Lappeenranta-Lahti University of Technology, LUT
School of Business and Management
Supply Management

MASTER’S THESIS

Service business development:

Improving corporate financing process with lean methodology

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ABSTRACT

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Title: Service business development: Improving corporate financing process with lean methodology
Faculty: School of Business and Management
Master’s Programme: Supply Management
Year: 2019
Master’s Thesis: Lappeenranta-Lahti University of Technology LUT, 79 pages, 14 figures, 2 tables, 2 appendices
Examiners: Professor Jukka Hallikas
Professor Mikko Pynnönen
Keywords: Service process, service business development, service blueprint, lean

The purpose of this master’s thesis is to study service business development from banking company’s perspective. The main objective is to determine, how to develop service business process with the chosen tools, service blueprint and Lean methodology. First, study provides an insight to service business and its characteristics. The value of the service is determined to find out, how this is affecting the service development process.

The empirical study maps out the current state of the company’s corporate financing process and identifies possible improvement targets based on the Lean principles and wastes. Improvement suggestions are made based on the theoretical part of the research and the company interviews. The results show, that applying Lean methodology to the service process of a banking company has its challenges because of the regulation of the industry. However, Lean can be seen as a useful tool in analysing phase of the service development process in finding out possible improvement targets. By implementing Lean’s management style into the company’s everyday work, cost savings and increasing the value of the service could be achieved.
TIIVISTELMÄ

Tekijä: Tanja Nenonen
Otsikko: Palveluliiketoiminnan kehittäminen: yritysrahoitusprosessin kehittäminen Lean-ajattelun avulla.

Tiedekunta: School of Business and Management
Maisteriohjelma: Supply Management
Vuosi: 2019
Pro Gradu -tutkielma: Lappeenrannan-Lahden teknillinen yliopisto LUT
Tarkastajat: Professori Jukka Hallikas, Professori Mikko Pynnönen
Hakusanat: Palveluprosessi, palveluiden kehittäminen, service blueprint, lean

Tämän pro gradu -tutkimuksen tarkoituksena on tarkastella palveluliiketoiminnan kehittämistä pankkialan yrityksen kannalta. Päätavoitteena on selvittää, kuinka palveluprosessia voi kehittää valittujen työkalujen Lean ajatusmallin ja service blueprintin avulla. Ensinnäkin tutkimus käsittelee palveluliiketoimintaa ja sen erityispiirteitä. Arvon tuottamista palveluprosessissa tarkastellaan, jotta saadaan selville, kuinka arvo vaikuttaa palvelun kehittämiseen ja kuinka sitä voidaan parantaa.

Empiirinen tutkimus kartoittaa pankin yritysrahoituksen palveluprosessin nykytilaa ja selvittää mahdolliset kehittämiskohteet käyttäen apuna Leanin määrittelemää periaatteita ja "hukkia". Prosessille luodut kehitysehdotukset perustuvat teoriaan sekä yritysrahoitusprosessin työntekijöiden haastatteluihin. Tulosten perusteella voidaan todeta, että pankin yritysrahoitusaikana haastatteluita

Entisissä yhteyksissä Leanin mukaisen johtamistyylin ja käytännöllä sitä päivittäisessä työssä, voitaisiin yrityksessä saavuttaa kustannussäästöjä ja palvelun arvon lisääntymistä.
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1 INTRODUCTION

In the first chapter background of the study is explained to gain understanding, why the research is done. Research questions follow to define the aim of the study. Theoretical framework, key concepts and limitations outline the most important analytical concepts and describe the significance of the study.

1.1 Background

The aim of this thesis is to examine service business development and its benefits for a banking company. Since service processes are crucial part of their business development, improvement has to happen constantly. The study provides new technologies to the company’s service process development and examines the tool’s benefits for the chosen business process. Service business is constantly growing, and thus becoming increasingly important. Sociological changes and increased customer incomes are leading to the growth of service industry. Also, the creation of new services is possible because of technological changes and increasing professionalism in companies. (Gemmel et al., 2013, 7)

For a long time, information and communication technologies have laid the foundation for financial services. Nowadays digitization has increased in all human activity areas and created new vast pools of data. Both opportunities and challenges are created from that to current institutions and new market entrants. Great benefits are attainable, but there is also possibility for new risks to emerge. New technology enables competition, and innovation can lead to better and cheaper financial services. (Nykänen 2018) With this study, the case company can better understand the selected service process from a new perspective and identify possible development areas to insure their competitive advantage.

Companies are forced to improve their competitive position. Because of globalization and the merging of the international markets, the competitive environment for all companies is changing. Markets that have been slow have transformed and new companies have come into the market, that increases a dynamic market behaviour.
This change is especially caused by increased deregulation, market saturation, strategic overcapacity and new competitors entering the market. Especially service companies like banks have to react to changed markets by adapting current services or develop new ones. (Aurich, Mannweiler, Schweitzer 2010, 136) In the results of this study, this can be taken into consideration by creating development ideas based on productiveness, effectivity and flexibility. The most essential result from the study are recognized problem and development areas and improvement suggestions for the process.

1.2 Research questions

Next, the research questions are defined to make the research structure logical. The study reflects on these questions and aims to find answers to them to provide valuable results. The research questions were chosen to help understand the service business development process for the company.

The aim of the study is to understand the current state of company’s corporate financing process and to find ways to develop it to become more efficient and valuable. With the chosen tools, the research tries to improve the overall process, not only from the customer’s point of view but also company’s internal operating models. First, theory is searched to understand service business characteristics and service business development methods. The current state of the company’s service process is examined to find out, how it can be developed. Theoretical part offers the tools and solutions for possible challenges, that can be found “from the company’s service process. The goal is to provide improvement successions based on the theoretical part.

Thus, the main research question is:
- How can service business be developed and what are its benefits for a banking company?

The research’s sub-questions are:
- How do characteristics of service business affect its development?
- How does value form in service process?
What are the most suitable service development tools and their benefits for the company?

What is the current state of the company’s service process?

1.3 Theoretical framework

Next this report proceeds to draw a picture of what the study is about and what is excluded from the study. The framework combines the most crucial content of the theory and describes how to study will reach its goal. The most significant perspectives for the study are mapped out below (Figure 1).

![Conceptual framework of the thesis](image)

To understand the perspective of this study, examination on the previous studies from the topic is done. Even though service business development has been studied before, its constantly changing business environment and perspective of the company make it an interesting topic. Different industries can’t necessarily use the same methods, since developed processes can differ. Stevens and Dimitriadis have studied new
service development. They note, that knowledge on the management issues for developing new bank offerings efficiently is limited and they identify learning actions, that can be taken to contribute to new service process development's effectiveness. (Stevens, Dimitriadis 2005, 175) Services business development has also been studied in small- and medium-sized equipment manufacturers. For example, Paiola, Gebauer & Edvardsson focus on underlying dynamic and operational capabilities in service business development. Their study explains the phases and capabilities necessary for service business development.

Lean methods have been implemented a lot to health care industries and manufacturing business. Kollberg, Dahlgaard and Brehmer studied measuring lean initiatives in health care services. They examine lean production movement in order to understand, whether lean thinking is applicable in healthcare. They found out lean thinking to be applicable in health care settings in their study. (Kollberg, Dahlgaard and Brehmer 2005, 7) Atkinson and Mukaetova-Ladinska (2012, 328) describe improvement and development of a health care service based on lean thinking. Study demonstrated that some of the lean changes can be implemented promptly and within available and unchanged resources, while ethical process parts may necessitate immediate change and reorganisation of resources. Lean improved health care company’s quality of their overall service process.

In the banking and finance sector lean has been adapted in some practitioner-style studies about applying Lean Service principles in their offices or branches. The most important study is from a US financial services company by Cynthia Swank (2003), where a case about a company dedicated to financial insurance services with several problems related to its process for collection and requests for insurance policies, used Lean methodology to help mitigate the problem. The case resulted reducing labor costs by 26% and cost from errors and their corrections by 40%. Although the focus of these studies is in the diversification strategies of different multinational banks, the financial problems of banks facing debts and non-payment of credit card bills. (Suárez-Barraza et al. 2012, 371)
1.4 Limitations

To keep the study accurate, limitations are made. This study focuses only on the service business process and its characteristics, business processes or development of new service processes are not discussed in this study to keep it beneficial and relevant for the company. Value creation in service business is explained to understand, how value of the service is formed. Customer satisfaction or customer service are not focused on in this study. Service management part examines the management process, but only focuses on the chosen tools, that can be used to develop the company’s processes. After study it can be evaluated, how well the chosen service management tools can be utilized in the banking industry.

Because of Lean is such an extensive methodology, this thesis focuses only on the lean principles and the general idea of removing waste, leaving lean tools out of it. Hines & Taylor (2000) have identified five main principles, that are: defining customer value, mapping value stream, creating flow, establishing pull and continuous improvement. These five principles are those, that the theory is based on. New principles have been added to the lean methodology, but these five have been the most used and examined. Thus, they are the most reliable and the most research is done about them.

1.5 Definitions of key concepts

**Service business**: Service can be described as a "performance, act or deed " (Lovelock 1983, 10). To understand the service process, the characteristics of services must be understood. Services are based on specific constitutive attributes. Concerning these attributes services can be seen to have four main characteristics: intangibility, heterogeneity, simultaneity and perishability, that specify them. (Aurich, Mannweiler, Schweitzer, 2010, 136) Service characteristics explain what or whom service is directed and what is the services nature? (Lovelock 1983, 10)

**Service value**: The definition of value is described from the customer’s point of view; it is combination of the benefit and cost of the service perceived by the customer (Kuusela & Rintamäki 2002, 16). Value is considered as a customer’s complete
assessment of the benefit of a service based on their perceptions of what is received and what is given (Sweeney & Soutar 2001, 204). Value can also be seen to be provided through special features, product quality and after-sale service (Sweeney & Soutar 2001, 204). With the right designed service process, value is formed. The value in service is created through each step of the service process. (Gemmel et al 2013, 53)

**Service development**: Service development is defined as a planned and constant process that aims to change and innovate the service to improve the process for the benefit for the customers and the company. In other definitions, service development can also be seen as leadership styles, that effect change. (Lees 2010, 30)

**Service blueprint**: Service blueprint is an analytical tool for process design and mapping. A service blueprint is a picture or a map that accurately portrays the service system so that the people involved in delivering it can understand and deal with it objectively. (Gemmel et al 2013, 66-68) In service blueprinting process, service journey identifies all the aspects it consists of and isolates possible fail points. (Miettinen & Koivisto 2009, 17)

**Lean**: Lean contains several techniques and tools to make process from traditional to “lean”. To achieve this goal, companies need to change their mindsets and philosophies to support the process in the long term. (Beecroft, Duffy & Moran 2003, 144) Leans focus is on improving the customer value by doing more with less, while maintaining the company’s long-term stability, quality and safety. (Eaton 2013, 24)

**1.6 Structure of the study**

This thesis is organized as shown in Figure 2. The thesis starts by introducing the background of the research together with research questions, theoretical framework, limitations and key concepts. Next in the second chapter, to develop a research framework the aspects of service business are examined. Service characteristic, service management and value of the service are addressed to form an understanding
about service business. In the third chapter, service development is explained by defining the service development process and the two chosen development methods: service blueprint and Lean. After the theoretical research framework, the empirical part follows. First the research methodology and data collection methods are described, these are followed by the empirical findings, results and improvement suggestions. Discussion is the fifth and final chapter, findings and theoretical background are compared, research questions are answered, and researches reliability and validity are being addressed. At the end, the results are concluded together with proposed suggestions and the future opportunities.

Figure 2 Structure of the thesis
2 SERVICE BUSINESS

This chapter explains the aspects of service business. Description of the concepts, service characteristics, service management and value of service, create the body of the chapter. These are needed building blocks to gain understanding about service business and how it can be further developed.

2.1 Service characteristics

Service can be described as a "performance, act or deed". Service characteristics explain what or whom service is directed and is this service tangible or intangible in nature? (Lovelock 1983, 10) Services are considered ephemeral, and by identifying the target of the service and examining its modifications or receipt changes of the service act, better understanding can be developed about service nature and the offered core benefits. Lovelock has identified banking services to be so called "membership relationships", that have service delivery nature of continuous delivery of service. (Lovelock 1983, 12-14) When explaining the word "service" its characteristics and service definitions are needed. In 1985 Zeithaml et al. examined service characteristics, the most frequently mentioned characteristics were intangibility, meaning inseparability consumption of and production, heterogeneity as non-standardization and perishability meaning exclusion from the inventory. Later after more research has been done, other characteristics have been suggested, but not generally recognized. These characteristics are based on practical experience and observations rather than empirical research. (Edvarsson, Gustafsson & Roos 2005,113)

Services are based on specific constitutive attributes, and based on these attributes, services can be seen to have the mentioned four main characteristics that specify them (Aurich, Mannweiler, Schweitzer, 2010, 136). The characteristics are compared to product characteristics in Table 1. Intangibility means, that services are mostly performances of actions compared to objects that can be perceived using any of the physical senses. Heterogeneity describes, that quality of a service is subject to
variability because they are delivered by people to people. Simultaneity of production and consumption shows in a way, that services are usually produced and consumed at the same time and consumption cannot be separated from the means of production. Perishability means, that services must be consumed as they are provided. They cannot be saved, stored, returned or carried forward for later use or sale. (Aurich et al. 2010, 136; Gemmel et al 2013,10)

Table 1 Differences in service and product characteristics (Gemmel et al 2013,10)

<table>
<thead>
<tr>
<th>Services</th>
<th>Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>An activity or a process</td>
<td>A physical object</td>
</tr>
<tr>
<td>Intangible</td>
<td>Tangible</td>
</tr>
<tr>
<td>Simultaneous production and consumption</td>
<td>Separation of production and consumption</td>
</tr>
<tr>
<td>Heterogeneous</td>
<td>Homogeneous</td>
</tr>
<tr>
<td>Perishable, cannot be kept in stock</td>
<td>Can be kept in stock</td>
</tr>
</tbody>
</table>

Edvarsson et al. claim, that the previous definitions of service are too narrow, and instead they recommend service being used as perspective. This way, service depends on the purpose of the service and who is portraying it. Portraying can be done from the company, customer or mutual perspective. It is suggested, that service should not be viewed from viewpoint of market offerings, but from perspective of value creation. The focus should be on customer defined value, because value co-creation in the most crucial part. Characterizing service is based on relational, observed and collaborative nature of the service. Services don’t represent common customer expressions, since the actual nature has the customer-specific service portrait and the company-specific feature portrait. View can be chosen between a long relationship view or value-in-use. If service is viewed as perspective, it includes the particular
service and its purpose. Also, service definitions change regularly because of market environment changes, like changing competitive circumstances affecting customer value-in-use. Thus, service has to be defined in a specific company, for a specific service, at a specific time and from a specific perspective. (Edvarsson et al. 2005, 118-119)

2.2 Service management

Services are providing expertise and assistance, where customers and company are participants in service exchange in a co-productive relationship. This makes service’s nature relational. The concept of service relates to one of system more than ever, developing the idea of service system. Service system is combined of heterogeneous actors interacting with a shared goal. Service system indicates, that actors are connected by value propositions in value chains, value networks, and value-creating systems. Companies have to involve in complex service systems to accomplish their business goals. (Badinelli, Barile, Ng, Polese, Saviano & Di Nauta, 2012, 499) Different service types need to be managed in the most suitable form for them. Service organization consists of three components: physical and process components, attitude and behavior components and professionalism components. Physical and process includes infrastructure, material components and processes and procedures. Attitude and behavior include presentation, friendliness, courtesy, tact, anticipation, speed and communication. In professionalism diagnosis and advice, innovative, ethical, confidential, flexible and knowledge skills are combined. Depending on the center of gravity of the service they can be categorized into three different groups. If the center of gravity is on physical and process components, they are maintenance-interactive services. Attitude and behavior centered are considered personal-interactive services and professionalism centered are task-interactive services. Based on understanding these interactions service processes can be managed in an appropriate way. (Gemmel et al, 2013, 27-29)

All the service areas should be measured in the suitable way, so they can be managed accordingly. Service management can be planned based on the type of interaction, since it has impact on all the management areas like process design, environment,
role of people and technology and role of customers. (Gemmel et al, 2013, 35) Vargo and Lusch (2008) have suggested the service-dominant (S-D) logic for managing service systems. With S-D logic focus from value-in-exchange is shifted to a service perspective of value-co-creation and value-in-use. S-D logic can especially provide an effective trans-disciplinary framework, that can be used to managing and viewing service systems. In S-D logic service is seen as application of processes of specialized resources like skills and knowledge to benefit the customer. Thus, the main idea of the process is creating value for and with the customer. Service can be seen to be the common denominator of all processes exchanged, where goods are used as tools for the application of service provision and they are only indirect in service provision and service is what is always exchanged in the creation of value. (Badinelli et al, 2012, 501)

Every process needs a metric to direct it, Lecklin categorizes these metrics into internal and external metrics. External metrics, also referred as result metrics, are describing external qualities and customer’s point of view. From this aspect significant factors are creating value, customer satisfaction and quality of the service. From the company’s point of view returns coming from the service and success of the company are meaningful. Internal metrics measure the state of the process and how it can be improved. The metrics reveal, what action should be taken to, for example, ensure the quality. There can also be statistical metrics, that provide information after the process. (Lecklin, 2006, 170-173.)

Compared to the manufacturing sector, service products can be considered more customized. This customization causes more costs and thus service management has to face struggle between adding value and reducing costs through standardization. To result this, a deep understanding of customer choice criteria especially about price/value trade-offs and competitive positioning strategy is needed. To success customization is not necessarily important. Industrializing a service can increase customer satisfaction by advantage of the economies of mass production like consistency, speed, and price savings, that can be more critical to customers than customized service. (Lovelock 1983, 16) When having constantly try to increase productivity and improvements, service business needs to consider their Key Success Factors. Dorne, Lesaint, Owusu & Voudouris have suggested capacity management to be a significant key factor for service, especially when taken into consideration
service characteristics. Customers can be critical on capacity management, since companies with overcapacity and idle resources can offer long waiting times, because of gross-operational inefficiencies. However, matching supply with demand is a key success factor in services business. It should be used to achieve minimised customer waiting time and resource idle time. Companies shouldn’t only focus on minimising these measurable targets, since their intangible, heterogenic and simultaneous nature. By acknowledging these, efficiency and quality can be increased. This can be achieved by maximizing employee and resource performance and maximizing experience for customers. Employee performance forms from productivity, quality of the work, behaviour and company culture. Customer experience comes from service and satisfaction, but also the exterior tangible cues, like websites, facilities, vehicles, personnel, equipment and all the things that customers can observe about the service provider. (Dorne, Lesaint, Owusu & Voudouris 2008, 4-6)

2.3 Value of service

Zeithaml has proposed in 1988, that value is considered as a customer’s complete assessment of the benefit of a service based on their perceptions of what is received and what is given. This assessment is referred as comparison of a service’s ‘get’ and ‘give’ components. (Sweeney & Soutar 2001, 204) The meaning of business is to create value to the customer, to do just that, it must be understood how the overall value is formed. The definition of value is described from the customer’s point of view, it is combination of the benefit and cost of the service perceived by the customer. The formation of value is illustrated in the Figure 3. (Kuusela & Rintamäki 2002, 16)

Figure 3 Value formation (Tuulaniemi 2011)
Quality and price have variance and different effects on observed value for money. Other customers recognize value with a low price and some when there is a balance between price and quality. Thus, with specific customers and factors the perceived value can change. Furthermore, customers can even find value from all applicable ‘get’ and ‘give’ components, causing changes in perceived value. It has been suggested seeing value as just a ratio of price and quality can be too one-dimensional. Value can be seen to be provided through special features, product quality and after-sale service. (Sweeney & Soutar 2001, 204) So with the right service process value can be formed. The value in service is created through each step of the service process (Figure 4). As the figure shows, the value creation is based on constant improvement going through the four-step cycle. (Gemmel et al 2013, 53)

![Figure 4 Value creation (Gemmel et al 2013, 53)](image)

Providing value can be confused with satisfaction and meeting customers’ needs. However, these concepts are distinct, since perceived value appears at various stages of the process and satisfaction is widely agreed to be a post-purchase evaluation.
Thus, value perceptions can be generated without the service being bought, while satisfaction depends on the service experience. (Sweeney & Soutar 2001, 206) In all market exchange one of the fundamental elements is customer value, since it is a main factor in achieving and sustaining competitive advantage. Customer value is defined as customers’ overall assessment of the received benefit based on perceptions of what is given and what is received. (Jaiswal & Lemmink 1994, 939) Customer value is argued to be resemblance of customer willingness to pay. There are different empirical methods, like first price auctions and conjoint analysis, for defining willingness to pay, the “true” willingness to pay is an unobservable concept. (Hinterhuber 2013, 800)

Sweeney and Soutar have created the multiple value dimension definition for value explaining it further than just a single ‘value-for-money’ explanation. The perceived value can be sorted in four categories, that create the overall value together. The four categories are: emotional, social, value-price ratio and quality of performance. Emotional value means the service’s or products ability to generate positive feelings, that affect customer experience. Social value can be seen as benefit gained when service enhances customer’s social self-concept. Both value-price ratio and quality of performance are considered to be functional value. Value-price ratio means the benefit derived from the service due to the reduction of its perceived short term and longer-term costs. Lastly, quality of performance is describing expected performance of the service and its’ perceived quality. (Sweeney & Soutar 2001, 211)

3 SERVICE DEVELOPMENT

This chapter focuses on defining the key concepts, to explain the concepts’ meaning in the study and their perspective. The main concepts in this chapter are: service process, value of service, service management, service blueprint and Lean.

3.1 Service development process

Definition for service development used for this study is a planned and constant process, that aims to change and innovate the service to improve the process for the benefit to the customers and the company. In other definitions, service development
can also be seen as leadership styles, that effect change. (Lees 2010, 30) Today’s technology has transformed the service delivery process. Since services like banking have always personal contact services, they have been through the most change. Today customers can interact with the banks through several contact points, such as high-street branches, ATM’s, phones and internet. Since evolving technology will be part of supporting personal contact or creating new self-service technologies in all the aspects of service business, the processes need constant development. (Patrício, Fisk & Falcão e Cunha 2008, 318-319)

When planning the development of service processes, Lees has presented three possible approaches: bottom up, top down or combined. In bottom-up method development is started from clinical perspective. In these cases, changes are often small-scale projects, that include lots of employee input. Changes are made and shared across organisations in a collaborative way. Criticism for the bottom-up approach is the potential effect of the change on company’s other services, that cannot often be effectively predicted, and thus the positive effect can be negated. In top-down the change is instigated as part of a business planning process. Development is seen as a part of an upper management corporate development. Development is usually linked to corporate objectives, targets and quality frameworks. The effect and scale of change required is reported back to practitioners in focused meetings and employees are given specific tasks to implement changes. Criticism for this approach is not getting employees engaged into or consulted about the process. The combination of previous approaches is used when development is connected to timescale and specific corporate objectives and employee and managerial collaboration is needed. (Lees 2010, 30-31)

The process of service development is complex, since it is happening between different professional roles and expertise areas. In Figure 5 all the different areas of service development are shown. In each of these areas, different activities with their methods and tools take place during the development process. The possible activities in information management are generating databases, knowledge sharing to key actors, integrated technology support and research and gathering evidence. Activities in clinical governance are clinical effectiveness and auditing, education and training. In change management activities can be clinical effectiveness and audit, education
and training. For area of change management potential actions are organizational behaviour, change tools and models, small-scale projects, “plan, study, act” cycles, pilot studies and clinical engagement. Second last area is corporate development, its’ activities can be business planning, marketing, income generation and service-level agreements. Lastly, in practice development are activities are developing core skills, competency assessment and in-house training. When implementing the changes, dynamic and interactive approach should be used to support the work and get the wanted results. (Lees 2010, 31)

![Image - Figure 5 The scope of service development (Lees 2010, 31)](image)

Adesola & Baines have planned systematic and effective methodology to help the improvement process, since structured methodology is a crucial, important and useful to achieve success. (Adesola & Baines 2005, 39) The methodology is a seven-step practical approach to guide actions and decisions. It gives guidance on “what” to do and “how” to make it happen. The seven steps are:
1 Understanding business needs
2 Understanding the process
3 Modelling and analysing process
4 Redesigning
5 Implementing
6 Assessing new process and methodology
7 Reviewing new process. (Adesola & Baines 2005, 43)

Curatolo et al. have taken this seven-step approach further and combined Lean methodology with it. This is done, since companies are faced with the situation of doing more with less, when reimbursements are falling and costs for services climbing. Adopting business process improvement method like Lean can be the solution. Curatolo et al. have studied combining business process development and Lean. (Curatolo, Lamouri, Huet & Rieutord 2013,1). Lean can be seen as a part of service process development, and Curato et al. have combined them to 11 activities.

1. First activity is to understand the business environment, to recognize companies’ strategic goals, the main business processes and customer needs.
2. Second task is to select the process, that needs development. Improvements should first be made to most important process to the company and to customers.
3. Next, upper management support is needed for the process to succeed.
4. Creating a process development team to focus on the development principles. The team should be working on the developing process, so they can bring their knowledge to the development process.
5. Understanding about the chosen process in crucial, clarity about it can be formed by mapping out the process, collecting data about it or by defining goals and features about the process.
6. Measuring the collected data to gain deeper understanding about the process.
7. Analyzing the collected data about the process and finding value-adding and non-value adding processes and problems like bottlenecks and inefficacies.
8. Improving the process by streamlining it by removing non-value-adding processes and waste. Other methods are updating needed technologies and creating future value streams.
9. Managing the change, is planning the needed changes, so that they help the employees to understand the new improved process and utilization. Discussion and training about the changes is needed.

10. Implementing the changes to improve the process.

11. Monitoring the new process. Metrics and data collection plan should have been done to measure the implementation of the improved process. (Curatolo, Lamouri, Huet & Rieutord 2013, 1)

After the improved process is designed it needs to be implemented and after reviewed and monitored. To do this Torkkola (2015) suggested the PDSA- method. (Torkkola 2015, 39) The three-step model foundation of Plan-Do-Check-Act cycle or Deming cycle is in 1920’s, created by the eminent statistics expert Walter A. Shewhart. From this starting model the Total Quality Management expert Deming modified it to Plan, Do, Check and Act. (Saier 2008, 143) The Deming cycle is a continuous quality improvement model consisting of a logical sequence of these four repetitive. This model is sometimes referred as PDSA-model, where instead of just checking the results the emphasis is more in studying and analysing the results. (Singh & Singh 2009, 53) This is method for learning and improvement, that has been called the key for change. The PDSA-cycle comes from words, plan, do, study and act. It is a group of repeated steps, that help to improve the functional ability of operation. It is creating new information by experimenting and repeating. By observations the hypothesis is formed, and it is confirmed after through empirical experiments. In this way, with inductive deduction generalizable knowledge can be created. (Torkkola 2015, 39-40)

Plan:

- Deciding the goal, of the experiment: The hypothesis, what is expected to happen.
- Selecting the metrics.
- Defining the success factors of the experiment.

Do:

- Deciding the smallest possible experiment, that gives additional information about the hypothesis.
- Select the right area for the experiment: an employee, an hour or a day. If the experiment is too wide, it will become too slow and expensive.
Study:
- Decide if the experiment was successful.
- Analyze the results: What are bottlenecks? What went wrong? What affected the results?

Act:
- Can the experiment be taken into a wider use, or will it be cancelled?
- Deciding about what the next cycle will be concerning. (Torkkola 2015, 41)

3.2 Service blueprint

Service blueprint is initiated for service industry and it was first introduced by Shostack (1982). It is a map, that describes the service system in a way that allows all the people in different roles and points of views in service process understand and handle it objectively. (Geum & Park 2011, 1603) In service blueprinting process service journey identifies all the aspects it consists of and isolates possible fail points. This process analysis methodology allows a quantitative description of critical service elements, such as time, logical sequences of actions and processes. It helps to specify both actions and events happening in the time and place of the interaction and actions and events that are out of the line of visibility for the users but are fundamental for the service. (Miettinen & Koivisto 2009, 17)

Service blueprint is an analytical tool for process design and mapping. It is a highly effective and adaptable technique for service design improvement, quality improvement, service innovation and strategic change focused around customers. A service blueprint is a picture or a map that accurately portrays the service system so that the people involved in delivering it can understand and deal with it objectively. Service blueprint is different from other process mapping tools through the use of three ‘lines’ on the blueprint: the line of interaction, the line of visibility and the line of internal interaction. The lines can be linked to swim-lanes connected to different actors in the process. The service blueprint components are shown in the Figure 6. (Gemmel et al 2013, 66-68) With service blueprint, actor behavior, sequential progress and spatial relationship can be shown clearly. That makes it a good starting tool for service
development. Its advantages in mapping the service process are clear modelling and visualization, thus it is widely used as a representation of services. (Geum & Park 2011, 1602) For the successful management of services, understanding the service delivery process from a customer’s perspective is important. Service blueprinting creates understanding about service delivery process and helps to analyze the service design. In service blueprints, the customer journey approach represents a customer-oriented perspective on service delivery. The concept of “customer journeys” means following a customer throughout a service delivery process, from beginning to end of the process. Customer journeys, also used in other mapping methods, are visual representations of events represented chronologically. Using customer journeys as visualization techniques are one of the most used tools within service design. (Halvorsrud, Kvale & Følstad 2016, 842-843)

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<table>
<thead>
<tr>
<th>Physical Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Actions</td>
</tr>
<tr>
<td>Line of Interaction</td>
</tr>
<tr>
<td>Onstage Actions</td>
</tr>
<tr>
<td>Line of Visibility</td>
</tr>
<tr>
<td>Backstage Actions</td>
</tr>
<tr>
<td>Line of Internal Interaction</td>
</tr>
<tr>
<td>Support Processes</td>
</tr>
</tbody>
</table>

Figure 6 Canvas for a service blueprint (Bitner, Ostrom & Morgan 2008, 73)
Blueprints can help to point out the activities of a specific employee in the overall picture of the service and serve as job descriptions. They are creating transparency throughout the process and can even be analyzed from different perspectives. When analyzing it from the customers perspective, it is read from left to right focusing on the upper levels of the blueprint. Like this the focus is on seeing, how the service is activated by the client or how involved the customer is in the service process. Other method is to analyze it from the customer-contact employees’ point of view, in this case the blueprint is read horizontally. By focusing on the visible activities, it can be seen when and how often the service encounter takes place and by whom. Vertical analyzation identifies different process elements’ and employees’ integration to the whole process. This is, how the most crucial links between activities and employees can be found. (Frauendorf, 2006, 46-47) Service blueprinted was initiated to be a process control technique for services, but with time it has involved. Advantages for this technique are its precision compared to verbal definitions and preventive way of solving problems by identifying failure points in a service operation. By time service blueprinting has become more and more customer oriented alongside with the companies. First adaptation to service blueprint was making it more customer process oriented than previously organizational one. After, further developments were made to differentiate onstage and backstage activities and to add physical evidence to describe key components. (Bitner, Ostrom & Morgan 2008, 26)

Especially a great customer focus is given by the service blueprint process to service development. The method has developed significantly since Shostack’s time to more useful for finding challenges in service design and customer experience design. Compared to other similar tools and techniques for process design, blueprint is the most customer focused. Customer-focused service execution is achieved by connecting the underlying support processes. Achieved results can be quality improvement, customer experience design, and strategic change focused around customers. (Bitner, Ostrom & Morgan 2008, 67-68) Although service blueprint can be used for many different purposes such as service design, it is also extremely useful in identifying the weak links in the chain of actions, which can be the target of first analysis and then improvement. Two types of weak links are traditionally distinguished: failure points and bottlenecks. Bottlenecks are more related to capacity management issues
and indicate points in the activity chain, where the probability of customers having to wait is high. Generally, service managers have two basic strategies to deal with these different types of variability: reducing the amount of variability or accommodating the variability. A classic way to reduce variability is to limit the number of request options. Waste can be reduced with the use of Lean and Six Sigma. By minimizing customer’s time and effort, and delivering exactly what they want, when and where they want it, companies can gain multiple benefits. (Gemmel et al 2013, 68-69)

Often service development process is carried out through "trial-and-error" and no metrics are selected to check the requirements. Frauendorf suggest using service blueprint to structure the process thoroughly. Typically, adjustments for services focus on the improvement of efficiency and effectiveness of the service transactions. A higher efficiency mainly causes a benefit for the service providing company, where increasing the effectiveness mostly causes a greater offer and advantages for the customer. Service processes can also have redundant process steps or a too complicated design. Blueprint helps to bring out these process pathologies and they can be eliminated by different service management tools. (Frauendorf, 2006, 46-47) With the created service blueprint, companies can calculate the costs for manufacturing the service by identifying each step of the process. This helps the company to price their services right and developing them to wanted direction. For quality control aspect, the service blueprint helps to identify the most crucial steps, so the most suitable metrics can be selected to measure them. (Tuulaniemi 2011) To benefit from the blueprinting process, results should be implemented right. Improving labour time management can be done with the results of customers view of labour time processes and the use of resources in those processes. Improvements can result the service to offer the most crucial parts of the process better than the competing companies and for same or lower cost by eliminating low value process parts. Optimizing signals can be used to employees to utilize the result of the service blueprint to gain benefits and making the wanted changes. (Baum, 1990, 46-51)

3.3 LEAN

With Leans organized approach, reductions of time and cost can be done to help companies’ profitability and competitive advantage. Lean contains several techniques
and tools to make process from traditional to “lean”. To achieve this goal, companies need to change their mindsets and philosophies to support the process in the long term. (Beecroft, Duffy & Moran 2003, 144) Lean is more about thinking, behaviours and skills, than about events. Events can only give assistance to creating the right environment for lean and gaining better results. (Flinchbaugh & Carlino 2006, 139) According to Wei (2009) the value of the service process needs to be understood before analyzing the process design principles. Value is the most crucial starting point for Lean improvements. Value for a specific product should be defined solely by the ultimate customer of the service. Deep understanding about the values company is providing its customers, should be known by the whole management of the company. Since companies often have limited expertise and resources, providing a wide selection of service offering and having high customer satisfaction can be difficult. This is where Lean helps management to repeatedly align the organization’s core competency to the values it is providing. (Wei 2009, 824) Hines et al. have written about the relationship between service value and cost. Lean thinking focuses heavily on value, however, often value creation is seen equal to cost reduction. In Lean value is created, when internal waste is reduced. That means reducing wasteful activities and the associated costs and thus increasing customer’s overall value proposition. Value can be increased, when customer valued additional services are offered. For example, a shorter delivery cycle, that does not add cost, but adds customer value. (Hines, Holweg, & Rich 2004, 997)

Lean can be described in many different ways, but the many definitions about Lean all have the same key three themes:
1) Focus on improving the customer value.
2) Goal of doing more with less.
3) Maintaining the company’s long-term stability, quality and safety. (Eaton 2013,24)
Some definitions of lean have been criticized for describing it just as a simple linear process. This description has been too narrow, since process is seen as waste identification and elimination, as if what creates waste is never contested and reduction is too straight forward. (Midgley et al. 2018, 1135) Lean’s goal is to eliminate waste and it offers a set of lean tools to do that. This system is not only a toolkit for companies, since besides the application of specific tools, an overall transformation plan is needed. Plan describes which the different steps of a whole lean transformation process are, in
which order they should be done, when the tools are chosen, when they should be applied and which other steps concerning preparation and post-processing are needed. Lean offers guidelines and a step-by-step program including the lean tools. (Machado & Leitner 2010, 389) Companies getting started with lean need to undertake different activities to support the goal. Management activities are needed for the strategic planning and implementing the lean procedures into the company. Preparing activities are helping to get the processes connected with the specific lean activities. “Road mapping” needs to be done to create an advanced plan for major projects. Activities to implement are planning and recognising the changes that need to be made to the processes, service and supporting products. Finally, activities are needed to sustain the made changes. This can also be seen as implementing the principle of continuous improvement to get the everyday improvements. (Eaton 2013, 10)

3.3.1 Lean concepts

The Toyota Production System, that developed the Lean methodology categorized all the activities that can cause poor performance and named them muda, mura and muri.

- Muda: can be any action not ‘adding value’ to consumers. Muda can also be called waste or non-value-adding activity.
- Mura: can be process variations caused by forms of imbalance, mura is also referred as ‘unevenness’.
- Muri: is putting excessive stress on employees, material and equipment are considered to be muri, ‘overburden’ I another term for muri. (Eaton 2013, 34) Other definitions for the identified three categories of damage to service process can be: Muda (uselessness), Mura (irregularity) and Muri (unreasonableness). They are the core of lean approach, that aims for constant improvement. Muda is caused by the seven wastes. Mura, that was defined as variability, irregularity or unevenness in the process. The seven wastes can be fixed by finding the causes for muda. Muri as defined as overburden, that is causing needless stress and workload to employees and processes. Muri is often caused by mura. (Berrahal, & Marghoubi 2016, 2) Liker is describing the lean concepts by comparing them to demand and resources (Figure 7). Muda is using more resources than the market is demanding. Muri Is the opposite, where resources don’t meet the market demand. This leads to forced overwork and
use of equipment. Mura is uncontrolled demand, that causes uncertainty in balancing and planning. (Liker 2004)

![Diagram showing Mura and Muri]

**Figure 7 Description of the lean principles**

Muda is defined as the tasks that don’t ‘add value’ to customers. It is also referred as waste and non-value-adding activity. Waste is a term for non-value adding material, effort, and time to customers, employees, investors. (Agustiady & Badiru 2013, 224) Muda increases the company’s costs and lead times and also increases the risk of errors happening. There are multiple types of actions that companies undertake that don’t add value, these are grouped together to form the seven wastes. Eaton (2013) has divided muda into type 1 and type 2. Type 1 describes the ‘necessary waste’ and ‘essential muda’, examples of this kind of waste are servicing, governance tasks, testing, essential training and compliance. Changes should be made, so elimination should be done so all the possible waste is removed and streamlining remains. Type 2 muda is considered the genuine waste that adds no value to customers and that the company doesn’t need. Both types of muda are waste and thus should be minimized. (Eaton 2013, 34-35) To achieve this goal, production process needs to be rationalized, so elimination of waste (muda) can be done holistically. Lean is using less to do more, so in eliminating waste goal should not only be increasing efficiency but also providing
higher quality of the products. Contrary to traditional thinking, lean aims to combine higher quality and less effort. Main idea is to do things right in the first time or in case of an error, to fix them immediately, to minimize reproduction. Reproduction demands higher responsibility and a strong commitment by the staff, so it should be avoided. (Machado & Leitner 2010, 384)

Activities, that cause variability (mura) in process should be recognized, since they create problems, that cause employees to have to stop one job and start another, rush what they are doing or simply just stop because they can’t go forward, whilst knowing that they will have to work extremely helps to eliminate mura in processes. (Eaton 2013, 35) Variability is defined as the property of a characteristic, system or process taking on changing values when repeated. (Agustiady & Badiru 2013, 224)

Muri is also associated with the terms absurdity or unreasonableness in the process. Muri is happening when activities where people, materials or equipment are put under unreasonable stress. Examples for muri can be, employee having to carry heavy burdens, undertaking more work than they can possibly do in a determined period, and requiring equipment to do more than it is designed to do. Muri can be tackled by reducing the amount of employee’s work by removing the muda, changing the working practices employees are using and reducing the time that machines, processes and equipment spend idle between tasks. Following the aspects of the third principle of Lean “creating flow” is also helping to tackle muri. (Eaton 2013, 35-36)

Next, the waste (Muda) is examined further in service context. In lean management, there are seven recognized wastes (Hines & Rich 1997, 50). A value-adding actions can be determined by three criteria:
1. Customer willingness to pay for activity.
2. Activities are changing the product or service.
3. Activity is done right the first time.
Thus, all the other actions are considered waste. (Flinchbaugh & Carlino 2006, 131)

Overproduction is the first waste, that means producing more than the customer has ordered. (Berrahal, & Marghoubi 2016, 2) It is the most serious waste, that doesn’t allow a smooth flow of goods and services and it inhibits quality and productivity. It can
also increase excessive work-in-progress stocks which that cause the physical dislocation of operations with because of poor communication. (Hines & Rich 1997, 50) In non-manufacturing contexts it is often better to refer to this waste as ‘overprocessing’ rather than overproduction (Eaton 2013, 37). Examples about overproduction are: producing reports no one reads or needs, making extra copies, e-mailing the same document/information multiple times, entering repetitive information on multiple documents and ineffective meetings (Sternberg, Stefansson, Westernberg, Boije Af Gennäs, Allenström, & Linger Nauska, 2012, 51).

Second waste are defects, that are finished goods or services, that are not adapting to the requirement or customer’s expectation, causing customer dissatisfaction (Berrahal, & Marghoubi 2016, 2). Defects cause direct costs, but they should be regarded as opportunities to improve rather than something to be traded off against what is ultimately poor management. (Hines & Rich 1997, 50) Eaton refers to this waste as rework. It is having to do corrective work of any kind because not everything was done correctly the first time. (Eaton 2013, 37) Defect examples are: data entry errors, pricing errors, forwarding incomplete documentation, lost files or records, incorrect information on documents, inefficient file system on desktop PC or in cabinet and not appropriate staffing to service customer. (Sternberg et al. 2012, 51)

Third is unnecessary inventory, that increases lead time and makes it harder to quickly identify problems and thus discourages communication. Problems in inventory need to be found in order to fix them. Reducing inventory is the only solution, since it will help to battle storage costs and decreased competitiveness. (Hines & Rich 1997, 50) Here inventory means everything, that is not directly needed to achieve current customer orders (Berrahal, & Marghoubi 2016, 2). Inventory is any unnecessary queuing of activity, like a group of people brought in for an appointment, a stack of letters waiting to be typed or excess stock stored in operational areas (Eaton 2013, 38). Unnecessary inventory can be files awaiting signatures or approvals, work awaiting task completion by others, obsolete files, obsolete office equipment, insufficient training of back-ups and purchasing of excessive office supplies. (Sternberg et al. 2012, 51)

Inappropriate processing is the fourth waste. This processing means doing any actions, that are explicitly not required, like producing unnecessary reports or doing
Inappropriate processing happens, when additional activities, like storage, handling, rework or reprocessing happens because of overproduction, excess inventory or defects (Berrahal, & Marghoubi 2016, 2). It can occur in situations, where overly complex solutions are found to simple procedures. Inappropriate processing further causes poor layout, leading to excessive transport and poor communication. Inappropriate processing can cause problem situations, so poor-quality goods are able to be made. (Hines & Rich 1997, 50) Inappropriate processing can also be duplicative reports or information, repetitive data entry, incorrect information being shared, constantly revising documents, ineffective meetings and no agendas, duplicative documentation and lack of accurate project planning. (Sternberg et al. 2012, 51)

Fifth is excessive transportation. Transport is unnecessary movement between locations or operations. (Berrahal, & Marghoubi 2016, 2) It can be the movement of information, materials and equipment (Eaton 2013, 37). Double handling and excessive movements can cause damage and deterioration with the distance of communication between processes proportional to the time it takes to feedback reports of poor quality and to take corrective action (Hines & Rich 1997, 50). Transportation can be searching for computer files, searching for documents in file cabinets, repeatedly reviewing manuals for information and hand-carrying paper to another process. (Sternberg et al. 2012, 51)

Waiting is the sixth waste, that is caused by time being used inefficiently. Waiting occurs whenever goods are not moving or being worked on. This waste affects both goods and workers, that are spending time waiting. The ideal is to achieve no waiting time. Waiting time for workers could be used for training or maintenance, but it should not result in overproduction. (Hines & Rich 1997, 50) Examples for waiting are waiting for information, people, materials or anything else to arrive (Eaton 2013, 37). Waiting can be periods of inactivity in a downstream process because an upstream activity has not delivered on time or sometimes queuing (Berrahal, & Marghoubi 2016, 2). Concrete examples in everyday work can be excessive signatures or approvals, dependency on others to complete tasks, delays in receiving information and cross-departmental resource commitments (Sternberg et al. 2012, 51).
Final waste is unnecessary movement, where motion is the unnecessary movement of human beings or work (Eaton 2013, 37). It takes time and adds no value to the product or service (Berrahal, & Marghoubi 2016, 2). Unnecessary motion can involve the ergonomics of production, where operators have to stretch, bend and pick up. That is when these actions could be avoided. It is tiring for the employees and can cause poor productivity and quality problems. (Hines & Rich 1997, 50) Unnecessary movement can also be seen as any movement of people, paper, electronic exchanges (e-mails). These are created by poor layout or design, ineffective equipment or supplies located afar. (Sternberg et al. 2012, 51)

All the wastes, that can be found in the service industry are summarized in the table below (Table 2).

Table 2 Wastes in service company

<table>
<thead>
<tr>
<th>Doing work not requested</th>
<th>Errors</th>
<th>Backlog of Work</th>
<th>Excessive work</th>
<th>Transport</th>
<th>Waiting</th>
<th>Unnecessary motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Unnecessary measuring and meeting</td>
<td>• Errors and correcting the previous work</td>
<td>• All unfinished tasks</td>
<td>• Using multiple systems</td>
<td>• Transportation of task or information from employee to another</td>
<td>• Work tasks waiting for employee</td>
<td>• Unnecessary reports, verifications and work stages</td>
</tr>
<tr>
<td>• Doing tasks just in case they are needed</td>
<td></td>
<td></td>
<td>• Typing information by hand from system to another</td>
<td></td>
<td>• Customers waiting for a service</td>
<td>• Working is large batches</td>
</tr>
<tr>
<td>• Wrong priorities</td>
<td></td>
<td></td>
<td>• Sorting and searching information</td>
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</tr>
</tbody>
</table>
3.3.2 Principles

Lean is methodology that creates constant improvement by eliminating waste. Essence of the lean approach can be described in five key principles.

1 Specifying what does and does not create value from the customer's perspective, defining the values that they want.

2 Identifying the steps in process necessary to service production across the whole value stream to highlight non-value adding waste.

3 Making those actions that create value flow without interruption, detours, backflows, delays, waiting or scrap. This can be achieved often applying Just-In-Time policy, that helps to reduce buffers between steps.

4 Only making what is pulled by the customer, since the flow should be based on the expressed needs of customers.

5 Striving for perfection by continually removing continuous layers of waste as they are uncovered. In Lean improvements (kaizen) are made to achieve that goal.

(Hines & Taylor 2000, 4; Machado & Leitner 2010, 384)

Carlborg, Kindström, & Kowalkowski (2013,5-6) describe the Lean principles results like they can be seen in business processes. To reach the defined value principle, wastes should be reduced by minimizing resources, that are not involved in creating customer value. For defining value stream, actions are mapped and categorized from customer point of view to value-adding and non-value-adding. To have flow, focus should be on optimizing the flow of elements in through the whole process, instead of efficient use of the available resources. Next is the principle pull, for it to happen capacity must become critical matter, so no production should be done before an order is made. Lastly, when the results for all these Lean principles are fulfilled and contained perfection has been reached. (Carlborg et al. 2013, 5-6)

It has to be acknowledged, that if taken the definition of waste without any modifications, many necessary parts of the processes can be seen as waste. For example, many service providers, like banks, retailers and insurance companies are not necessarily adding value. Still many of these activities are useful and can be discussed as service value adding even, since they are reducing the cost to the
customer rather than adding value. Because of their “cost reduction value”, they can be added to the necessary non-value adding category. The problem for including them into the value adding activity category, is that this can direct focus away from their long-term improvement or development. (Hines & Taylor 2000, 10) These principles (Figure 7) are fundamental to the elimination of waste. (Hines & Taylor 2000, 4)

![Figure 8 Lean principles](image)

Lean management is more than a new management method. If used right, it can create a universal philosophy and a new part of company culture. Every organization is trying to create value for the customer through series of processes. These processes involve different amount of either value-adding or non-value-adding steps. Lean managements core activity is to recognize those processes and eliminate non-value-adding steps to make process more efficient. Value-added is what the customer wants of the product or service and they are willing to pay. These steps should only be left in a process after lean management. (Machado & Leitner 2010, 388) Hines and Taylor (2000,10) also define third category, necessary non-value-adding activity. These processes don’t make a product or service more valuable in customers eyes, but they are necessary,
or the existing supply process would be radically changed. Necessary non-value-adding activity is waste, but it is difficult to remove in the short term and should be a target for longer term or radical change. (Hines & Taylor 2000,10)'

Carlborg et al. have examined combining lean principles to service business. Applying the first principle “define value” to service business it has to considered, that from a lean perspective company creates the value and the customer defines it. When examining value from perspective of a service, value comes from every customer’s using context. Customers can create value individually or co-create value in their processes together with the service company. Thus, the value creation in service highlights customer’s active role and value-in-use. Service companies should understand what creates customer-defined value in their companies. With knowledge about customer value creation and reducing non-value-adding activities efficiency and customer satisfaction can be increased. This approach requires a thorough understanding of the firm and the customer processes to determine whether an activity is value-adding. In some cases, customers can be price sensitive since they forgo customization and contribute with their own labour. This is when company should adapt service production to reduce costs and standardize customer interfaces. Other features are important for creating customer value in reciprocal services, where customers value expertise and solutions to unique problems. (Carlborg et al. 2013, 10-11) To achieve the first lean principle, understanding about what the customer wants is needed. This principle emphasizes on delivering customers with the services they value and are willing to pay for. The principle promotes value improvement through eliminating waste. Waste is all the activities, in the current process that causes stops or delays in the process of converting materials and information into customer payments. Further understanding value involves the design of service that improves customer satisfaction and profitably, that is formula of making the right service in the right way. (Rich 2006, 15)

In mapping value stream, necessary actions for service can be applied to all service types and the principle is not restricted to the company’s processes. In service, value is primarily created in customer processes. Methods that clearly include customers are service blueprinting and customer scripts. When mapping is done for both company and customer activities, it can will help to increase efficiency and customer satisfaction.
Efficiency increases when the production process improvements are made, customer satisfaction can improve if the value stream mapping reveals resources and efforts the customer contributes. Therefore, defining value stream will plan more accurate use of resources, as well as better coordination for customer, company, and other actors in value creation. (Carlborg et al. 2013, 11-12) In identifying the value stream the internal actions done in the company to convert a customer’s orders into a completed order and the activities related to creating new services for customers are defined. When the company has a good understanding about manufacturing and designing their services, process can be improved by working with the suppliers and customers in order to eliminate all the wastes between companies involved with satisfying customers. (Rich 2006, 15)

In flow customer is seen as a flow element in company’s own service processes. To achieve flow company needs to understand, how to address the customer as a “flow-brick” in the provider’s processes. The flow principle can be more beneficial for services with low diversity of demand and low customers’ disposition to participate. Using the flow principle in this situation has the potential to improve efficiency for the service provider without negatively affecting customer satisfaction. By achieving flow both efficiency and customer satisfaction can be improved. Although for service types with high variety and high customer participation, there is a possible risk of customer satisfaction decreasing, if applying a standardized system that does not fit every customer. In addition, difficulties in achieving flow are inherent with an active customer, and more customer involvement also increases input uncertainty. Furthermore, a faster flow can increase efficiency but may reduce customer satisfaction because actively pushing the customer through the flow may negatively affect the customer’s emotional experience. (Carlborg et al. 2013, 12-13) Creating flow involves keeping materials and information moving, so that everything ‘flows’ to customers without delay or interruption. Stocking materials for long time reduces stock turns, that inflates costs and ties up large amounts of capital in materials that are not utilized. (Rich 2006, 15)

To achieve pull in service business, services are not produced before the order is placed. Since almost all services respond to customer needs, they can’t be produced before the customer request. Although sometimes services may be produced in anticipation of demand. Pull can be applied regardless of low or high diversity or
customer’s disposition to participate. Service companies need to forecast the number of customers and their service level agreements to provide the right competencies and quantities of resources available. Applying the pull principle causes positive effects on efficiency and customer satisfaction as long as the company has enough capacity. When capacity is too low to satisfy the demand customer satisfaction decreases because of the customer’s waiting time increases. As services typically are difficult to store, managing capacity and demand becomes harder. A balance between customer satisfaction and efficiency should be found. (Carlborg et al. 2013, 14) The “pull” principle aims to optimize the process to be at the rate of consumption. It can be used, if it is not possible to complete the flow of service to customers because of the short lead times, number of customers, the needs of company’s technology and batch sizes or other constraints. If flow production is not possible, a buffer must be purposefully designed, so fulfillment of customer orders can be done. Like this, good level customer service can be maintained by later production and finishing processing. When reaching more advanced stage of lean production use of have many small buffer points is possible, so using direct link to internal customer and supplier production operations allow customer orders to completely pull work through the factory. This method creates possibility of instant availability of products and short lead times simultaneously. (Rich 2006, 15-16)

The last Lean principle **constant improvement** is difficult to apply, that is because it is the outcome of successful application of previous principles. All the previous principles remove wasted time and recourses to fulfil the principles and creating constant improvement. If considering constant improvement as a goal, it is applicable to all types of services. Carlborg et al. suggest, that constant improvement happens, when customer is satisfied with the service and right amount of resources are used for production. So, in other words, constant improvement can be seen as achieving excellence together with high efficiency and maximized customer satisfaction. Achieving this last principle eventually depends on the type of service and context. (Carlborg et al. 2013, 16) Constant improvement seeks perfection in every aspect of the process and associations with customers and suppliers. Here the emphasis is on the use of problem-solving teams of operators, managers and inter-company teams to perfect the processes and remove the last remaining waste elements and non-value adding actions. (Rich 2006, 16)
3.3.3 Lean in service

Suárez-Barraza et al. has identified Lean service as a derivation of Lean thinking. Lean services can be used as method to improve and innovate service processes. They don’t believe it should be used to correct failures in the process, but rather used as tool to reduce waste, change the culture to focus on customers and continuously improve. Lean helps to train the employees to develop their behavior and skills in serving the customer, as well as joint value creation and assuring the service quality. In the authors’ definition of Lean service, it is a customer-oriented approach internally and externally. Employees are involved in the behavior and methods in both individual and team level. They can be involved in the process by setting up systems for shared recognition to raise the awareness to apply and utilize value equation: client satisfaction = \frac{1}{4} \text{ benefit gained by the customer (fulfilling their needs)} + \text{ the treatment received} + \text{ solution delivered.}

With these methods, companies can gain new discoveries by minimizing waste and maximizing value and by doing that improve quality in all aspects of service. (Suárez-Barraza et al. 2012, 376-377) Differences between manufacturing and service business need to be taken into consideration, when applying lean to the process. The most important differences are the nature of the processes output, inventory’s life cycle and feasibility and amount of customer interaction. Process becomes service process, when process doesn’t change the shape or physical goods of materials. This can be seen for example in a bank loan approval, that requires many steps of data collection, acquisition of knowledge and professional assessment. The final product being several documents with signatures on them. And a loan does not exist without a customer’s signature, so no inventory of completed products can be kept. (Wei 2009, 821) It is common for service companies to overlook lean’s remarkable transformation potential. However, it requires some adjustments of the tools, lean principles and concepts so they apply equally well to service companies. Applying process of the lean in a service environment can be harder, since service processes are cross-functional in nature. Challenges are, that the process can be difficult to see and there is sparse documentation and measurement. If the company is willing to do the research the results can be rewarding. (Flinchbaugh & Carlino 2006, 131)
Lean’s purpose is to identify and reduce waste by enhancement of operational processes, while aiming for value development. Waste for services is defined similarly as in product manufacturing. Non-value-adding activities in an operational process are any obstacle that prevents and introduces inefficiencies into the unremitting flow of work processes. Non-value adding activities include ‘solid’ waste materials that are discarded after manufacturing, waste resulting from errors and ‘intangible’ waste, like motion inefficiencies in production, unnecessary transportation and avoidable waiting time. (Midgley, Papadopoulos & Ufua 2018, 1134) In service business active customer and reciprocity are highlighted. This is why resources, like customers time and efforts need to be analysed and understood as a part of productivity. Also, diversity of demand must be considered by the managers. Especially in services with high diversity on demand, it is not recommended increasing productivity only changing the efficiency. If that approach is used, lower customer satisfaction and lower profitability can happen. Acknowledging the previous is especially important, when applying the lean principles to service business. Customers operational processes and different service types’ uniqueness must be understood, when applying Lean principles and improving productivity. Sometimes value creation may be found in recognising customer process improvements or even “training” customers certain behaviours. Carlborg et al. suggests lean to be a valuable tool for managers to balance efficiency and customer satisfaction and proposing opportunities to better understand and improve service productivity. (Carlborg et al. 2013, 18-19) Lean should be implemented in a logical way, taking into consideration the service-based business model rather than as a systematic, simplistic, obligation of manufacturing methods (Cervone 2015, 159).

4 EMPIRICAL FINDINGS

In this chapter, the research methodology is explained along with data collection. Findings about the two interviews based on the service blueprint and lean methodology are introduced. Lastly, improvement successions about the process are proposed based on the interview results.
4.1 Methodology

The research is conducted as a single case study to find out the benefits of service process development for the company. Secondary data is collected from existing literature and primary data through the company interviews. Qualitative research approach is used to get interpretation and understanding of the reasons behind the research questions (Eriksson & Kovalainen, 2008, 4-5). Qualitative research gives insight into research subject and helps to explain the research questions. Thus, the research questions can be best answered through qualitative data. Qualitative study suits best to collect descriptive data, that cannot be measured. Qualitative study enables the study to get started without expectations. (Eskola & Suoranta, 1998) To get the answers, company interviews are used to collect the qualitative data. Research methods were chosen to support the used service development tools. This study was executed as qualitative research that can be simplified as non-numeric portrayal and in this research the researcher is taking a comprehensive approach to the topic (Eskola & Suoranta, 1998). In this research, nothing is left out from the examination of the corporate financing process and it is being looked in its entirety. The improvement targets are being search regardless whether the task belongs to management team or the single employee.

Next the report focuses on discussing data collection plan. The progression of the empirical research is pictured in the Figure 9. To find out the current state of the company's corporate financing process a service blueprint is formed by using unstructured interviews. They can be used to gain in-depth understanding without predetermined list of questions and interviewee can talk freely about the topic idea (Saunders, Lewis & Thornhill, 2009, 391). Since unstructured interview resembles a normal conversation, interviewee can build the service blueprint together with the interviewer. (Eskola & Suoranta, 1998) Service blueprint is done in face-to-face interviews. Service blueprint is analyzed by comparing it to the theoretical part of the study. By understanding all its levels, the semi-structured interviews can be planned to gain the most valuable information.
To execute the Lean based interviews, semi-structured interviews were used. They are based on predetermined questions to get standardized answers (Saunders et al 2009, 391). In semi-structured interview the questions are asked in the same order and in the same form, but no ready answers are given (Eskola & Suoranta, 1998). Interviews will be done individually, so everyone can try and find the problems in process without the pressure from the group. All the three employees from the office working in corporate financing are interviewed. This is done, so an overall view of the process can be formed. The semi-structured interview is based on all the five Lean principles (Hines & Taylor 2000, 4), that are fundamental to the elimination of the seven wastes from the process.

The research is executed as non-hypothetical, that means that collection of the data there was no assumptions about the results. The data was collected this way, so new findings can be found easier instead of proving the hypothesis right or wrong. (Eskola & Suoranta, 1998). Analysis is done first by making preliminary assessment of the data and then identifying and categorizing the findings. After collecting the observations from interviews and creating patterns the findings can be created to an overall description of the problem. (Lecompte 2000, 148-151) It is suggested, that thematic analysis applies categorization to direct themes suitably. Also, thematic analysis requires good interaction between theoretical and empirical parts, so this way findings can be easily linked to theory. Qualitative analysis should be done to get results structured in a reasonable way. Since there are many possible ways to analyze qualitative data, if a single method does not work with the results, other ways can be applied. (Eskola & Suoranta, 1998) The interview results can be categorized by process phases, lean principles and the found wastes.
4.2 Data collection

The service blueprint was created together with the office manager. Guidelines on creating a service blueprint from Bitner et al. were adapted to create the blueprint of corporate financing process for this study. First step is sharing the blueprinting fundamentals: explaining blueprinting and its meaning. Then, interviewees are shown a generic blueprint and each of the components is explained, while showing common examples. To make sure all the participants have a clear understanding about the goals and the blueprinting process objectives are explained. Service is supposed to be mapped the way it usually happens, not how it is supposed to happen, there can be different individual events in the service process, but the focus of the service blueprinting should be on typical occurrences. Focus can be kept in the right place by questioning service start and stop point from the customer’s point of view. After that, map can be created from the contact employee actions continuing to both onstage and backstage and after followed by support processes. Physical evidence is usually the last component to be added to the blueprint. (Bitner et al. 2008,73-74, 78-81)

To find out more about the process and its possible challenge areas, semi-structured interviews are done for all the employees working directly in the chosen service
process. Their job descriptions being bank manager, office manager and financial expert. Interview questions (Appendix 1) were based on the lean methodology and the created service blueprint. Interviews were done by email to all the three employees. The interview about Lean was categorized to 12 themes that all included multiple questions about the theme. First five themes were the Lean principles: defining customer value, mapping the value stream, creating flow, establishing pull and continuous improvement. And the rest of the seven themes were about the Lean wastes: errors, doing work not requested, transport, waiting, backlog of work, unnecessary motion and excessive work.

4.3 Findings and result

Next the interview results are examined from the two chosen research methods. The service blueprint is explained and observations about the process are made. After, the interview about lean is analyzed in the all the twelve categories.

4.3.1 Results from service blueprint

The research subject was the bank’s corporate financing process. The process deals with the funding their corporate customers business. Every company in spite of their size or industry will be needing financing at some point of their existence. For example, the company’s financing process offers loans for investments or funding for starting the company. Regardless of the purpose of the loan the process outlines stay the same. The financing services help their customers to achieve their business goals. The process blueprint (Figure 10) was created to understand the process and plan the interviews based on the lean methodology.
The loan approval is always handled on case-by-case basis. The process is affected by the amount of the loan, degree of solvency, profitability and liquidity. The process starts with the customer booking an appointment through their web page and ends in the decision about the approval of the loan. The financing negotiations consider the loan period and other loan terms. The process includes many mandatory documents, that are needed from the customer to complete the loan process, for example official financial statement, detailed business plan, investment plan, information about loan warrants and trade registration. There are some mandatory phases and documents that are regulated by bigger organizations and individual banks cannot change them.

Figure 10 Service blueprint of corporate financing process
4.3.2 Results from the interview based on the lean methodology

Next, the interview answers from the three employees are reviewed by the twelve themes: defining customer value, mapping the value stream, creating flow, establishing pull, continuous improvement, errors, doing work not requested, transport, waiting, backlog of work, unnecessary motion and excessive work.

**Defining customer value**

The first principle reflects on company’s understanding about their value creation process and how well company can create value for a customer. According to the answers, the company has a good understanding about customers’ special requirements. Components on the onstage activities, that make the process easy and fast, are the valued activities. These are the aspects, that make the customer recommend service to others, if they are delivered. Thus, onstage activities are the ones creating value, and those should be invested in, instead of eliminating them.

**Mapping the value stream**

The second principle defines efficiency and customer satisfaction with use of resources in value creation process. The results show, that the most important value-adding activity is the face-to-face meeting with the employee. It makes the service customer experience easy when customer can flexibly get information from the employee. Other value-adding elements are seen to be the web page and office consistent to the company brand. The mandatory but non-value-adding activities of the process from the answers are seen to be all the invisible activities to customer. Interviewees did no recognized activities that are non-mandatory and non-value-adding. The current process relies on the customer’s own activity in delivering effective service. According to the answers, efficiency could be increased by activating the customer, for example by having the opportunity for customer to do the loan application in their web page at the same time as booking the appointment. This way the needed documents and information could be sent to the bank beforehand. Having access to the document before the meeting, the employee could form an understanding about the customer and their needs. Letting customer know about denied loan application in-person, was
mentioned as activity that is invested in more than they are creating customer value. According to answers telling the customer that kind of decision, could be done by phone to make the process easier for both parties.

Creating flow

The result from the third principle reflect on company’s ability to include the customer into the process in creating flow. The answers show, that information has to be documented from system to another, since it doesn’t automatically transfer from system to another. Also, work has to be redone every time important information, like purchase price changes. This shows, there is possibility of delays or interruptions, since process isn’t flowing. Process includes waiting when customer documents are being delivered to the bank. Waiting can also be found in the loan decision phase, where decision is being formed through the bank’s internal decision process, where decision-makers don’t always have time to get familiar with the process. Waiting is also happening, if credit committee’s decision is needed. The committee is only meeting once a week, so process has to wait until that decision. Lastly, when documents are being prepared in the affiliate company, waiting can occur up to two days. In standard circumstances two days is being reserved for this work. Returning to the previous stages of the work happens rarely. If the customer changes their loan application, reconsideration is needed. Sometimes there is also situations where employee has not taken into consideration some information, that creditors think is relevant, and has to return to add it into the application. There was also answer stating, that in the preparing stages, there is need to return to previous stages to collect information. The amount of work only varies according to the type of loan application. For the balance of amount of work and resources, answers showed the lack of know-how and time after the loan approval for achieving. There was also variance in the amount of work during different times.

Establishing pull

From the fourth principle’s answers the company’s ability to produce the service efficiently and in time for customer’s needs can be seen. Answers state that the process is completed just in time from customer perspective and the process is designed according to the customer needs. From employees’ point of view pull is not
always achieved. For the finishing assignments there is not enough time compared to the other phases. Answers suggest individual time management to be the cause for this problem.

Continuous improvement

The answers of the final principle reflect on the company’s ability to seek perfection in every aspect of the process. The company’s current service process satisfies the expectations it has been given. However, interviewee thought the developing technology could be utilized more. It can be seen from the answers, that there is no established monitoring method to track the process. Also, the quality of the process can vary on the individual level and it requires constant monitoring from the manager. The quality can also depend on the person and their service skills. Quality is partly being stabilized by the credit approval criteria. Process development cannot be fully influenced by a bank, but on the group level they say to have developed the process and the work is being more efficient by shifting some work to affiliate company.

Errors

The occurrence of errors in the process can be minimized with flexible working according the to the interview. According to an answer, there is an error in every process, but they can be fixed, since many people are checking the process progression. Major errors happen rarely, but occasional errors are caused by the possibility of business customers to book appointment to others than the professionals of corporate financing and inexperience of new employees in preparing the documents.

Doing work not requested

Based on two interview answers, there is not too early or too much work done to gain the final result. There were not any parts of the work done in advance before the next step. The third employee brought up, that loan application and negotiations can be made almost ready even when there is a possibility of the customer deciding to go with another bank’s offer. Answers presented a possibility of creating different memos, that might not be needed to fulfill customer needs.
Transport

The waste of transport was not found from the process in the shape of unnecessary confirmation of information or non-developing information transfer. Unnecessary movement happens, when unnecessarily organizing a meeting, when thing could be talked through in the phone. Occasionally the responsibility shifts from the original employee to another because of longer employee absence, when incomplete projects are transferred to others.

Waiting

There is waiting for another employee’s work in document preparation and decision making during the process. After making a loan proposal for the client, the employee has to wait about decision about the loan. If there is any part that needs further modifications the waiting time becomes longer. According to one answer, delays are only considered, when the loan decision date is agreed with customer and that date is not achieved. The schedules of the process are not being monitored, so improvement targets could be found if the process was monitored. However, the interviewees thought there wasn’t many delays in the process. Delays caused by of a machine or a system were also very rare. There are also parts of the process, where waiting time cannot fully be reduced. According to answers one of these is decision making, since the employees have to have time to get familiar with the topic to make a decision and after take responsibility about these decisions.

Backlog of Work

Based on the interview answers, backlog of work was not found from the process. Sometimes in the preparing stage of the process there is problems in the movement of information.

Unnecessary motion

According to results, additional checkups and meetings are happening during the process. Information might need made more precise or additional information needed from the customer. Other process and work are always being done simultaneously during the process.
Excessive work

Based on the results there is not usually much excessive work in the process. At times there is phases in the process that need to be figured out again after they have been forgotten. There is no unnecessary work done from the service view point, but unnecessary meetings could be minimized, if customer would give all the needed information for loan application beforehand, so the loan negotiation could be done in phone. Neither is there collected information in the process, that is not being utilized. There were not necessarily any phases is the process, that customers are not willing to pay for. Costs about different document are costs customer might not want to pay, but they cannot be removed. The answers suggested excessive work forming from having to document the same information twice to two different systems.

The results from the Lean based interview, that were examined in detail before are summarized in Table 3.

Table 3 Summary of the lean interview results

<table>
<thead>
<tr>
<th>Principles</th>
<th>Current state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining customer value</td>
<td>A good understanding about the value-adding activities and customers’ special requirements.</td>
</tr>
<tr>
<td>Mapping the value stream</td>
<td>No recognized activities that are non-mandatory and non-value-adding or activities that are invested in more than they are creating customer value.</td>
</tr>
<tr>
<td>Creating flow</td>
<td>Problems in information and material flow.</td>
</tr>
<tr>
<td>Establishing pull</td>
<td>Problems in creating pull from employee point of view.</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>Variation can occur on individual level and no monitoring is done for the process.</td>
</tr>
<tr>
<td>Wastes</td>
<td>Errors</td>
</tr>
<tr>
<td></td>
<td>Rare.</td>
</tr>
<tr>
<td><strong>Doing work not requested</strong></td>
<td>Documentation an creating unnecessary memos.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td>Occasional shifts in responsibility.</td>
</tr>
<tr>
<td><strong>Waiting</strong></td>
<td>Waiting of another employees' work and no monitoring for schedules.</td>
</tr>
<tr>
<td><strong>Backlog of work</strong></td>
<td>Occasional problems in movement of the information.</td>
</tr>
<tr>
<td><strong>Unnecessary motion</strong></td>
<td>Doing different tasks simultaneously.</td>
</tr>
<tr>
<td><strong>Excessive work</strong></td>
<td>Typing information by hand from system to another.</td>
</tr>
</tbody>
</table>

### 4.4 Improvement suggestions

The improvement targets were chosen from the results, so that the parts of the process, where most wastes were found can be fixed. Waste can be removed by applying the lean principles into the process. Next, suggestion about the actions, that can remove the waste by applying the principles are made.

#### 4.4.1 Defining value

The results showed, that the company's value definition already was well managed. But to aim for the constant improvement, value definition can also be improved. According to Malmbrandt and Åhlström specifying what does and doesn’t create value from the customer's perspective is needed for daily improvement. The ultimate goal for this is identifying customer value with exceptional and innovative approaches, that have been recognized to work best in the company. (Malmbrandt & Åhlström 2013, 1160) The process can be further improved by managers regularly participating in the onstage activities from customers point of view. When doing this, manager should be questioning the process: why something is done, how it is done and what is achieved? Listening is important. This applies to customers as well, how they feel and how things look? Improvements should never be done without basing them to actual evidence, the
current state of the process and reasons behind it should be investigated. The decision making can take time and after the implementing becomes faster. Implementing should be done in as small parts as possible. The possible coincident should be separated from actual signals, when guiding the process. Many changes can be made at once, if statistically effective factors can be analyzed. (Torkkola 2015, 224) The goal is to create an exceptional approach to involving customers. For this evidence of innovative solutions developed from customer feedback is needed, customers should also receive information about made improvements. Furthermore, customer value should be constantly challenged and redefined. All employees need to know, what part of the process adds customer value. (Malmbrandt & Åhlström 2013, 1160) For improving their current process, company could start with the following actions.

- Actively collect feedback from customers, instead of waiting them to tell when the company is doing something wrong. Data about customers should be gathered and analyzed systematically.
- The work should be organized, so that the manager can spend most of their time engaging with the customer instead of correcting mistakes.
- There should be employee to make sure the whole process is flowing from customers point of view as well and the quality reaches the standards. (Torkkola 2015, 225)

4.4.2 Value stream

Identifying value stream is recognizing the sequence of activities required to produce the service. Value-adding and non-value-adding processes should be identified in the eyes of the customer. (Cervone 2015, 161) At the moment in the company, there were no recognized activities that are non-mandatory and non-value-adding or activities that were invested in more than they are creating customer value. However, this can be affected by the regulation in the banking industry. The goal is to remove all the activities in the value stream that don’t positively contribute to the development or delivery of the service (Cervone 2015, 161). For further evaluation, the company should aim to use value stream mapping exceptionally. Process maps should be constantly updated and used for continuously challenging activities from a customer’s point of view. (Malmbrandt & Åhlström 2013, 1161)
4.4.3 Flow

Achieving flow requires an uninterrupted production stream of the individual elements within a value stream, that uses a just-in-time approach. The ultimate goal is to normalize peak and low volumes. (Cervone 2015, 161) According to the company interviews, this was one of the principles, the company had most difficulties with. Balancing the work amounts and resources, waiting time and going back to previous stages were mentioned in the answers.

Constant flow is the most efficient way of working. This means reaching all the goals listed below.
1) Lead time can be planned.
2) Individual tasks don’t need to be scheduled or prioritized, so the time to do that can be used to something else.
3) Task should not be interrupted after it has been started, because the same type of repetitive tasks has been scheduled to be done in standard time, when all the participants are present.
4) The work does not wait to be transferred to the next person. This way separate monitoring for time management is not needed in working teams.
5) Regularity removes the need to ask how the work is going and when the next step is going to happen. Interruptions are reduced and arranging different meetings can be stopped, so working time is saved for the actual tasks.
6) Worktime is saved when the tasks are done all at once.
7) It can be immediately recognized when the flow is interrupted. (Torkkola 2015, 136)

If the company can eliminate activities that are unnecessary and unproductive, then they can create a better position to be more effective (Cervone 2015, 158). Lean principles aim to transform the company processes flow efficient by minimizing lead time for customer and making the use of resources as efficient as possible. It might be difficult to reach this goal, because of variation as shown by dashed line in the Figure 11. The variation in process makes it more difficult to reach the optimal situation. The more the variation occurs, the harder it becomes to balance the process. Also, the better the resources are used, the longer lead-times it means for the customer.
The ultimate goal is to reduce time of waiting for a piece of work and all the stages to zero (Eaton 2013, 27).

Creating stability to workload is the only way to achieve flow in the long term. To achieve ‘on demand’ service, patterns of demand should be identified, since there are many patterns that can be reasonably expectable within certain limits. Also, making sure, that right number of employees are deployed to meet the demand as it varies is needed to prevent delays for people waiting to enter the process or for customers. This way, backlogs can be prevented, and the company can level out the activity. (Eaton 2013, 28) The goal should be to connect the process cross-functionally by having all areas working together to improve and challenge the process activities based on insights related to customer value and process flow. (Malmbrandt & Åhlström 2013, 1161)

Standardized tasks help to create flow, since when deviations, for example in quality or time occur, the standard can be used as a guide to find the reason by improving the standard or increasing training to follow the standard (Malmbrandt & Åhlström 2013,
Standardizing should be done to all tasks that are essential for the work flow. In standardizing, plan is done on how to do different tasks, how information is shared and how to implement first-in-first-out. Standardizing is important to create flow and perfect timing. Only the most crucial parts of the process should be standardized. Standardizing the process can be started by answering the following questions:
- Where the incomplete work is stored?
- How much unfinished work can be allowed in each step of the process?
- In what order are the tasks done?
- How much capacity is reserved for each step?
- How and when is knowledge shared? (Torkkola 2015, 140-141)

Standardizing the tasks can be seen unpleasant in the office, if earlier each employee has been able to decide their working methods. It can seem like their independence and professionalism is questioned, but it should be seen that shared rules and team work is needed to fulfill the customer needs. (Torkkola 2015, 140-141) The goal for work standards is that they are continuously challenged and updated (Malmbrandt & Åhlström 2013, 1162). Standardizing tasks and processes lay the foundation for constant improvement. Methods like flowcharts and non-creative strict processes are not what standardizing is all about. With flowcharts there can the problem of misunderstanding the chart and after there are as many different ways of doing the process as there is employees. The purpose of standardized tasks is for managers and employees creating, analyzing and implementing the most efficient ways to the work routine. With this method, while trying to find the best practices, more innovative, successful and efficient ways can be found. (Eaton 2013, 29)

The interview results showed, that the company relies on the individuals own time management. According to Torkkola, this could be improved by applying first-in-first-out principle. The employee should only be receiving work tasks through one route, like ERP-system, email or by phone. The whole work process should be planned beforehand, so employee knows, what to do next. The next task should be given from the only source and it should be the one that has arrived there first. After the first task is done, the second task should come to employee following those same principles. With the use of first-in-first-out all the processes become predictable chains and work flows efficiently. (Torkkola 2015, 137-138) The whole workplace design should be
designed to flow, the best possible place for location of information and resources for process flow should be found (Malmbrandt & Åhlström 2013, 1161).

Having to write same information to multiple systems, was also brought up in the interview. According to Eaton, companies should use only the technology, that has been found reliable and thoroughly tested. It should serve first and foremost the employees and processes. Processes and behaviors should not be shaped by technology, instead technology should support the work of teams and enable the planned efficient work. To improve the process, technology should be used selectively, increasing flexibility, effectivity and responsibility. (Eaton 2013, 30)

Precise resource planning in the company is impossible to reach, because of the variation, that can cancel even the precise and punctual plans. Inoperative plan means, that time of designing it has gone to waste. Lean methodology accepts the existence of variation and tries to improve the company’s ability to adapt to it. There is an initial plan, but it includes the rules from changes caused by variation beforehand. The effect of interruptions has been examined many times, these researches indicate, that switching from task to another increases processing time 40%. When switching to more demanding task, it can take about 10 to 15 minutes to get started. Interpreting these numbers is important, when considering the use of resources. They employees of the company can see this kind of multitasking as positive thing, while actually it is spending the company’s resources for nothing. (Torkkola 2015, 61) For understanding and minimizing the variance, the process’ standard deviation should be measured in addition to measuring means. (Torkkola 2015, 221) Proactive planning and aiming for built-in quality help achieving stability. Proactive planning is using innovative methods for influencing the company’s customers in order to reduce process variability. Built-in quality is achieved by specifically designed work tasks to confirm quality is built-in and very little time is spent on checking quality. (Malmbrandt & Åhlström 2013, 1162)

From results it was noticed, that employees of the company are constantly multitasking. Literature suggests, that by reorganizing the work tasks, more capacity can be released fast for the most important tasks. The best solution for creating flow to the whole company cannot change depending on who is doing the work. Efficient
way is creating common rhythm and clear prioritizing rules. Questions to help the planning process are shown in the figure (Figure 12) below. Torkkola 2015, 127-128)

Figure 12 Planning a flowing process. (Torkkola 2015, 127-128)

To achieve flow, work should be predictable and the tasks should be done repetitively. The rules for the work should be agreed together, in addition to how the information is shared inside the different teams and the company. In efficient process, the learning during the process is organized. When an employee learns new information, it should be utilized and implemented in beforehand agreed phases of the process. In practice this means implementing the PDSA-cycle’s study and act phases. (Torkkola 2015, 127-128)

Visual signals are important to create the flow, this is why the most important information should be visualized, not textual and numeric, and available in the office not in computer (Torkkola 2015, 223). Visual signals should be used in all processes, everyone can see the current situation and any of the deviations by looking at visual signals in the workplace. Visualized information should be diverse, not only safety instructions, but also include company performance and standards. (Malmbrandt & Åhlström 2013, 1163)
4.4.4 Achieving pull

Company interviews, revealed, that the process is designed according the expressed needs of the customer. The ultimate goal for pull principle is to demand to trigger the flow of processes in the value chain rather than “pushing” production of services “just in case” (Cervone 2015, 161). To reach this ultimate goal, few suggestions are made.

‘Pull’ systems can be used to avoid overproduction, since by starting activity when there is demand, resources are not going to waste. In service companies it should be considered, how to trigger activity only on demand. This can be done by allowing customers to book the appointments online (pull), instead inviting them on possibly inconvenient times (push). (Eaton 2013, 28) When aiming for resource efficient organization, work tasks are always waiting for the employee and not the other way around. Resource efficiency means having high utilization rate, that increases the lead times. In flow efficient organization, work tasks should not be waiting for the employee, instead employee might have to wait for the next task. (Torkkola 2015, 58) To improve the pull system, company should continuously challenge the pull signals used to avoid wastes connected to operations and storage, that are not based on customer demand (Malmbrandt & Åhlström 2013, 1163).

4.4.5 Continuous improvement

Continuous improvement is striving for perfection, by aiming to do things right the first time rather than having to go back and fix problems (Cervone 2015, 161). When redesigning the process, the goal is to create a process, that is self-improving, and managers are needed as little as possible in maintaining the daily service levels. Every employee should see the state of the service in customer’s point of view and be able to fix the work process when necessary. (Torkkola 2015, 127) The goal would be exceptional participation by all teams in the improvement work. Every employee should participate actively in improvement work considering the processes that they are part of. Focus should be in improvement work and continuously improving the entire flow, not just specific function. Problem solving should be structured and improvements made by challenging the current situation. (Malmbrandt & Åhlström 2013, 1164-1165) Employees should take care about doing the work according the instructions and
reacting to problems as agreed to preserve the service levels. In this way prioritization, scheduling and figuring out status of the task are not needed to do individually every time. Managers also shouldn’t have to constantly monitor the work. (Torkkola 2015, 127) The goal is to create multifunctional teams of appropriate level of multifunctionality in individuals and teams for the process (Malmbrandt & Åhlström 2013, 1164).

Companies should increase the use of visual controls to emphasize possible problems. Visual signals have been proven to be the most effective to humans and their use can help in implementing lean to the process. The goal is to make the performance of the process visible, so every employee can see the current state. This can also help in showcasing the improvements they make and their impact on the overall performance. There might be hesitance in companies about making the information visible, even when customers can see it. Eaton justifies this by explaining that companies cannot assume employees having motivation in involving in improvement process of the performance, if they don’t know what it is. (Eaton 2013, 29-30) Visualization of improvements is needed for diverse information regarding improvements, like root cause analysis and measurement of frequency of different problems, visualized in a central area of the office. (Malmbrandt & Åhlström 2013, 1163)

Following up processes should be done by employees in all areas, for this innovative metrics should be developed and used by employees systematically (Malmbrandt & Åhlström 2013, 1164). Service companies should have operational metrics to predict, guide action and provide focus for the process. Some metrics used in manufacturing can be applied in to service companies, but data collection with these metrics can be more difficult. Especially effective metrics for service companies according to Flinchbaugh and Carlino are the percentage of value-added time per service worker and the percentage rate of customer needs served in the first attempt. Predictive operational metrics are defining the company’s actual performance, for the service companies that typically don’t have a clear understanding about their current state. (Flinchbaugh & Carlino 2006,132) Good metrics are ones, that give unambiguous results fast. They should be used to measure relevant targets and they should be selected to create reliable observations. (Lecklin 2006, 173) The essential key performance indicators often measure only the financial goals of the business. This is why, when examining the process from the customers point of view, different metrics
are needed. Net Promoter Score can be one possible tool to do that. It measures the customer’s willingness to recommend the service by asking customer after the service has ended “Would they recommend the service to others?”. The answer range is from 0 (I would not recommend) to 10 (Would absolutely recommend), these can be further into three groups: referees (scores 9 and 10), neutrals (7 to 8) and critics (0-6). Combining the key performance indicators and net promoter score, it is possible to monitor the effect of the made improvements from financial aspect as well as from customer’s point of view. This way a comprehensive view about the success of the company can be formed. (Tuulaniemi 2011, 224–227, 241.)

Lean itself embodies the learning cycle of Plan-Do-Study-Act. It can be seen, how the cycle participates to creating the flow, revealing problems, forming countermeasures, and assessing results. The company should then check to be sure the countermeasure is doing its job to maximize the learning. After, inventory should be reduced to create more flow, which will surface new problems. (Liker 2004) Agustiady & Badiru have also recommended using the PDSA- cycle, they have referred it as plan-do-check-act-cycle. With the cycle mistakes can be caught and feedback is provided during the check phase. The checks report the assessment about the process. Thus, all parts and processes are adjusted, leading to no defects. There are three main types of checks recommended: Source inspections, Judgment inspections and Informative inspections. (Agustiady & Badiru 2013, 37-38) PDSA- cycle can be used to help solve even fairly detailed work processes, but it is suggested that a learning company can continually keep using PDSA at all levels of the company, from the project, to the group, to the company, and ultimately across the organization. (Liker 2004)

Company should aim to create a process and the way of working, that fixes problems and can produce the right quality from the first try. The problem detection should be perfected in a way, that empowers employees to stop and review the process in possible problem situations. Understanding should be had about the reason behind problems occurring, to create solutions to prevent them from occurring again. Even service companies can waste time and money ‘working around’ problems rather than trying to deal with them. (Eaton 2013, 29) Sustaining improvements can be done by involving both employees and managers. If improvement is not used, the reasons should be discussed and analyzed. Based on the discussion, the improvements can
be updated. (Malmbrandt & Åhlström 2013, 1165) Building the culture of experimenting and learning into the company can happen by following the next suggestions:

- Try the improvements fast by using PDSA-cycle
- Ask why the error occurred, not who made it, mistakes are inevitable for learning to happen.
- Create the policy of dealing with the problems regularly and visualize them for everyone to see.
- Not everyone is needed to solve a problem, but every employee should be part of problem solving of the company, not just the management.
- Intensive teamwork is needed over the boundaries of organization and teams.
- Management should not be setting and telling the rules for the employees, instead employees should help them create the rules and management should be training them.
- Improvement should be part of the everyday work. (Torkkola 2015, 222; Cervone 2015, 160)

4.4.6 Implementing the changes

Improving the process with lean should be done in stages and any of the stages cannot be skipped. The first step is to truthfully recognize the starting situation, so the best operating model can be chosen. (Torkkola 2015, 72) The focus of all efforts is to discover and solve problems so solutions can be implemented. Problems belong to everyone, and input from every employee is needed to uncover root causes and find answers. (Cervone 2015, 160) The improvement should proceed according to the steps shown in Figure 13. By applying lean, company can move from chaos to organization and from stability to the final optimal stage. (Torkkola 2015, 72)
Figure 13 Route from chaos to optimal state. (Torkkola 2015, 220)

When examining the company’s current situation based the Lean principles, it could be placed to chaos stage in following the Lean guidelines. According to Torkkola, most of the companies start at the chaos stage, even when they are not recognizing it. This is mostly because the fact, that in order to get to the next stage, variation must be understood, and it must be measured accordingly. Chaotic stage means uncontrollable workload and constant prioritization, where some tasks have to be rushed while other are left behind. In these situations, capacity cannot be forecasted, and work tasks come from many different sources, leaving the employee to prioritize the tasks and their own time management. It is typical for the chaotic stage to have to figure out, what tasks have been left behind or even neglected. (Torkkola 2015, 77–78.)

In the chaotic stage the main goals are to try to organize the process and create systematic approach. Guidelines and process maps are external signs of good organization, but do not ensure the working process. Getting to the next stage requires:
- the chosen improvement targets most crucial for the company
- visualization and understanding of the problem within the whole staff
- measuring the process and choosing the metrics
- organizing the employees according the customer needs. (Torkkola 2015, 72–77)
Organization stage is where shared operational coals and ways of working are implemented and obeying them can be measured. Capacity and performance also have to be measured with the chosen metrics. In this stage variation is increased by changes caused by individual factors when executing the process. Getting to the stabile stage requires removing these specific actors. To recognize these actors, performance diagram and operational model that recognizes and removes abnormal activities should be created. (Torkkola 2015, 73) When selecting the metrics to evaluate the service, it is important to recognize the conversion points and other essential performance indicators, KPI’s. The conversions can be divided into micro- and macrolevels. Micro conversions mean the phases in the process, that lead into the main objectives of the process. Example about micro conversion can be for example person transferring from visitor of the shop to its customer. (Tuulaniemi 2011, 224)

Stabile stage demands for logical, consistent and predictable process, where variation is only occasional. However, if the customer needs are not satisfied, variation must be reduced, new system planned, or customer needs adjusted, to be suitable for the company to get to optimal stage. (Torkkola 2015, 73–74.)

Getting the company to optimal stage means, that customer needs are included in stabile process. This requires defined customer demands and their measurement in way that includes both sides. (Torkkola 2015, 73–74.) In some service companies, value and process can be seen as the same thing. The customer is often seen as the beginning, middle, and end of the process. Value should be seen to be more than a design action from customers point of view, it should be daily activity. Defect in service is a customer problem. Since in service companies the customer is so close, each activity employee does is either chance to provide or destroy value. This is why companies cannot only examine the end results of their processes. (Flinchbaugh & Carlino 2006,137-138)

Beecroft et al. (2003) and Malmbrandt & Åhlström (2013) have created a plan on sustaining lean and acknowledging resources it takes to fully gain the benefits. Internalizing lean into day-to-day work happens by continuous employee training in different aspects of improvement work. Committing to the lean as a continuous process requires time and resources for improvement work for visible investments throughout
the service site in connection to lean adoption. There should also be “change agent”, who is an expert resource for improvement teams. Bi-directional vertical information flow is needed for forwarding of the information daily from teams to the business unit and head office in addition to suitable communication channels. (Beecroft et al. 2003, 139; Malmbrandt & Åhlström 2013, 1158-1159) Continuous process improvement model (Figure 14) shows, how to gradually develop the process towards the Lean goals. For everyday improvements resources are needed, but gradually they create benefits and more knowledge about the process, helping company gain competitive advantage. (White & Chaiken 2008, 28)

*Figure 14 Continuous process improvement model. (White & Chaiken 2008, 28)*
5 DISCUSSION

In the final chapter, the research is reviewed by going through theoretical and empirical findings and comparing them. Research questions are answered based on the results of the research and validity and reliability of the study are examined. Finally, discussion about the research explains the research process and proposes ideas for further research about the topic.

5.1. Comparison of theoretical and empirical findings

The aim of this chapter is to mirror the existing studies and theories into the case findings resulting a deeper understanding of bank’s service development process. Service business development according to Patrício et al. (2008) is necessary, since technology has transformed the service delivery. They also claimed, that banking services have been through the most change in terms of customer contacts. This can be seen from the results as well. Improvement areas were found from the company’s service process and the answers suggested to increasing the use of current technology. This service process was selected to be suitable for the master’s thesis research in terms of confidential information and the level of understanding about banking services. With this research the company wanted to create ways to improve their performance in the process. According to Lees (2010), usually the need for service development comes from occurring problem or customer feedback. Also, developing service processes can be started with three possible approaches: bottom up, top down or combined. In this research, the development process can be seen to follow the bottom-up method, where development was started from clinical perspective. The research was small-scale project, that included mostly employee input.

Service development process has been divided into different stages by many authors. In this study, the development process resembled most the model of Adesola and Baines (2005). Their methodology is a seven-step practical approach to guide actions and decisions. Compared to process of Curatolo et al., Adesola’s and Baines’ is more
simplified. The process as shown below, was followed in this research with few modifications.

1 Understanding business needs
2 Understanding the process
3 Modelling and analysing process
4 Redesigning
5 Implementing
6 Assessing new process and methodology
7 Reviewing new process. (Adesola & Baines 2005, 43)

The first three steps were combined in the company interviews, where current state of the process was analysed. Curatolo et al. have combined business process development and Lean to 11 activities. Their second task is to select the process that needs development. Improvements should first be made to most important process to the company and to customers. This task was not done, because the process was executed as part of the research process and not within the company. Also, the steps suggested by Adesola & Baines (2005) and Curatolo et al. (2013) about implementing the changes and managing the change, like discussion and training about the changes is, were not done, since the research stopped at the suggestion level.

To map out the current state of the process, service blueprint was recommended in many studies. Frauendorf (2006) and (Tuulaniemi 2011) suggested the blueprint, because of its ability to point out the activities of a specific employee in the overall picture and creating transparency. Ostrom & Morgan (2008) and Bitner et al. (2008) argued service blueprint to be most customer focused method. Gemmel et al. have also described service blueprint to be good way in in identifying the weak links in the chain of actions. Authors also suggested service blueprint to be combined with Lean or Six Sigma for best results, just like was done in this study. In this research service blueprint created a great base for the company interviews and concretized the overall process in a form that was easy to understand. This was also suggested by Wei (2009), since the service process needs to be understood before analyzing the process principles.

Beecroft et al. (2003) and Flinchbaugh & Carlino (2006) claimed Lean approach to reduce time and cost and help companies achieve profitability and competitive

1) Defining value
2) Mapping value stream
3) Creating flow
4) Establishing pull
5) Continuous improvement

Carlborg et al. (2013) have examined combining lean principles to service business. In this research the principles were used as they were described in the theoretical background. Although, according to results some modification needs to be done, since for example all the non-value-adding activities cannot be removed because of industry regulations.

There are seven recognized wastes according to Eaton (2013), Hines & Rich (1997) and Hines & Taylor (2000). These wastes were adapted to service processes by Sternberg et al. (2012) and Tuulaniemi (2011). These wastes were applied in the study to find out, what activities could be removed or where operation improved. The wastes, that were used for this study, were the wastes modified for service. In results wastes were found in the process activities. Thus, the suggested types of waste can be adapted to the study purposes. Suárez-Barraza et al. (2012) have identified Lean service as a derivation of Lean thinking. Flinchbaugh and Carlino (2006) claimed implementing Lean to service to be harder than to manufacturing setting, but if the company is willing to do the research the results can be rewarding. The theoretical part and the improvement suggestions propose benefits the company could accomplish, if implementing Lean into the service process. However, this research ended in the analyzation phase, so the actual benefits for implementation cannot be defined.
5.2. Answering research questions

In order to answer the research questions, familiarizing with theoretical background on service processes, service development and chosen tools was required. Finally, collecting the data from employees working in corporate financing process through interviews and analyzing the data, research questions can be answered more reliably.

The main research question was "How can service business be developed and what are its benefits for a banking company? " Summarized answer to this main research question is provided at the end of this chapter. First, the sub-questions are focussed, since they contributed in finding answer to the main research question. The sub-questions were answered as follows:

*How do characteristics of service business affect its development?*

The service characteristics of the service are different from traditional products’ and this is why the development process also needs to be different. Characteristics: intangibility, heterogeneity, simultaneity and perishability all have to be taken into consideration, since they affect the perceived value. Differences between manufacturing and service business also need to be taken into consideration, when applying lean to the process. The most important differences are the nature of the processes output, inventory’s life cycle and feasibility and amount of customer interaction.

*How does value form is service process?*

In service process, customer is the major actor in defining the value. Thus, value is defined as customers’ overall assessment of the received benefit based on perceptions of what is given and what is received. This can also be seen as resemblance of customer willingness to pay. The perceived value form is emotional, social, value-price ratio and quality of performance levels.
What are the chosen most suitable service development tools and their benefits for the company?

Service blueprint and Lean methodology were chosen as the tools to develop to corporate financing process. Service blueprint was used as base in creating the semi-structured interviews. It helped to map the customer journey and create a map, so people involved in the process could understand the process and deal with it objectively.

Lean was chosen to analyze the process to find the improvement areas. It is suitable tool to reduce waste, change the culture to focus on customers and continuously improve the process. With Lean process can be developed in overall efficiency, employees' behavior in serving the customer, joint value creation and assuring the service quality.

What is the current state of the company's service process?

The current state of the company’s service process was defined with Lean methodology. Since their service process was not planned according to Lean, more development areas were found. Their service process was planned according to customer needs, so the value stream was already on a good level. Efficiency and internal work processes were the main improvement areas.

The main research question was “How can service business be developed and what are its benefits for a banking company?”. In addition to all of the above answered sub-questions, the answer for the main research question can be summarized as follows.

Service development is constant process, that aims to improve all parts of the service production process within different expertise areas. In these different development areas, different development activities have to take place. However, the development process can be seen to have simplified model, that every company can follow. Strategic goals and customer need to be understood to start the process and select the process that will be developed. If the company has decided the start the development process, it needs to achieve management and employee commitment to do that. Next, analysis, collecting data and defining goals to the process needs to be
done. After data analysis and measurement can be done, where to improvement plan is made. If the improvements are implemented, suitable metrics and technologies are needed to keep track on the improvements. Benefits from the improvement process depend on the implementation of the suggestion. With the Lean methodology cost savings and increased value can be achieved. With constant improvement and adapting into the changing business environment, company could gain competitive advantage by well utilized process development tools.

5.3. Validity and reliability

Assessing the validity and reliability is essential in qualitative research. To call the research reliable, the results should be the same answer however and whenever the research would be carried out. (Kirk & Miller 1986, 19) By reporting and describing the research process as accurately as possible makes the research more reliable. Describing conditions, like the distractions, schedule and possible misinterpretations, of the research as they have happened, makes the reliability better. (Hirsjärvi, Remes & Sajavaara 2004, 216-218.) If repeating the study to the same case company, the results would likely to be similar. However, this thesis was conducted as case study, so the results can only be applied to the specific process of this company. The documentation of the interviews increases the reliability of the study. Both of the interviews were documented first in the form of the service blueprint and in the semi-structured interview, the interviewees wrote their answers to the sent questionnaire. Also, to avoid misinterpretations, the structure of the research was explained to the interviewees. Kirk and Miller also bring out the possibility of the interview questions not being answered logically, because of the way the person understand the question (Kirk & Miller 1986, 41-42). There is this possibility in the Lean based interviews, where the interviewees could have understood the questions differently, since the interview was not done in-person. Other possibility to decrease the validity is, if the researcher makes wrong conclusions without justification or asks the “wrong” questions (Kirk & Miller 1986, 30). The research was based on the methodology lean was defined, so that partly removes the possibility to asking wrong questions or making wrong interpretations.
Validity reflects, the research’s ability to give the correct answers (Kirk & Miller 1986, 19). A factor increasing validity is generalization, by finding out whether the results can be generalized to other cases or studies about the topic. (Eskola & Suoranta 1998) This was noticed in the research by getting interviewees, that were experts of the corporate financing process and voluntarily wanted to improve the process. Thus, the interviewees participating to the research are not decreasing the validity of the results. Finally, validity can also be examined by comparing the results of the study to existing studies about the topic (Eskola & Suoranta 1998). The research validity can be seen to be good in this area as well, since there can was similarities to other studies as well. Eskola and Suoranta claim, that the phenomenon cannot ever be reported just as it is in the research situation, nor can perfect understanding ever be reached. (Eskola & Suoranta 1998)

5.4 Conclusions

In short, it could be said, that the Lean principles can be beneficial in analyzing phase, when improving service process. Going through the service process based on the principles and wastes Lean has defined can help to find the improvement targets, but making the process more effective by removing waste takes a lot more work. Managerial support, involving the employees participating in the process, understanding the big picture and setting the goals. However, banking industry is heavily regulated and that limits the possibilities to fully implement lean principles like removing all waste.

This research resulted in concrete improvement suggestions, that could benefit both the company and their customers. Thus, it could be said the research has been successful and the conclusion, that Lean methodology can applied to banks service processes can be made. The theoretical part of. The thesis formed an appropriate theoretical background for the study by combining theory about service management, value of the service, service development process and Lean principles. This background was utilized by using it to plan the development process and bringing new insights to company’s current service management. Collecting data with both unstructured interviews for service blueprint and Lean based semi-structured
interviews made the research more comprehensive and gave different perspective about the current state of the service process.

Examining the research critically is done, so more comprehension on what might have affected the formation of the results is given. The background of the study was explained to the employees before the interviews and the concepts were explained shortly. Initially the plan was to carry out both of the interviews in person to the employees. This would have enabled the researcher to explain the lean concepts more in depth to each employee and specify each question to them if needed. This way the answers would have been more accurate, compared to the e-mail interview, where the answers might have been narrower. Because of the organizational changes happening in the company, the employees were occupied and executing the interview as e-mail interview was more convenient for them.

Including and comparing data company had about the process, like lead times and other metrics, would have given the research more depth. Even so, the bank didn’t have existing metrics to monitor the process and the majority of information they had is confidential. For further research, having more detailed data about the process could allow calculating costs or revenue and ability examine how the improvements affect the process.

The limitations of the research left out the customer perspective in form of customer satisfaction, so the research was not too extensive. The suggestions about the improvements were emphasized more on the internal practices of the company. In further research including the customer perspective could create valuable information on value-creation and execution of the process. However, Lean is very customer-oriented approach and the customers are very important part of the process in service industry, so the improvement suggestions can be seen to support customer satisfaction as well. With use of Lean based improvements, the service should only be improved from customers perspective.

The proposed improvements are subtle suggestions about day-to-day activities, that makes them achievable. Nevertheless, they can help the company achieve customer benefits and positive financial impacts. The changes to work process are easy to
implement, but the changes to management style can be harder. Also, there might be some of the changes, that cannot be put to use because of the regulations of the industry.

Implementing the suggestions to a little part of the process and measuring the effect of them would have been interesting to examine for the research. However, this would have been challenging to accomplish because of the time limits of the research. To figure out, whether Lean is an effective service improvement tool to use in banking industry, still needs more research.
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Saier, M. 2008. Going back to the roots of W.A. Shewhart (and further) and introduction of a new CPD cycle. International Journal of Managing Projects in Business


Tuulaniemi, J. 2011. Palvelumuotoilu. Talentum

The aim of this interview is to gain information about developing the corporate financing process. In the beginning of the interview form is earlier created service blueprint map of the process. Start by reading the service blueprint and proceed to answer the questions thinking about each of the steps in the process. When answering the questions, focus on how the process normally happens, not how it is supposed to happen. Specify in the answers, which part of the process the answer is about.

### Physical Evidence

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<tr>
<th>Physical Evidence</th>
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<tbody>
<tr>
<td>Web page</td>
<td>Bank office, bank teller</td>
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<tr>
<td>Online bank service</td>
<td>Bank office, bank teller</td>
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<td>message feature</td>
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### Customer Actions

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<th>Customer Actions</th>
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<tbody>
<tr>
<td>Booking a meeting from the web page</td>
<td>Financing/ customer's business activities</td>
</tr>
<tr>
<td>Setting up new meeting to carry out the financing process</td>
<td>Customer provides all needed documents</td>
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<tr>
<td>Customer signing the financing documents</td>
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### Onstage Actions

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<th>Onstage Actions</th>
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<tbody>
<tr>
<td>Customer arriving at reception at the bank office</td>
<td>Interview about customer's business activities</td>
</tr>
<tr>
<td>Requesting the needed documents from the customer</td>
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### Backstage Actions

<table>
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<th>Backstage Actions</th>
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<tbody>
<tr>
<td>Starting the loan application and inserting the documents to electronic archive</td>
<td>Applying financing application to get decision about financing</td>
</tr>
<tr>
<td>Informing the customer about the loan decision and confirming the final meeting</td>
<td>Preparing documents in an affiliate company</td>
</tr>
<tr>
<td>Printing and examining the documents at the bank office</td>
<td>After taking out the loan internal financing - tasks are done (archiving, mailing etc.)</td>
</tr>
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### Support Processes

<table>
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<th>Support Processes</th>
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<tbody>
<tr>
<td>Booked meeting shown up in bank teller's calendar</td>
<td>Using information from information systems to prepare the application</td>
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### Principles:

1. **Defining customer value:**
   a) Do customers have special requirements for the process?
   b) What aspects about the service process affect the customers willingness to recommend the service to others?

(continues)
2 Mapping the value stream:
a) What are the value-adding activities of the process?
b) What are the mandatory but non-value-adding activities?
c) Are there parts of the process that are non-value-adding but mandatory for the outcome?
d) Is value creating effective?
e) Is some part of the process being invested on more than it is creating value to the customer?

3 Creating flow:
a) Are anticipated improvements made for the process?
b) Is there part of the process where work has to be redone?
c) Is there waiting during the process?
d) Is there need to go back to previous work stage during the process?
e) Are the amount of work and the resources for it in balance?
f) Does the amount of the work vary a lot?

4 Establishing pull:
a) Is the process complete in just in time from customers perspective?
b) Is the work process planned not to have too much or too little time?

5 Continuous improvement:
a) Does the process satisfy all the expectations?
b) Is there a monitoring method to track the process?
c) Is the process being constantly improved?
d) Is the quality of the process stable? How the stable quality can be guaranteed?

Wastes:
6 Errors:
a) How often do errors occur in the process?
b) How often errors cause delays?

7 Doing work not requested:
a) Is work done too much or too early to gain the final result?
b) Is the process creating more than the minimum customer needs?
c) Are some parts done in advance, even though they are not immediately needed in the next step?

8 Transport:
a) During the process is there confirmation of information, that shouldn’t necessarily need to be confirmed?
b) Is information being transferred from employee to another without it being developed during the transfer?
c) During the process, is the work being transferred from employee to another so that the responsibility shifts from the original employee?
d) Is information or employee being transferred physically or electrically for nothing during the process?

9 Waiting:
a) Is there waiting for another employee’s work, like confirmations or approvals during the process?
b) Is there waiting for some information, report or decision during the process? How waiting could be reduced in these situations?
c) Are the schedules of the process being monitored?
d) Are there delays in the process?
e) Is the work being delayed or interrupted because of a machine or a system?

10 Backlog of Work:
a) Is there a phase during the process, where information doesn’t move?
b) Is work done, where it is not known whether it is suited for customer’s needs?

11 Unnecessary motion:
a) Is some other process being done simultaneously during the same time?
b) Is there additional checkups or meetings during the process?

12 Excessive work:
a) Are there phases in the process that need to be figured out again after they have been forgotten?
b) Is there work done or meetings held unnecessary from the service view point?
c) Is information being collected during the process, that is not being utilized?
d) Are there parts in the process, that customer is not willing to pay?
APPENDIX 2. Answers to Lean based interview

Bank manager

1
a) Yrittäjät/yritysasiakkaat useimmiten kiireisiä ja rahoitushankkeilla tiukka aikataulu. Asioiden odotetaan järjestyvän ripeästi.
b) Yrittäjät/yritysasiakkaat arvostavat henkilökohtaisesta palvelusta ja sitä, että asioita hoitaa sama henkilö. Tämä asiakasyrhmä arvostaa asioiden järjestyminen nopeasti ja joustavasti.

2
a) Asiakaskohtaaminen tutun henkilön kanssa face to face. Prosessin nopeus ja joustavuus.
b) Näkymättömät prosessin osat.
c) Ei, kaikki tarpeellisia.
d) Tehokkuuteen vaikuttaa merkittävästi asiakkaan omat aktiivisuus esim. asiakkaalla on jo ensitapaamisessa mukana tarvittavat dokumentti.
e) Mielestäni ei.

3
a) En osaa sanoa.
b) Satunnaisesti.
c) Silloin, kun joudutaan odottamaan asiakkaalta pyydettyjä dokumentteja.
d) Yleensä ei, paitsi jos asiakkaan hankkeeseen tulee muutos, kun prosessi on jo alkanut.
e) Meillä on liian vähän resurseja/osaamista tällä hetkellä.
f) Mitä laajempi asiakaskokonaisuus, sitä enemmän työtä.

4
a) Tähän pyrimme ja useimmiten se saavutetaan.
b) Tämä riippuu� asioa hoitavan henkilön ajan hallinnasta eli varaako hän riittävästi aikaa.

5
a) Useimmiten kyllä.
b) Ei riittävästi.
c) Ei riittävästi. Yksittäinen pankki voi vaikuttaa tähän rajallisesti.
d) Useimmiten hyvä ja tasainen laatu.

6
a) Satunnaisesti.
b) Harvoin.

7
a) Ei.
b) Ehkä erilaisia muistioita.
c) Erittäin harvoin.

(continues)
8
  a) Harvoin.
  b) Harvoin.
  c) Satunnaisesti.
  d) Satunnaisesti.

9
  a) Satunnaisesti.
  b) Silloin, kun asiakas ei toimita pyydettyjä/tarvittavia dokumentteja riittävän nopeasti.
  c) Ei.
  d) Satunnaisesti.
  e) Harvoin.

10
  a) Harvoin.
  b) Satunnaisesti.

11
  a) Jatkuvasti.
  b) Harvoin.

12
  a) Ajoittain.
  b) Harvoin.
  c) Ei.
  d) Satunnaisesti.

**Office manager**

1
  a) Näkyvä palveluprosessi: Kokemuksen mukaan ei ole, olemme pystyneet toteuttamaan prosessin asiakkaan näkökulmasta mahdollisimman helpoksi ja nopeaksi.
  b) Näkyvä palveluprosessi: Helppous, nopeus, positiivinen asiakaskokemus.

2
  Näkyvä palveluprosessi: Asiakaskokemus, miten asiakkaan asia hoidetaan konttorilla, miten asiakas sen kokee.  

(continues)
b) Näkymätön palveluprosessi ja tukitoiminnot: Nämä prosessit ovat välttämättömiä, mutta eivät tuo lisää-arvoa asiakkaan näkökulmasta prosesseihin. Pankin näkökulmasta em. ovat kuitenkin merkittävä osa prosessia ja ilman niitä koko yritysrahoitusprosessi jää toteuttamatta.

c) Kaikki prosessin osat ovat pakollisia.

d) Tehokkuutta saataisiin lisää sillä, että ajanvarauksen yhteydessä yritysasiakas voisi tehdä lainahakemuksen jo valmiiksi verkkopankissa, joka ohjaisi samalla toimittamaan pankkiin valmiiksi kaikki tarvittavat liiteasiakirjat kuten esim. tilinpäätöksen. Näin asiakaskohtaamisessa virkailijalla olisi jo valmiiksi käsitys asiakkaan tarpeesta ja mahdollisesti valmiina jo ajatus sen toteuttamisesta.

e) Mielestäni ei. Varmasti aina on paranettavaa ja kehitettävää, mutta mielestäni nykyinen prosessi toimii asiakkaan näkökulmasta.

3

a) -

b) Kyllä. Kaikki tieto ei kulje järjestelmästä toiseen, jolloin työ joiltain osin joudutaan tekemään toistona.

c) Kyllä, päätös vaiheessa (rahoituksele haetaan päätös pankin sisäisen prosessin mukaisesti) saattaa kestää, jos päätättäjä/t eivät heti ehdin Hankkeeseen tutustumaan. Myös asiakirjojen valmisteluvaiheessa on odotusta. Asiakirjat valmistellaan toisaalla ja heille on varattava aikaa normaalitiilanteessa 2 päivää valmisteluun.

d) Ei varsinaisesti. Hankkeen valmisteluvaiheessa joudutaan "hyppimään" taaksepäin tietojen keräämiseksi.

e) Eivät ole. Prosessin loppuvaihe, hankkeen toteutumisen jälkeen vie merkittävän määrän resurseja (arkistoointi ja muut lopputyöt).


4

a) Kyllä, siitä on mielestäni huolehdittu hyvin, että asiakkaan näkökulmasta prosessi toimii.

b) Aikaa on varattu liian vähän lopputöiden tekemiseen, muuten prosessin eri vaiheille on riittävästi aikaa. Tässä korostuu jokaisen oman työn organisointi ja hallinta.

5

a) Kyllä täyttää nykyiset odotukset.

b) Ei ole mitään systemaattista seurantaa.

(c) Prosesseja kehitetään jatkuvasti ryhmätasolla.

6
b) Ei juurikaan. Olemme hyvin luovia ja joustavia ja pyrimme kaikin keinoin pysymään aikatauluisissa asiakkaalle annettujen lupausten mukaisesti.

7
a) Ei mielestäni.
b) Ei
c) Ei

8
a) Ei
b) Ei
c) Ei. Poikkeuksena pitkät poissaolot, jolloin keskeneräinen hanke joudutaan siirtämään toiselle henkilölle hoidettavaksi.
d) Ei

9
a) Kyllä, päätöksenteossa ja asiakirjojen valmistelussa.
c) Ei
d) Ei juurikaan
e) Hyvin harvoin. Yleisesti ottaen järjestelmät toimivat moitteetta.

10
a) Hankkeen valmisteluvaiheessa.
b) Ei mielestäni.
11
a) Kyllä, lähes aina on useita töitä / hankkeita meneillään samanaikaisesti.
b) Kyllä, joskus. Joudutaan esim. soittamaan asiakkaalle lisättöjen saamiseksi tai asioiden täsmentämiseksi.

12
a) Ei.
b) Yleisesti ei. Tarpeetonta työtä syntyy siitä, että kaikki tieto järjestelmien välillä ei liiku, jolloin samat asiat joudutaan kirjamaan kahteen kertaan.
c) Ei mielestäni.
d) Ei

Financial expert

1
a) asiakkaat toivovat yleensä nopeutta: ajan saisi nopeasti ja neuvottelut sujuisivat nopeasti. Meidän pankissa prosessi kulkee yleensä asiakkaan toivomalla aikataululla. Tässä ajattelen ajanvarausprosessia ja asiakkaalle näkyvää prosessia eri kanavissa (konttori, puhelin, verkko)
b) helppous, nopeus, asiantuntijuus ja että kohdellaan asiakasta arvokkaasti

2
a) asiantuntevat henkilöt pankissa töissä, helppokäyttöiset palvelut, saatavuus
b) asiakkaan näkökulmasta arvoa tuottamattomia prosesseja ovat tukitoiminnot, esim. kun lainapaperit valmistetaan keskitetysti. Asiakkaalle ei ole välttävä valmistelun paperit itse tai tekeekö sen joku muu. Meille työntekijöillehän tuo tukitoiminnot tuovat arvoa.
c) ei ole yleisesti ole sellaisia osia.
d): mielestäni yritysasiakkaille voisi tuottaa verkkosivuille sellaisen hakemuspohjan, joka pakottaisi täyttämään kaikki ne vaaditut tiedot mitä tulemme tarvitsemaan ja joita tulemme kysymään ja pyytämään

e) Mielestäni selvät kielteiset päätökset voisi ilmoittaa asiakkaalle ilman, että hän tulee konttorille asti.

3
a) -
b) Kyllä joudutaan tekemään uudelleen, jos esim. kauppahinta tai muut tiedot muuttuvat

(continues)
d) Pitää palata jos luoton esittelijä ei ole huomioinut jotain olennaista asiaa ja luoton myöntäjät pyytävät lisäämään tiedon esitykselle.
e) Kyllä pankissamme ovat.

4
a) Pääsääntöisesti valmistuu.
b) On suunniteltu.

5
a) Ainahan voi parantaa. Nykyteknikko mahdollisuuksia voisi hyödyntää paljon enemmän.
b) En tiedä.
c) Kyllä. Pyritään lisäämään taustahenkilöillä teetettävää työtä aina kun se on mahdollista.
d) Pankin luotonmyöntökriteerit takaavat sen, että prosessin laatu on melko tasainen, mutta kun neuvottelijoina ovat ihmiset ja asiakkaina ihmiset niin eihän kahta samanlaista neuvotteluprosessia ole.

6
a) Kyllä jokaisessa prosessissa tapahtuu jonkinasteinen virhe, mutta ne korjataan, koska useampi ihminen tarkistaa prosessin vaiheet.
b) Ei juuri ollenkaan.

7
a) Joskus saatetaan neuvotella asia hyvinkin valmiiksi ja asiakas saattaaakin valita kilpailijapankin.
b) Kyllä. Monesti annetaan neuvoja, joita asiakas ei ole osannut kysyykään.
c) Ainoastaan silloin, jos asiakas ei valitsekaan meidän pankkia vaan kilpailijan.

8
a) Ei tarkasteta.
b) Ei siirretä.
c) Kyllä joskus siirtyy, mutta harvemmin. (continues)
d) Kyllä joskus asiat saataisiin sovittua puhelimessakin, ettei tarvitsisi sopia fyysistä tapaamista.

9
a) Kyllä. Esittelijä joutuu odottamaan luottopäätöstä.
b) Kyllä. Esittelijä joutuu odottamaan luottopäätöstä ja jos esityksessä on jotain korjattavaa, esittelijän odotusaika pitenee. Odotusta voi vähentää tekemällä kerralla laadukas luottoesitys.
c) Kyllä seurataan. Jos esittelijä laittaa vakuudet perustettaviksi tai asiakirjat valmisteltavaksi taustataitureille liian tiukalla aikataululla, siitä peritään PIKAtilausmaksu
d) Vain silloin, jos esittelijä on luvannut luoton asiakkaalle tiettynä päivänä, eikä ehdikään laittaa esitystä eteenpäin sovitussa ajassa

e) Joskus voi olla tilanteita, että koneissa on käyttöhäiriöitä, mutta niitä on todella harvoin

10
a) Kyllä. Kun esittelijä valmistautuu asiakkaan tapaamiseen, hän tekee osittain olettamuksia, joista saa tiedon vasta kun kohtaa asiakkaan
b) Tarjousvaiheessa lainalle tarjotaan aina lainan takaisinmaksuturva, vaikka ei vielä tiedetä onko asiakas luoton myöntöhetkellä turvakelpoinen. Tosin tämä ei vie juurikaan enempää aikaa kuin jos turva jätetään tarjoukselle, kone laskee turvan maksun.

11
a) Tehdään todella montaa työtä samanaikaisesti.
b) Ei varsinaisesti ylimääräisiä.

12
a) Kyllä. Kaikki prosessin vaiheet ovat tarpeellisia ja jos jossain vaiheessa joku asia unohtuu, tieto pitää saada ennen kuin voidaan jatkaa.
b) Kyllä. Monikin luottoneuvottelu voitaisiin käydä alustavasti puhelimessa, jos luottohakemus olisi saatu etukäteen täydellisin tiedoin
c) Ei oikeastaan.
d) Ei asiakas haluaisi maksaa esim. asiakirjakulujia, mutta kyllä he ymmärtävät, että jos haluua lainan, pitää maksaa kaikki kulut jotka aiheutuvat luoton hakemisesta