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Lessons Learned

within Customer Delivery Projects

Case: Wärtsilä Oy

International Business
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ABSTRACT

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The aim of this study was to investigate how the Lessons Learned process is working within my case company Wärtsilä Oy in Services Customer Delivery Projects. The goal was to find out what can be improved in the procedure by looking at where the barriers are. Since Lessons Learned is said to be an important tool within Project Management, it should be taken advantage of to its full extent.

The theoretical framework includes Project Management theory along with organizational learning and Lessons Learned. It also includes the case company's own theory of projects and their Lessons Learned process. As of the empirical part, a qualitative research method was used in the form of semi-structured interviews.

As a result of the empirical research it showed that the participants know the value of Lessons Learned but there are improvements to be made in the Lessons Learned process within the company. The main issues lie with the database Clarity and its search function, which effect several other parts, such as the motivation to use it for looking for information and the Project Managers involvement in the Sales phase. The sharing of the Lessons Learned information within the departments through bigger meetings and Skype and the general attitude and motivation towards Lessons Learned are to be improved.

Keywords	Lessons Learned, Project Management, knowledge, process

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ABSTRAKT

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Syftet med detta arbete var att undersöka hur Lessons Learned processen fungerar inom Services Customer Delivery Projects i Wärtsilä Oy som var min uppdragsgivare. Målet var att ta reda på hur processen kan förbättras genom att hitta problemen. Lessons Learned sägs vara ett viktigt redskap inom projektarbete och det är viktigt att det utnyttjas till sin fulla potential.

Den teoretiska delen behandlar allmän teori om projektarbete och dess processer, samt lärande inom organisationer och Lessons Learned. Dessutom presenteras företagets egna teori om projekt och deras Lessons Learned process. Den empiriska delen bygger på en undersökning där en kvalitativ metod har använts i form av semistrukturerade intervjuer.

Resultaten i denna undersökning visar att de intervjuade är väl medvetna om vikten av Lessons Learned men att det finns en del förbättringar som kan ske inom företaget. Det största problemet låg inom företagets databas Clarity och dess sökfunktion, som påverkar Projektledarnas motivation att söka och använda tillgänglig information, speciellt i första faserna på ett projekt. Förbättringar i att dela Lessons Learned information inom avdelningarna, t.ex. genom större möten eller genom Skype bör göras samt se över den allmänna motivationen och attityden till Lessons Learned som ett viktigt vertyg.

Nyckelord	Lessons Learned, projektarbete, kunskap, process

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1   INTRODUCTION

*'You must learn from the mistakes of others. You can't possibly live long enough
to make them all yourself'*

Sam Levenson (1911- 1980)

In everyday life, people make mistakes. It is a natural way of living and no one can go on for very long without making some wrong decisions or failing somehow. The focus, however, should not lie in the failing or in the mistakes themselves, but in what can be learned from them and what should be done for the same mistake to not happen again. It is said that firstly, you must admit you made a mistake in order to learn. Often, however, people tend to rather blame others for their own mistakes and the lessons to be learned are not learned. Additionally, it is often easy to forget that lessons can also be learned from successes and achievements, not only mistakes.

How is this working when it comes to organizations and especially within projects? We live in a fast-paced world with a continuously competitive pressure of achieving success and money. Organizations worldwide are seeking ways to add value to their business, and knowledge is said to be a key to improving performances.

According to Goodman and Riddell (2012), Lessons Learned by mistakes and successes have the possibility to be the most powerful Project Management tool available. It is, however, suggested through knowledge and project management literature that organizations rarely apply Lessons Learned to their processes, and if they do manage to capture them, they fail to share them and the knowledge is 'lost'. A way to look at the importance of knowledge sharing, is how it could be used to reduce possible risks that could occur within a project. However, even despite the known fact of the importance of lessons learned, organizations seem to struggle to make use of their knowledge. (Goodman & Riddell, 2012)

1.1 Objectives of the study

The problem of this thesis is: Why are Lessons Learned within Project Management not taken advantages of as they could be?

The aim of this thesis is to find out (1) how the Lessons Learned is working within the case company Wärtsilä Oy in Services Project Management - Customer Delivery Projects, (2) where the barriers are for learning from mistakes and (3) what can be improved in order to make the process work better.

This research is from the project team's point of view with focus on the Project Managers.

1.2 The methodology of the study

The choice of research type will be qualitative research in order to achieve the objectives. As the aim of the thesis is to find out way of working, barriers and improvements from Project Managers, qualitative research is best suited for this, since the focus is on understanding opinions, motivations, attitudes, experiences and thoughts. These are discussed and analysed to get the results. A quantitative research method would not be suitable for this kind of research since the purpose is not to generate any numerical data or statistics.

1.3 Structure of the study

The thesis is divided into two sections; the theoretical framework and the empirical framework. The theoretical study will give an overview of what a project is and the project management processes that exists to give the reader a better understanding in where Lessons Learned has its place and significance. It also deals with project risk management, which is one of the processes. Furthermore, the focus will be on organizational learning and the organizational process asset: Lessons Learned. The

Lessons Learned processes and their importance will be discussed, as well as barriers to learning within companies. The fundamentals of knowledge management will also be discussed.

The theoretical study includes also theory about the case company and its process. In this part the company's own definitions, phases and especially their Lessons Learned database Clarity will be presented. The theory in this part will reflect back to the academic theory since the company's process is based according to the PMBOK guidelines.

The empirical framework focuses on the case company: Wärtsilä Oy and its Lessons Learned within Customer Delivery Projects. A qualitative research is made upon interviews with six participants and its findings are analysed and after that results and conclusion are discussed. Additionally, reliability and validity of the study are noted and recommendations for future research are given based on the findings.

1.4 Limitations of the study

This research is conducted for Wärtsilä Oy Finland, and therefore the findings may not be applicable to other companies. The study is also restricted to only one division out of three in the company, so the study may also not be applicable to the other two divisions.

Another limitation is, that although the research is made for Wärtsilä Oy Finland, the focus is on the Service division and Customer Delivery Projects which is operating in several countries, and not only in Finland.

Lastly, the target group for this thesis is Project Managers with a few years' experience within Services Project Management, and not on the others working within Project Management.

2 THEORETICAL FRAMEWORK

The theoretical framework will introduce the reader to the literature regarding Project Management, organizational learning and Lessons Learned. It is divided in two parts, were the second part introduces the case company's theory and processes.

2.1 What is a project?

There are various projects and each one of them is unique. A project is, according to PMBOK guide "*a temporary endeavour undertaken to create a unique product, service or result*". The meaning of temporary defines that the project has a beginning and an end, which is reached when all the objectives has been achieved, however, the length of a project may vary greatly. (PMBOK, 2013, 3)

Another definition of a project is suggested by Nordberg (2008): *"A project is a well-planned action- and future oriented activity with a specific purpose within a defined area, carried out over a limited period with earmarked money"* (Nordberg, 2008, 15)

What makes projects so special is that it is never completely the same as a previous one. A project may have the same deliverable as another project, however, different circumstances, locations, design and contractors make the nature of each project special. Projects require dedicated planning due to uncertainties that may occur during the process and are initiated at all of an organization's different levels. Additionally, a project can involve a single person, a single organizational unit, or multiple organizational units. (PMBOK, 2013, 3)

According to Kliem (2014), a project has several elements which have a significant impact on the project depending on the quantity and quality of them. These are people, processes, systems, data, time, equipment and supplies. The people working with the project are, as a matter of fact, the most important element, since it is their

efficiency, effectiveness and creative thinking that forms and executes the project. (Kliem, 2014, 13)

Examples of different projects includes: developing a new product or service, structure changes within an organization, developing or modifying a system, building or infrastructure construction or implementation of a new business procedure or process. (PMBOK, 2013, 4)

2.2 Project Management

A much known approach of Project Management is the one provided by the Project Management Institute in the PMBOK Guide, which is a collection of processes and knowledge areas approved as best practice and used by several companies worldwide to manage a project from the beginning to the end. The fundamentals of Project Management are provided within the PMBOK Guide book with an internationally recognised standard (ANSI/PMI 99-001-2008). (Haughey, 2013)

Defined by the PMBOK, Project Management is *"the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements"*.

There are five process groups which build the foundation of Project Management, and these are; initiating, planning, executing, monitoring and controlling, and closing. (PMBOK, 2013, 5)

2.3 Project Management Processes

The project management processes, or the lifecycle of a project provides a template on the different phases that a project usually go through to be completed. The phases help the project manager to structure the project when divided into processes. There is no universal definition of the lifecycle or the phases, however, the PMBOK provides a well-known and used approach with their five Project Management Process groups. (Newton, 2009)

2.3.1 Initiating

The initiating process is the start of a new project where the primary scope and financial resources are defined, as well as identifying internal and external stakeholders. The project manager is also selected during this process. All information which is decided during the initiating process is set to the project charter and stakeholder register. A project charter is a document that formally authorizes a phase or a project that meets the needs and expectations of the stakeholders. The project becomes officially recognized when the project charter is approved. (PMBOK, 2013, 54-55)

2.3.2 Planning

The next phase is the planning of a project, which main focus is on deciding the course of actions that needs to be taken in order to deliver the project objectives. (Köster, 2010, 5) The planning processes consists of developing the project plan, which becomes the main source of information on how the project will be planned, executed, monitored, controlled and closed. (PMBOK, 2013, 55-56)

The importance of planning a project is enormous, especially when it comes to international projects. International projects are executed in fast paced environments with the possibility of multiple changes and great uncertainty. The better the structure of the project plan the better the project team is prepared when faced with difficulties. The challenges with planning are to minimize the project duration and resource availability cost, and to maximize the quality. (Köster, 2010, 128-129)

2.3.3. Executing

The longest of the project phases is the executing or implementation phase. (Köster, 2010, 190) The processes in this phase cover the completion of the work that is stated in the project plan. In this phase, it is also possible for several changes, which

might require updating of the project plan. Changes in duration, resource productivity and availability as well as unanticipated risks are usually expected, which in turn require analysis and development of responses, which may result in modification of the project plan or documents. In order to manage the changes in all its forms, the monitoring and controlling processes are the key activities to this. (PMBOK, 2013, 56)

2.3.4 Monitoring and controlling

The PMBOK Guide definition of the monitoring and controlling processes is: "*the processes required to track, review and orchestrate the progress and performance of the project: identify areas in which changes to the plan are required; and initiate the corresponding changes*". Different areas to monitor and control are for example: schedule, scope, costs, quality, performance, risks and procurements. (PMBOK, 2013, 57,61) The aim of monitoring and controlling is to detect any issues in advance that differ from the original plan, in order to take corrective actions and align the plan to the changing environment that the project is executed in. (Köster, 2010, 191)

2.3.5 Closing

The last phase is the closing phase, which is defined as "*Processes performed to conclude all activities across all Project Management Process Groups to formally complete the project, phase, or contractual obligations*", according to the PMBOK Guide. It is in this closure phase the project is accepted by the customer or the sponsor, it is reviewed, documentation is made of lessons learned and archiving of all important project documents is done. (PMBOK, 2013, 57-58)

2.4   Project Management knowledge areas

The PMBOK Guide defines ten Project Management Knowledge Areas, which are categorized under the process groups. The processes with similar characteristics are

set under one category and several phases or process groups can be covered by one knowledge area. The ten areas are: Project Integration Management, Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Human Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management and Project Stakeholder Management. (PMBOK, 2013, 61)

2.5 Project Risk Management

International projects, with their complexity and execution in fast changing environments, considerably have a high exposure to risks. As a matter of fact, risk management plays a huge role in the managing of projects (Köster, 2010, 98) and as described by The Project Management Institute; *"Project Risk Management includes processes of conducting risk management planning, identification, analysis, response planning, and controlling of a project."* (PMBOK, 2013, 309)

2.5.1 Project risk

A project risk is according to PMBOK, *"an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives, such as scope, schedule, cost and quality."* (PMBOK, 2013, 310) Another way to describe a risk is simply "a problem that has not happened yet." (Cervone, 2006)

There are two types of risks identified, those that can be foreseen and those that can arise during the process of a project. Risks that can be foreseen are divided into two groups and the first risk group are related to the internal risks, such as the overall management of a project. Furthermore, foreseen risks are those that have been identified and analysed and, therefore, there usually exists a risk response plan for those. Planning, communication, poor selection of team members or stakeholder management are a few examples causes from the organization itself that have an impact on the project. The second risk group that can be foreseen, are risks in the external environment. These are usually controllable by key decision makers and include:

high level of corruption, increase in inflation in target markets, taxes and environmental protection groups. (Köster, 2010, 99)

Risks that can arise during a project are emerging and by nature unpredictable such as natural disasters and political revolutions. (Köster, 2010, 99) These two groups are also known as known and unknown risks. (PMBOK, 2013, 310)

2.5.2 Project Risk Management Process

Project Risk Management is seen as processes which accompany the project all through the whole cycle. Several PRM processes have been proposed. The PMBOK defines risk management planning, identifying of risks, qualitative and quantitative risk analysis, response planning, and controlling of risks. (PMBOK, 2013, 309)

2.5.3 Minimizing risks by reviewing previous projects in the identifying process

Identification of risks is said to be the most important area of the PRM processes. The general threats are located and a deeper understanding of what the project is exposed to is determined in this process. The focus is to detect the risks, not the outcome if a risk happens. The identification process does not deal with current issues. An example of a risk that could occur is poor planning of a project, and the outcome of this will be late delivery of the deliverables.

To identify risks there are a combination of approaches to consider. There are some specific inputs, tools and actions to apply in the identification process. (Newton, 2009)
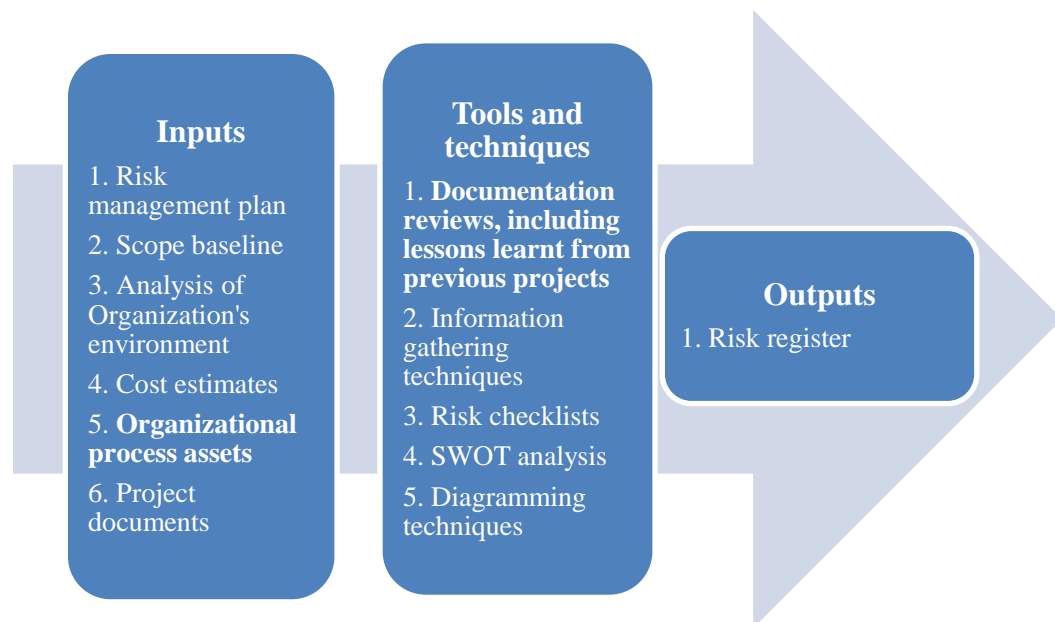
Figure 1 Identify risks: Inputs, Tools and Techniques, and Outputs. Modified from (PMBOK, 2013, 319) and (Köster, 2010)

As can be seen in Figure 1, a common way to identify risks in projects is to take advantage of experiences from previous similar projects. The lessons learned database is a valuable source for this, as though projects are never identical, they do have many features in common with each other. By using the knowledge of previous projects, it is most likely to identify problems with that project and see what could have been avoided. Moreover, this information can be applied to the new project and mitigate or even erase the possible risks. (Newton, 2009, 318)

When using Lessons Learned in the risk identifying process, it is a great example of taking advantage of organizational knowledge databases. This is said to be a return on investment if by using the lessons learned, mistakes and problems are avoided. (Barker & Cole, 2012)

2.6 Organizational process assets

Before describing Organizational process assets (OPA), the term asset should be defined. An asset is "*a resource with economic value that an individual, corporation or country owns or controls with the expectation that it will provide future benefit* ". This can be something that can be owned, kept and made use of in order to e.g. generate cash flow, improve sales or reduce expenses. (Investopedia)

To be able to achieve their goals, companies use their OPAs to influence the success of, in this case, a project. The OPAs can be divided into two groups: processes and procedures, and corporate knowledge base. A process asset can be a formal or informal plan, policy, procedure or guideline. The process assets also include completed schedules, risk data and earned value data.

Lessons Learned and historical information belong to the corporate knowledge base and are important assets for the company due to the storing and retrieving of information. This base also includes e.g.; all project files, financial databases, measurement data on processes and products. The historical information and lessons learned base consist of records of the project, all closure information and documentation, results of previous projects selection and performance, and risk management information. The organizational process assets act as inputs and outputs to the project management processes. (PMBOK, 2013, 27-28)

2.7 Knowledge management and organizational learning

Knowledge is a crucial factor for organizations when it comes to competitiveness. The way knowledge is managed and applied to future events can have major effect on the success of a company. Knowledge management has been explained as *"a systematic approach to capturing, structuring, management, and dissemination of knowledge throughout an organization to work faster, reuse best practice and reduce costly rework from project to project"* (Dalkir & Liebowitz, 2011, 2-3)

By putting more focus into managing knowledge within an organization, it is adding value and generate profits if it is used right. Knowledge is not only about past experiences, but also including the company's knowledge regarding markets, customers, processes, technology etc. The more the company focus on identifying, analysing and making use of available knowledge, the more likely they are to fulfil the objectives that are set for a project. (Terzieva, 2014)

Knowledge can be divided into two different groups; explicit knowledge and tacit knowledge. Explicit knowledge includes words, numbers or sounds and it can be easily communicated to others within a formal and systematic way in the form of data, formulas, visuals or manuals to name a few. (Köster, 2010) Within Project Management, explicit knowledge can also be transferred through project management software tools, shared project folders and drives, project templates and shared status reports.

Tacit knowledge, on the other hand, is much harder to capture and share since it is hard to formalize and it is rooted in an individual's experiences, insights, actions, judgements, ideals, values and emotions. Tacit knowledge, however, can be transferred through methods like dialogues, storytelling, videotaping, internal networks, Project Management training and the sharing of lessons learned. (Terzieva, 2014)

Organizational learning comes from the knowledge that is attained within the company. Organizational memory is a suggested concept of knowledge management and is based on the idea that organizations need continuously learning in order to face problems and survive in the dynamic and changing business environment. It requires effort from the organization to keep up a learning environment and capture, document and share the explicit and tacit knowledge. (Terzieva, 2014)

2.8 Lessons learned

Lesson learned is a project management tool which is used to gather the learning that has been gained during the project process. The aim of the learning that is

gained is to apply it to upcoming similar projects to avoid or to decrease problems, and to help in working towards the desirable outcomes. (Chaves & Veronese, 2014, 2)

Originally Lessons Learned were considered as only a checklist and guideline of what went right or wrong in a situation. However, today the concept has been developed and companies use Lessons Learned to improve their results and make an impact on their organizational behaviour. (Weber et al, 2000, 63)

Lessons Learned is a common used term for this tool, however, as companies have their own techniques, methodologies and templates, synonyms such as after-action review, project assessment, project completion audits and post-implementation evaluation are a few examples of terms that can also be used. (Judgev, 2012, 15) In this thesis, the term Lessons Learned (LL) is used.

2.8.1   Lessons learned Process

The lessons learned process allows the company to learn both from the mistakes and successes that occurs. If the process is effective it should prevent an organization from repeating the same mistakes within a project, however, it should also help to repeat the successes. (Marlin, 2008) There are five LL processes to consider: collect, verify, store, disseminate and reuse. Furthermore, these processes have got their own sub-processes. See Figure 2 for the basic LL process.
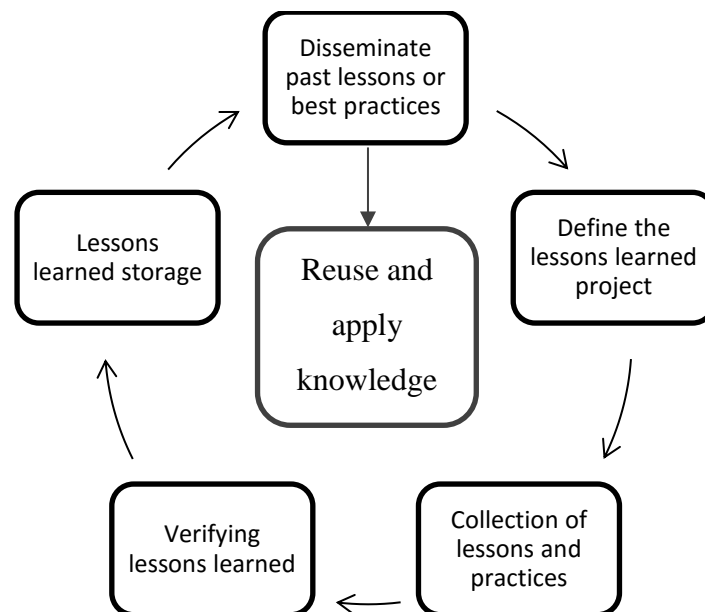
Figure 2 Basic lessons learned process modified from (Weber et al, 2000) and (White & Cohan, 2010)

2.8.2 Collection

The collection process includes: passive, - reactive, - after action, - proactive, - and active collection. The passive collection stands for when members of the organization submit their own lessons using a special form, often online. The reactive collection occurs when members are interviewed in order to gather the lessons learned. After action collection is carried out during or near the ending of a project. To collect information in a proactive way means that the lessons are seized when the problems are solved. The active collection can be carried out in two ways; the first is an active scan where the aim is to find lessons in documents and communications between members. The second way of active collection is to identify problems and plan a collection event to collect important lessons. (Chaves & Veronese, 2014)

2.8.3 Verification

The next process is verification, which focus is on validating the Lessons Learned for correctness, consistency, redundancy and relevance. (Weber et al, 2000)

2.8.4 Store

In the storage process the focus lies on issues related to where the LL will be stored. The store process contains how to represent the LL, indexing of LL and how to format and archive the information. The LL representations can be structured, semi-structured or in various media (e.g. text, video, audio). (Weber et al, 2000)

2.8.5 Dissemination

The process of dissemination addresses how to spread the information by a team, department or organization. This process is categorized into five sub-processes. The passive dissemination process, when members search for LL in a standalone retrieval tool. The active casting process, when the LL are broadcasted to users who are subscribed to the specific list server. The third category, active dissemination is the process where users actively are notified of relevant lessons which are in the context of their decision making. The fourth category is proactive dissemination, where the users get relevant lessons through a system which build a model of the user's interface events and then predict when to send out the LL. Lastly is the process of reactive dissemination, means that the users themselves realize they need supplementary information and request a help system where they can retrieve lessons and historical information. (Weber et al, 2000)

2.8.6 Reuse

When the LL are disseminated, the next process is to reuse and apply the knowledge that has been gathered. This can be considered as a post implementation process alongside the process of withdrawing. To withdraw within this context means to

recognize when a LL is no longer useful or can be applied to projects within the organization. The LL is then removed from the system. (Chaves & Veronese, 2014, 5,13)

To reuse the LL can be considered as the toughest part. The LL can be collected, documented and shared, however, they have no significant meaning if they are not institutionalized or applied to future projects. The learning should become a part of the way a project is done, to not repeat the same mistakes. (Marlin, 2008)

Köster (2010) introduces through literature findings, a knowledge management value chain which can be compared with Weber's (2000). The chain includes creation, storage, distribution and application.

2.9 The importance of lessons learned in PM

Projects are unique and complex undertakings (Marlin, 2008, 1) due to their time limitations, diversity and risk tendencies (Köster, 2010, 307). Challenges of all kinds usually face projects and some of them can have a highly critical impact. Lessons learned helps to share knowledge about particular project phases, about what went according to plan, improvements and what should be addressed more closely. Lessons learned as a knowledge based organizational asset is a source of competitive advantage for the company, due to uniqueness and difficulty to copy. (Judgev, 2012, 13) Lessons Learned can be a valuable contributor to an organization's overall goal of continuous improvement if the LL process is well developed and maintained. (Marlin, 2008) Given these points, organizations should use all the knowledge they possess in order to operate as effectively as possible. (Köster, 2010, 307)

In a survey by Ernst & Young in 2006, out of 130 people who were members of the Project Management Institute, 91 % of the respondents agreed that lessons learned reviews on projects were valuable. Comparatively, only 13 % could claim that their

companies actually performed lessons learned in all their projects. (Marlin, 2008, 1)

Additionally, researchers, e.g. Barlett and Ghoshal (1989), have suggested already two decades ago that a reform of learning within organizations are among the most significant competitive sources for the future. Moreover, even though lessons learned is said to be an important tool, companies seem to be lagging behind when it comes to using their experiences they gain from projects. (Köster, 2010, 307)

2.9.1 The barriers to learning from projects

Köster (2010) describes four groups affecting learning in international projects. Firstly, issues related to the cultural diversity of stakeholders can have a significant impact on the organizational learning e.g. language, - culture, - gender, - and ethnic diversity. A typical feature can be the 'avoidance of loss of face'. As has been noted, Lessons Learned means learning from failures. For example, admitting one's own mistakes is a taboo in many Asian cultures, due to the potential loss of face. In several other regions in the world, e.g. Latin America, some African countries and the Arab region, the step to admitting to a mistake openly can be enormous. This creates a barrier in the collection process of Lessons Learned. The impact of collectivism culture within companies may also play a part in the possible obstacles where teams or managers might compete with each other. This leads to unwillingness to share project experiences with other teams.

The second group consists of issues related to the nature of a project. People enter and leave the organization, and with them some valuable knowledge, especially in projects with long duration. Lack of time is likewise a common issue since project teams are often under time pressure. This leads to low priority of gathering lessons from projects. Moreover, teams that are spread out on different locations may have more difficulty in gathering Lesson Learned, since the details easy are left out and the project manager does not keep up on who has done exactly what.

Thirdly, there are issues related to communication. Sometimes, it is as simple as that the sender of the knowledge is not being heard for various reasons. The lesson given might be seen as non-important or ignored by key decision makers. Linguistic barriers are also a factor, due to difficulties of understanding each other.

The fourth and last group of barriers is related to the overall organization. The culture of an organization plays part in the attitudes towards new knowledge. Acceptance, adaptation and integration are attitudes to overcome. The transfer of knowledge from one project to another is among the decisions a project manager or a team makes. Even though there is a lesson learned database which is easy accessible, the attitudes play a part in using other people's lessons and applying them to their own projects. Motivation from members to share their knowledge is a known issue, due to that they might consider it as a waste of time. Additionally, lack of discipline in the lessons learned process can lead to no gathering of lessons at all. Similarly, lack of skills to learn and capture lessons during a project is a problem if the organization does not have the developed methods to do so. (Köster, 2010, 314-316)

2.9.2 The benefits from lessons learned

Stated in a research made by Mauri Myllyaho et. al (2004), lessons learned analyses can bring unexpected benefits to an organization. They pointed out a list of benefits:

1. It helps project team members share and understand each other
2. It integrates learning within the team and the individual
3. It identifies hidden problems
4. It documents good practices and problems
5. It increases job satisfaction by giving people feedback about their work
6. It has the possibility to improve project cost estimation

(Myllyaho et al, 2004)

The lessons learned knowledge can also be analysed on three different levels, these are suggested to be: management, teams and individuals.

The management in general is said to benefit from the lessons learned by getting a clearer view of the processes, decisions and dynamics that occur within a project as full. Furthermore, they gain a better understanding of how the organization works and have the opportunity for developing and making improvements on a larger scale. The project manager's role is more specific and they benefit from lessons learned by learning to improve the project management methods and plan according to meeting the goals which are set for the project. Project managers gain a lot of information by communicating with individuals from previous projects and use the knowledge in creating new ways for future projects to succeed.

When it comes to the project team, lessons learned knowledge is used to enhance the work efficiency. Team members benefit from experiences by discussing and analysing previous actions to improve the way they perform. The team has most likely a great amount of personal lessons learned knowledge gained and by sharing them it helps to get to know each other, increase job satisfaction and motivation.

For the individual person in a project, lessons learned knowledge helps them to improve tasks that make themselves more effective within their work. By reviewing previous information, they can see what actions have been taken and what effect they have had in same kind of tasks that are about to be carried out. (Terzieva, 2014)

3 WÄRTSILÄ

Wärtsilä is a global leader in complete lifecycle power solutions for the marine and energy markets, and offers products, solutions and services. The company was established in 1834 in Finland and has since then been at the frontier of engineering innovation. Wärtsilä operate in over 200 locations in more than 70 countries around the world and has around 18,800 employees. The company's net sale was EUR 5 billion in 2015 and they are listed on Nasdaq Helsinki.

Wärtsilä provides their customers with innovative products and integrated solutions that are efficient, flexible, safe and environmentally sustainable. Within the marine solutions market, Wärtsilä is a technology leader and in the year of 2015 their Wärtsilä 31 engine was launched and achieved a Guinness World Records title for the most efficient 4-stroke diesel engine. Within the energy solutions, Wärtsilä provides power plants, LNG terminals and distribution systems. Within Wärtsilä services, the company support their customers throughout the lifecycle of their installations for both the energy and the marine market. (Wärtsilä, About Wärtsilä, 2016)

3.1 Wärtsilä Project Management Services

Wärtsilä's Project Management Office (WPMO) was established in 2007 to develop the project management culture, processes, competences and tools. The WPMO was a virtual forum with members from all businesses and support functions. In 2014, the WPMO project was closed since the mission of its developments were accomplished. A new supporting Project Portfolio Management (PPM) tool, Clarity, was established for project, program and project portfolio management further on with two new forums for Wärtsilä Project Management development. (Wärtsilä, Intranet, 2014)

Projects within Wärtsilä Services are divided into three categories:

Customer delivery projects

Operational development projects

Product and solution development projects

3.2 Services Customer Delivery Projects (CD)

The definition of a Service Customer Delivery Project (CD) is according to Wärtsilä: "*Service Project is a unique and complex delivery obligation defined in a contract consisting of price, scope and time schedule and often combining various systems and techniques from Services Portfolios and Functions.*

The execution of the contract requires appropriate planning and co-ordination efforts. The project is managed by dedicated Project Team to the satisfaction of the customer" (Wärtsilä, Wärtsilä project definition, 2013)

Figure 3 shows the Wärtsilä Project Model, which is based on Project Management Body of Knowledge, PMBOK® Guide. The model shows the lifecycle phases and the Gates (G) which links project portfolio management to management of an individual project and where each Gate have different responsibilities.
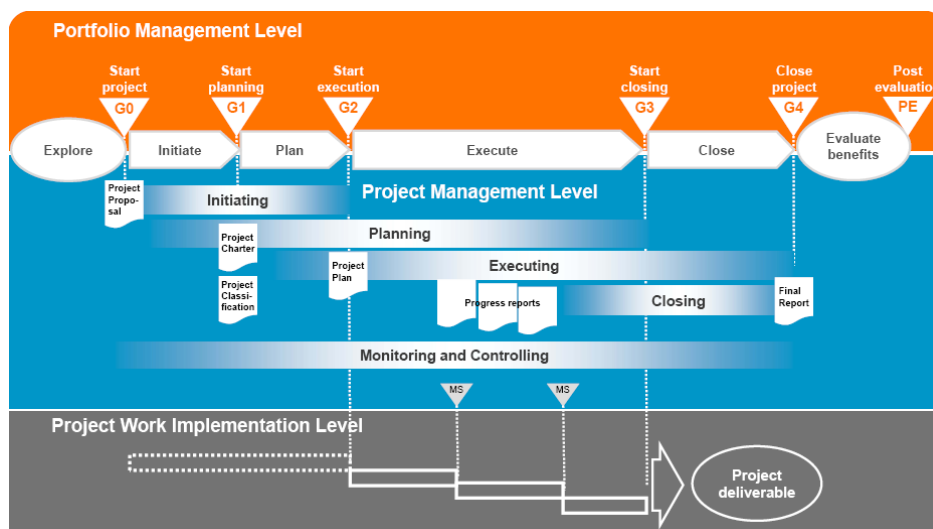
Figure 3 Wärtsilä Project Model Framework (Wärtsilä, Intranet, 2014)

3.2.1 Lessons learned procedure in Services CD projects

In regards to the Project Manager's responsibility to handle Lessons Learned, it usually starts at Gate 2 when the Project Manager is handed the project from sales and the executing phase starts. However, it is preferred that as soon as the Project Manager is involved he should have gathered previous Lessons Learned from similar projects and shared them already in the sales phase with the Sales Account Manager, but also with all involved parties to ensure that mistakes are not to be repeated in the beginning which will affect the whole project. This is crucial when it comes to A- class projects which are considered as high complexity projects.

The Project Manager should collect Lessons Learned during the whole phase, record and document them in Clarity and if any major findings occur these should be communicated to stakeholders urgently.

Within four weeks after the Gate 3 date has passed, a Lessons Learned review together with the final project report should be arranged by the Project Manager and pass it to all stakeholders whom are involved. The Project Manager is still responsible for the project during the warranty period after a project is done where Lessons Learned could occur, however it is very rare. (Wärtsilä, Intranet, 2014)

3.3 Project risk management

As an overall definition, Project Risk Management within Wärtsilä *"provides an approach by which uncertainty can be understood, assessed and managed within projects"*. Wärtsilä states that effective Risk Management's purpose within Services CD project is to *"analyse the possible risks and threats and if possible eliminate them or minimize the potential impact or loss for Wärtsilä and the customer*." (Wärtsilä, Intranet, 2014)

3.3.1 Risk management process
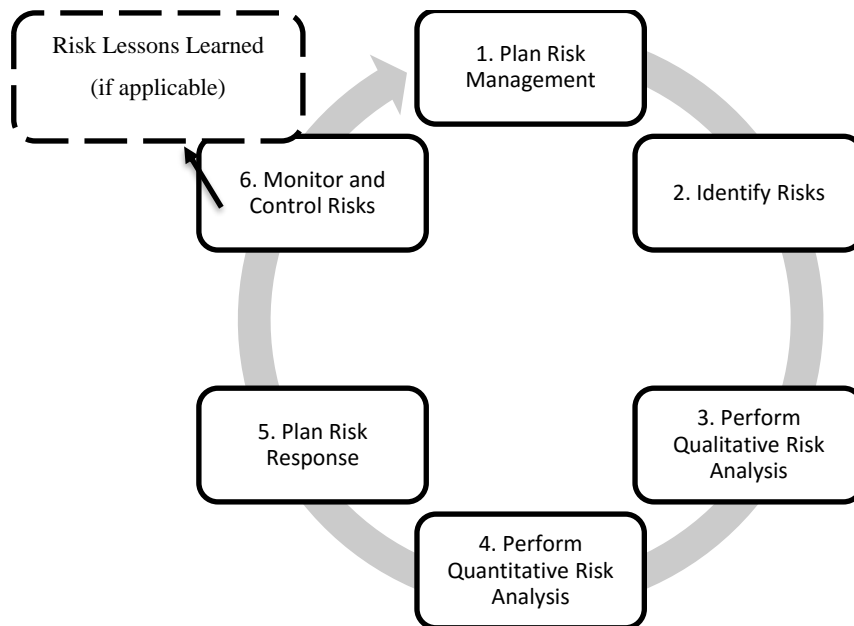
Figure 4 Risk Management Process, Wärtsilä 2013

The risk management process is important to ensure that the Project Manager is in control of the project. Already in the Sales phase risks should be identified and evaluated to take actions and analyse, reduce, mitigate or consciously accept some possible risks. The risk management process is continued during the project execution phase where unforeseen risks might occur and urgent actions are needed. (Wärtsilä, Intranet, 2014)

It is pointed out that the handling of risks within projects depends largely on the experiences of the project managers. An often-occurring matter is that risks and uncertainties are dealt with as they happen, however, with experienced project managers the issues can be predicted far in advance before any damage is done and the right actions can be taken. It is therefore important to have experienced project managers who can recognize uncertainties within a project.

3.4 PPM tool Clarity

As stated, the experience and knowledge of a project manager is significant to the outcome of the project. Nevertheless, the whole project team has responsibility to use their experience and knowledge to make sure the project succeeds. This leads to the significance of the lessons learned database were information and knowledge is an excellent resource for the project team to tend to when starting a new project or when a problematic situation occurs.

As mentioned, the PPM tool Clarity is used to record and store Lessons Learned for Service Projects. In Clarity, the most important details to document is:

- What was planned
- What actually happened / Description of the event
- Why were there differences/ What was the root cause
- Identified lessons learned and recommendations

The Project Manager create a new Lessons Learned and fill in all the details required to easy store and to find using keywords. Other general information includes: the name of Lessons Learned and to which project it belongs, Project Activity, Knowledge areas and Project Lifecycle Phase to name a few. In Figure 5 there is an example of how a Lessons Learned page can look like. (Wärtsilä, Intranet, 2014)

General

◘ Lessons learned name	Explorer of the Seas
◘ ✳ ID	PR2373-LL109
Created Date	12/1/2011
Created By	████████████
Contact person	
Project Activity	/CD/Procurement
Knowledge areas	Procurement Management
Project Lifecycle Phase	
Link to Lessons learned	https://

Details

Keywords	
What was planned:	Complete delivery of parts from Vaasa
What actually happened / Description of the event	Napier was late with the deliveries of TS's Shortages found on board with materials, Module no. not including all required parts Measure faults found in materials.
Why were there differences / What was the root cause	Supplier late with the delivery. Module number not including all needed materials. Material drawing not updated according to feedback from previous project.
Identified lessons learned & recommendations	Early warning need to be given for supplier when project with long lead items is coming. Sales, PM Material drawings and module numbers need to be updated according to feedback. TS
Additional description:	
Lessons learned Released	☐

Return

◘ = Required   ✳ = Unique

Figure 5 Clarity Lessons Learned

4   RESEARCH METHODOLOGY

In this chapter the research methodology will be presented, including the choice of research method, selection of participant, executing of the interviews and the analysing of the results.

4.1   Research Method

There are two research types in general, qualitative and quantitative research. The aim of these two different types is to show how a research is chosen to be generated, processed and analysed based on the information which has been gathered. With qualitative research the focus is on "soft" data, which can be qualitative interviews and often verbal analysing methods. The quantitative research focus on measurements in data collection and statistical analysing methods. (Patel & Davidson, 2011, 13-14)

The research method chosen for this thesis is qualitative research. As the goal of this thesis was to investigate the attitudes, actions and issues of the participants to see what can be improved, a qualitative research approach was the best choice.

A qualitative research method is best suited for studying people since it includes interviewing, observing and analysing. In a qualitative research, the researcher is interested in understanding how people view their own experiences and what meaning they attach to them. (Merriam, 2009, 2,5) According to Merrian (2009) the characteristics of qualitative research are:

- Focus on quality
- Constructive
- Understanding, meaning, hypothesis, discovery as goals of investigation
- Flexible and evolving design
- Non-random small sample, purposeful

- Researcher as primary instrument, interviews, observation and documents for data collection
- Inductive, constant comparative analyse mode
- Comprehensive, holistic and richly descriptive findings

(Merriam, 2009, 18)

For this thesis, I chose semi-structured interview as my method. This is due to the character of the method which I thought was the best choice for gathering information. The questions are relatively structured and can be used flexibly. In this method there is usually specific data which needs to be gathered from all of the participants and the interview is guided based on questions or issues to explore. Furthermore, the order of the wording is not predetermined. (Merriam, 2009, 89) This method was suitable for this research, since the main topics were about the experience and actions that the participants had, and also their thoughts about the process, which led to discussion and flexibility of the interviews.

Figure 6 shows the big picture of what was discussed in the interviews. I divided the interviews in five different sections where each area was broken down into more detail, in order to make it more easy to read and to understand. The fifth section, 'Improvements' was the last discussed topic which brought together the suggested changes of the other four sections. The results are explained after this figure.
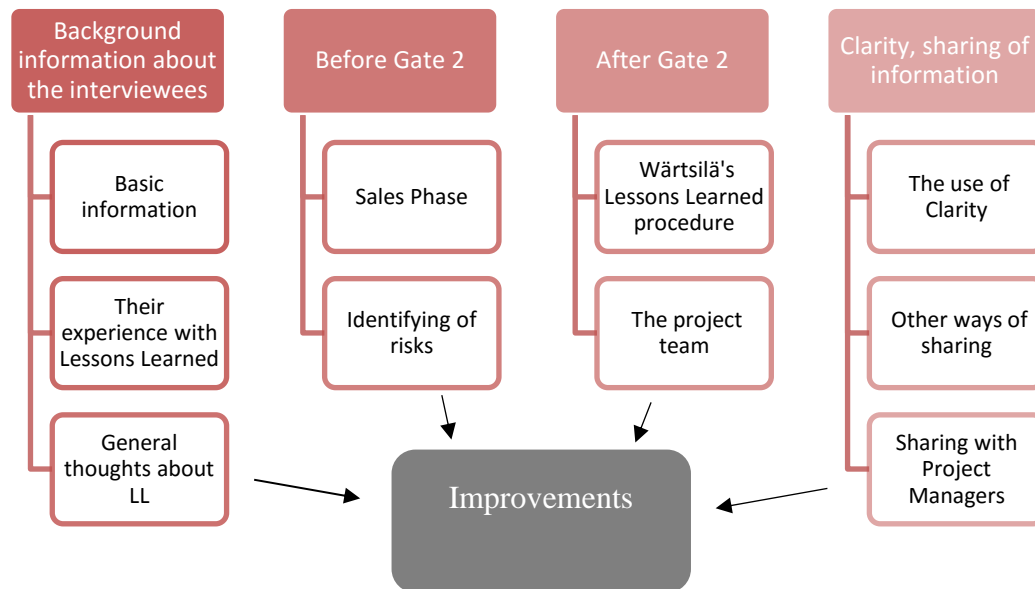
Figure 6 Categorizing of the interview

4.2   Data Collection

The sample collection in qualitative research is often small, non-random and chosen with a purpose, in comparison to a quantitative research were there are usually larger number of participants and structured more randomly. (Merriam, 2009, 16)

The interviews were conducted either face-to-face or by Skype and they were all held in English. The ones that were conducted by Skype were held with participants who are working in another country than Finland and only voice interviews were made, no video included. There were three participants from Finland, two from the Netherlands and one from India. They were all held with Project Managers within the same division and they had at least a few years of experience in the position.

The interviewees did not have any background information or questions sent to them about the interviews other than the topic discussed. I chose this because I wanted to get answers that came naturally and not preconceived in advance.

4.3 Analyzing of the results

After all the interviews were held, I transcribed them to have a cleared overview of what had been discussed. I started to analyse the background of the interviewees one by one to get a better picture of what kind of interviewees participated. This gave an easier way to continue the analyse since I could refer to Interviewee 1,2,3 etc.

I then continued with analysing question by question and highlighted the content which I would use in my results. This part took a long time since analysing craves high concentration. I analysed each question and set it into the category which the interviews were based on (Figure 6) and were writing the results at the same time. The results were then sent to my supervisor at Wärtsilä and he could check so there was no confidential information included.

4.4 Reliability and Validity

The aim of this thesis was to find out how the Lessons Learned is working within the case company Wärtsilä Oy's Customer Delivery Projects, where the barriers were and what can be improved in order to make the Lessons Learned process better. A qualitative research with a semi-structured interview method was done which was the most appropriate method for this thesis.

The interviews made were not many in amount of answers given, however the material gathered contributed well to a deeper understanding in the attitudes and opinions about Lessons Learned. The participants were chosen by my supervisor at Wärtsilä Oy who could better assume whom were appropriate experienced participants for this research. The number of chosen participants were also due to their availability to contribute to this thesis within a chosen set of dates that I had selected to hold the interviews. There were participants from different countries and with different kind of experience, so it's possible to presume that the answers would represent a larger group of Project Managers within CD projects as well.

Regarding the conducting of the interviews, it was clear that I had not experience in being an interviewer before this research. I had main questions and sub questions prepared, although the discussion with some of the participants gave birth to more sub questions, I tried to follow my red thread. All the interviews were held in English, which most of the times were smooth, although I noticed that some of the interviewees sometimes had hard to find some words and expressed themselves somewhat short occasionally. It may have affected the outcome in some way, but not heavily since all the participants has English as their working language.

When discussing opinions and attitudes it can sometimes be hard to get a deeper understanding, depending on the willingness of the participants to share all their thoughts. I found however that the more we discussed, the more thoughts were shared since one discussion could open up to new underlying opinions on the next one. When discussing opinions, as an interviewer I tend to follow body language and see how the participant react to the question in order to make the interview smoother and the discussion easy going. However, three of the participants were interviewed through Skype with no video, so I could only follow their words and voices in how they reacted to the interview. This could have had a small effect on the interviews.

Furthermore, to mention, I have myself worked within the organization as a Trainee within Services Customer Delivery Projects. I therefore had some basic knowledge about the way of working and might have been influenced by the organization's local culture in my region, but were not familiar with the local working culture in the other countries were some of the participants were from. However, I focused on being an objective researcher and not to take too much influence of my work position into consideration, although it happened occasionally, which could have affect my study somehow.

As a conclusion, I consider the study valid since the research objectives are well answered and achieved through my research design. The reliability of the research

can be hard to define since it is a qualitative research, and very specific interviews made. However, other researcher could use the same research design and there is a possibility to find similar answers.

5   RESULTS

The results are presented in this section, and will follow Figure 6 which shows what was discussed in the interviews. The interviews have given satisfying answers and they are gathered under each category.

5.1   Background information about the respondents

The background of the interviewees is presented in this section. The relevant background information is how long they have worked as a Project Manager within Wärtsilä Services, in which country they are working and their overall experiences and attitudes from Lessons Learned during this time.

There were three respondents from Finland, two from the Netherlands and one from India. All the respondents are currently working as Project Managers within Wärtsilä Services CD Project Management in respective countries and the duration of working varies from four to nine years. However, some of the respondents have previous experience of similar positions both within the company and from other companies. All the interviewees are males.

5.1.1 Interviewee A

Interviewee A is working for Wärtsilä Finland and he has recently returned to Services from another department within the company. He has four years' experience within Wärtsilä Services Project Management.

Interviewee A has mostly only created his own Lessons Learned and has not experiences with others Project Managers' Lessons Learned. This he thinks is due to difficulty in finding information in the database and he would rather go and ask other people if he knows someone has done something similar. The overall opinion on the general experience from person A, is that the information is forgotten after the Project Managers has created and shared Lessons Learned in an end session. He

also mentioned that there were problems within the system and procedures from earlier experiences, however, since he has recently returned he stated that there may have been changes made recently.

Interviewee A agreed that Lessons Learned is important and adds value to a project. The cooperation to share information with each other during the whole project is important and he prefers to always have Lessons Learned in a project. Additionally, he said that there is development to be done in the organization, due to difficulties to find and use the stored information.

5.1.2 Interviewee B

Interviewee B has been working for Wärtsilä Netherlands for about ten years. He sees Lessons Learned as a process gathered from all experiences you have, not only the ones you document and record. He said that you do recognize the Lessons Learned from all the projects you working with, and then you think about how you can do it differently next time.

Interviewee B thinks that Lessons Learned is very important, especially when working in a large team and for the sake of remembering what has been done in a project. He said it is wise to look at Lessons Learned from colleagues when you know that something similar has been done and this way avoid mistakes. Additionally, interviewee B mention the importance of Lessons Learned already in the sales phase, and thinks that is something to consider more often.

5.1.3 Interviewee C

Interviewee C works for Wärtsilä Netherlands and has been doing so for five and a half years. He brings up the early experiences of using Microsoft Excel and Microsoft Power Point to store and share the information with the project team and the sales support, and adds that with the current tool Clarity, all information is centralized, which it was not before. He hopes that the current system makes people use it

more. He also adds that in the Netherlands they like to be active and to have the best Lessons Learned which are shared in monthly and quarterly newsletters. He also thinks that from a Project Manager's and business perspective it is good to register and share the Lessons Learned so you don't fall into the same trap again.

However, interviewee C thinks that Lessons Learned adds more value to the overall business, and not to a project. He said that a Lessons Learned comes with an issue, and an issue comes with extra cost etc. and that in turn has a negative impact on the project. On the other hand, he thinks that Lessons Learned should have a positive impact on future sales, business and relations.

5.1.4 Interviewee D

Interviewee D works for Wärtsilä Finland and has been doing so for a few years. He said that the most important experience he has from using Lessons Learned is the fact to share it with all the involved stakeholders. The information in what to improve, what went well and what are the positive and the negative challenges is important and there is always something to improve when it comes to different ways in how to save time and money e.g. he adds.

Interviewee D thinks that Lessons Learned absolutely is adding value to a project, especially from a cost-, competence-, and quality point of view.

5.1.5 Interviewee E

Interviewee E has been working in Wärtsilä Finland as a Project Manager for about nine years, however several years before that he worked with similar tasks. About Lessons Learned he emphasises different kind of utilizations for his own projects such as; technical and logistical matters. By collecting all the pros and cons from a project the information can be used in other projects. He also adds the importance of learning about cultural matters from Lessons Learned. He continued with the value of taking risks into consideration by learning from earlier experiences.

5.1.6 Interviewee F

Interviewee F has been working for six years as a Project Manager at Wärtsilä India. His experience with Lessons Learned is that the process is relatively new. However, before Lessons Learned were set as a procedure, information was already then gathered from people who had been working with similar projects or been to the specific place were a new project were to start.

He thinks that Lessons Learned is especially important in the beginning phases when it comes to what to anticipate, which country it is regarding and technical aspects. Cultural and behavioural factors are also to be considered as well before a project he adds.

5.2   Before Gate 2

The following answers are appointed to what happens before Gate 2 in a project. This is according to Wärtsilä's Project Management Process; the initiating and planning phase. In the interviews, it is referred to as the Sales phase.

5.2.1 The Project Manager's involvement in the Sales Phase

The answers regarding the involvement with the Sales team and bringing previous Lessons Learned varied. Interviewee A wished for more involvement in the Sales phase, to be able to share Lessons Learned and suggested that Project Managers should get a list from the Sales team of projects that are similar to the ones they have ongoing, so the Project Manager could check previous Lessons Learned and then share it with the sales team. He also added that he thinks it should be a part of the procedure for Project Managers to be more involved as early as possible, and not just get the project handed to them.

Interviewee B and C, however, said that they as Project Managers are involved quite often with the Sales team and can provide their input. They added that it is a part of

their way of working and therefore they get information about a project already when an opportunity arrives. Interviewee B commented though that it not always happens but it would be ideal if it would. Interviewee C said that it is the task of a Project Manager to advice the Sales team of Lessons Learned of similar projects and give their support in the Sales phase. When it comes to using Clarity to check Lessons Learned they both admitted they don't use it for searching for information, but rather give input from their own experiences and what they know have happened in the past. Similarly, Interviewee D said that nowadays quite often the Project team works with the Sales team and he thinks that the information between them must be transparent. He added that he in some way is checking for Lessons Learned and then shares it verbally with the Sales people before Gate 2.

Interviewee E, on the other hand, said that he likes to be involved when there is a bigger project coming up and then he is asked by the Sales team to provide an input. He added that he usually uses his own collection of information and experience from his projects, not particularly a Lessons Learned document.

Interviewee F emphasized, the importance to network as much as possible in all available ways before a project starts. He said that communication with the Sales team happens 50/50, sometimes they get involved sooner and sometimes later, or sometimes they are just handed the project. He said he prefers getting involved as soon as possible in the Sales phase.

> Interviewee F commented: *"When a project guy is looking into a project it is totally different from when a sales guy does. We have a better input to give and it is we Project Managers who must fight with the project once it is signed, not the Sales team. The customer often gets a better deal when we are involved, because we know what needs to be delivered and know the customer's expectations. We have a more peaceful time after the contract is signed because we have been involved in what needs to be delivered."*

Interviewee F adds that the database is used for checking for Lessons Learned information but that they also try to talk to people they know have done something similar.

All interviewees agreed on that significant Lessons Learned or earlier experiences are becoming institutionalized most of the times. Interviewee D added though that sometimes due to time some Lessons Learned are not used. Interviewee F said that the Lessons Learned inputs that are available make things a lot easier when it comes to schedule planning, for example and regional and political issues that can have an impact on the project.

5.2.2 Minimizing risks by using Lessons Learned

When it came to checking Lessons Learned when identifying risks, there was only Interviewee F who said that he does check Lessons Learned in Clarity and that it is good if he finds some information there, otherwise he tends to network. The other interviewees mentioned their own experiences and discussions with colleagues, but admitted they don't go in and check Clarity. Interviewee D said he checks previous reports in another database called IDM though.

5.3 After Gate 2

When Gate 2 is passed in the Project phases, execution of the project starts. It is here the Lessons Learned should be collected and reported.

5.3.1 The Lessons Learned procedure of Wärtsilä Oy

All the interviewees agreed that they know Wärtsilä's Lessons Learned procedure and try to follow it. The most common answer was that they know they should gather Lessons Learned and report them during the whole project, but it is usually left to the very end, when it must be done. Interviewee C said that updates or changes in any procedure that are affecting them is actively forwarded to them,

either through their manager, the internal network, the Project Management Office, or sometimes through a person visiting them for training when new tools or procedures are implemented.

When discussing more deeply the activity of capturing and recording Lessons Learned during the execution the answers corresponded to each other. The majority of the interviewees said that they do capture Lessons Learned during the project, however, they do not report it until the end. A few of them also added that they should get better in reporting during the project also and not leave it until the last minute. Interviewee A commented that it is impossible to record everything that happens in a project, because of so much going on and time is limited. Interviewee C also mentioned time, pressure and being busy as the factors why recording is left to the end.

Interviewee A said that the big picture is gathered at the end of a project, but there is information that is probably left out from being stored. He also said that it is up to the Project Managers themselves to see if it is an important Lessons Learned to record and what value it gives internally. Interviewee B commented on this too, that it is important to recognize that a Lessons Learned is of value and will be useable for the future. Interviewee F added that sometimes he feels that it is not a great Lessons Learned to capture and publish, but added that it can become an important lesson too.

Interviewee A brought up a suggestion of Lessons Learned shared in internal reporting every month, however, he added that he does not know if that is happening nowadays since he has returned. Interviewee D, E and F, on the other, hand mentioned that there are monthly sessions, newsletter and reports were Lessons Learned are included. They all thought that it is a very good way to get to know current Lessons Learned. Interviewee F said that the monthly sessions where Lessons Learned are shared and discussed is keeping him more motivated to share his own information and to stay active.

With some of the interviewees the barrier of admitting one's own mistakes was discussed. Interviewee A and D commented that it is just the human side that we want to give a good picture of ourselves even though we make mistakes. Interviewee C, however, said that where he works they are very open and straight forward, and not afraid of making and admitting mistakes. He added that you make a mistake, learn and share it and make sure not to do it again. Interviewee D also thought that this depends on the culture or society, but in his own culture he found that it is very open and there is no reason to not share your mistakes, but admitted that it might be a problem in other societies.

5.3.2 The project team's involvement and contribution

All the interviewees said that to some extent the project team is involved and contributes to report Lessons Learned. Some seemed to have more cooperation with the team and some a little less. Interviewee A commented that he thinks the communication and cooperation with the team is very good and he asks his team to collect information from his own area. He also added that it is impossible for one person to collect everything and think it is a good way to gather information from the team also and then put everything together in the end. Interviewee D said something similar about him sending out a document to the team so all can contribute feedback from all the areas; site, logistics, engineering, etc.

The other interviewees said that they do communicate with the team and ask for their input, but because the team does not have access to Clarity they cannot themselves do the reporting. Interviewee F stated that he thinks that the team is not so motivated to contribute since they do not have access to the database, but that even though they communicate Lessons Learned it still can be highlighted and the team should be more encouraged to share their knowledge.

Regarding if the teams are aware of previous Lessons Learned from similar projects there were varied answers. Interviewee A said it is unclear to him if they are aware

of any information but he hopes that they are, otherwise he wished for a database for everyone's use. Some of the other interviewees mentioned that since the team does not have access to Clarity, they do not know of the previous Lessons Learned so that they could help themselves other than in the monthly newsletters that are sent out or perhaps some from the internal database IDM. However, interviewee D and F said that they do share their knowledge with the team from similar Lessons Learned, especially the critical points.

5.4 The use of the PPM tool Clarity

Clarity is the tool were the Project Managers record the Lessons Learned which are captured, and where they should search for other's Lessons Learned. The interviewees agreed all on that recording the Lessons Learned was not a problem, however, searching for information and using other's information were not very popular.

Amongst the answers were Interviewee C, who said Clarity is very straight forward to use, and with the recording the only struggle is what proper keywords to use for the Lessons Learned. He, however, tries to use what he thinks is Wärtsilä's terminology. Interviewee F also emphasized that Clarity is very convenient when it comes to reporting and not a problem at all.

The issue that all besides one brought up were the searching and using of the information stored in Clarity. Interviewee D was the only respondent who said that searching for Lessons Learned is easy and it just takes time to find out how to do it. Interviewee E said it is not easy to find specific information, however, he also thinks it is learning by doing.

> Interviewee A commented: *"I think Clarity is not functioning properly for Lessons Learned purpose. I think it is hard to use and find information. I rather ask for reports or Power Point presentations for a project, because there is all useful information, and that can be found on IDM."*

Interviewee C admitted that he has never search for Lessons Learned in Clarity, but will from now on. He also suggested that it should be put in the procedure to make sure they use Clarity for that purpose also. Finally, he stated that it feels like he just puts in a lot of data but is not taking anything out.

Interviewee F thought the searching function can be a bit tricky, depending on what he is searching for, but added that he does use Clarity for checking Lessons Learned but that it happens before Gate 2, not during the executing.

Both interviewee D and F mentioned the monthly letters again which contain Lessons Learned, and thought that it is an easy way for everyone to get important Lessons Learned information.

5.4.1 Sharing of Lessons Learned other than Clarity

The interviewees all shared Lessons Learned at the end session of a project, as it should to be done. Interviewee D, for example, said that for a recent project he also forwarded the monthly report were Lessons Learned were included to all involved in the project. Interviewee F brought up that they do sometimes send Lessons Learned to the sales team when they know they are working with some certain factors, so that they are aware of issues for upcoming projects. He also added that on a very specific case it has happened that they have sent a personal message to someone about some special things regarding to what lessons has been learned. Interviewee C said that in some instances they share information with the customers, and if they are contacted by Sales support they share the information with them and they can use the information that resonates with them.

Interviewee A, however, suggested that not only the ones who have been working with the project get to know about the Lessons Learned, but to invite the whole department, just for people to get the information, and then take advantage of what resonates with themselves. He added that it would be a great idea that every time

someone arranges a session with Lessons Learned, they could also have it through Skype so that everybody who is interested could participate and listen.

5.4.2 Lessons Learned shared between Project Managers

All the interviewees agreed on that they are discussing Lessons Learned with each other and in that way they share information. Interviewee B said that a lot of the happens at the coffee machine, and interviewee C confirmed too that experiences are shared between colleagues 'on the floor'.

None of the interviewees said that they share actual specific Lessons Learned with each other, besides interviewee E who said it has happened that there are Lessons Learned meetings where several Project Managers are involved, however, he added that he will share the information with other Project Managers next time he has a big Lessons Learned meeting. He added that there is place for improvement regarding this. Interviewee A discussed this as well. He thought that Project Managers should get invited when Lessons Learned are shared, since it is them who are most likely to use the information, and it is an easy way of sharing, especially if the sessions are short and effective, and reachable through Skype as well.

Interviewee F thought that it would be interesting to know about others Lessons Learned in sessions, because he said that he has not shared any specific Lessons Learned himself with other Project Managers, if not asked in a specific forum of course. But, he added again that even though he does not share specific Lessons Learned with other Project Managers, he checks other Project Manager's Lessons Learned in Clarity, this is especially good in case someone no longer works at the company.

5.5 Improvements of the Lessons Learned process

The last question was about any improvements that the interviewees suggested. During the interviews opinions on changes were already expressed. At last the interviewees got to add and emphasize which improvements they would like to see.

Almost everyone had some opinions on Clarity and how it could be improved. Access for the project team was one of the suggestions they had in common. Moreover, training emerged as something to be improved. This is mostly regarded to the issues in the search function. Interviewee B said that not full training was needed, but some sort of document with some info and pictures that would help them in the searching process. Interviewee A emphasized this as well, to make Clarity more user-friendly and information more easy accessible. It is very important to be able to find information fast and easily. Interviewee C commented that the awareness of using Clarity for knowledge should be increased. He thinks that Clarity is full of valuable information but that it is hidden and not in proper use at the moment. Interviewee B also thought that people should somehow be triggered to want to share their experiences, because there is a lot of important knowledge with people who do not give their input. Interviewee F added too that motivation is an important part using Clarity to its full extent.

To invite others to the sessions were Lessons Learned are shared was another earlier mentioned improvement that can be done. Interviewee D said that there is a gap when it is coming to this, that bigger meetings with not only the project team to get to share and listen to the others and thereby make the Lessons Learned more visible.

Interviewee A and F, think they should get more information regarding corresponding project in the Sales phase and become more involved, the motivation is higher if they can have an input before Gate 2. Interviewee A also thought that information somehow should be shared between the departments in the company, since he often

contacts people from other departments whom he knows have done something similar.

Finally, Interviewee C said that Lessons Learned and information that is shared monthly often focuses on large project, called A projects. He continued that there is more focus and support on the A projects, and therefore easier to implement Lessons Learned on them because they are 'more' important. Furthermore, he said that the same mistakes usually keep happening in smaller projects, called B-C projects. People think that nothing can go wrong in a small project, but it does, and this is because the attention is lower and not as much effort is put in. He added that these B-C projects are usually the ones that loose most money, and that these projects would need more focus on Lessons Learned, both in the implementing and gathering phases.

6   DISCUSSION OF THE RESULTS

In this chapter the main findings of the results will be discussed. The findings will be referred to the theory part and the objectives of the research.

6.1   How the Lessons Learned is working within CD Projects and where the barriers are

It is said that knowledge within an organization is one of the most important factors when it comes to competitiveness. (Dalkir & Liebowitz, 2011) In the interviews, all participants agreed upon the importance of Lessons Learned and that the knowledge which is stored is very valuable. This shows that there is an awareness of the significance of knowledge gathering and sharing within a company.

According to Wärtsiläs's own process, the Project Manager should be involved in a project preferably already in the Sales Phase and share previous Lessons Learned from similar projects. Most of the Project Managers has some sort of contact with the Sales Team although it was preferred to be more. The knowledge shared with them is also of own experiences and mostly verbally and not from the Lessons Learned database, Clarity. This is one of the issues since it is in this phase Clarity especially should be used. In the theory, it is very clear that the aim of Lessons Learned is to apply them on upcoming similar projects in order to minimize risks, avoid or decrease problems, and to help working towards desirable outcomes. (Chaves & Veronese, 2014) This correlate well with the most common statement that organizations rarely apply Lessons Learned knowledge in their processes, even though the information is there. (Goodman & Riddell, 2012)

Köster (2010) brought up the barrier of the general attitude which plays a part in employee's willingness to use other people's Lessons Learned and apply them to their own projects. This seemed to correlate well to the results where it was clear that most of the Project Managers rather applied their own experience and

knowledge to the projects, instead of tending to the database to check other's knowledge.

The lack of skills to use the database correctly was also a recurring issue with the Project Managers, mainly when it came to search for information in the system. Köster (2010) explains this as a barrier that the organization has not developed correct methods to do this. This, lack of training along with the attitudes, may be the answer to why the Project Managers are not actively using the search function to use other people's Lessons Learned from Clarity.

Furthermore, the Project Team does not have access to Clarity, and can thereby not make use of the valuable knowledge either, if not searching for information or reports in other internal networks in the company. The Project Managers, however, said that they gather information from the Project Team, and Lessons Learned in the end of a project. According to Terzieva (2014), not only the Project Manager, but also the management, team and the individual can gain benefits of the Lessons Learned. Wärtsilä's own theory states that *"the Lessons Learned is an excellent resource for the Project Team to tend to when starting a new project or when a problematic situation occurs."* In this case, it seems as if it is only the Project Manager and the management who have benefit of the knowledge since it is only they who have got access to Clarity. The responsibility relies then on the Project Manager to share the knowledge with the team.

When it came to the sharing of the Lessons Learned in the end of a project the theory correlated well with the findings. Within four weeks after the Gate 3 date has passed a Lessons Learned review together with the final project report should be arranged by the Project Manager and shared with everyone involved in the project. (Wärtsilä, Intranet, 2014) All the Project Managers agreed on doing this. Something that was brought up and a very important factor was the sharing of information to others than the people involved in the specific project. For example,

according to Marlin (2008) is Lessons Learned a valuable contributor to an organization's overall goal of continuous improvement if the Lessons Learned process is well developed and maintained. This leads to the critical factor of sharing the knowledge with others in the organization as well, something that the Project Managers were all positive about. If more people were invited to the Lessons Learned review in the end of a project, the more they could make use of the knowledge within the organization, and especially between Project Managers themselves. Suggestions like open invitation within the department and possibility of Skype session came up of new ways of making the Lessons Learned more visible. The current monthly newsletters which contains Lessons Learned is, however, well appreciated amongst the Project Managers when it comes to sharing of information.

Regarding the collection and storing of Lessons Learned during the project, a clear pattern was that it is often left to the last minute. It is supposed to be actively collected and updated in the database, however, it was a positive finding that all of the participants are collecting and storing the information at some point.

Going back to the Basic Lessons Learned Process, Figure 2, there is a clear pattern in where in the process the issues lies. The findings clearly show that the process start having problems after the Lessons Learned is stored. The sharing of the information is not so wide as it can be and it has a define stop at the reusing and applying of knowledge.

6.2   Improvements to make the process better

Based on the findings, improvements were easily found both in the different discussions and in the final discussion about the Project Managers own suggestions on improvements for the process.

The first improvements would definitely be in the database Clarity. Firstly, more awareness of the tool in order to higher the motivation to use it as a knowledge base.

Secondly, to give some training and make Clarity's search function more easy accessible. This could lead to improvements in the Sales phase, so that the Project Managers would use Clarity for Lessons Learned and share them before Gate 2. A procedure or rule could be introduced to give more awareness to this.

Sharing of Lessons Learned through bigger meetings, Skype and different departments would be a great improvement to get more knowledge out in the company. The visibility of Lessons Learned as a significant tool have the possibility to then expand.

Lessons Learned are being used the most on A projects, the large ones, and less on B and C projects, smaller ones. Improvements in awareness are to be done here to bring more motivation to apply learnings on these projects as well, and not only focus on the large ones.

7   CONCLUSION

The aim of this thesis was to find out how the Lessons Learned process is working within the case company Wärtsilä Oy, in Services Customer Delivery Projects, where the barriers to learning are and what can be improved in order to make the process better.

The theoretical focus on Project Management and its phases to get a clearer view of where Lessons Learned has its place. The Project Management theory has a strong base from the PMBOK since the case company use their theory in their way of working. Organizational learning and Lessons Learned is discussed to give the reader required knowledge about within the subject in order to understand the empirical part. The theory also present the case company Wärtsilä Oy's Services Customer Delivery Projects theory in how their Lessons Learned procedure works.

The empirical part presents the research methodology of the study. The research method of this study is qualitative with semi structured interviews and the interviews were held with six Project Managers from Wärtsilä Services Customer Delivery Projects. The results are presented according to different categories and a discussion of the results to connect them to the theoretical part followed up.

The results showed that the participants know the value of Lessons Learned but there are improvements to be made in the Lessons Learned process within the company. The main issues lie with the database Clarity and its search function, which effect several other parts, such as the motivation to use it for looking for information and the Project Managers involvement in the Sales phase.

Improvements of the Lessons Learned process are fully achievable with the support from the management and a change in the overall awareness and attitudes towards Lessons Learned as a Project Management tool.

7.1 My own reflection

The topic I have been researching about, Lessons Learned was somehow for me a new subject. Even though I have been working within Project Management as a Trainee, the term has only come up maybe once or twice. The concept though was very easy to grasp, it was just a matter of theory and literature available that could make or break my research.

The topic was introduced to be via my current manager at the company who gave me some ideas to work with. I have gotten very good support from the company's side and a lot of help to fulfil my research. Mostly this is regarded to information about the company's own process and overall a general interest in my work which gave me more motivation to do a good job.

My own work has gone quite good and I have not have had any major problems in conducting my research. The literature provided me with more than expected within this topic and covered the required theory. The empirical part did also go smoothly and I was lucky to get all the interviews which were planned and with satisfying answers. The process of transcribing and analysing the results was the most time-consuming part but also the most interesting.

I am very satisfied with my work and have learned a lot during this half year it took me to do this research. I have gathered useful experience and knowledge for future researches and I am now more confident in how a research is to be carried out.

7.2 Recommendations for further research

This research had its focus on a very specific topic were a few key issues were found. A basic idea is to do the same research after the improvements are done and see if the same issues still exists. For example, if the use of the search function in Clarity would get used more with specific training and more awareness. Another suggestion would be to include more departments and then compare them to each

other. It would be very interesting to see if it worked similarly in other areas in the company as well, or if they have a more / less developed method. To even stretch it further, an overview over other companies Lessons Learned procedure within projects would be an interesting topic as well.

I see that there is potential for further research in many areas within Lessons Learned since it is an important tool used in many ways and in different departments in organizations.

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APPENDICES

Basic information

1. How long have you worked as a Project Manager?

2. What experiences do you have from using Lessons Learned?

3. Do you perceive Lessons Learned is important/ adding value to a project?

Before Gate 2

4. The Project Manager should bring a collection of LL from previous similar projects as soon as he is involved in a new project, already in the sales phase.

What actions do you take regarding checking previous Lessons Learned before a project is executed? (if no actions, why not?)

5. Are the significant Lessons Learned becoming institutionalized? (how/why not)

6. Lessons Learned is said to contribute to minimizing risks if used actively and correctly. Are Lessons Learned used when identifying risks in Project Risk Management?

After Gate 2

7. How well do you follow the company's Lessons Learned procedure?

8. Are you actively capturing Lessons Learned during the executing of a project?

9. Do project teams contribute to capturing Lessons Learned? Are they aware of previous Lessons Learned for the project? (Have you shared your knowledge?)

10. Training sessions have been given in how to report Lessons learned.

Is it nowadays easier for you to report lessons learned in Clarity, or do some issues still occur that make it difficult for you to report lessons learned in Clarity? In case of issues, what would help, could more training help up the situation?

11. Do you share Lessons Learned in another way than Clarity? How? Do you share to involved stakeholders?

12. How can the Lessons Learned process improve?