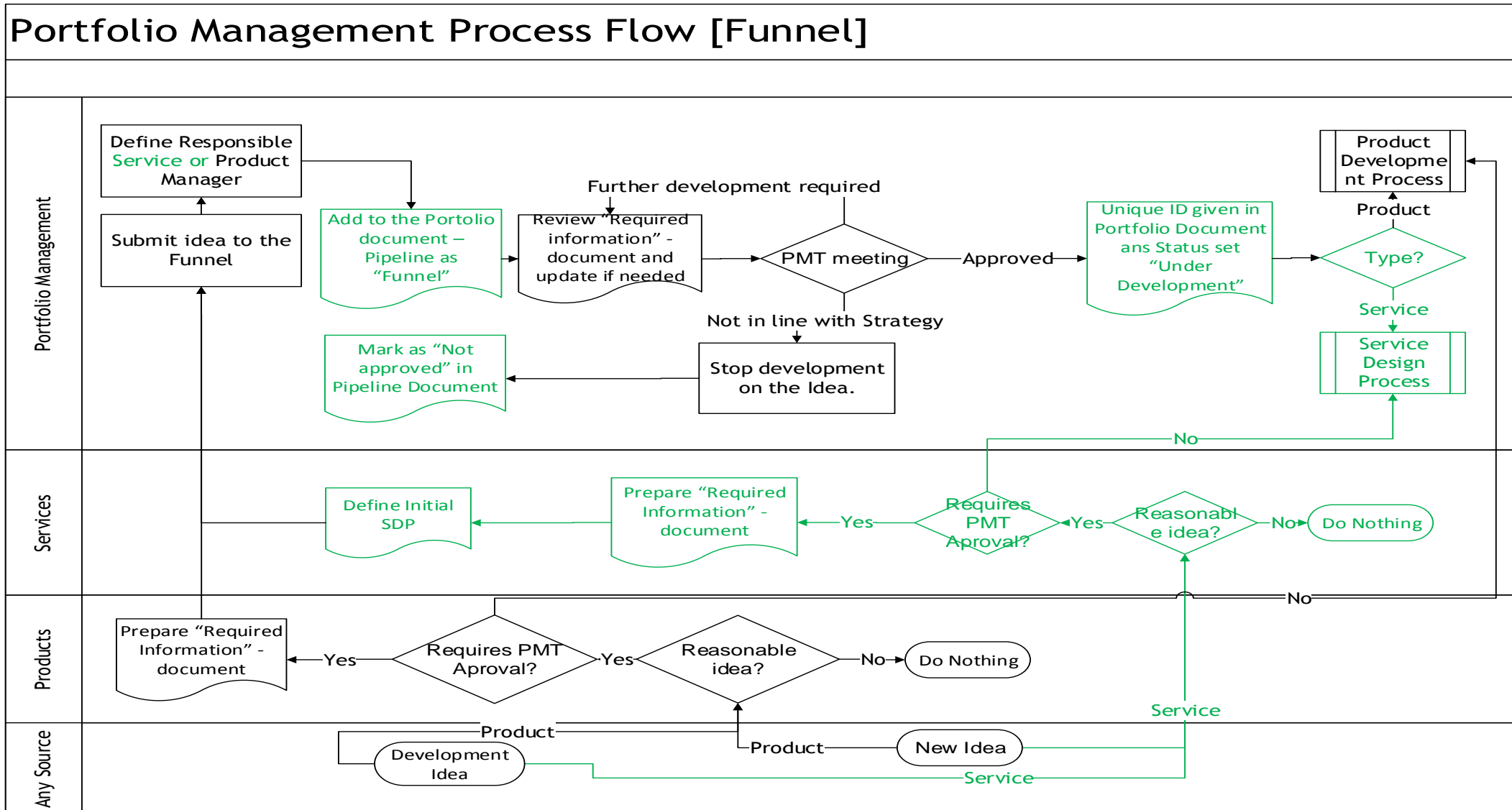
Service Catalogue Management

7. Do you have a defined service catalogue?
8. How is the service catalogue built and maintained?
9. How about a service portfolio?
10. What information is included in your service catalogue?

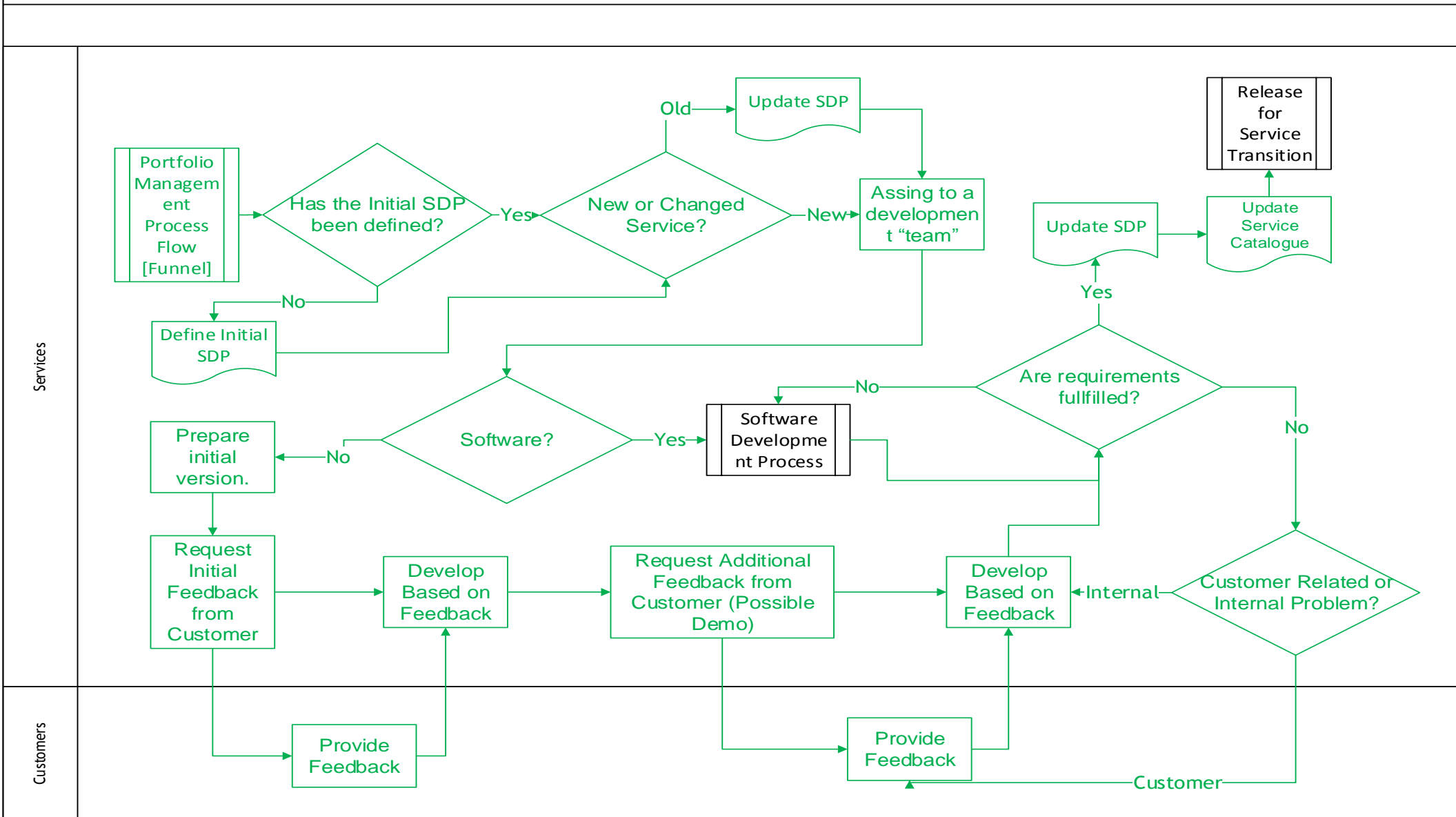
Service Level Management

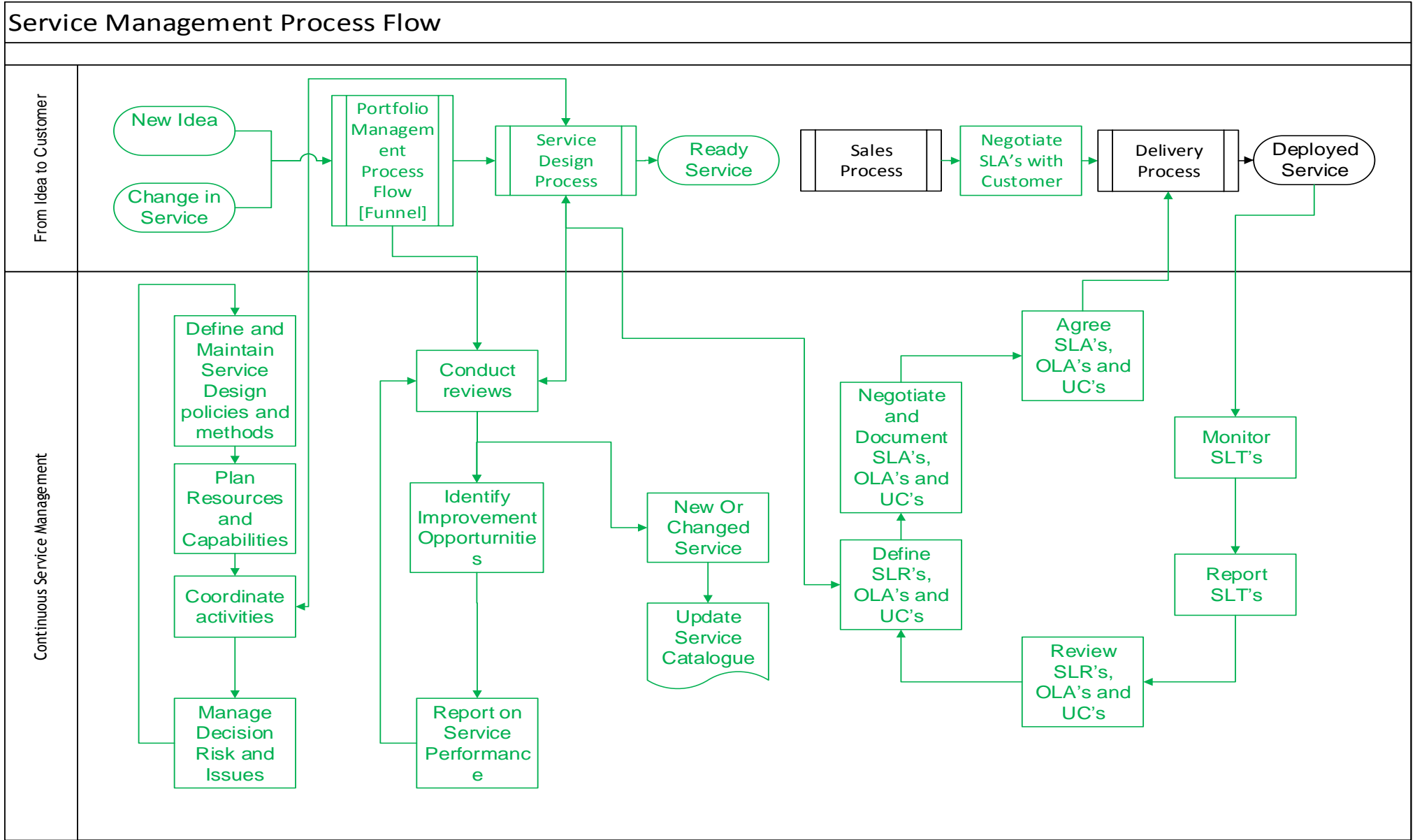
11. Do you have a service level management process or responsible persons?
12. How are your SLR's, SLT's, SLA's, OLA's and UC's maintained and monitored?
13. How is the lifecycle of the product visible in this process? New service versus and older established service or a service at the end of its lifecycle.

Proposed Processes – Initial Proposal



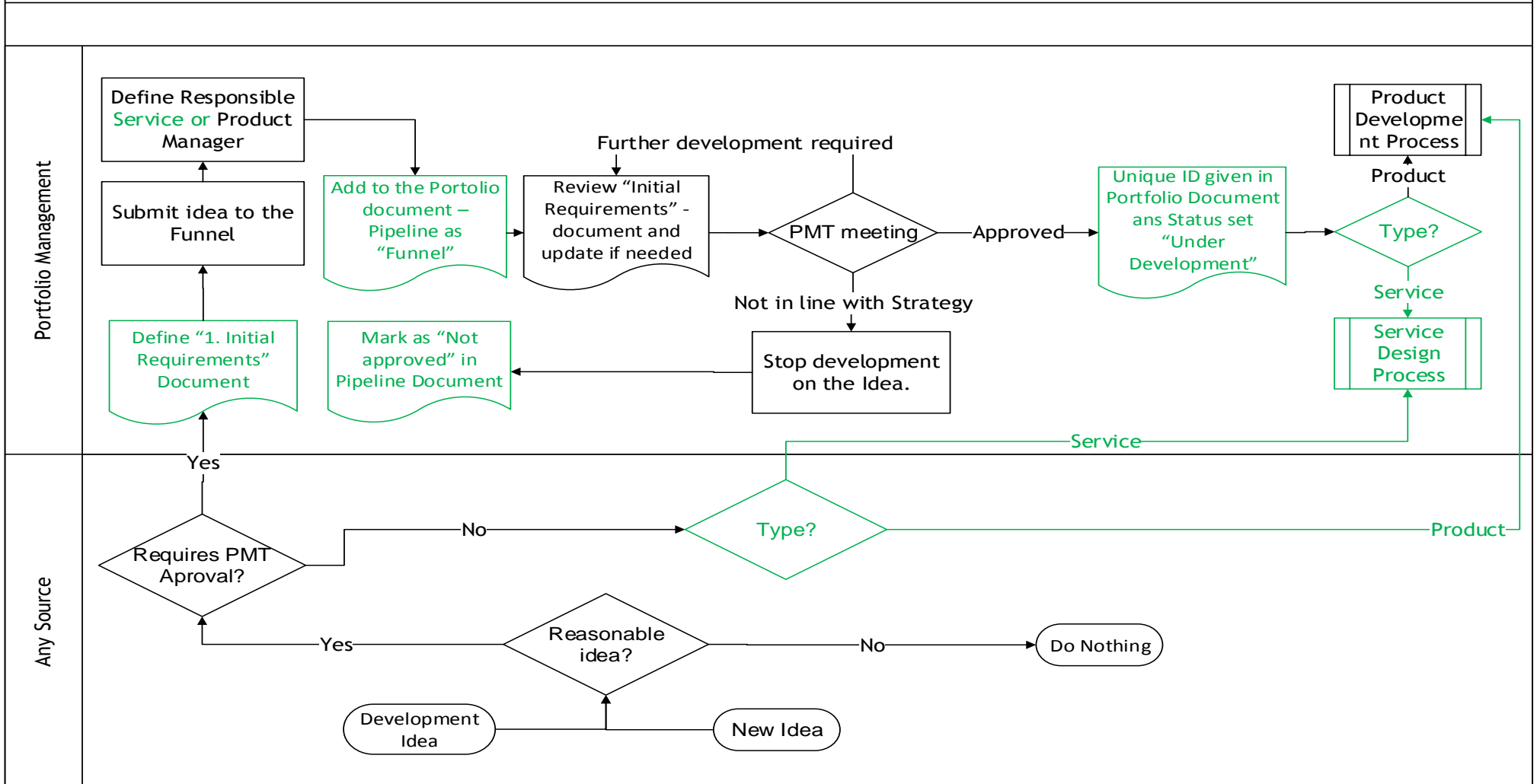
Service Design Process Flow



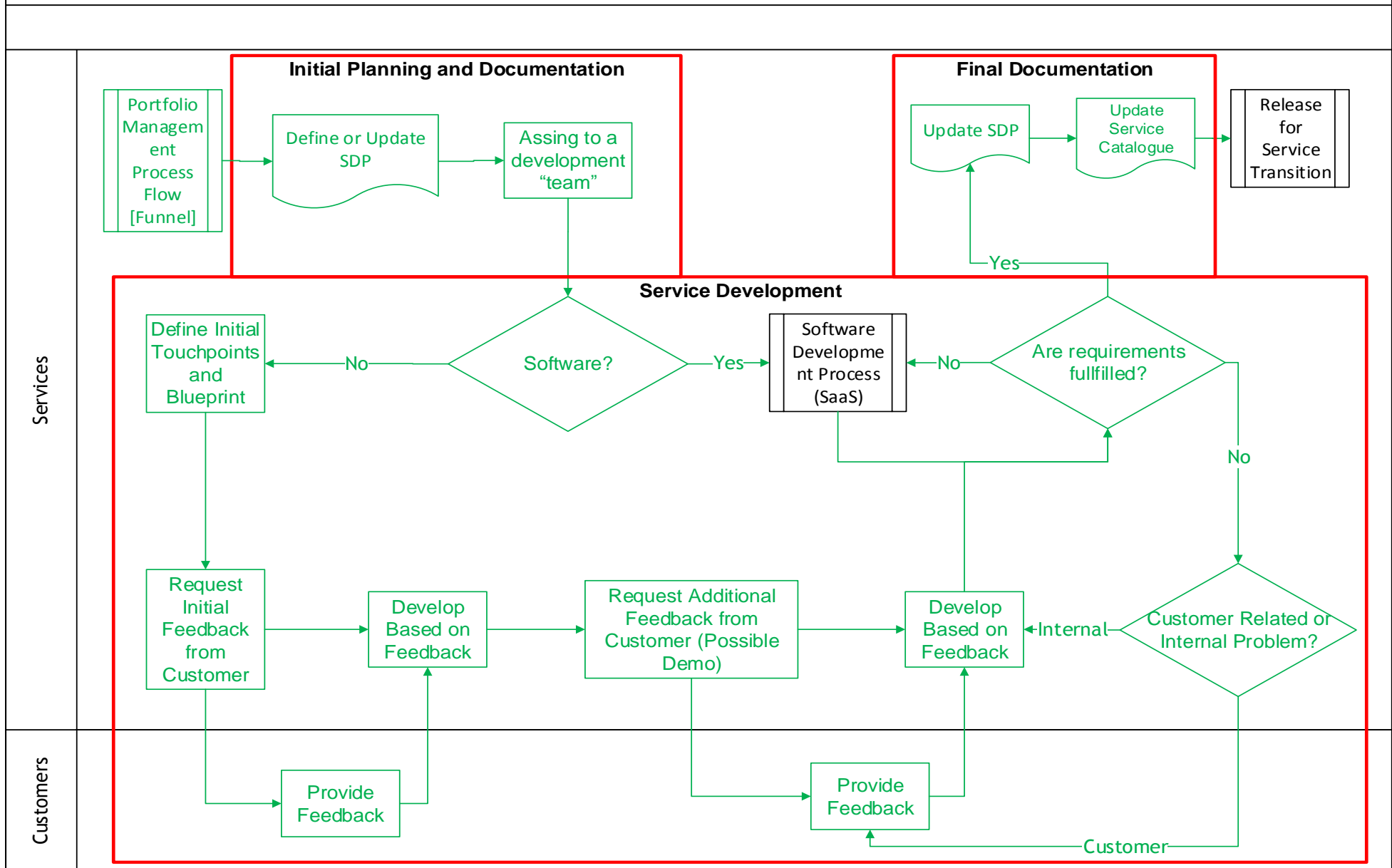


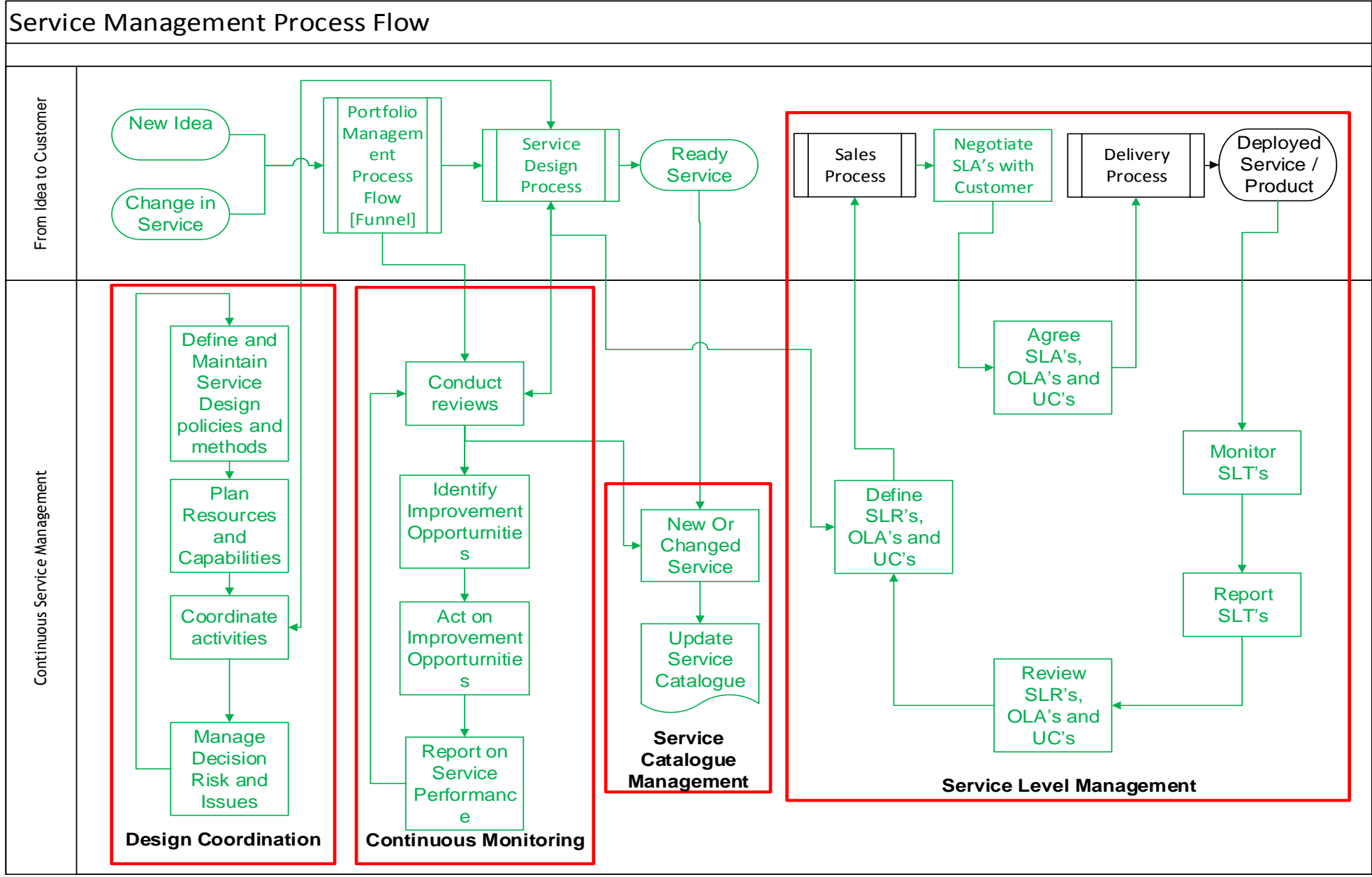
Proposed Processes – Final Proposal

Portfolio Management Process Flow [Funnel]



Service Design Process Flow





1. Initial Service Requirements

Summary

Idea:

ID: *If existing product/service*

Author:

Date:

Type:

Short Description:

Risks:

Financial:

Scheduling;

Practical:

Software:

Contractual:

Major Assumptions:

Market and Value Proposition

Target
Segments:

Affected
Segments

What problem does this idea solve?:

Value Proposition:

Customer	Wants:
	Needs:
	Fears:
Product/Service	Benefit:
	Features:
	Experience:
	Substitutes:

Market
Size:
[billable
units]

Targeted
Market
Share:
[billable
units]

Investment Summary

Job Size:
[story
points]

SLR
Cost/Ef-
fect:
[€]

Other Di-
rect Cost:
[€]

Revenue:

Revenue or/and cost savings resulting from investment for the next 5 years (can be a link to separate calculation)

Pricing Model:

Other Value To Consider:

2. Service Definition

General Information

ID:

Name:

Category:

Status:

Service Manager:

Service Owner:

Development
Team(s):

Customer profile:

Service Revenue: *Yes/No*

Management Information

Service Description:

Planned Outcomes:

Deliverables:

Marketing Material: [\[Link\]](#)

Contract/Agreement Template: [\[Link\]](#)

Service Hours: [\[Link\]](#)

Service Level Agreements: [\[Link\]](#)

Technical Information:

Model, Packaging and Service options:

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Supporting Services:

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Supporting Agreements:

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Supporting Infrastructure:

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Service Components:

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Related Processes:

How is service provided/delivered to customer? e.g. link to process descriptions.

Reporting:

Measurements and Metrics, KPI's

Usage Instructions:

Links to manuals, user instructions etc.

3. Lifecycle Plan

General Information

ID:

Name:

Category:

Status:

Service Programme

Service Programme:

Service Transition Plan

Operational Strategy:

Objectives:

Policy:

Risk Assessment:

Plans:

Service Operational Acceptance Plan

Operational Strategy:

Objectives:

Policy:

Risk Assessment:

Plans:

Service Acceptance Criteria

Acceptance Criteria:

Service Retirement Plan

Retirement Plan:

4. Service Level Requirement

General Information

ID:

Name:

Validity Period:

Brief Service Description:

[from 2. Service Definition]

SLA Change Control Mechanism:

When SLR is updated, what is the procedure to change active SLA's with customers.

Change Approval Details:

How are changes for the SLR approved

Brief Description of Communications:

How communication related to SLR is handled internally and externally, including reporting, review frequency and schedule. (Could be a separate general document for all SLR's)

Service Hours:

When is this service offered and what are the response times in case of an incident?

Scheduled and agreed interruptions to services:

Scheduled maintenance breaks and procedures how to inform customers about them. Procedure on how to do and inform about unscheduled maintenance.

Customer responsibilities:

What parts of the service levels are the customer responsible, why and how?

Service provider liability and obligations:

e.g. security, legal requirements,

Impact and priority guidelines:

Escalation and notification process:

Complaints procedure:

Service targets:

Agreed, Measurable Service Level