

Isto Pasanen

Implementing an agile start-up culture into a process oriented company

Case eHealth

Helsinki Metropolia University of Applied Sciences

Master degree programme in Business Informatics

Masters Thesis

Date 16.5.2016

Author(s) Title	Isto Pasanen Implementing an agile start-up culture into a process oriented company
Number of Pages Date	46 pages 16 May 2016
Degree	Master of Business Administration
Degree Programme	Master's Degree Programme in Business Informatics
Specialisation option	
Instructor(s)	Antti Hovi, Senior Lecturer
<p>The purpose of the present study was to find out and implement more agile ways of working into a process oriented telecommunications company TeliaSonera Finland Oyj. TeliaSonera Finland is one of the largest telecommunication companies in Finland and the largest in the Nordics. In Finland it operates under the name of Sonera Oyj. Part of TeliaSonera's strategy is to become a new generation telecommunications company through transforming the company towards more application and integrator type of service provider and finding new business opportunities close to the core business.</p> <p>During the study, a current state analysis was made from Sonera's current development methodology and decision-making processes. Three different disciplines were selected to be studied that were lean start-up and lean service creation, scaled agile framework and bimodal enterprise. A lean service creation program was launched in order to validate these methodologies with a case study with one of the new business initiatives close to the core – eHealth.</p> <p>The results revealed many different angles for the company to further develop: customer centricity, agility in development governance and culture. The scope of the development projects were not usually based on engaging the customer into the design process and projects tended to grow very large with big scopes and long lead times in the current state analysis. The minimum viable product thinking was something that the company was not used to do. The entrepreneurship culture was after all discovered to be one of the largest challenge for the company. There is no "one size fits all" type of approach. Instead, the conceptual framework should be adjustable and different methodologies suit better in different type of development items based on size, complexity, business area and so on.</p> <p>The author recommends that the leaders in Sonera make sure that the lean service creation and agile methodologies are taken more widely into use throughout the organization, but also clarify the guidelines of different disciplines. The change from a tightly-governed company to an agile start-up-like company with entrepreneurship as its core value does not happen overnight, it requires a lot of change management and continuous learning – especially from the management.</p>	
Keywords	lean start-up, agile, bimodal, waterfall, product development

Contents

1	Introduction	1
2	Current state analysis	6
2.1	Assessment process	6
2.2	Waterfall methodology	7
2.3	Organizational structure and decision making	9
3	Conceptual framework	10
3.1	Lean start-up and service creation	11
3.2	Scaled agile framework	14
3.2.1	Portfolio level	15
3.2.2	Program level	15
3.2.3	Team level	16
3.3	Bimodal enterprise	16
4	Development of the current state methodology	19
4.1	Lean Service Creation program	19
4.2	Insights and ideation	21
4.3	Ideation	22
4.4	Business planning	22
4.5	Service Design	24
4.6	Prototyping	25
4.7	Agile development and analytics	26
4.8	Storytelling	27
5	Case eHealth	27
6	Lean start-up and agile framework at Sonera	35
6.1	Innovation funnel	36
6.2	Organizational structure of the lean start-up	37
6.3	Lean start-up process in Sonera	38
6.4	Bimodal enterprise in Sonera	41
7	Conclusions	42
7.1	Findings and learnings	42

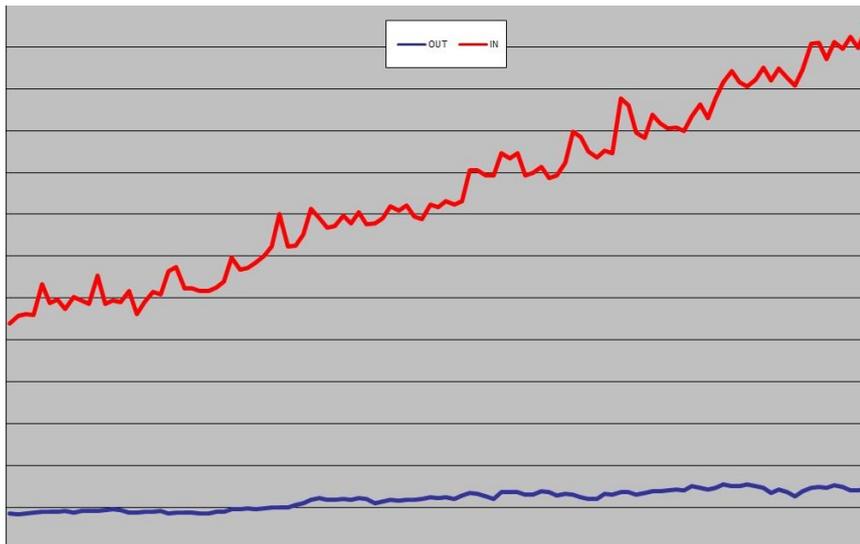
1 Introduction

Telecommunication business has become a commodity business, where growth is hard to find. In the Finnish market penetration of mobile and internet products is high and competition is fierce between rivalries. Customer demand for capacity is increasing every year on an exponential speed and the demand for services has changed to having services available at anytime and anywhere. Finland has already a number one position in the world in usage of mobile data and there doesn't seem to be an end to the demand of capacity. In the figure 1 and 2 the customer demand is illustrated. In the figure 1 there are the three cornerstones of customer demand of today and in the figure 2 the capacity increase trend is illustrated.

Growing demand for services and changing customer behaviour



Kuvio 1. Customer behaviour cornerstones (TeliaSonera Intranet. 2016.)



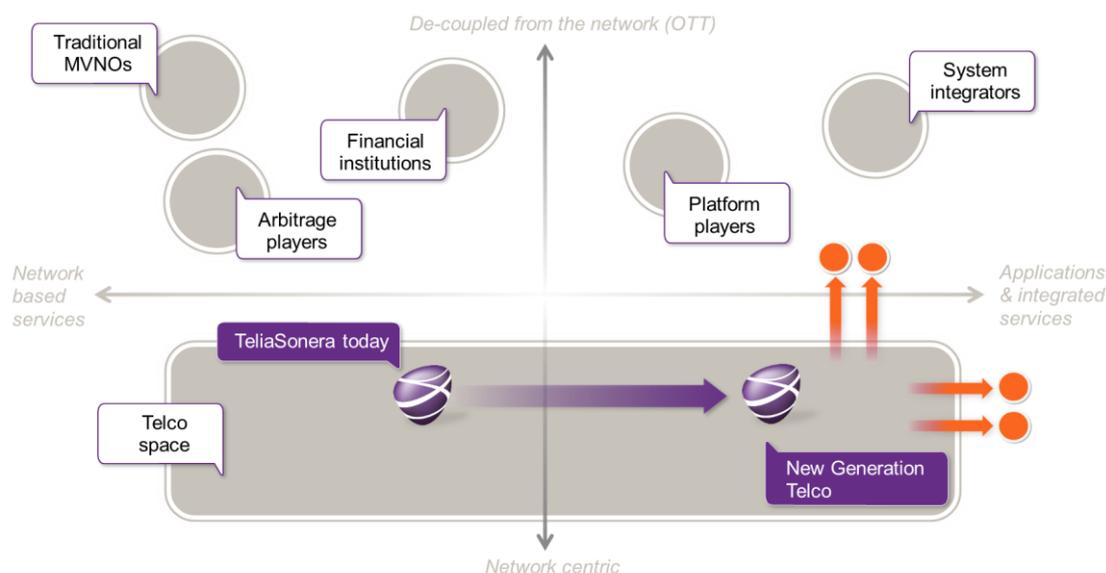
Kuvio 2. Traffic increase in the core network

Continuous traffic increase is causing a lot of investments for the operators in to their networks. Capacity investments have been doubling each year during the last few years while the subscription prices have been stable or decreasing. Subscription business has become a commodity business with limited growth potential while the growth is huge in the application and service businesses such as social media, gaming, video streaming, music and different unified communication services utilizing the network capacity where the companies providing these services are often other than the operators.

As application and service businesses are utilizing and consuming most of the capacity and earning the profits, operators are struggling to find new business areas with growth potential that are close to the core business. Businesses are getting more and more software oriented that are more de-centralized and less proprietary from the network perspective. Major global players are able to launch and develop products and services with a very rapid speed that work in any operator's network which makes those companies almost immediately global players. This has caused a totally new challenge for the operators that have a long history of providing services that are tightly connected to the network.

TeliaSonera has selected in its strategy to transform to a new generation Telco. Today, TeliaSonera is as many other typical operators where the networks is its main asset and the services or value offered to the customers are usually very close to the network based services such as mobile subscriptions, internet connectivity or voice communication. The development of these type of services also usually goes very close to the development

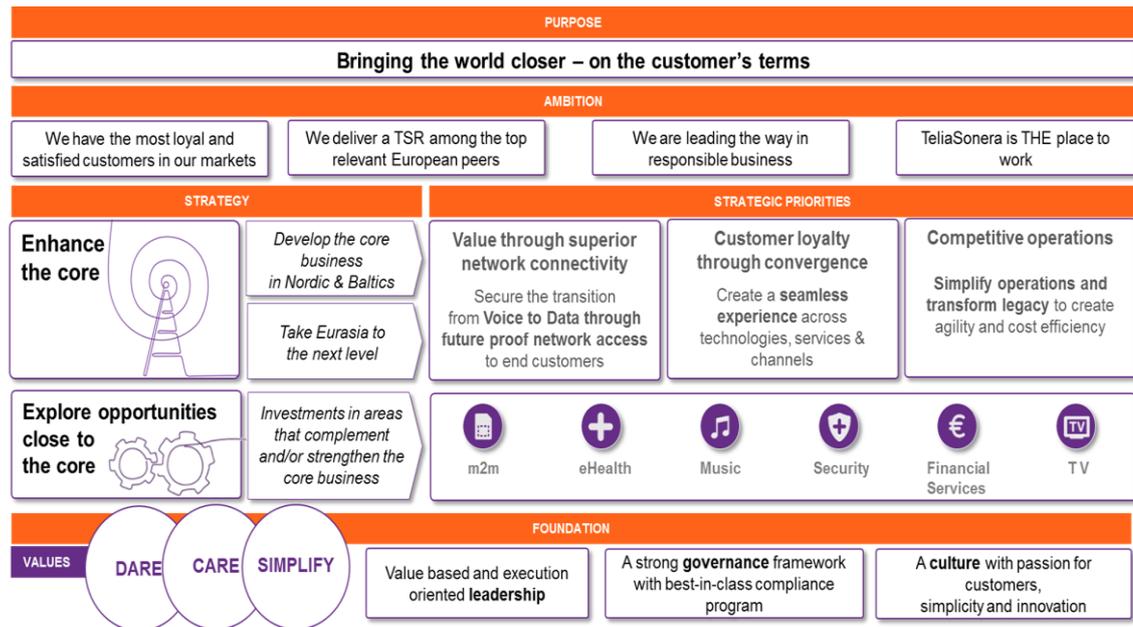
of the network asset or telecommunication technology. Since networks are rather slow and quite expensive to build, usually the processes whether it is construction or development are also based on close follow up on investments and tight process and project governance. In the new generation Telco strategy, TeliaSonera has decided to re-position itself from offering only network based and network centric services towards a provider focusing on more application and integrated services that are still close to its core business – the network. Additionally to take selected business decisions towards network de-coupled and full blown application provider markets when applicable. This is illustrated in the figure 3.



Kuvio 3. New generation telco strategy (TeliaSonera Intranet. 2016.)

In the figure 4, the strategy of becoming a new generation Telco is illustrated. Focusing on the strategy level and strategic priorities, it is illustrated that the foundation of the strategy is based on two parts: Enhancing the core business and exploring opportunities close to the core. Enhancing the core business refers to the more traditional Telco business that are more network centric such as providing connectivity. The competition and margins in the core business area especially in Finland are under heavy pressure and almost every household has a high speed internet connection as well as mobile voice reception available. In this type of business area the importance of having competitive operations and support the convergence of different connectivity technologies efficiently is key, and there are differences on how to handle investments and development in this type of businesses. I will analyse that a bit in the chapter 3.3 (bimodal enterprise).

Another part of the strategy is exploring opportunities close to the core business. In this dimension, TeliaSonera has chosen six main priorities to investigate further business potential. Those six priorities are machine to machine (M2M), eHealth, music, security, financial services and TV. These are areas where the competition and competitors are totally different from traditional telecommunications business and I will go through the current state and different conceptual frameworks how to handle new type service development in the chapters 2 and 3.



Kuvio 4. TeliaSonera strategy (TeliaSonera Intranet. 2016.)

In order for TeliaSonera to do the transformation towards the wanted position illustrated in the figure 3 where most of the competition is software based companies as their core business, there needs to be a rapid change in the way TeliaSonera develops its services. Software companies are usually fast and agile companies where there are numerous launches in a short period of time. This is not the case for traditional Telcos where usually development is slow and based more on a so called “big-bang” launches and large-scale projects using a so called waterfall methodology presented in the current state analysis.

Big bang methodology that is used currently causes the situation that projects tend to grow very large where all of the features of a product are specified in the pre-study phase of a project and a market launch is not possible before all of the features are ready. That leads to very long and expensive projects which causes slow time to market and there is increased focus on the costs of the projects. Since projects tend to be very long with

the current waterfall methodology presented in the chapter 2, often the product that is launched is already outdated since market and customer demand has changed during the implementation of the project. Especially in the consumer and mass market customer segments the lifecycle period of products is short and thus time to market is essential for product development in these segments. Conclusions from the current state analysis clearly proofed that more flexible development methodologies are needed in order to shorten the time to market and also cost-risk ratio by being able to launch smaller product packages and turning the lifecycle of products from big releases to smaller launches with continuous development cycles during products lifecycle.

Another problem that the Telcos are facing when addressing the new business opportunities currently is the problem in the prioritization of product development capacity (resources and money). Current product development model is focused on large projects meaning that each project allocates resources to a very long time. Since resources are the single most valuable asset to a product development organization, the big projects tend to get highest priority. Priority is often based on the business cases of the projects where the best business cases are often cases with a large customer base. That steers the prioritization decisions often towards development projects of products that are so called Telco-core products such as subscription business of mobile data, voice and so on. It leads to the situation where the new business areas are not getting priority and thus are not capable of getting all the needed development resources and capacity. This is a loop where the corporate level strategy struggles – new business areas are essential for Telcos to find to secure the long term revenues but at the same time the methodology that is used steers the utilization of capacity away from those areas.

Third problem identified from the current state analysis was customer focus. Since current model promotes large scale projects with large set of features and demands – the timeline of the projects are too long. Secondly, current model does not support the engagement of the customers to the specification process which leads often to the situation that customer demand is based on assumptions. Since to model is based on setting large fixed scope it does not support fast changing requirements and market demands with a fast paced decision making on dropping a set of features out from the scope or including new features in. This causes often the situation that product development is detached from what the customers are really asking for. I will address this in the conceptual framework chapter 3.1.

Fourth challenge with the current development framework is that it doesn't identify or recognize the different levels of product development well enough and adjust to the need of that particular development item. As one problem was that the current framework treats both big and small business areas the same it applies to the different levels as well. Different levels can be categorized roughly into four different areas: small development such as process, price or bundle type of changes, big or large scale development such as offering renewals, new development such as introduction of a new product or feature and continuous development or improvement such as continuous improvements based on customer feedback.

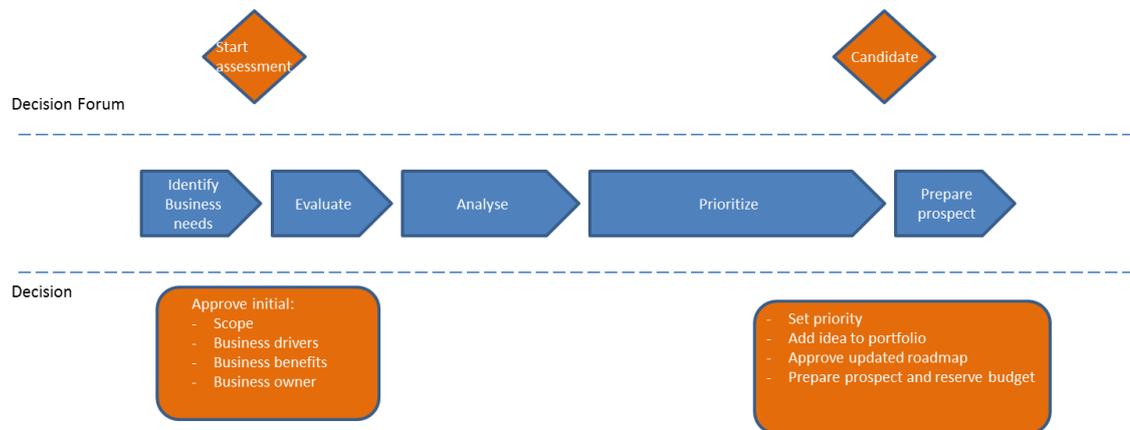
2 Current state analysis

In this section, I will present the problem statement and current status which were the initiators for this thesis. I will go through the methodology that is used for product development in TeliaSonera today as a main tool. I will cover the whole process from idea to execution and evaluation as well as describe the decision points and forums and their main tasks in the model. I will also go through the lifecycle management aspect of products and services in this model. Finally, I will conclude the findings and problems from the current state as a basis for the study work.

2.1 Assessment process

In this section I introduce the process how ideas are gathered in TeliaSonera and funnelled through a process called assessment process. This is a process that acts as a basis for prioritization decisions and is used for pre-allocation of budget for the development portfolios. Assessment process is illustrated in the figure 5. The process starts from identifying the business needs, where typically a business manager has a need that affects the development portfolio of an existing product or an introduction of a completely new product. Business manager describes the business drivers, business benefits and the initial scope. After the business need is described, usually a product manager or product developer gathers up a team of specialists to evaluate and analyse the business need. This part of the process results on an initial estimation on the complexity, length, cost and resource analysis of the case as well as describes the dependencies to other ongoing projects in the development portfolios. In this stage, there is no vendor participation yet so the estimations are usually based on an architectural view and experience and competence of the internal specialists.

After the initial analysis the results are sent back to the business manager or other business owner that has initiated the process. In this phase the prioritization of the demand is done taking all the other assessed items from other parts of the organization as well as budget situation into account. If the assessed business need is still something that the business owner wants to push forward, a so called prospect decision proposal will be made. Prospect decision means that the amount of estimated cost in the evaluate-analyse phase will be allocated from the development budget and the prospect is put into queue in prioritized order waiting to be started when all the needed resources are available.



Kuvio 5. Assessment process

2.2 Waterfall methodology

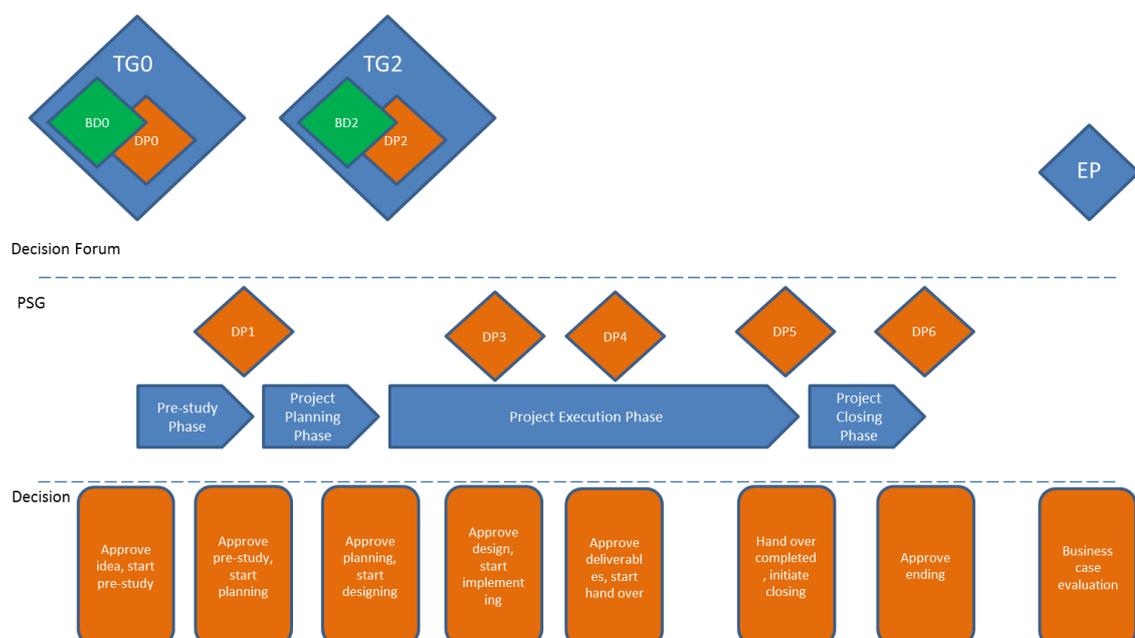
In this section I will introduce a methodology that is used for product development as a main tool in TeliaSonera today. In previous chapter I introduced the assessment process briefly. After the assessment process is completed and it has resulted into a prospect decision with priority, the process that is illustrated in the figure 6 starts.

First stage of the project model is to prepare a so called toll gate zero (TG0) decision material. This material includes an initial business case for the whole project and a plan and investment decisions material for the so called pre-study and project planning phases that happen between TG0 and TG2 decision points. During the pre-study and project planning phases only operational expenditure (OPEX) is used. During these stages, a detailed scope and design of the product and detailed project plan for the execution of the project are made. During these stages also a project steering group is founded and a final business case is prepared for the decision. During pre-study and project planning stages, needed vendors are committed to the project.

Second important stage in the current project model, is the so called toll gate two (TG2) decision point. In this decision point the final business case is approved including an investment decision and a project plan. After the TG2 decision is made, the project execution phase starts.

There are four important decision points (DP) during the project execution phase. In the first decision point the final design of the product is decided and the scope is frozen. In the next decision point the projects technical deliverables are accepted and the product is put into a production environment for a pilot period. After a DP4 decision the hand over period for production and line organization start including training, instructions, fault management, customer services, sales channels and so on. This is usually very heavy phase on the project time line. When all the handovers are done and the line organization has accepted that all necessary steps has been taken, the project steering group (PSG) takes the DP5 decision. After DP5 decision, project manager starts to close the project including the final report. DP6 decision closes the project and the project organization is closed.

Final point in the current project model is called evaluation point (EP). This is a point that typically happens after 6-12 months from the closing of the project. In this point, the business owner presents the original business case to the upper management and evaluates how well it has realized during its first 6-12 months in its lifecycle.

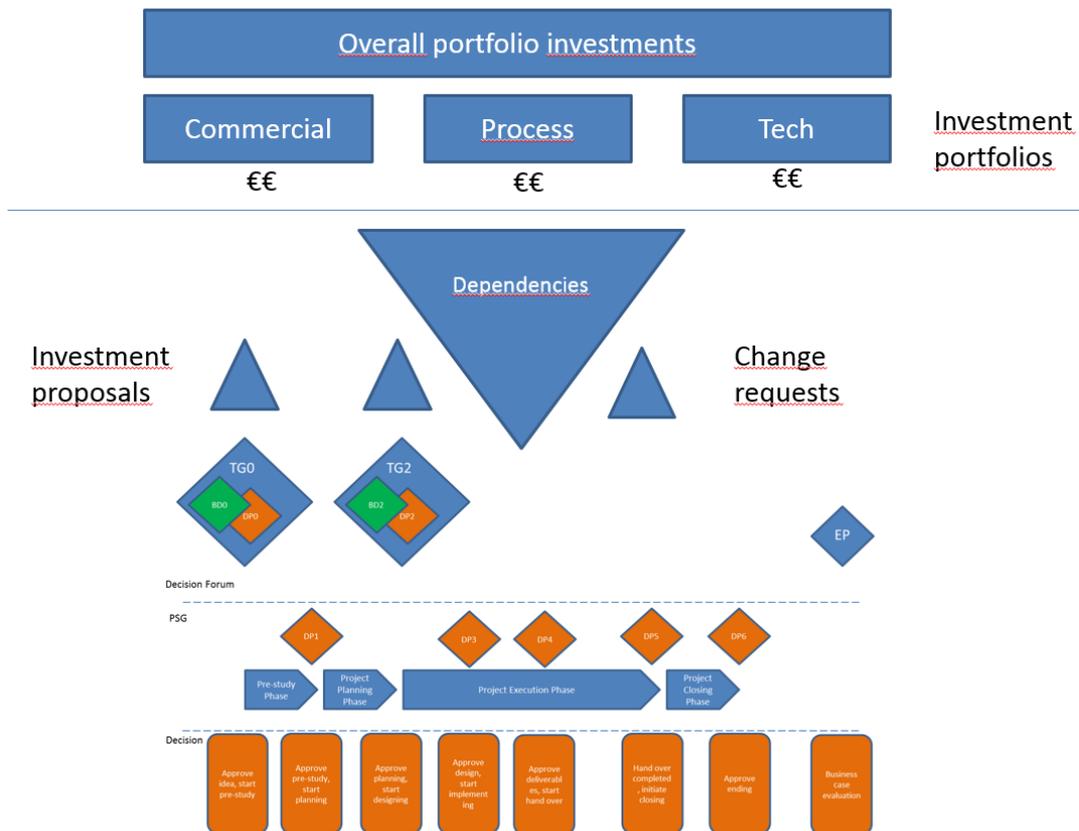


Kuvio 6. Waterfall project model

2.3 Organizational structure and decision making

In this section I shortly go through the decision making forums that are active during the process presented in chapters 2.1 and 2.2. The different decision making portfolios or themes are illustrated in the figure 7. In the current model, available development money is allocated into different portfolios that have their own investment forums. The different portfolios are divided into based on themes of the investment drivers such as commercial, process or technology. These forums decide on four different matters: TG0 (approve idea, start pre-study), TG2 (approve planning, start designing), change requests to the scope, schedule or budget (CR) and priority of resources and money. In case of the investment proposal is over the amount of the mandate for the forum to decide or in case the investment decision proposal requires money from more than one portfolio, it goes to the overall portfolio investment level for a decision.

The problem in this model is typically caused by the fact, that the same resources are needed in projects from many different portfolios causing the situation, that the investment forums do not have sufficient visibility of the dependencies that their decisions are affecting or facing. Also, often a technical development of a feature is adding value or an asset to the benefit of multiple portfolios business owners which causes situations where it is hard to identify which portfolio should fund the investment. This is a matter that I discuss further in the following chapters handling the matter of lean start-up organizational structure and investment structures.



Kuvio 7. Decision making portfolios

3 Conceptual framework

In this section I will go through the frameworks that was studied to solve the issues presented in the problem statement. I will go through the essential parts from the frameworks such as decision making, budgeting, prioritization, quality control and resourcing and compare these aspects to the model presented in the current state analysis. Finally I will conclude the main differences and the reasoning why studied framework was selected as a model in the actual case that is presented in the later chapters.

Frameworks that were studied can be divided into three categories: Building up a concept that is validated and tested with users, finding out a new way for implementation of product development and thirdly – analyse if there are differences between different product areas or if a lifecycle status of a product has any effect on the methodology that should be used. Many of the sources and basis presented in the conceptual framework chapter are based on multiple discussions and meetings with specialists and directors from companies such as Futurice, CGI and Gartner as well as internal sources and interviews.

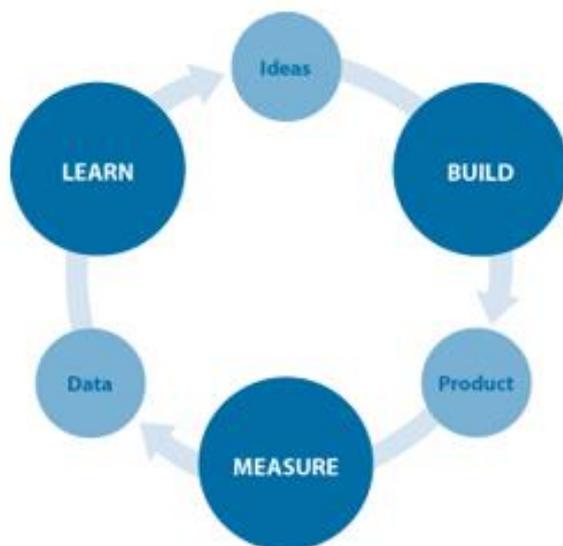
3.1 Lean start-up and service creation

In this chapter I will go through first part of the whole framework that was studied. As described in chapter 2, one of the problems in the current model was the complexity and speed of decision making whether it was regarding scope, budget or resourcing. Projects and portfolios are usually very depending on each other especially in terms of resourcing which made the decision making and prioritization very complex and favouring of the core business area products. That made very little room for the smaller or new business areas that were just trying to find their markets or customer demand.

Second problem identified in the current state analysis was the customer engagement. Since waterfall and hierarchical organization model favoured a large scale implementation projects it was very hard to adapt to a constantly changing customer demand leading to the situation where projects had large and fixed scopes with long implementation time. That furthermore lead to the situation that at the launch of the project, customers were not really getting what they wanted in the beginning of project.

Lean start-up was identified as a framework for solving the organizational boundaries and constraints for development. Lean start-up culture is based on a continuous development and improvement where organizations should iterate their development and business plans continuously. This illustrated in the figure 8. Iteration is based on 3 active stages that should generate value for the next one by producing continuously enhanced asset or data. These three main stages are build, measure and learn. Fundamentally the basis is to find a problem worth solving, find a solution that fits to the problem, verify and validate and be on time to market with the right minimum viable product. Lean start up methodology should provide an organization a capability to quickly adapt into fast changing business models in their current marketplace or quickly find or validate new business opportunities by failing fast enough. Finding a customer demand or finding a problem worth solving is achieved through open and efficient way of handling ideas, interviews, finding the customer demand and building products that are small or efficient enough to fill the customer demand (minimum viable product). All decision making should be based on fact based measures providing sufficient amount of data to learn how to improve the business or product further. Investments and funding should not be based on assumptions or estimated business cases, instead they should be based on analytics and results. So the difference between the traditional business where business cases are build more or less in beforehand when nothing is yet really done or validated, the business

model in the start-up methodology is reversed. The more results an organization achieves, the more money it gets to develop the business further. (Ries 2011.)



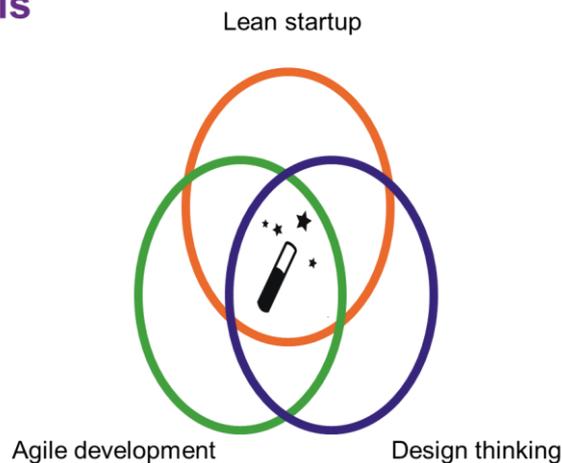
Kuvio 8. Lean start-up principles (Ries 2011, 81.)

In the lean service creation framework and the lean service creation program that is further introduced in the chapter 4, the development of services, businesses and products are based on best practices from three different dimensions: lean start-up, design thinking and agile development (Futurice 2016). This is illustrated in the figure 9. As mentioned on earlier, lean start-up approaches new opportunities through entrepreneurlike and fact based process where decision making is based on facts and results instead on assumed business cases.

Design thinking adds another dimension to the lean start-up methodology which is based on prototyping and concepting new services together with the customers and on the customers terms. In the design thinking companies should be able to step into the potential customers situation and way of thinking in each step of the way from creating concepts that are attractive to the customer and reflect the needs of each customer segment. In the desing thinking methodologies companies should identify, develop and adjust the different touchpoints and customer journeys through demos, prototypes, concepts and pilots with the customers.

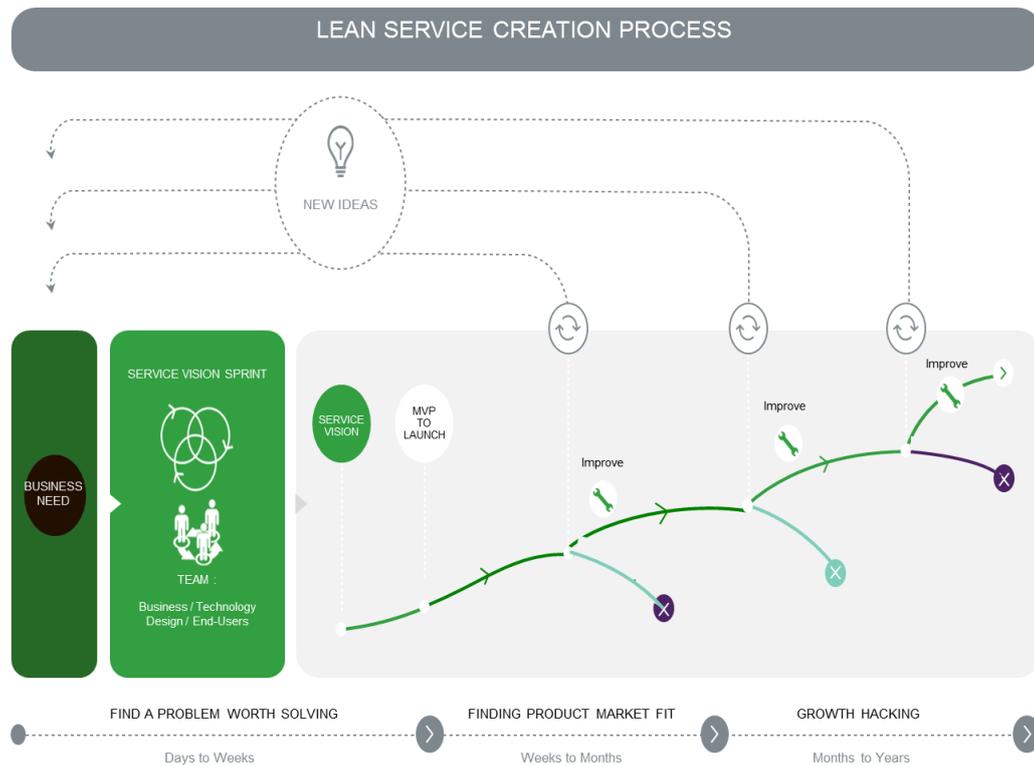
Agile development a third dimension in the lean service creation model. Agile development is based on continuous release and build cycles with an ambition on fast time to market and a low risk level in the sense that it is not based on big release cycles. Essential for agile development is to identify the different minimum criterias for a release and prioritize a backlog for the next most important thing. I will deep dive into the agile development further in the chapter 3.2

Best practices from 3 schools of thought



Kuvio 9. Best practises from 3 schools of thought (Futurice 2016.)

Lean service creation process is illustrated in the figure 10. The process identifies business needs and creates business plans by using lean start-up methodology through fact based decision making, creates service concepts through iterative process of demos, prototypes and customer touch point and journey mapping and uses agile methods for fast and small enough releases.

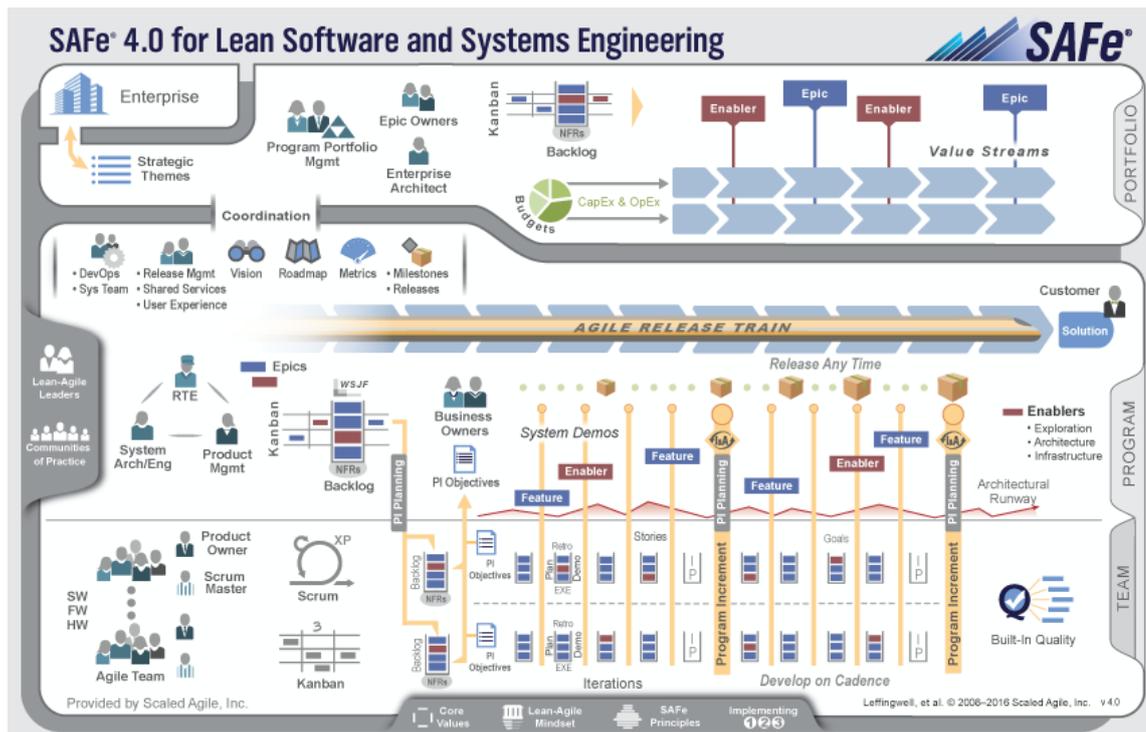


Kuvio 10. Lean service creation process (Futurice 2016.)

3.2 Scaled agile framework

In this section I will go through a framework called scaled agile framework (SAFe). I introduce the main principles of the framework and reason why it was selected as a framework for this thesis. I will also compare the different decision making points in terms of budgeting, prioritizing, decision making and resourcing as well as way of working compared to the waterfall model introduced in the chapter 2.

Scaled agile framework is illustrated in the figure 11. The framework consists of three different levels: portfolio, program and team levels. SAFe is based on LEAN and agile principles with its core values on built-in quality, alignment, transparency and program execution. The reason why SAFe was selected as one key elements in the conceptual framework was to increase visibility and capability to prioritize and to execute product development as well as increase the quality of product launches both from customer demand as well as system quality point of view. In the next chapters I will briefly introduce the three different level and the main principles of them.



Kuvio 11. Scaled Agile Framework (Scaled agile framework 2016.)

3.2.1 Portfolio level

Portfolio level in SAFe is the highest level in the SAFe methodology. Portfolio level captures the strategic themes of an enterprise that are categorized and prioritized into so called business epics. Portfolio level provides also budgeting and other governance mechanisms. Business epics are divided into different so called value streams that can represent a strategic theme, product line or similar entity with a large enough return or set of functionality to fulfil the strategic objectives or a theme which can consist of a series of business epics in one value stream. (Scaled agile framework 2016.)

Portfolio level differs from the current state portfolio handling from having focus on what is going on to what is important to do, what is the link to the strategy and how should we divide large strategic themes into measurable value stream that link to the strategy. Most of all, portfolio level adds a visible link to business cases and strategy that are also more easily understandable.

3.2.2 Program level

Program level in SAFe is where development teams are allocated to fulfil a business epic or a whole value stream. In the program level business epics are divided into features that are prioritized into program epics. In the program level activities, teams and roles

are organized into so called agile release trains (ART) where each train is an independent group of capacity (resources and money) with a continuous release cycle (instead of big bang) of program epics that needs to be fulfilled to fulfil a business epic or a whole value stream. Program level consists also a release management entity, which represents typically a project steering group in a waterfall project presented in the chapter 2. (Scaled agile framework 2016.)

Program level brings one of the biggest differences to development compared to the current state methodology. As presented in the chapter 2, one of the largest problems in the waterfall methodology is the dependencies between projects when it comes to resources and the poor visibility between these dependencies. In SAFe, agile release trains are independent development teams that are capable to execute end to end releases. Another improvement seen compared to the waterfall methodology is also the continuous release cycle view instead of a big bang view which provides faster time to market with less risks in the release management. This used together with lean start-up methodology with an ambition to find the minimum viable product was seen as a huge benefit compared to current state.

3.2.3 Team level

Team level is a level which leads execution and is part of the program level. In the team level program epics are divided and prioritized into user stories and further on to tasks that are implementable entities for a coder to implement as an example. Team level uses SCRUM or Kanban to execute and handle backlogs and transparency to the program level agile release trains. The ambition for team level is to produce a system demo every second week. (Scaled agile framework 2016.)

Team level compared to the current state methodology could be described as increased visibility of the execution and thus also increased visibility of the budgets and value. Also, since the team level divides the features into small enough implementable pieces (tasks), it should reduce errors and testing cycles.

3.3 Bimodal enterprise

In this section, I will go through the third methodology called bimodal enterprise that was studied as a part of the whole conceptual framework.

As illustrated in the figure 4, TeliaSoneras strategy could be divided into two areas: core business and new businesses close to the core. Both product categories have certain distinguish features in terms of business size and market position, penetration and saturation of the market as well as technological differences. As illustrated in the figure 3, the core business was identified as more network based and close to the network type of services whereas the new business areas were identified being more close to the application based or an integrator type of services.

Bimodal enterprise model recognizes these differences. In the traditional business areas that can be considered in Sonera's case the network business or products that are close to the network, there are many aspects that are different to the application based services. In the traditional business areas the focus is very much in the reliability of the service such as mobile voice sound quality or data speeds. Since the profit margins especially in the Finnish markets for these type of services are rather saturated, the value of the products are heavily tied to the cost levels in order to produce the service. Waterfall approach is many times a better way to approach these type of product development or investments since waterfall as described in the chapter 2 takes very close approach on single investment and business case. Governance is usually based on more long term roadmaps where investments are handled through tightly governed processes and sourcing negotiations are focusing on more long term contracts with well-established vendors or partners. Resources and competences are typically existing widely within the organization or example in Sonera's case – network engineers and developers since it is and has been Sonera's core business for very long time. Culture is process oriented with more top down approach rather than based on piloting and fail-fast culture. Development cycles are also typically long since the cost or effort – benefit ratio is more important in these type of development activities. (Gartner 2014.)

Application, or non-linear businesses or product areas in Gartner's report have a different type of approach where the focus is more on renewing the business like described in the figure 3. Value proposition from these type of transformation initiatives is focused on making a significant business impact and high-class customer experience where the cost levels are not the main driver when looking at a business opportunity. Development approach is agile and focused on time to market where the governance model is more based on allocated budgets with room for risks through experimenting as described in the chapter 3.2. In the non-linear type of development model, the sourcing deals are usually made with fast and agile vendors and with short term contracts in order to support

the fail-fast principles of lean and agile methodologies. Competence is typically little or not existing in the organization as such or they need to be built from the beginning. Culture of non-linear type of business or development activities are more based on autonomy and business driven that are typical in a lean start-up organizations. Development cycle times are short and experimental. (Gartner 2014.)

In the current state analysis, the finding was that the current development model was not totally wrong but it was based on serving the purposes of the traditional businesses rather than the non-linear businesses. This was also the basis of the study further on in this thesis since the non-linear development model was clearly needed in order to succeed in wanted strategy of exploring businesses close to the core illustrated in the figures 3 and 4.

Mode 1: Traditional		Mode 2: Non-Linear	
Reliability	Focus	Digital Business Renewal	
Acceptable quality cost-efficiently	Value	Significant business impact, best of class customer experiences	
Waterfall	Approach	Agile	
Roadmaps, long term plans, investment propositions	Governance	Budgets allocated at high level, experimental, risk taking, start and fail fast, succeed often	
Long-term deals with a few dominant suppliers	Sourcing	Small, new vendors, short-term / flexible deals	
Good at conventional process, projects	Talent	Good at new and uncertain projects, disruptive competences	
Process based command and control management	Culture	Business purpose driven, autonomy, leadership	
Long (months)	Cycle Times	Short (days, weeks)	

**Think
Marathon
Runner**



**Think
Sprinter**



Kuvio 12. Bimodal Enterprise (Gartner 2014.)

Another aspect that could be concluded from the Gartner's report was the product management angle and especially the effect of the lifecycle status of a product that can steer an organization to choose between traditional and non-linear development disciplines. During an end to end lifecycle of a product, typically in the beginning of a products lifecycle, speed and time to market is more important rather than the cost of development or total cost of ownership. When the product and markets are found and business is scaling up it is essential to continuously develop the product in fast paced cycles. When the product or a business reaches a saturation stage, typically there starts to be more competition in the marketplace for similar products or businesses. When competition is high,

it usually decreases the product margins and costs of development or maintenance of a product starts to become more important. This can be also looked at a so called threshold where an organization should start to evaluate the governance model and development methodologies such as moving from full blown agile to more waterfall type of governance. This thinking is illustrated in the figure 13.



Kuvio 13. Lifecycle aspect to the bimodal enterprise

4 Development of the current state methodology

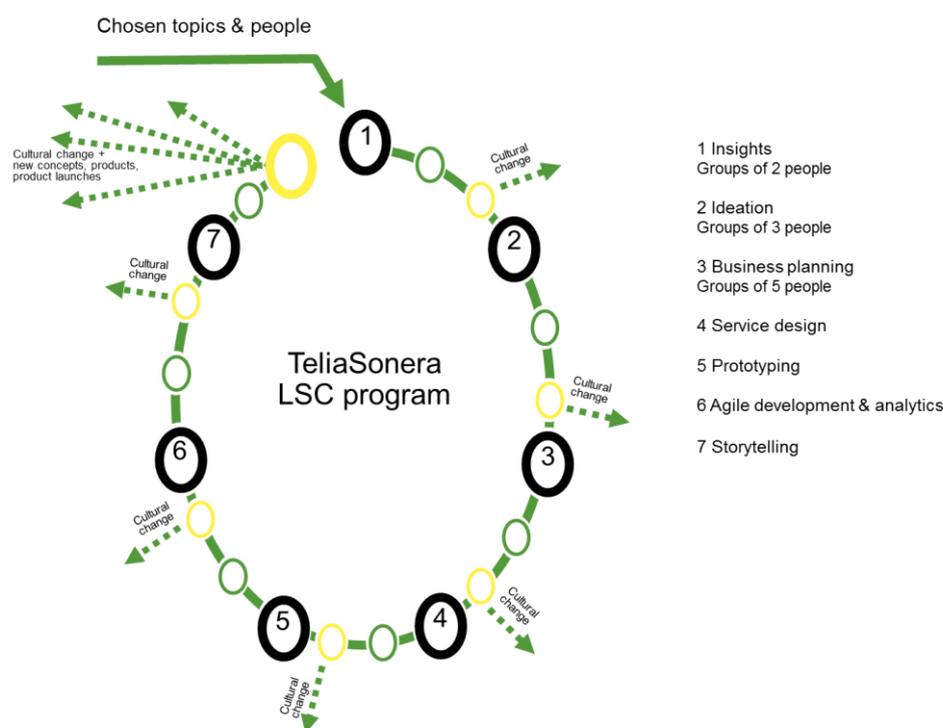
In this chapter, I will go through what was done using the frameworks presented in the chapter 3.

4.1 Lean Service Creation program

As described in the chapter 3, new ways were needed to be found in order to gather customer demand, to develop new services and to found new business areas in order to move the organization towards the wanted state as presented in the chapter 2. During the spring and autumn 2015 we founded a lean service creation program within Sonera. Lean service creation program was founded in order to educate and collect the benefits from the some of the most important cornerstones from the lean start-up culture – customer centricity, experimentation and iteration and to drive the transformation towards a new generation Telco. For the lean service creation program we needed a partner with a lot of experience from the area that could facilitate, educate and provide different tools, competences and dedicated people for the program. Partner that was selected was Futurece, which is specialized into lean service thinking, service design and lean start-up culture.

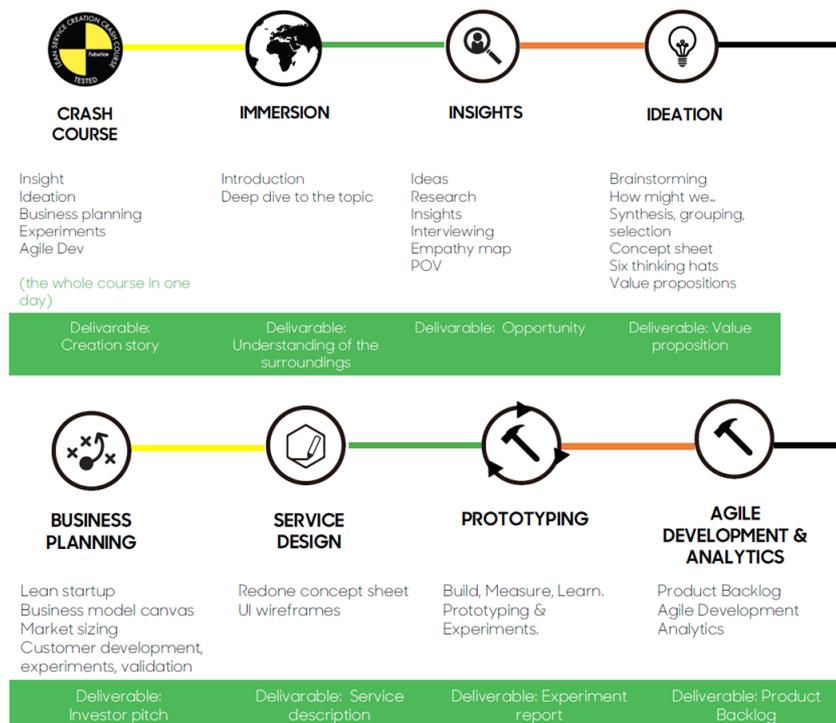
The first step before starting the lean service creation program was to select the topics or themes for the program. In Sonera there is an innovation manager appointed who had the responsibility to coordinate and facilitate the program from Sonera's side. Innovation

manager gathered a lot of ideas and topics that were identified as challenging or interesting areas of investigation or ideas where Sonera had failed earlier to find a solution for. Topics were focusing on the business areas that were identified as areas needing a new type of approach from the core business development model. Topics that were selected to the program were business defined networking, cloud business and eHealth. In this thesis, I will focus on the case eHealth in the chapter 5. Lean service creation program is illustrated in the figure 14. After each phase the groups presented the results from the phase in an open seminar. The audience was acting in a role of an investor and after each demos session the audience voted for the winning group that was considered to be the most advanced finding the answers or solutions needed to be found in the that particular phase.



Kuvio 14. TeliaSonera lean service creation program (Futurice 2016.)

Lean service creation program and the different phases of the lean service creation methodology are illustrated in the figure 15. After the topics were decided the first stage was a so called immersion stage, where each topic had to really deep dive on the area that was to be implemented through the program. In the immersions stage each topic analysed the markets, customer potential and maturity of the product area to really understand the current state, potential and customer need of the potential business area.



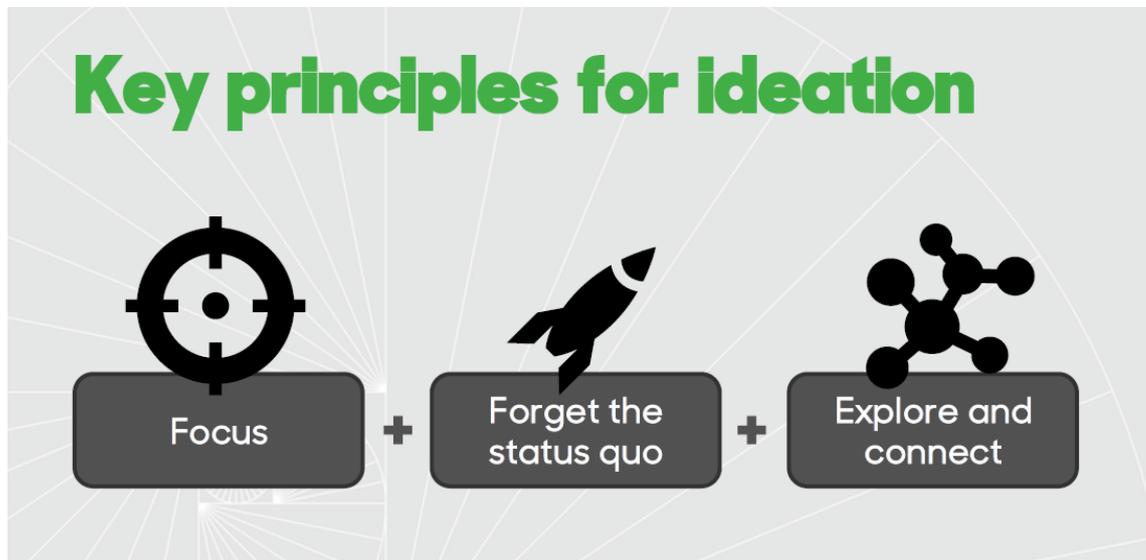
Kuvio 15. Different stages of the lean service creation program (Futurice 2016.)

4.2 Insights and ideation

After the immersion stage groups moved into a so called insights phase which was one of the most important stages of the program. One of the key principles of insight phase is to meet customers and customer groups to verify the customer need and point of view on the topic or product idea at hand. Each group interviewed from five to eight customers or more depending on whether the product idea was based on enterprise or consumer markets. In the interviews groups tried to gather more understanding on what are the key features or needs customers would expect to be fulfilled by the product. Very important things in the insights phase is that the groups should forget the current state or “status quo” and really explore the potential of the topic or product. This is not so easy since often there are already a lot of pre-defined hypotheses or even targets set by the management for the product area and the interview can easily turn into just confirming the already decided direction.

Essential is also to keep the focus in this stage since when exploring business area that is not yet clearly defined, one can easily be distracted by too many things at once and grasping of the essential things that really matters for the customer. During the insights phase a lot of surprises were found and a lot of pre assumptions were proven wrong as an example, cloud services were pre-assumed that security and knowing where my data

is would have been the most important issues for the enterprise customers regarding cloud services. They were of course important but the most important when considering a minimum viable product.



Kuvio 16. Key principles for ideation (Futurice 2016.)

4.3 Ideation

After the insight phase the next phase was ideation. In the ideation phase groups gathered all the information that had been acquired so far from the immersion and insights phases and started to do ideation. Ideation were held in heavy full day workshops where all groups did a lot of brainstorming trying to find answers to the things such as what is the most important thing for the customer based on what we have learned so far and how would, should or could it look like? During the ideation groups needed to group the ideas into different categories based on importance, features and so on in order to visualize the possible different value propositions and concept sheets for the product or service. A lot of post-its and powerpoint slides were produced in this stage and also first possible commercial advertisements were drawn.

4.4 Business planning

After the ideation phase started the business planning phase. In the business planning phase concepts and value propositions created and modified based on the feedback from the pitching event were put to a business plan canvas. In this stage the concepts started to become more concrete in terms of the business and this stage was really hard for all of the groups. Business planning phase is divided into two parts and six steps as

illustrated in the figure 17. First part is business model creation. In the business creation the key things to identify were understanding the problem or more specifically evaluate that have we really now understood the problem based on the previous phases of the program. After the groups were confident that the problem was understood and it was worth solving the solution was defined. After the problem was understood and solution was defined to resolve the problem, they were documented to the business model canvas that is illustrated in the figure 18. In the business canvas the groups described first the value proposition – what and how the value proposition evolved during the program in the earlier stages would be and how it would be delivered, customer relationship – with whom and what kind of relationship should the product or business area have with the customer during its lifecycle, channels – what kind of channels would or should be used to reach the customers, customer segments – which are the most important customers we want to deliver value to and so on. After this groups tried to identify key partners and the requirements, key activities and key resources that would be required for delivering the value to the customer. Next, groups described the cost structure – what are the most important cost elements that were needed to be handled and how and identified the revenue streams – how much the customers would be willing to pay and what would be the potential for that. All of the information described into the business model was information that was essential to be found during the immersion, insights and ideation phases. Finally, groups identified the riskiest parts in the plan.

Second part in the business planning phase was business model validation. Business model validation is based on systematic testing and development of the business plan iteratively.

BUSINESS MODEL CREATION



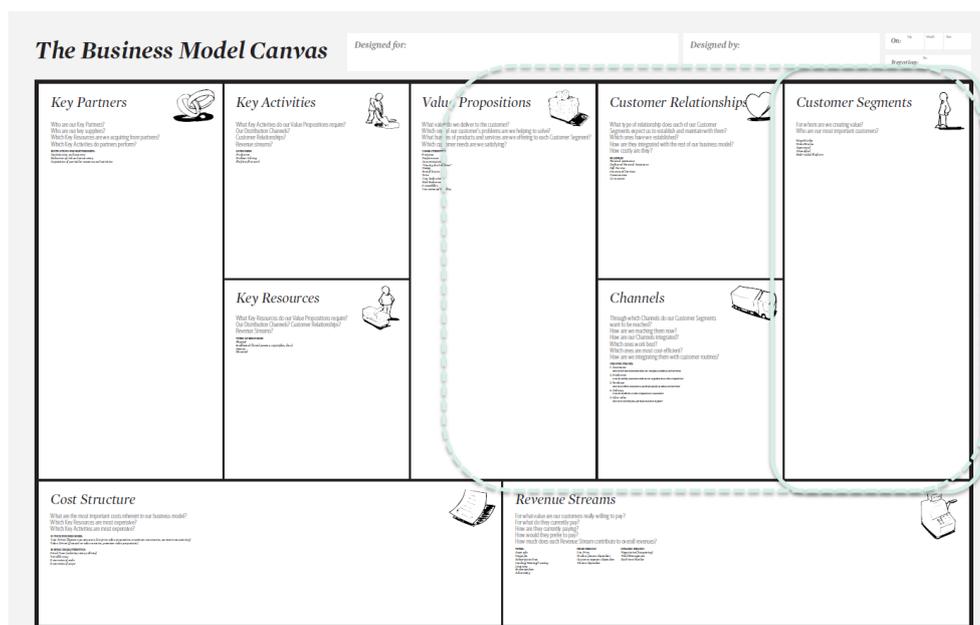
1. Understand the problem
2. Define the solution
3. Document your business assumptions using the business model canvas
4. Identify the riskiest parts of your plan

BUSINESS MODEL VALIDATION



4. Develop a plan to test
5. Systematically test your plan
6. Keep validating your business model hypothesis and pivoting until you find a model that works

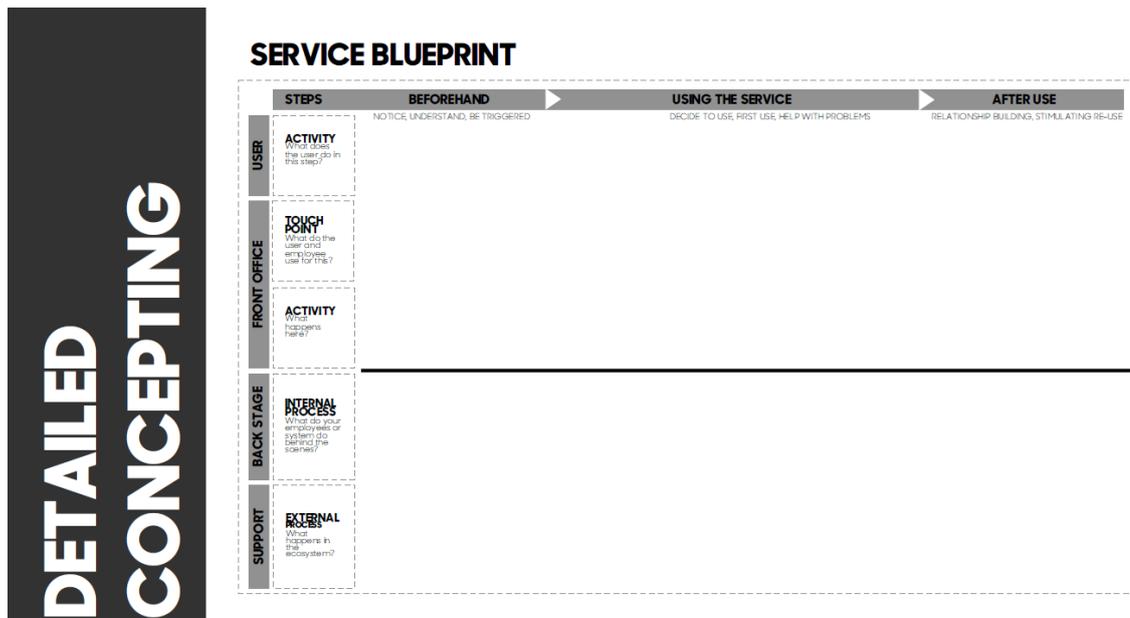
Kuvio 17. Business model creation and validation (Futurice 2016.)



Kuvio 18. Business model canvas (Futurice 2016.)

4.5 Service Design

After the business planning had progressed into the situation where each group had validated their business plans to the extent that they had time in the program, they entered into the service design phase. In the service design phase each group had an external service designer to help them to visualize the concept. In the service design phase the concept is drawn into a service blueprint and first user interface wireframes are drawn. Essential part of this phase is to map and design the customer journey through each so called customer touch point in different stages of the process such as how the user finds, buys, activates, uses and ends the service, what happens in different internal and external processes and what are the key stakeholders during the process. In this phase groups started to take first thoughts also towards mapping the customer journey through Soneras value chains and their touch points in case of the concept should be implemented in the Soneras existing processes. Many findings were found in this stage especially regarding Soneras existing processes and the challenges that a new concept would have if implemented as a “regular” product and project model introduced in the chapter 2.



Kuvio 19. Service design blueprint (Futurice 2016.)

4.6 Prototyping

In the prototyping phase, the concept is put to a test. In the prototyping phase the groups needed to validate whether the main assumptions were correct before building anything based on the build-measure-learn foundation from the lean start-up culture. Groups needed to describe how to validate the concept, product or an assumption – whether through pilots, prototypes, user interfaces or application and so on. The groups also needed to set a success criteria in order to measure whether the prototype or solution would really answer to the demand and then formulate a set of key findings how to proceed further. The key findings should be also the first stage of starting to formulate a backlog of the product and also to set requirements for measuring principles and analytics. Experimenting template is illustrated in the figure 20.

EXPERIMENTING - Finding the answers before building it.

	OUR MAIN ASSUMPTIONS	HOW TO EXPERIMENT	SUCCESS CRITERIA	KEY FINDINGS
IF THE CONCEPT/BUSINESS WON'T WORK IT FAILS DUE TO:				

DO YOU THINK? DO YOU KNOW? DID YOU **CHECK?**

Kuvio 20. Experimenting template (Futurice 2016.)

4.7 Agile development and analytics

During the prototyping phase the groups also needed to start to formulate the final description of the minimum viable product based on the learnings during the prototyping. Essential also for the minimum viable product definition is the backlog formulation which means a set of features, functions or services that are important for the product after the initial launch. One of the most important things in this phase is also to define the analytics – what to measure, how to measure and what the key performance indicators are which proves that the minimum viable product is succeeding in the market as wanted. Minimum viable product, backlog and analytics requirement templates are illustrated in the figure 21.

The image displays three templates for Minimum Viable Product (MVP) development, arranged horizontally and separated by vertical lines.

- MINIMUM VIABLE PRODUCT:** This template is divided into two sections, each titled "What is in the MVP?". Each section contains a large empty box for notes and a small speech bubble icon with the text "ASK WHY." to the right.
- MVP BACKLOG:** This template is titled "RIGHT NOW WHAT IS THE MOST CRITICAL...". It features a grid with columns labeled "PRIORITY", "DATE", "RESPONSIBLE", and "DONE". Below the grid is a circular diagram with three nodes: "LEARN" (with a lightbulb icon), "BUILD" (with a pencil icon), and "MEASURE" (with a magnifying glass icon), connected by arrows in a clockwise cycle.
- WHAT TO MEASURE:** This template is titled "ORIGIN ANALYTICS" and "MVP is out. What to measure to make it rock". It includes a graph with a vertical y-axis and a horizontal x-axis. Below the graph are four empty boxes for notes, each labeled "[Insert label here]". At the bottom right, there is an hourglass icon and a box labeled "Other".

Kuvio 21. Minimum viable product, backlog and analytics requirement template (Futurice 2016.)

4.8 Storytelling

In the storytelling phase, the groups needed to formulate a story how address the market, the investors and so on. In the storytelling phase groups did different marketing concepts and further enhanced prototypes where the focus was on how to tell a story based that would sell based on the findings and results from the previous stages such as “how to create the story around the customer demand which was learned during the various interviews with the potential customers”, “how to tell a story why the product developed is answering the this demand” and so on.

5 Case eHealth

Case that was selected for this thesis was eHealth. eHealth was identified from the new business areas as probably the most difficult area and also as the most un-developed as a whole market where no big players have yet emerged into the marketplace. One of the main reason for this was seen that no one has really understood yet what the customer demand is. Business case in the Finnish market is clearly seen that the need for electronic healthcare services is increasing due to the demographic and geologic evolution of the country where the population is aging, people are moving into cities and the country is geographically large. Still, there are lot of doubts among people for this type of services and not being able to handle everything face to face is concerning especially elderly people. In order for Sonera to launch a new business in the healthcare area, more customer centric approach was needed where the customer – not the existing business is in focus. In this and following chapters I am going to go through more in detail, what was done in order to find a solution or a customer demand for the aimed new business

area eHealth. I am going to go through different stages of the program and what was achieved in each step. Many of the findings and results are based on the investor pitches and interviews with the business lead in eHealth program, Ms. Sanna Mutka.

Based on the macro economic situation and trends happening in Finland – a problem statement was created based on the interviews done with selected target groups. During the first step of the program we identified two main problem statements: How to ease the concerns of the relatives of their elders without increasing the feeling of someone watching them and how to enable the elders to live and stay active in their homes for as long as possible. This led to the main problem statement: How to bring the families that are living in different parts of the country closer together. This is illustrated in the figure 22.

” How to ease the concerns of the relatives of their elders without increasing the feeling of someone watching them”

” how to enable the elders to live and stay active in their homes for as long as possible”



How to bring the families closer together?

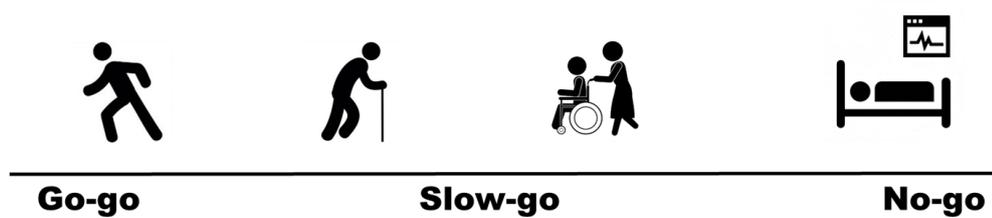
Kuvio 22. The main problem statement of eHealth

After the main problem statement was created, the next step was to continue with the next set of interviews in order to get more information around the actual problem and to identify different potential customer segments in the healthcare area as well as to narrow down, what would be the focus group of the minimum viable product. Based on the interviews we identified three different segments in the elderly population that is visualized in the figure 23 that were classified as go-go, slow-go and no-go. Go-go referring to the elderly population that are active, live on their own with some or minimum external support from health-industry. Slow-go referring to the elderly population that are living on their own, but are requiring or starting to need some attention or help at home regarding safety, health, automation and so on. No-go referring to the elderly people who are already within a constant need of medical help (home care) or perhaps hospitalized and are not managing to fully live on their own anymore.

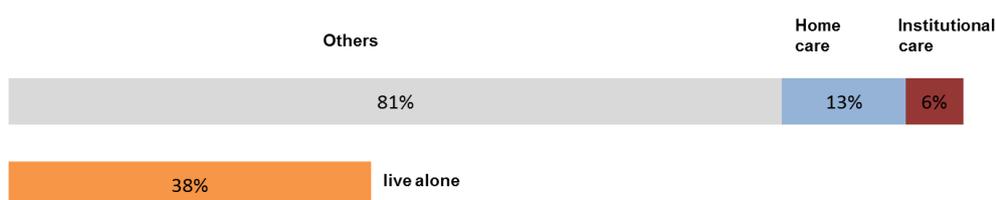
As illustrated in the figure 23 the amount of over 65 years old population in Finland is already over 1,1 million people. 81 percent was identified as go-go or slow-go segments

and 19 percent as no-go segment. First decision was that the minimum viable product and target segment should be in the go-go and slow-go segments. In order to really have focus on the minimum viable product it was evident, that 81 percent of the population is still too much to address the whole market with one concept or story. The next step was to try to identify the group that would be the best potential candidates for the main problem statement of how to bring families closer together. For that, we identified that how many persons from the 81 percent go-go and slow-go groups are living alone, since when interviewing the relatives of the elderly, that became as one the most important factor of concern for the family members: how to make sure that my father or mother who is living alone is well and secure. Based on the analysis and statistics that are available, we identified that 38 percent from the go-go and slow-go segments are living alone which was to be selected as the first target audience of the concept.

Asiakas-segmentit



1.1 MILLION OVER 65-YEAR-OLDS

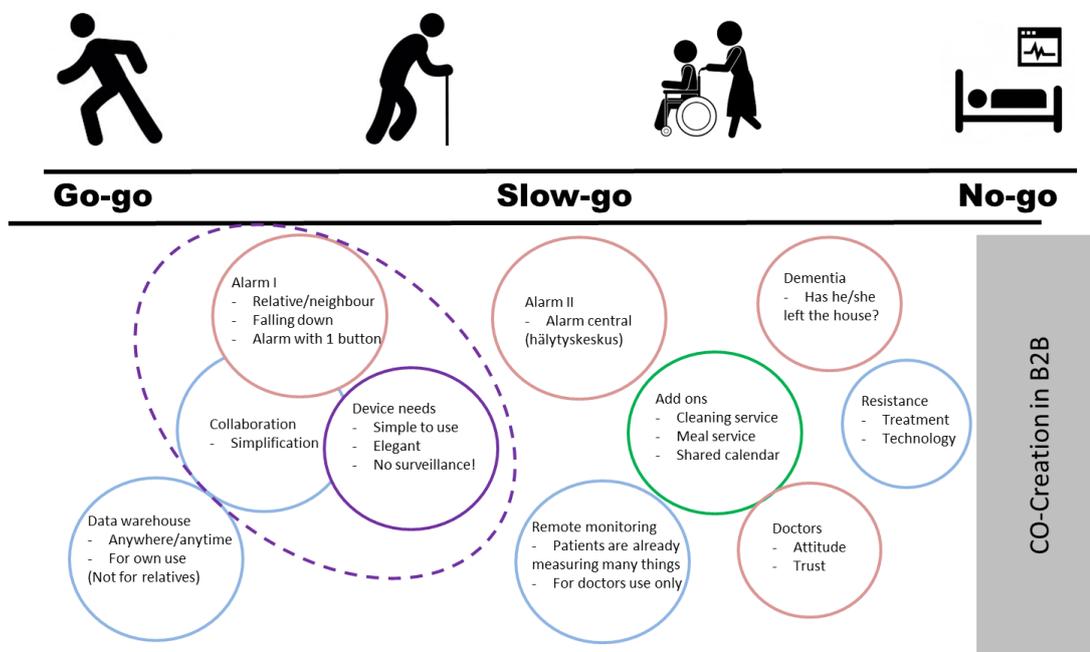


Kuvio 23. Customer segmentation

After the target audience was identified, another round of interviews both with the seniors and the relatives started in order to validate the most important needs in order to create a concept for validation. Based on the interviews we identified a lot of different potential product or service needs in the go-go and slow-go segments that are illustrated in the figure 24. Areas that was brought up during the interviews varied from different alarm systems to different communication and collaboration services as well as devices and

databases and monitoring systems. A selection was made based on the interviews to focus the concept on alarms, devices and collaboration.

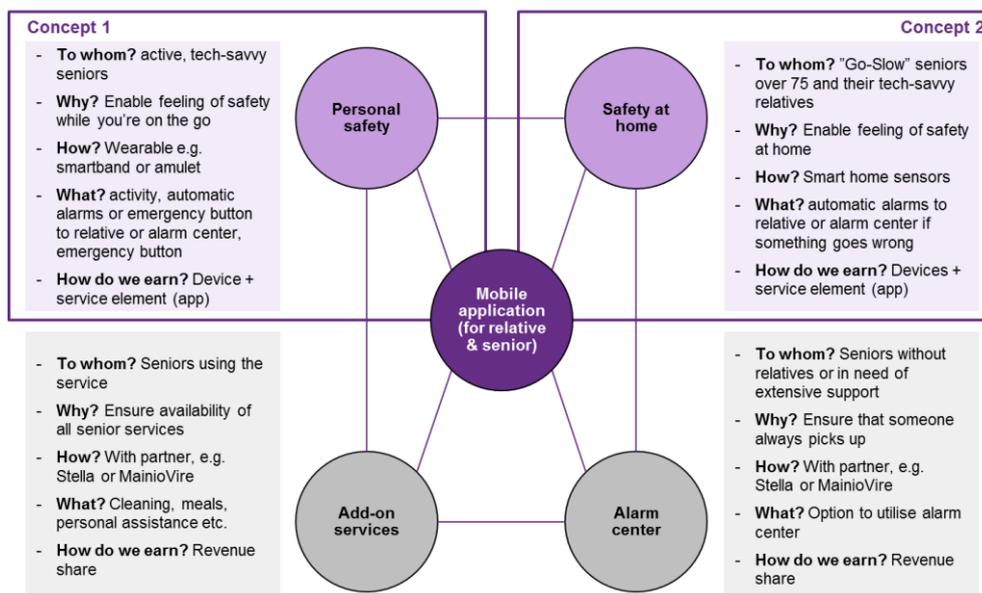
Needs gathered through interviews



Kuvio 24. Product needs selected for the minimum viable product

Next step was to do first concepts and ideation of the concept how to address the segment that was identified as the main target group for the MVP. Two concepts were created: Personal safety and safety at home. Personal safety was focusing on the safety on the move and gathering personal information such as activity, location and accidents while as safety at home was focusing on what goes on in a person's home such as door alarms, fire alarms and movement indicators in a senior's home. In the concept phase the group needed to use business planning tools learned in the business planning phase of the lean service creation in order to answer to many important questions such as: to whom are we going to sell the product, why are we selling it, how will the concept actually work, what will the concept offer (value proposition) and how are we going to earn money. Important in the concept phase was also to be able to narrow down – what is not in the concept. Two concepts are illustrated in the figure 25.

B2C Elderly Care Concept



Kuvio 25. Concepts selected for piloting

Once the concepts were identified, the group did a first concept look and feel and a few different potential advertisements together with a marketing professional and a graphical designer. The first draft of the online front page of the concept is illustrated in the figure 26 and different sketches of the potential advertisements (storytelling) are illustrated in the figure 27.

Solution: Sonera Hoiva

Huoletonta välittämistä

On hyvä tietää, että rakkaalla ihmisellä on kaikki hyvin.
Sonera Hoiva auttaa sinua pitämään paremmin yhteyttä läheisiin.



Läheisyyttä ja yhteydenpitoa



Varmuutta ja mielenrauhaa



Tukea ja käytön helppoutta





Pidä yhteyttä lähimmäisiisi

Yhteistyössä Pienen piirin kanssa tuomme sinulle ja läheisellesi helpon ratkaisun arjen viestintään. Pieni piiri tuo koko perheen yhteen kuvapuheluiden avulla. Kokonaisuus sisältää laitteen, nettiliittymän sekä Pieni piiri-palvelun.

24⁹⁰

€/kk

Lue lisää

Kuvio 26. First draft of the online front page

Täyttä elämää

Nyt voit harrastaa huoletta.

Soneralla saat nyt turvarannekkeen, jonka avulla läheisesi saa heti tiedon, jos jokin sattuu. Harrastessasi voit liittää ratkaisuun hälytyskeskuksen, jolloin saat varmasti avun, jos läheisesi ei olekaan saatavilla.

Lue lisää: www.sonera.fi/turva



TUUT TUUT TUUT.

Useimmiten kaikki on hyvin, mutta miten voit olla varma?

Sonera tuo läheisellesi turvarannekkeen kotiin, jonka avulla saat heti tiedon, jos jokin sattuu. Harrastessasi voit liittää ratkaisuun hälytyskeskuksen, jolloin apu löytyy perille, vaikkei itse pääsisikään heti apuun.

Lue lisää: www.sonera.fi/turva





Täyttä elämää

HARRASTAHUOLETTA.
Soneralla saat nyt turvarannekkeen, jonka avulla läheisesi saa heti tiedon, jos jokin sattuu. Harrastessasi voit myös liittää ratkaisuun hälytyskeskuksen, jolloin saat varmasti avun, jos läheisesi ei olekaan saatavilla.

Lue lisää: www.sonera.fi/turva



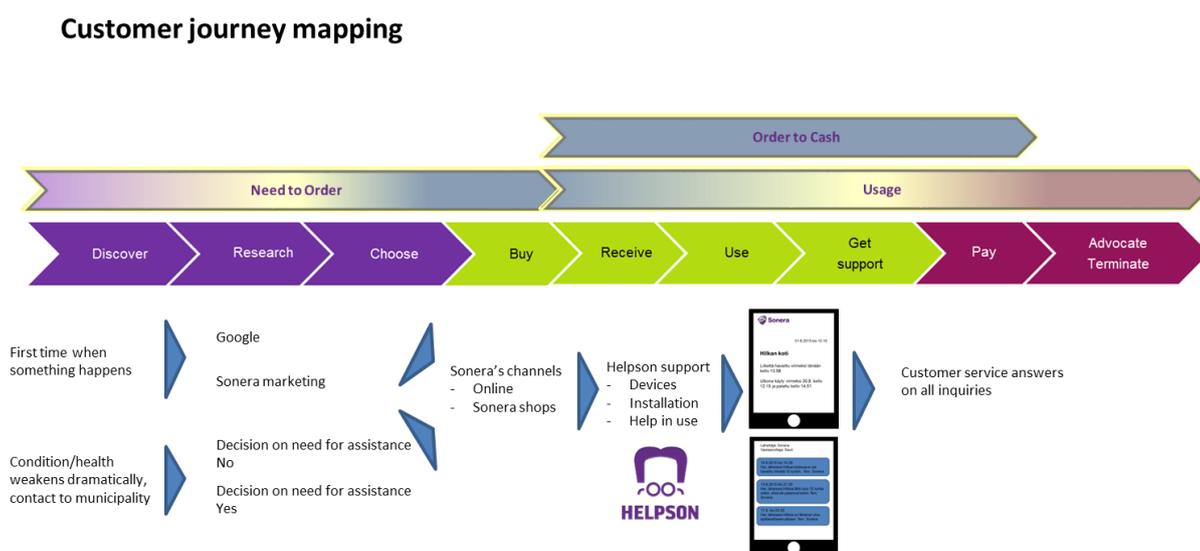
KAUKANA MUTTA KAIKKI HYVIN

Sonera tuo läheisellesi turvarannekkeen, jonka avulla saat heti tiedon, jos jokin sattuisi. Halutessasi voit liittää ratkaisuun hälytyskeskuksen, jolloin apu löytyy perille, vaikkei itse pääsisikään heti apuun.

Lue lisää: www.sonera.fi/turva

Kuvio 27. First drafts of advertisements and storytelling

Concept phase included also the services design or customer journey mapping of the potential product. Customer journey mapping describes the different phases of the customer journey from the trigger moment which generates the need of the service through finding it, making a decision to buy, taking the service into use, using the service and discontinuing the service. In each phase all of the touch points needed to be described also in case the service was planned to be implemented using Sonera's regular channels and systems. Customer journey mapping and Sonera value chains are illustrated in the figure 28.



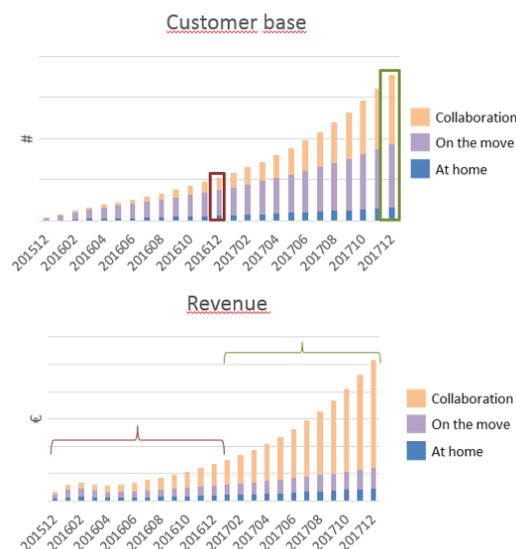
Kuvio 28. Customer journey mapping

After the concepts were identified and created – a rough business case assumption was created based on the segmentation (go-go and slow-go), target group (living alone) and the minimum viable products from the two concepts that were selected for further validation. The business case assumptions were based on customer volumes and assumed price points based on the concepts. Business case assumption is illustrated in the figure 29.

Business case assumption

- End of 2016
 - Number of customers
 - Revenues

- End of 2017
 - Number of customers
 - Revenues



Kuvio 29. Business case assumption

Next step was to prototype and validate the business case assumptions with the customers. Prototyping was decided to be divided into three different prototypes and 4 stages: web-based survey from the customers, demo application including trigger messages, pilot in an actual customer environment and pilot in the Sonera shops with salespeople. In each stage there was four important things to be described: what is the assumption or question that needs to be validated, how to validate it, what is the success criteria and what were the findings from the phase. The validation matrix is illustrated in the figure 30.

Findings from the different stages were mixed. In the first stage the amount of answer rate was not sufficient in the short timeframe that was allocated in the program for the validation and prototyping phase and the average age of the respondents was lower than the target group. In the second stage of prototyping (pilot application using trigger messages) the same problem was faced – not a sufficient amount of results and not enough sent messages that lead to the situation that the application was not used much by the customers. Conclusion from the stage was that a longer usage time would be needed in order to gather sufficient amount of data. The third stage (pilot in customers home) brought more encouraging results. At first, seniors felt the feeling of being watched over but once they started to use the service more, they started to see more benefits. Conclusion was that more time was still needed to gather data. In the last stage of visiting

Sonera shops, the salespeople gave really positive results and felt that the concept would be sellable at the planned price points and features.

Validation of the assumptions

	Assumption or question to be validated	How to validate?	Success criteria	Findings
Proto 1: Webropol Survey	Proto 1: Is the segment large enough? (Whole Sonera Hoiva)	Customer survey	20% of the respondents interested	The amount of answer rate was not sufficient
Proto 2: pilot application using trigger messages	Proto 2: Does the messages/app-view activate usage? (Sonera Hoiva at home)	Tests of trigger messages and demo application	Is the pilot person using the app/what happens after a trigger message	The amount of answer rate was not sufficient. Longer piloting period needed
Proto 2: pilot in customers home	Proto 2: Does the service generate feelings of surveillance or care (Sonera Hoiva at home)	Survey from test-users after the pilot	More feelings from care than surveillance	First, feeling of surveillance but after longer time of usage more benefits seen
Proto 3: Visit in Sonera shops	Proto 3: Is this too complex concept to sell? (Whole Sonera Hoiva concept)	Survey from salespeople	Salespeople in Sonera shops interested to sell	High interest to sell, concept understandable for a customer

Kuvio 30. Validation of the assumptions

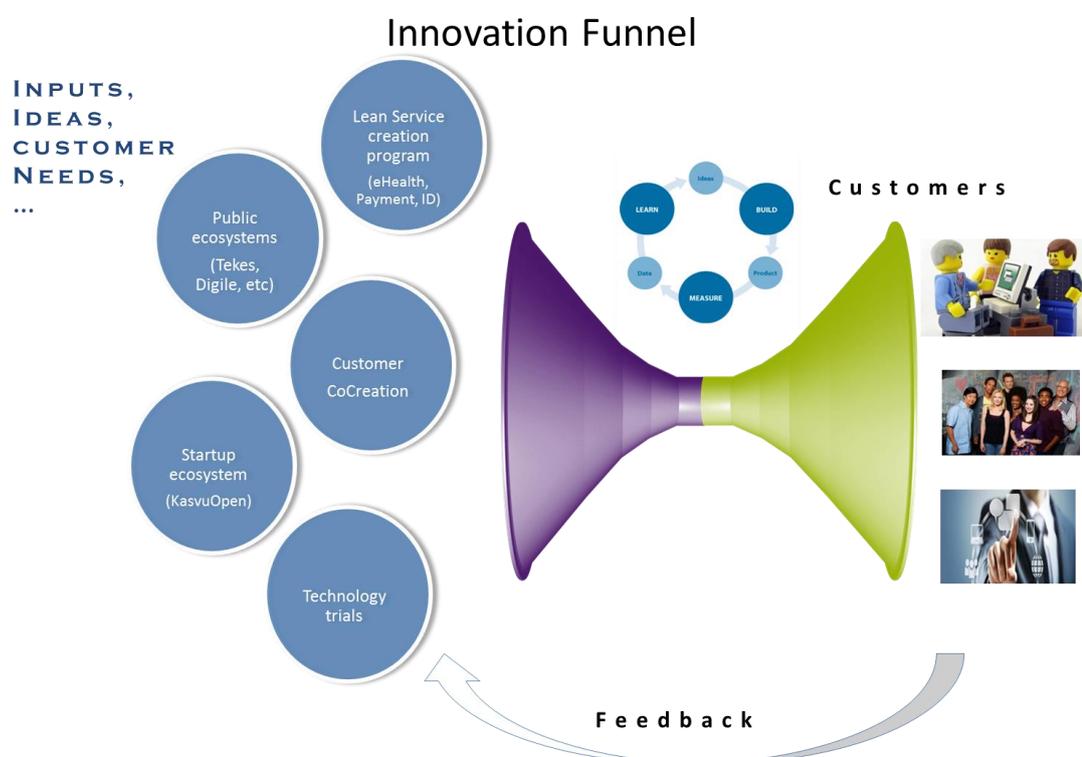
After the validation stage, the next step was to finalize the description of the minimum viable product based on the learnings from the prototyping stage. Another task needed was to build a backlog (roadmap) for the business area based on all the needs that were identified in the customer insights and interview phases in order to formulate a budget plan for the eHealth business area. Also, setting of the key performance indicators (KPI's) on what to measure, how to measure and what are the success criterias in order to start building analytics that would be needed to fulfil those KPI measurements.

6 Lean start-up and agile framework at Sonera

In this chapter, I will go through how innovation, agile and start-up culture and has been implemented into Soneras existing processes based on previous chapters. I will go through the innovation funnel, start-up team structure and position in the existing organization. I will also go through how agile methodology and funding principles has been adjusted based on the learning from the previous chapters. Many of the applications and implementation models presented in these chapters are based on interviews with Sonera's innovation manager Mr. Mika Raitola and with the head of lean start-ups, Mr. Märt Ridala.

6.1 Innovation funnel

During the thesis it became evident that a structured way of gathering and selecting innovation ideas was needed in order to capture the best potential themes or candidates for further investigation. Even though lean start up methodology and agile ways of working were identified as good tools to capture the customer demand and increase efficiency in time to market, they are still just tools how to enrich the potential strategic theme. The strategic themes can be identified through many different stakeholders where innovation ideas are emerging. In the figure 31 the innovation funnel and few identified examples of different sources of input are illustrated. Lean service creation program was implemented to investigate and validate the new strategic business initiatives but other sources were identified as well such as public ecosystems, start up ecosystem like KasvuOpen and new technology enabled trials. Also, a co-creation program with customers was established during the thesis where the focus was on existing customers and their needs in the evolution in becoming the new generation telco. An innovation manager was appointed for keeping up the funnel, gathering the ideas, initiation and running different co-creation and lean service creation programs as well as participate into external ecosystems.



Kuvio 31. Innovation funnel (Raitola 2015.)

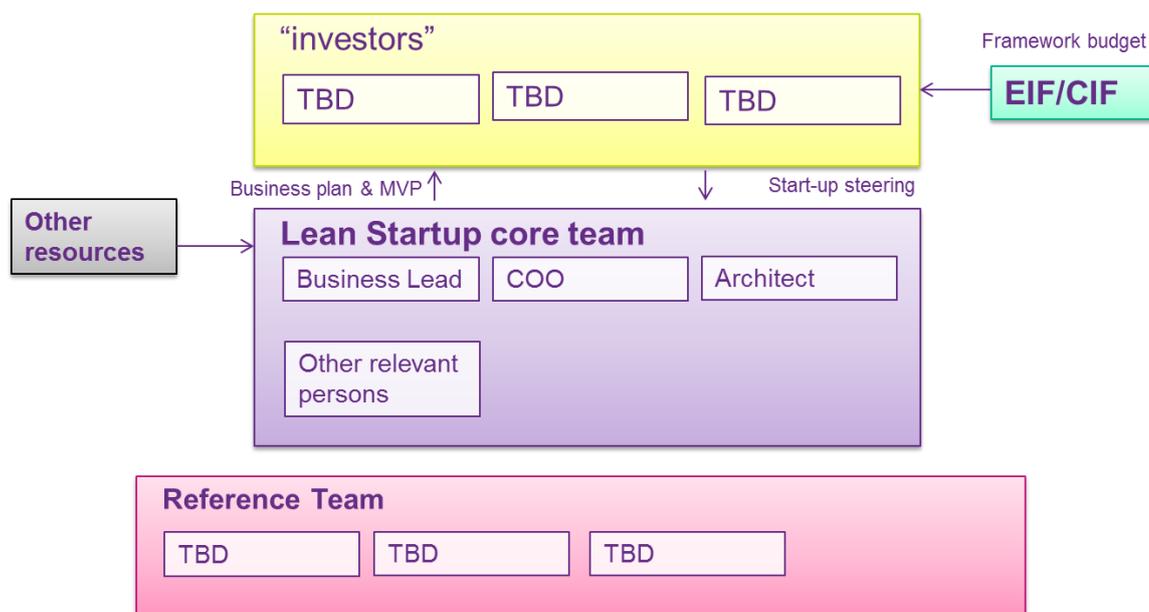
6.2 Organizational structure of the lean start-up

In this section I will go through the organizational structure of the lean start-up as well as the roles of the different positions in it. In the figure 32 the organizational structure of a start-up in Sonera is illustrated. Start-up team and stakeholders are divided into three main layers: investors, the core team and a reference team.

The role of the investors is to approve the business plan, approve the budget framework based on that and release investments on a quarterly or half yearly basis based on the progress and results of the core team. That is a big difference compared to the investment model presented in the chapter 2 where investments are typically handled on a case by case basis with an individual business cases. The second big difference is the investment portfolio handling compared to the investment model presented in the chapter 2. In the start-up structure there are two main differences: start-up investment portfolio and resourcing have autonomy from the line organization investment portfolios (EIF, CF, OF, CHIEF, Tech MT) and also, all the resources are fully dedicated to the start-up and thus do not have dependencies to the other ongoing parallel projects. The persons in the investor board are usually management representatives of the main interest group but they can also be external stakeholders.

The main party in the structure is of course the core team. The core team consists of three main roles: business lead, chief operating officer (COO) and a lead architect. The core team usually consists of other important persons such as a developer, a technology specialist and a marketing professional. Business lead is the “chief executive officer” (CEO) of the core team and is the main accountable of the team achieving results. Business lead is the one that puts the business plan together, introduces the business plan to the investors and has the overall profit and loss responsibility of the start-up. Chief operating officer is the main responsible of the operations and the implementation of the business plan. COO has usually also the overall responsibility of the quality related issues and making sure that the production releases are done with good quality. This is especially important if the start-up team is using the existing ecosystems, processes or platforms in the surrounding organization. The third main role which is the lead architect has the responsibility of the overall architecture of the solution or a service that the core team is planning to offer to the customers. The lead architect has also the responsibility such as the COO that if and when the solution needs to be integrated in to the surrounding or existing ecosystems – it is done in a well-defined, documented and tested manner.

The third layer in the organizational structure is the reference team. Reference team consists of teams that are usually the main interest groups or stakeholders from the surrounding organization. As an example, if the product that the core team is developing is planned to be handed over to the main organization and production, usually a reference team is established to advise the core team close to the hand over phase.

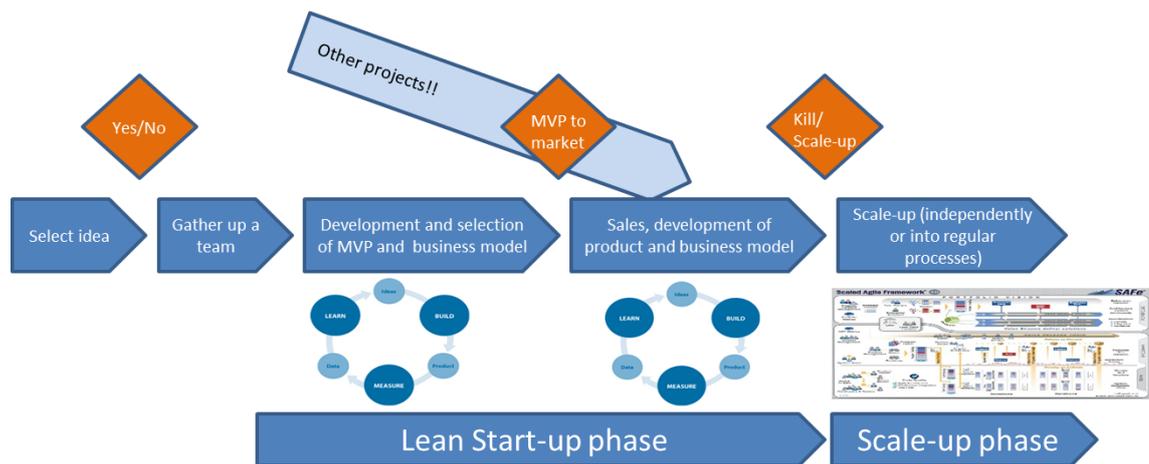


Kuvio 32. Organizational structure of the lean start-up (Ridala 2015)

6.3 Lean start-up process in Sonera

In this section I will go through the process and the main phases and decision points during the process. The first stage of the process is the idea selection. The idea selection is handled through the funnel process presented in the chapter 5.1. As presented in the chapter 5.1, ideas can originate from various different places such as start-up ecosystems, external organizations, customer co-creation activities, technology trials or directly from the strategy such as the new business initiatives.

In the figure 33 the process of lean start-up formulation and the key decision points are illustrated.

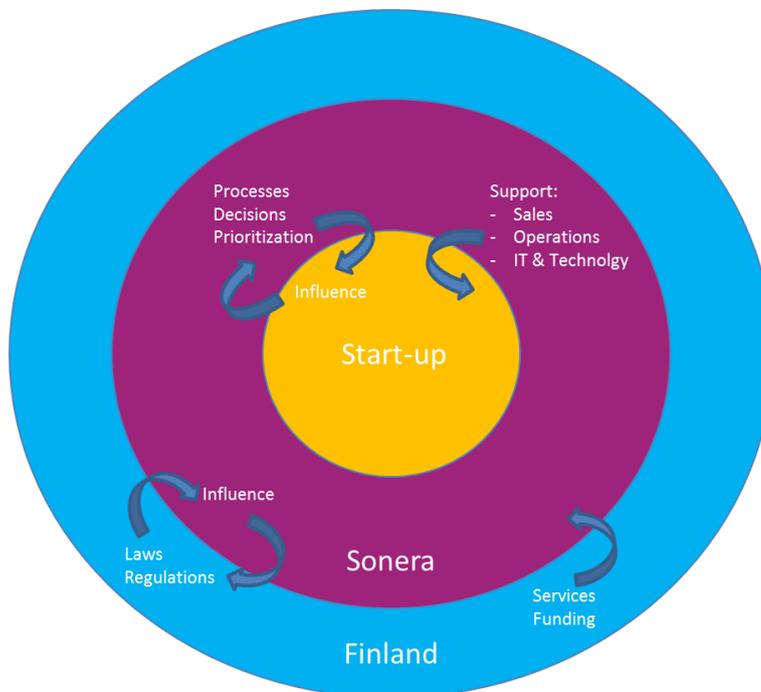


Kuvio 33. Lean start-up formulation and key decision points (Ridala 2015)

After the idea has been selected, the next stage of the process is to gather up a team. The team structure is presented in the previous chapter 5.2. Once the team is built up – the actual lean start-up phase begins. During the lean start-up phase the team uses the lean start-up methodology to learn the customer demand, define and develop the first minimum viable product (MVP) as well as build a business plan based on the validation process. When the business plan is solid and the MVP is defined, the core team presents the business plan and MVP definition to the investor board. If successful, the investor board will release the next investment based on the presented business plan and the core team can move to launching of the MVP to the market.

After the MVP is launched to the market, the core team starts focusing on the sales and development of the MVP backlog as well as development of the business plan. This is very crucial and challenging stage for the core team since in this phase they need to get sales and invoicing up in order to pass through the next decision point. In this phase the core team can face a lot of challenges. The core team must evaluate very carefully that how, where and by whom they want to sell or further develop the product. This dilemma is illustrated in the figure 34. Since the start-up resources are limited, it needs to evaluate the benefits and risks of using the processes and resources of the main organization before and after the scale-up decision point. If the core team needs resources or support from the surrounding organization already after the launch of the MVP it needs to take that in to consideration in the business planning phase. This is due to the fact that the main organization has a lot of other projects always ongoing usually using the same resources in the organization such as sales, operations, IT and other technology resources. The core team can easily be influenced by different prioritization and process

dependencies in this case. This is valid especially when the MVP launched to the market is targeted to the mass market segment which usually depends on a high scale sales and low cost production processes.



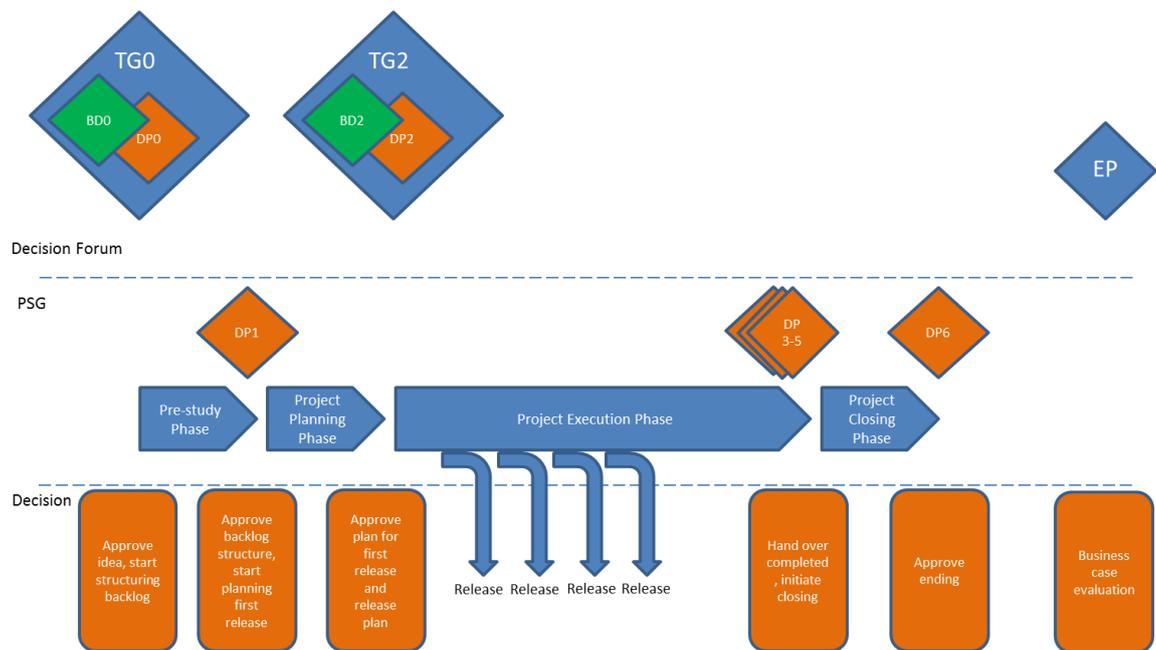
Kuvio 34. Dependencies to external influencers for a start-up (Ridala 2015)

After a pre-defined period of time, the core team has to present the results of the time period after the first launch of the MVP to the investor board. This is the most critical decision point in terms of the continuity of the start-up. In this decision point the decision of whether to scale-up or terminate the start-up is taken. In the case of a scale-up decision, it is also decided that how and what will be the model to scale-up the business. There are multiple different options for this and it is very crucial to recognize the differences or consequences of this decision. In case of a scale-up decision, the investor board decides if the business area should be integrated into the line organization or whether to continue the start-up independently as a separate organization and in that case, whether to incorporate the start-up as it's on company, sell it or just keep it as a separate business unit within the company.

After a scale-up decision is made, the development and lifecycle management of the product is handled using the agile methodologies presented in the conceptual framework chapter 3.

6.4 Bimodal enterprise in Sonera

In this chapter, I will go through the implementation of bimodal enterprise introduced in the chapter 3 in Sonera. As described in the bimodal enterprise, product or business development can be categorized into two categories: traditional and non-linear. In Sonera the implementation of bimodal enterprise is illustrated in the figure 35. Implementation of the bimodal enterprise can be seen as a combination of the waterfall and agile development disciplines. First, the product or a business area presents the business plan, product plan or a set of features (backlog) that would be needed in order to reach into a pre-defined stage of maturity of a product. The program also presents a description of the minimum viable product and a release plan throughout the product in other words, what visible effects to the customer will be released incrementally throughout the program. Investment decision framework is done based on the budget of the whole programs roadmap including all releases. After that, release decisions from that framework are made on cycles base on the proposal of the program. As an example, an investment decision framework is done for a whole year based on the business plan of a program and the release plan (roadmap). After approving the framework decision (budget), there are two release decisions on the framework – the first half of the year and then the second half of the year. After the first half of the year, the program manager or a business lead presents what has been accomplished during the first half and presents the updated plan for the second. The steering group then compares the presentation to the original business plan presented in the framework decision and decides whether to release the investment decision for the second half or whether to adjust the framework decision for a full year (lower budget, increase budget). So in a way, the steering group acts as an investor board of a start-up. Bimodal enterprise has been seen as a good process to handle especially large scale programs with existing business in the particular product or business area, but with a need to increase flexibility in decision making and have smaller releases with less risks released in to the markets. In case of disruptive business or product areas, it is still too much based on pre-defined assumptions and roadmaps not giving enough room for experimental development in an uncertain business environment or customer demand.



Kuvio 35. Implementation of bimodal enterprise in Sonera

7 Conclusions

In this chapter, I will conclude the findings and learnings from the thesis as well as introduce shortly the decisions that has been taken since eHealth was ran through the lean service creation program. I will also conclude on the needed next steps or development that I see would be important to do in order to utilize the full potential of the methodologies presented in the thesis.

7.1 Findings and learnings

New ways of working are clearly needed in Sonera in order for it to find and be able to scale-up new business areas. The current investment model and methodology favours the core businesses giving very little room for the new business areas to get priority or focus in the line organization. It was evident that different ways to prioritize, organize, develop and make investments are needed in order to be able to be competitive and capture the business potential of the new business initiatives. Current investment model is based on case by case type of investments that take focus on the individual business case and budgeting since the current traditional businesses are big both in terms of customer and cost base as well as investment wise. Also, due to the cost focus of the company during the last years, development resources have been optimized to serve the needs of many portfolios causing long lead times, lack of transparency in development capacity as well as long lead times from idea to market. Another clear deficiency in the current model is customer centricity. Since today's product portfolio of Sonera is mainly

consisting of traditional close to the network services that has been developed throughout decades, many of the development activities are started based on historical data of customer behaviour rather than co-creation with the customers through interviews and prototypes.

New conceptual frameworks studied and tested during the thesis were found really potential and suitable especially for the smaller or new businesses since the methodologies are based on low or no dependencies (autonomy), full transparency in development capacity, small and continuous releases instead of big launches with big risks and totally new way of customer centricity by engaging the customers or potential customers early enough in the process. The combination of three different disciplines from the lean start-up, design thinking and agile development were definitely something that is needed in order to succeed in the markets or product areas more unknown than known. Design thinking and lean start-up methodologies are especially useful in the beginning of projects or ideas to capture the customer demand, validate together with the customers and define minimum viable product. Agile methodologies, especially scaled agile framework is really useful when moving into the continuous development and release cycles as well as brings a lot of visibility for the organization what is really going on, what are the capabilities and lowers the risk on failing big since it's based on small and incremental releases. Facts are on the other hand, that Sonera is a large scale network operator with its core business around traditional Telco type of services where agile methodologies are not always applicable or the best way forward. For that, bimodal enterprise framework proved to be maybe more realistic development framework since it combines the traditional and non-traditional. Conclusion from the conceptual frameworks is rather simple: there is no "one size fits all" methodology and instead, each business or development item or theme should be able to "pick and choose" from the toolbox of different conceptual frameworks. The decision points or KPI's on the other hand should be comparable between methodologies in order to be able to track the results and keep control on the quality of releases and the impact on customer experience.

Lean service creation program was a really good learning program for employees within Sonera to learn the methodologies and principles of a lean start-up culture. Many of the participants in the program felt an enlightenment of finding a new way of thinking from the customers point of view as well as business during the program. The risk that I see is that since the program has a beginning and an end, organizations easily fall back into their familiar ways of working and the program results being something on the side or

just a course without any long lasting change in the ways of working or mindset. Another problem that was evident during the program was also too tight linkage to the pre-defined strategic topic or theme. This is very typical risk for large scale waterfall or top-down type of organizations to fall into. eHealth had been selected as a strategic business area already before the lean service creation program which tended to be a bit of a problem throughout the program since management had already a lot of pre-expectations what the eHealth should and should not be and what kind of business numbers it should produce in a pre-defined period of time. This causes a high risk that the interviews and customer insights are steered to confirm the pre-decided assumptions and not real dialogue can emerge. This also causes the loss of autonomy for the start-up since there are too many influencers too early in the process from surrounding organization such as decision to implement the product into existing systems or platforms or a decision to utilize the line organizations resources causing an immediate dependency to the line organizations capabilities.

The biggest obstacle or potential whichever direction the organization is capable of steering it – is culture. Culture sets a huge challenge for an organization to really change from top down, tightly governed and risk optimizing organization to a low hierarchy, experimental and fast moving agile organization able to adapt to continuously changing business rules. One part where an organization with a tight process culture can face problems is employee entrepreneurship. Employees have gotten used to detailed and well defined requirements or targets from the management. This has led to the culture which has given little room for innovation or looking at the big picture and employees or participants of a start-up team are easily tying themselves to a certain assumed or familiar boundaries or hypotheses. Another observation made regarding the lack of entrepreneurship within the organization culture was when it came to the investment pitches after each phase. A person that is used to handle large scale investments and big numbers, easily overlooks either the opportunity or the effort that needs to be put into the development of a business in order to produce a similar amount in value of invoices to cover for the investment. During the lean start-up and agile journey, Sonera has formulated three new value chains (need to order, order to cash, usage) with the focus especially on the order to cash when it comes to the investments of the start-ups with a KPI that how much invoicing have the start-up produced. That has been a useful question when handling the investment proposals.

Concretely the culture constraint can hit the lean start-up team or a new business initiative in the scale up phase. Learn-build-measure and innovative ways of developing things is often something that is happening in an isolated innovation or a development organization and is accepted just as long it is kept outside of the line organization. In case of the scale-up decision, it is in many cases important to be able utilize the resources and capabilities of the line organization but then things seem to get more difficult. Many of those difficulties are caused not by lack of resources or priority but an attitude of “not invented here” or a lack of understanding or a lack of will to understand the agile and lean ways of working. I saw a lot of the same as Mr. Ron Miller in his article handling the digital transformation and what it requires: “The reasoning behind isolating innovation was sound enough, because those fledgling ideas would very likely be sucked up into the vacuum of existing business policies where they get lost forever in a haze of bureaucratic negativity. If you want to kill innovation, you just keep saying no.” (Miller 2016.) I see this as a leadership issue rather than the lack of development methodologies or lack of competence. Leaders of today need to be able to lead the change and culture rather than things and substance and accept that the business around us is changing faster than ever in the history of mankind.

In the case eHealth, a decision was made to found a separate business unit called Sonera Healthcare. Most of the group members that were participants in the lean service creation program were also moved into the newly founded business unit and a new business lead was recruited outside of the company. The new business unit has an overall profit and loss responsibility to drive the business further and answers to the new business initiatives investor board that is a group of directors from different part of the organization. Healthcare business has continued the process of lean service creation and has now many ongoing activities.

All and all, after the lean service creation program, a lot of agile trainings and certification courses and learning of the start-up culture, I quote the business lead of the eHealth start-up during the program: “Now we are just beginning to understand what we don’t understand”. But it’s a good start I think.

References

- Futurice 2016. Lean service creation program material. TeliaSonera internal material.
- Gartner 2014. Bimodal enterprise introduction. TeliaSonera internal material.
- Miller, Ron 2016. Digital transformation requires total organizational commitment. Techcrunch. Posted 31.1.2016. <http://techcrunch.com/2016/01/31/digital-transformation-requires-total-organizational-commitment/>. Read 10.5.2016.
- Mutka, Sanna 2016. Business Lead. TeliaSonera Finland Oyj, Helsinki. Interview 4.4.2016.
- Raitola, Mika 2016. Innovation Manager. TeliaSonera Finland Oyj, Helsinki. Interview 22.3.2016.
- Ridala, Märt 2016. Head of Lean Start-ups. TeliaSonera Finland Oyj, Helsinki. Interview 22.3.2016.
- Ries, Eric 2011. The lean startup. How today's entrepreneurs use continuous innovation to create radically successful businesses. Crown publishing group, New York.
- Scaled Agile Framework. <http://www.scaledagileframework.com/>. 2016. Read 11.4.2016.
- Yderstam, Maria. (2016). Strategy new generation telco, (April 13, 2016). TeliaSonera Intranet (accessed March 21, 2016)
- Waltari, Outi. (2016). Value chains & processes, (May 6, 2016). TeliaSonera Intranet (accessed May 10, 2016)