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Developing Cooperation of Project Teams towards Meeting Customer Needs

Case of Multiservice B2B Supplier in the Energy Industry

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I would like to start by saying that I am very thankful of my decision to apply for this Master's Program. This opportunity to further my studies couldn't come in a better time as I face a gruelling challenge in my personal life and an important stage in my career advancement. The program has kept me grounded and focused in my life in many ways. I have had the good opportunity to meet very inspiring people in the form of the most dedicated instructors that I have ever met and the highly motivated fellow students in the program.

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<p>This study aims to develop the cooperation of project teams in meeting customer needs in the case of a multiservice B2B supplier in the energy industry. The technical service in the energy industry is a highly competitive yet lucrative business. Energy generation companies are interested in seeking to work with companies which are able to provide comprehensive services instead of obtaining these services from separate companies. The case company has a varying service mix available through different product areas, yet the project teams are not aware of the entire span of services available to satisfy customer needs. Hence, business opportunities are lost. The study is focused on developing the cooperation of the project teams across product areas to utilize all services available within the case company towards meeting customer needs.</p> <p>The case study method is selected as the research approach due to its all-encompassing method which incorporates specific approaches to data collection and data analysis. The research design consists of five steps and includes a current state analysis of the case company and a review of best practices in current literature which serve as the basis for creating a solution for the case company.</p> <p>The outcome of the study in an action plan to enhance the cooperation between project teams in sharing project information and breaking down information silos. The action plan sets out the proposed actions to be taken by the case company to tackle the challenges that it faces in order to improve cross-team communication in the organization.</p> <p>The action plan strives to improve cross-team communication in the case company with the ultimate aim of meeting customer needs and ensuring business opportunities are not lost. The proposed action plan has been accepted by the management of the case company and has been approved to be implemented department wide. If proven successful, the next step is to propose the action plan to be implemented in the whole business unit.</p>	
Keywords	Information silos, Breaking silos, Team communication

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1 Introduction

The technical service business in the energy industry is a highly competitive but yet lucrative business. Energy generation companies and power plant owners are constantly seeking technical services which enable them to meet strict environmental and safety standards, to lower operating costs and improve plant performance. Due to these reasons, the number of companies, which are providing various types of technical services in different areas of the energy industry is high. However, energy generation companies and power plant owners are mainly interested in seeking companies, which are able to provide comprehensive services instead of getting these services from separate companies. Therefore, it is critical for technical service companies to be able to provide holistic service offerings to their customers to capture this business opportunity.

1.1 Business Context

Fortum Oy is a Finnish energy company focusing in the energy industry in the Nordics, Baltic countries, Poland and Russia. It is based in Espoo, Finland and employs about 8000 energy professionals in the countries that it is active in. Fortum Oy operates power plants, including co-generation and nuclear power plants, and generates and sells electricity, steam and heat. It also provides other energy related services and products. The company is divided into three main divisions, namely Generation, City Solutions and Russia and two development units which are focused on growing new businesses shown in Figure 1 below. (Fortum 2016)

Organisation structure

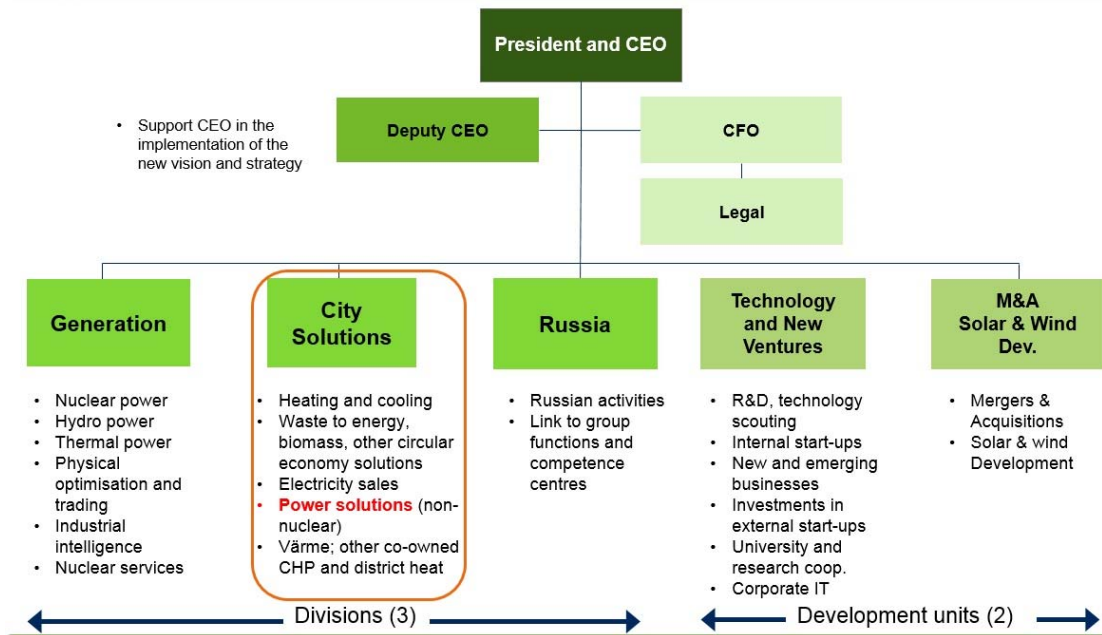


Figure 1. Fortum's organization structure (Fortum 2016).

In this thesis, the case company is Fortum Power Solutions (hereafter Fortum PS), which is a business unit of the City Solution division. Fortum PS employs approximately 200 experts in various fields in the energy industry. It provides technical services to business to business (B2B) customers ranging from plant IT software products, plant optimization, combustion technology, turbine generator services and power plant operations & maintenance as shown in Figure 2 below.

Power Solutions

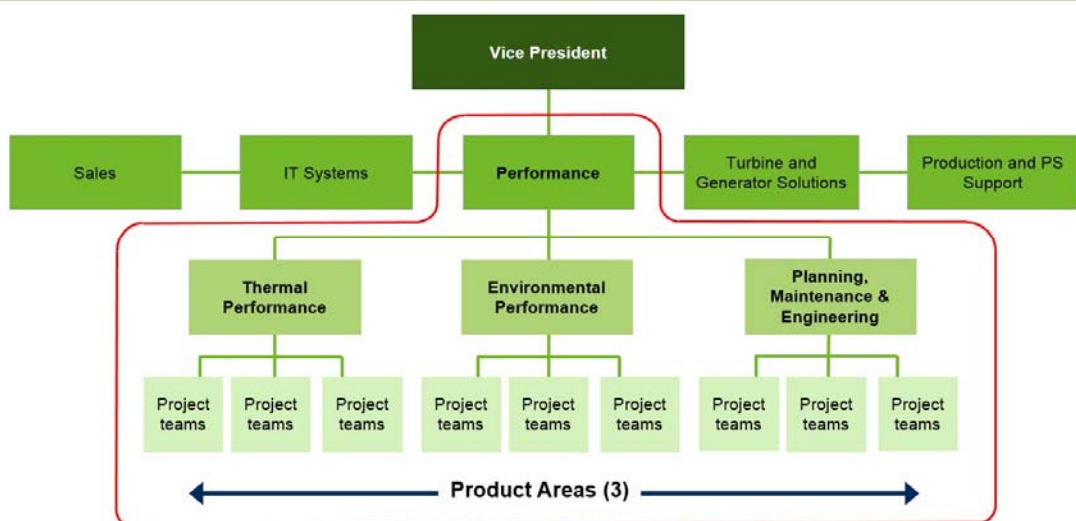


Figure 2. Fortum Power Solutions' organization structure.

As shown in red in Figure 2, the scope of this thesis covers one department in Fortum PS, i.e. the Performance Group, which consists of approximately 40 experts in 3 different product areas. These product areas are Thermal Performance, Environmental Performance and Planning, Maintenance & Engineering (PME). Each of the product area is managed by a Product Manager with project teams working under him. The annual turnover of the Performance Group for the year 2015 was EUR18 million.

1.2 Business Challenge, Objective and Outcome

The project teams in each product area work in silos as compared to the other product areas' project teams. This means, among other things, that individual project teams are not aware of the entire span of services available by other product areas in the Performance Group. As specific customers typically have needs in addition to the bespoke product area's service mix, which could be satisfied with services available from the two other product areas, business opportunities are lost.

Therefore, the objective of this study is *to develop the cooperation of the project teams across product areas focusing on utilizing all services available within the Performance Group towards meeting customer needs*. The outcome of this thesis is an action plan with managerial recommendations to improve the cooperation between the teams.

1.3 Outline of the Thesis Report

This Master's thesis is written in 7 sections where Section 1 provides the Introduction. Next, Section 2 explains the methodology used in this research. Section 3 reports on the current state analysis carried out in the case organization in order to identify existing strengths, challenges and limitations in the current process which is used. Section 4 presents the conceptual framework which has been developed based on the findings from the current state analysis and literature reviews. Section 5 proposes the solution to the business challenge. This is followed by Section 6 which records the test results of the proposed solution. Finally, Section 7 discusses the conclusion of this research.

2 Method and Material

This section discusses the research approach chosen for this Master's Thesis study, the research design which is planned and data collection and analysis methods which are applied. Finally, the thesis evaluation plan is explained.

2.1 Research Approach

Selecting the right approach starts with identifying the research questions which need to be answered, whether it is one or a combination of questions of “who”, “what”, “where”, “how” and “why”. For this study, the following questions will determine the strategy: 1) What is the extent of the researcher's control over behavioural events, and 2) What is the degree of focus on contemporary events compared to historical events?

A case study covers the “how” and “when” questions in a contemporary set of events which the research had little or no control over. (Yin, 1994: 9). Therefore, for this study, the most suitable strategy which is used to tackle this business challenge is the case study.

The case study method is an empirical study that researches present day phenomenon within its real-life context when the boundaries between the phenomenon and context are not clearly evident (Yin 1994: 13). According to Yin (1994: 13), the case study is a research strategy that includes “an all-encompassing method – with the logic of design incorporating specific approaches to data collection and to data analysis”. He states further that the case study is not just a data collection or a design feature alone but a comprehensive research strategy. However, Stake (1995: 2-3) argues that case study is not a method or process but it is the object of the study to understand and accomplish a goal.

Yin (1994: 13) further indicates that a case study research confronts a technically special situation where there will be many more variables of interest than data points and it relies on numerous sources of evidence with data that needs to converge in a triangulating pattern. This is supported by Gilham (2010) who explains that various evidence are needed to support the answer to specific research questions.

Accordingly, this further strengthens the selection of the case study method as the most suitable approach to be used to study the project teams' cooperation towards meeting customer needs for the company and for developing an action plan with managerial recommendations to improve the cooperation between the teams. In this study, this is done with the intent of triangulating the sources through interviews with different candidates, reviewing company processes which are documented as well as observing the situation itself. Regardless of the differences in opinions to define case study research, it is considered the best approach to be used in this particular business challenge.

2.2 Research Design

A research design connects all the collected data in a logical manner to the fundamental questions of a study and eventually to the outcomes of these questions. It is an action plan that takes the research study from *here* to *there*, where *here* may be described as the initial set of questions to be resolved, and *there* is the set of conclusions about these questions (Yin 1994: 19). And in between the *here* and *there*, there are the major steps of data collection and analysis of significant data. Figure 3 below shows the research design for this thesis. The left side of the diagram shows the data collection points and the right side presents the outcomes from each step of the research design.

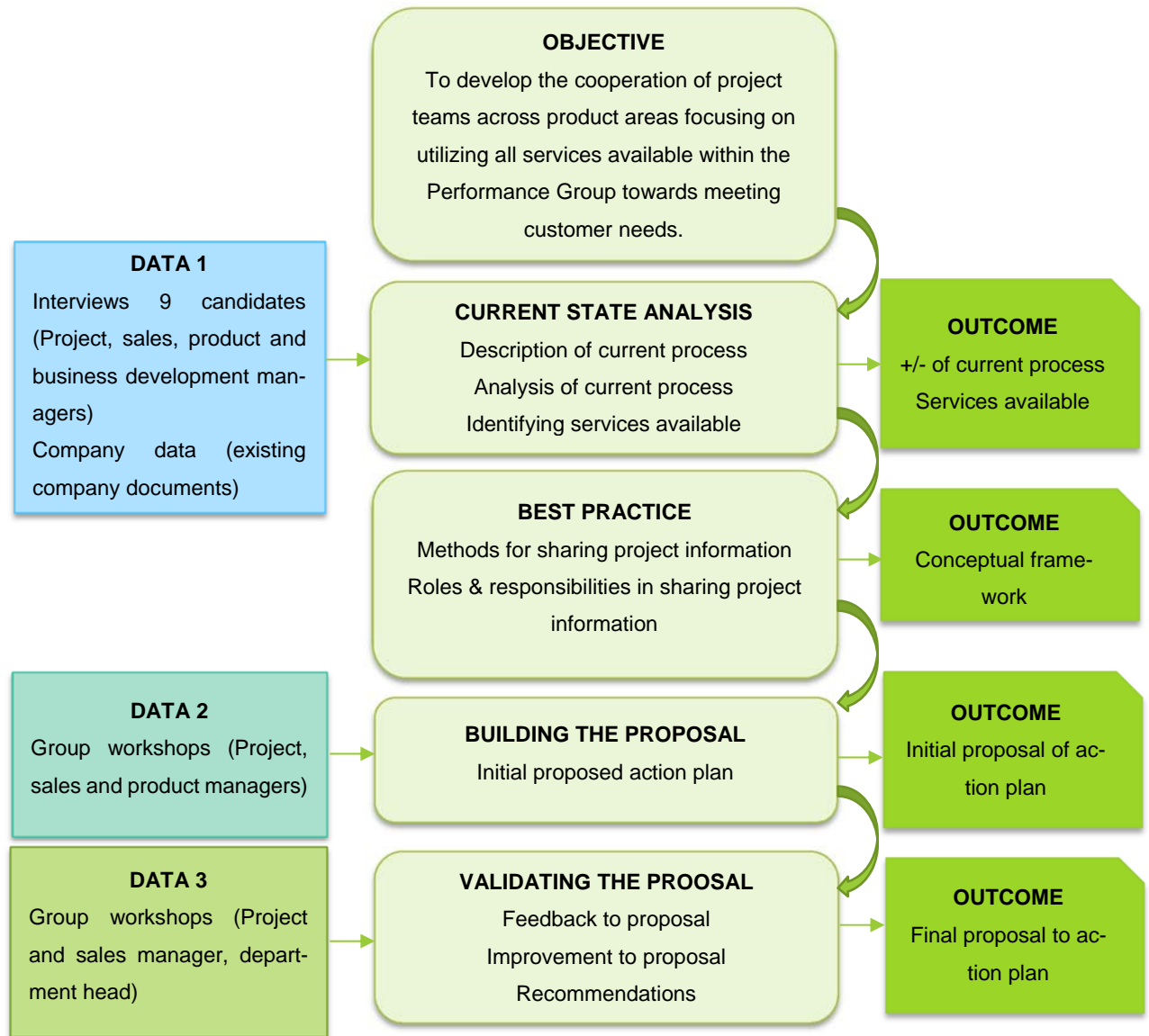


Figure 3. Research design for this thesis.

As shown in Figure 3, the objective of this thesis is to develop the cooperation between project teams across product areas focusing on utilizing all services available within the Performance Group towards meeting customer needs. After the research objective has been defined, the next step is the current state analysis (CSA). The analysis is conducted by interviewing the project team managers, sales team managers and other relevant stakeholders and by analysing existing company documents. This is done to identify the current process which is used and to pinpoint the existing strengths, challenges and limitations in the process. The Product Managers of respective product areas are also interviewed to identify all services available in the department. The outcome from the CSA

is the strengths and weaknesses which need to be tackled and all services that are available in the three product areas.

Once the strengths and weaknesses are pinpointed, the following step is to conduct literature reviews of best practices and existing knowledge available. The theories and concepts from the literature are studied to understand in detail the weaknesses identified through the CSA. Following this, a conceptual framework is established.

After that, the next step is to build the proposal for the action plan. This is done by presenting the findings from the CSA and conceptual framework to the relevant stakeholders and discussing with them through workgroups and one-to-one discussions in order to co-create an initial action plan. Finally, the initial action plan is improved further and validated together with these stakeholders including senior management. Feedback from this validation stage is consolidated into the final proposed action plan which will be presented to the senior management as the outcome of this thesis.

2.3 Data Collection and Analysis

This thesis consists of three parts of data collection. Data 1 is obtained from interviews and company documents in the CSA stage. Data 2 is gathered from the workshop discussions with the stakeholders during the proposal building stage from the findings of CSA and conceptual framework that were created. Data 3 is collected during the validation stage with the stakeholders including senior management to conclude the final proposed action plan.

In Data 1, the main source of data comes from interviews with Project Team Managers, Sales Team Manager and relevant stakeholders such as Product Managers and Business Development Manager. This is followed by reviewing the related internal company documents which define the process which is used in the department. Project Team Managers, Sales Team Managers and Product Managers are chosen because they are involved directly with customer engagement from the start until the end of the project and also when there are continuation of follow-up projects. In addition, Product Managers have the best knowledge of all the services that are available in the Performance Group. The interviews are done to identify the process which is used by all these key stakeholders in the overall project implementation with customers. The main goal is to determine the existing strengths and weaknesses in the current process. In order to strengthen the

results of these findings, customer feedback is also needed to gain an outside perspective of the department's internal process. Since time and resources are limited to conduct interviews directly with customers who are located all over Europe, the customer feedback results are used as the alternative solution. Thus, the Business Development Manager who is responsible for the Customer Satisfaction Survey is interviewed.

All the interviews are conducted in English without any risks of distorting the Data because all of the stakeholders use English in their daily tasks in the company. The list of all the interviews conducted are shown in Table 1 below.

ID	Position	Date	Duration	Data Type	Topic Discussed	Documented as	Transcript
PM1	Project Manager	16/1/17	1 hr	1-to-1 interview	Project implementation process	Field notes	Appendix 1
PM2	Project Manager	16/1/17	1 hr	1-to-1 interview	Project implementation process	Field notes	
SM1	Sales Manager	17/1/17	1.5 hr	1-to-1 interview	Project implementation process	Field notes	
PM3	Project Manager	17/1/17	1 hr	1-to-1 interview	Project implementation process	Field notes	
PM4	Project Manager	18/1/17	1.5 hr	1-to-1 interview	Project implementation process	Field notes	
PD M1	Product Manager	19/1/17	1hr	1-to-1 interview	Identifying services available	Field notes	
BM1	Business Development Manager	23/1/17	1 hr	1-to-1 interview	Customer Satisfaction Index	Field notes	
PD M2	Product Manager	27/1/17	1 hr	1-to-1 interview	Identifying services available	Field notes	
SM2	Sales Manager	30/1/17	1 hr	1-to-1 interview	Project implementation process	Field notes	

Table 1. Interviews for Data 1.

In addition to interviews, company documents are reviewed as well. The documents consist of processes and instructions to be followed by the sales and project teams. The

latest customer satisfaction results (Year 2015) are used to identify the external viewpoint. The documents reviewed are listed in Table 2 below.

	Name of Document	Amount	Description
P1	Asiantuntijapalveluiden To- teutusprosessi (FIN) (Expert Services Implemen- tation Process)	3 pages with 1 appendix	Process guidelines for service implementation of Performance Department (Experts Services & Mandates)
P2	Suunnittelupalveluiden To- teutusprosessi (FIN) (Planning Implementation Process)	4 pages with 3 appendices	Process guidelines for planning implementation of Performance Department
S1	Sales Instruction	9 pages	Defined common sales instruc- tions for Power Solutions
S2	After Sales Service in For- tum Power Solutions	14 slides	After Sales activities and expe- rience in Fortum Power Solu- tions
C1	Stakeholder Survey, Fortum Power Solutions 2015	54 slides	Summary of results and find- ings from B2B customer satis- faction survey
C2	One Fortum, Customer Sat- isfaction Survey results, For- tum Power Solutions 2015	2 Excel sheets	Results and findings from B2B customer satisfaction survey

Table 2. Company document for Data 1.

Data 2 is gathered from two workshops with the stakeholders who were interviewed during the CSA stage. The workshops and discussions are held by presenting the data analysis from the CSA and best practises which are obtained from literature reviews in order to co-create an initial proposed action plan with the stakeholders. The summary of data collection for Data 2 is shown in Table 3 below.

ID	Participants	Date	Duration	Documented as	Transcript
W1	1. PM1 2. PM2	29/03/17	1.5 hr	Workshop memo	Appendix 2
W2	1. PDM1 2. SM1 3. SM2	03/04/17	1.5 hr	Workshop memo	Appendix 2

Table 3. Discussions for Data 2.

In Data 3, the data is collected during the validation stage with the stakeholders from initial interviews including senior management to conclude the final proposed action plan. Due to busy work schedule, not all of the stakeholders who had participated in the one-to-one interviews were able to attend the validation workshop. The department head is also involved in the workshop discussion as he will be involved in the implementation of the action plan if it is approved. After the first validation workshop, a follow-up workshop was held with the Product Managers to identify the main priorities of the action plan to be implemented. Table 4 below shows the summary for data collection of Data 3.

ID	Participants	Date	Duration	Documented as	Transcript
W3	1. PM1 2. PM2 3. PDM1 4. PDM2 5. Department Head	07/04/17	1 hr	Workshop memo	Appendix 3
W4	1. PDM1 2. PDM2	11/04/17	1 hr	Workshop memo	Appendix 3

Table 4. Discussion for Data 3.

The main outcome from this data is the improvement to the initial proposal in order to conclude the final proposed action plan for implementation. The validation of the proposal is discussed in detail in Section 6.

3 Current State Analysis (CSA) of Existing Process

This section reports on the current state analysis which is carried out in the case organization in order to identify existing strengths, challenges and limitations in the current process which is used and the services which are currently available in all three Product Areas in the Performance Group. The first part overviews how the CSA is conducted and the rationale behind the choices that are made. The second part identifies all the services which are provided by the Performance Group. The third part describes the current process which is used and this is followed by the fourth part where the process is analysed. Finally, the key findings are presented in the fifth part.

3.1 Overview of Current State Analysis Stage

The current state analysis was conducted through one-to-one interviews with selected stakeholders in the Performance Group and by reviewing existing company documents. Firstly, Project Managers, Sales Managers and Product Managers are interviewed to understand the current project implementation process which is in practise. In the same time, the strengths and weaknesses of the current process are identified from these interviews. Secondly, existing company documents are reviewed to check for consistency or gaps with what is practised in the company.

Thirdly, the customers' opinions are taken into account in order to gain an external viewpoint of how the services are provided. This also helps in identifying the strengths and weaknesses from external point of views. The customers' opinions are obtained from the customer feedback results which are collected annually. The Business Development Manager is responsible for managing the feedback collected. Therefore she is also interviewed to gather a comprehensive understanding of how the customers see the company in providing its services to them.

Finally, in addition to providing information about the current process used, the Product Managers also provide information on all the services that are available in the Performance Group. During the interviews, they are asked additionally about the services which are currently available in three different product areas. This is done to identify and clarify all the current services which are available for the customer.

3.2 Identifying Service Available

The Performance Group consists of three main product areas, namely Thermal Performance, Environmental Performance and Maintenance, Planning and Engineering (MPE). Each of these product areas serve different needs of the customer in the power plant industry.

3.2.1 Thermal Performance

Thermal Performance product area provides services mainly in the improvement of power plant processes and operations. The Ecotuning™ program is a service to improve the energy efficiency of plants through energy audit, modelling of processes, analysing process conditions and finally providing improvement plans to the customer. Consultation is provided in troubleshooting of faults, optimization of processes and decision making of the power plant operations. Remote monitoring and support services are provided to customers who need periodic analysis of the operations and performances of their power plants. The customer's operating data are sent in real time to Fortum's database for storage and analysis.

The project team in this product area also performs performance and guarantee test measurements for customers with on-site instruments or portable measurement devices. This service is usually required when a reputable neutral party is needed for verification of plant performance. SOLVO™ software is a versatile tool which has been developed in-house by Fortum since 1991 for design and optimization of power plant processes for professional use. This software can be tailor-made to meet the customer's special needs such as offline, online or training mode. Training services for power plant operations and maintenance (O&M) are provided to power plant managers, engineers and operators from basic plant operation and maintenance to economics and advance knowledge of improving efficiency and availability in the power plant.

Thermal Performance

- **Fortum Ecotuning™**
Energy efficiency consultation (including plant process auditing, troubleshooting and optimization)
- **Remote monitoring and support services for power plants**
Periodic analysis of Power Plant Operation and Performance
- **Power plant performance and guarantee test measurements**
Measured by local or accurate calibrated measurements
- **SOLVO™-tool Power plant process simulation**
Offline, Online and/or Training mode
- **Training services**
Operations & maintenance of power plant

Figure 4. Thermal Performance's list of services.

As seen in Figure 4, the five major elements in the services provided by Thermal Performance product area focus mainly on plant operation and energy efficiency improvement programs which provide customers with monetary savings and safe operating conditions for their power plants. Profitability and safety comes hand-in-hand in modern power plant business.

3.2.2 Environmental Performance

The Environmental Performance product area provides customized combustion solutions and products for different types of combustion and fuels from pulverized hard coal, peat and biomass to oil and gas fired boilers. Combustion consultancy is provided for boiler performance analysis, combustion process optimization and operation load range improvement. Simulations of boiler combustion are done with computational fluid dynamics (CFD) method to analyse combustion conditions in boilers. Burner system modifications are done for pulverized hard coal, peat, biomass, oil and gas boilers not only to improve boiler reliability but also the gas emission limit to fulfil local environmental regulations. The project teams have expertise in turnkey project management that includes design and delivery of burners, project and site operations, commissioning of boilers, inspections and repair work. Figure 5 shows the summary of main services which are provided by Environmental Performance product area.

Environmental Performance

- **Combustion solutions and consultancy**
Feasibility studies and tailor-made solutions
- **Simulation of boiler combustion (CFD method)**
Computational modeling of combustion
- **Burner system modifications**
Low NO_x system modification for pulverized hard coal, peat, biomass, oil and gas boilers
- **Turnkey project management for combustion systems**
Design and delivery of burners, site operations, commissioning, inspection and repair

Figure 5. Environmental Performance's list of services.

As shown in Figure 5, the four major elements in the services provided by Environmental Performance product area focus mainly on comprehensive combustion solutions in traditional fossil fuel boilers as well as renewable fuel boilers. These solutions not only provide for better fuel efficiency but also for cleaner emission that adhere to strict environmental regulations. The project teams in Environmental Performance also provide turnkey project management to customers in their combustion system upgrade projects.

3.2.3 Maintenance, Planning and Engineering (MPE)

The MPE product area provides management consultancy to improve the availability of power plants through risk and reliability analysis using the Reliability, Availability and Maintainability (RAM) model and Life Cycle Cost (LCC) calculations. The availability improvements include the development of maintenance planning and structured overhaul management. MPE looks into power plant's asset health and life cycle through Life Cycle Management and proposes remaining life extension possibility on these critical assets. These are done with condition and lifetime analysis of the critical assets which are followed by long term planning of how they should be operated and maintained. Engineering and investment optimization is done with feasibility studies of different options that are available for power plant's development plans. The studies propose refurbishment projects and modernization investments which give the most rewarding development plans in terms of safety, reliability and availability to power plant owners.

Figure 6 shows the summary of main services which are provided by Maintenance, Planning and Engineering product area.

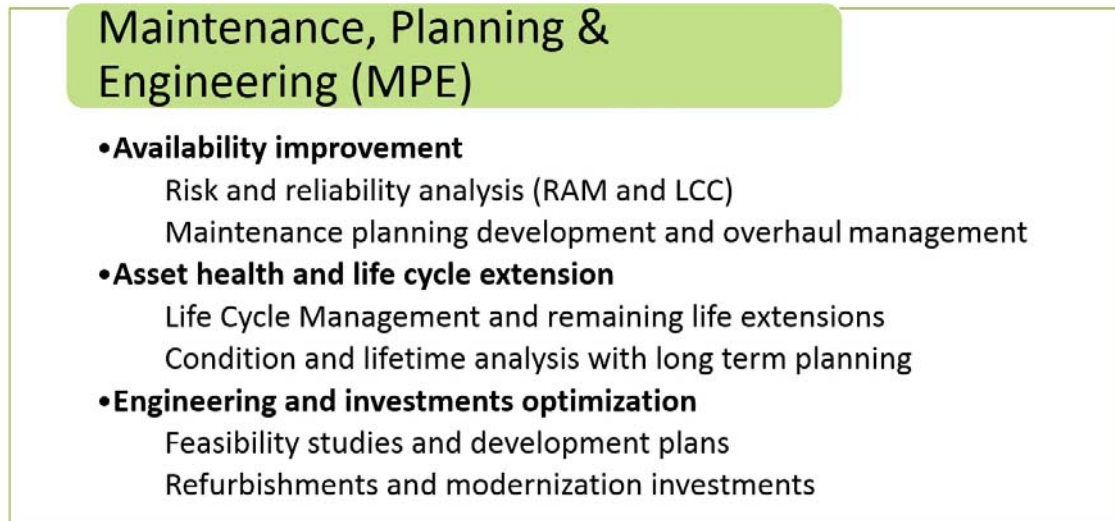


Figure 6. Maintenance, Planning and Engineering's list of services.

As seen in Figure 6, the three major elements in the services provided by Maintenance, Planning and Engineering (MPE) product area focus mainly on the lifetime and investment planning for customers who seek to maximise the investments in their power plant. With good maintenance and investment planning, customers can maximise their profitability in the long run.

3.3 Description of Current Project Implementation Process

The analysis here focuses on the project implementation process of Performance Group in Fortum Power Solutions business unit. Performance Group consists of three product areas, namely Thermal Performance, Environmental Performance and Maintenance, Planning and Engineering (MPE).

Figure 7 below shows the current project implementation process which is in practice in the group.

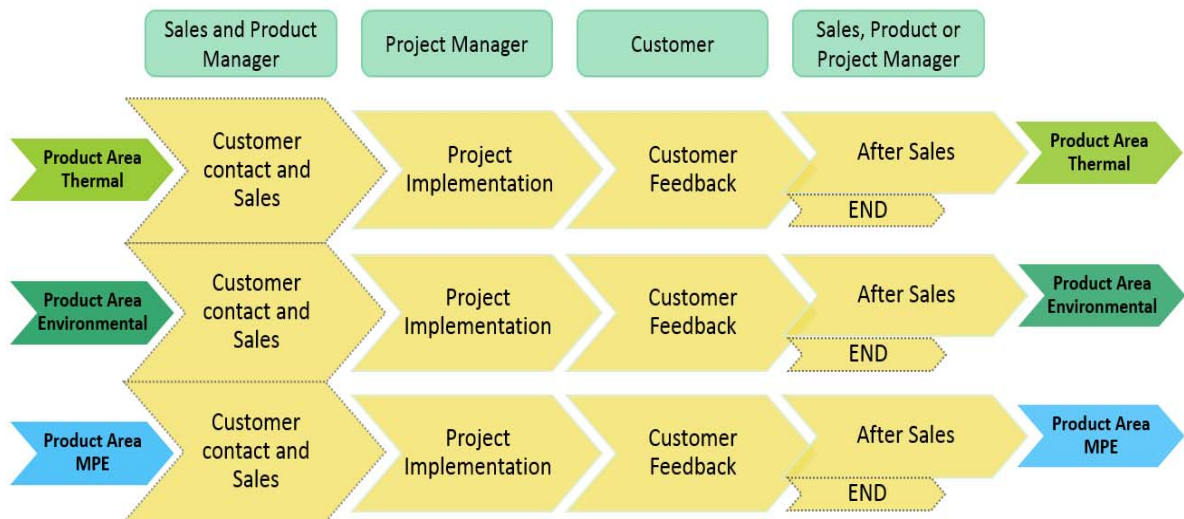


Figure 7. Current project implementation process.

As shown in Figure 7, each product area starts with the customer contact and sales which are the responsibility of the Sales and Product Manager. The Product Manager develops the products and services together with the Sales Manager for the customer. When the service has been ordered and purchased by the customer, it is handed over to the project team for project implementation under the responsibility of the project manager. Once the project is completed, the customer completes the project survey forms which are given to them to give feedback for the work done. In the following step, the process ends or there would be after sales activity where a follow-up product or service from the same product area is marketed to the customer by the sales, product or product manager. The follow-up service usually involves the supply of spare parts, inspection work, maintenance work and renewal of the service which had been delivered.

All the interviewees have described the project implementation process in a similar way throughout the three different product areas. By comparing the results from the interviews with the company written process of the project implementation plan, it shows that the process is consistent in the way it is written and executed. This demonstrates that the process is clearly understood and followed by all the respective interviewees. This is important because it shows that there are no discrepancies between written process and the real life practise in the department. Consequently, any process changes can be implemented and used in a consistent manner in the department.

3.4 Analysis of Current Process

The current project implementation process is analysed and improvement possibilities for the three different product areas are identified. These areas for improvements can be seen marked in red in Figure 8 below.

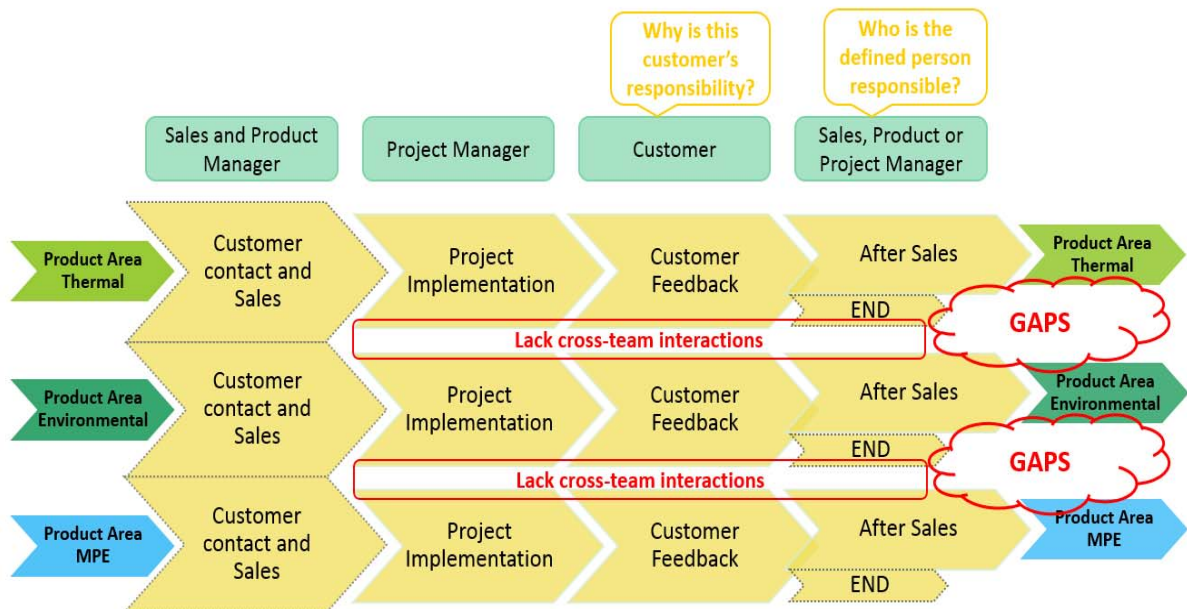


Figure 8. Improvement possibilities for project implementation process.

The main finding of this thesis can be clearly seen in the gaps which exist between the product areas as shown in Figure 8. Each team is only providing their own services from their own product area after project completion instead of offering services from the other two product areas which could be needed by the customer. In reality, the customer would have no reason to purchase the same services from the same product area anymore if their own issues are solved after the project completion. At the very most, the customer may purchase some spare parts and inspection work from the After Sales stage which have a rather small impact on the Performance Group revenue. Ideally, the After Sales stage should include providing the services of the other two product areas to the customer from the knowledge of the customer current realities and needs which have been obtained during Project Implementation and Customer Feedback stage. This enables the customer to continue their engagement within the company through different product areas. Accordingly, these additional needs of the customer can be fulfilled and more revenue can be gained by the Performance Group.

By looking at the process in reverse from these main gaps, it clearly shows that there is lack of cross-team interactions between the project teams from different product areas. All project teams work in silos and are focused on implementing their own projects of their own product areas. There is no pathway for cross-team interaction in place at the moment in the current process. Project teams are unclear about their roles and responsibilities concerning cross-team communication particularly when it involves critical information. In the same time, knowledge sharing is very limited and there is also no platform such as a tool or channel to enable cross-team communication. These topics came up during the interviews with the stakeholders in the Performance Group. The responses below show the lack of cross-team interaction as voiced by two interviewees.

We have no idea what type of projects are done, who are the customers, what are the scope of work that has been carried out by the other teams, what solutions have and can be provided to their customers and what are the benefits to customers, especially compared to our competitors, as well as our weaknesses. Documentation and knowledge sharing is limited.

Data 1: Interviewee 1, Project Manager

Project managers know the needs of customers but do not tell or inform each other because there is no method, procedure or tool to do so. Also Project Managers don't feel it's their role to do so.

Data 1: Interviewee 2, Product Manager

The lack of cross-team interaction causes the lack of understanding and knowledge of services which are provided by the teams from the other product areas. Hence, there is lack of ability by the project teams firstly to identify the customer needs beyond their own product area and this is followed by the lack of ability to provide these services to fulfil the customer needs. The results from the interviews on this point came up a few times to support this view as voiced by one interviewee below.

The project teams don't know enough about the other teams, so they cannot sell or identify customer needs. Project teams are mainly focused on their own services.

Data 1: Interviewee 3, Sales Manager

From the interviews, the interviewees agree that the project teams have the best opportunities to identify and provide additional services which can fulfil additional customer needs during the Project Implementation and Customer Feedback stages. The drawbacks during Project Implementation stage are: 1) the project team and customers themselves have limited time to enter into productive discussion on topics which are not related to the exact project in hand, and 2) the lack of knowledge of project team about services from other product areas hinders their ability to identify additional customer needs.

At the moment, the Customer Feedback stage is in the responsibility of the customer as stated in the company's project implementation process instead of being the responsibility of anyone from the Performance Group. Customers are sent project survey forms to fill in and the results are processed by the Product Manager and Project Team. If there is customer engagement after the Customer Feedback stage, there is possibility of After Sales stage where services from similar product area are provided. If not, the process ends without further engagement with the customer. This shows that the Customer Feedback stage is critical in maintaining customer engagement which can lead to business opportunities for the After Sales stage.

Currently, project survey forms are sent to customers either by the Product Manager or Sales Manager at the end of projects. Even though customers have the role to fill in project survey forms, the responsibility for obtaining customer feedback should lie on the shoulder of team members in the department. Without active participation coming from an internal entity from the Performance Group, customers are usually not motivated to complete any project survey forms which take up their working time. Even if the customers decide to fill in the project survey forms by themselves, the feedback provided are minimal. Consequently, the department receives minimal feedback from the customers. With active participation from team members, there would be interactive dialogues with the customers where more valuable information can be obtained in addition to further customer engagement. Therefore, the responsibility for obtaining customer feedback should not be taken up by an external entity, which in this case is the customer, but by the sender of the project survey form to ensure that useful feedback is received from the customer.

Interview results from Sales and Product Managers also point to the issue that the project teams lack basic awareness of marketing and sales skills which could enable them to

utilize all services available within the Performance Group towards meeting customer needs. The lack of these skills has hindered the ability of project teams from offering additional services from other product areas to the customer because it puts the project teams out of their comfort zone to go to areas that they are not specialized in. Adding to the fact that the project teams lack knowledge of the services from the other two product areas, this creates a barrier for them to venture into the unknown when discussing with the customer.

A secondary finding from the interviews and company documents review shows that there is also no defined person responsible for the After Sales stage from the Performance Group. As such, the customer engagement during the Customer Feedback and After Sale stages are not sufficient. At the moment, there is lack of focus on this stage and it has mostly been done as part of project closing discussion. This is also confirmed from the results of Customer Satisfaction Survey where customers note the lack of communication from the company as one of its weakness.

3.5 Key Findings from the Current State Analysis (Data Collection 1)

The current state analysis of the current project implementation process in the Performance Group has identified the main strengths which should be kept and weaknesses which should be improved in order to develop the cooperation of project teams across product areas focusing on utilizing all services available within the Performance Group towards meeting customer needs.

The two main strengths identified are the availability of a working process and the good professional relationship between all team members that exists at the moment. The project implementation process is clear and understandable by all stakeholders in the Performance Group. The process is practiced by all stakeholders and as such, it shows that the process is followed well. This is important because any process improvement can be implemented and followed through by the project teams. At the moment, there is a healthy work relationship among the project team members of different product areas where cross team support is easily provided when the needs arise. There exists open working relationships where all teams are able to ask and communicate freely. This is beneficial in order to create productive cross-team interaction pathways in the working process.

The main two weaknesses which are identified that require improvement are the non-existent pathway for cross-team interaction in the project implementation process and lack of platform for knowledge sharing among the project teams of different product areas. To clarify the situation, the atmosphere is good between the employees, but the collaboration in project implementation between teams is lacking.

The current project implementation process does not have any pathway to enable cross-team interactions. This has caused the project teams to work in silos where project teams are mainly focused on their own product area. As such, there is no possibility to share project works and statuses by project teams among each other, causing the absence of knowledge sharing between the teams across all the product areas. Firstly, there are no methods, procedures or tools for information sharing among the project teams. Even if there are leads and customer needs which are identified during project implementation stage and customer engagement, there is no platform for project teams to move forward with these information. Without such platform, the knowledge sharing is limited. Secondly, the roles and responsibilities of project teams are unclear concerning cross-team critical communication. This has caused communication and critical information breakdown which can otherwise be used to identify customer needs and provide more services to them. Essentially, these two weaknesses have caused the project teams inability to be aware of the entire span of services available by other product areas and utilizing all of these services to meet the customer needs.

Following these findings in the current state analysis section, existing knowledge on communication across teams and breaking of working silos are studied in the following section in order to build the initial improvement proposal.

4 Best Practice of Cross-Team Communication in Breaking Down Silos

This section discusses best practice in cross-team communication and information sharing in order to find the framework to break down information silos in the company. Firstly, it overviews the phenomenon of information silos that exist in organizations. Secondly, it discusses the method for sharing critical project information across different teams. Thirdly, it discusses the roles and responsibilities of team members in sharing project information. Finally, based on the findings of these best practices, a conceptual framework for this thesis is created to be used in proposal building in Section 5.

4.1 Overview of Information Silos

Information silo in the context of business organization can be defined as a group of employees within an organization that fails to communicate freely or effectively with other groups including management (Agnes 2016). This phenomenon mainly exists due to an organization culture that does not encourage sharing of knowledge by employees and lack of collaborative mind-set in the organization that begins from the very top of the organization. These negative behaviours tend to settle into the organization culture over time causing the build-up of information silos. The way the organization is structured also creates a low degree of collaboration and information-sharing among departments.

Organizations have traditionally been set up in vertical structures into different functional departments to fulfil their operating purposes (Crawford-Cook et al. 2004: 11). Traditional vertical organizations can survive routine day-to-day activities without any sudden changes to the standard processes. Kreissl (2012: 26) states that while organizing based on vertical functions allows specialization when it comes to products or services, it can create internal competition and lead to ineffective communication among different teams or departments. When there are any disruptive forces that enter into the routine, such organizations struggle to cope and overcome these threats. In the current situation, where the business environment is extremely dynamic and on-demand, organizations need to tear down the information silos in their organizations to enable their employees to manage such difficult environment.

The vertical organizational structure creates invisible departmental boundaries that discourage employees from other departments from interacting with each other and sharing information freely (Chung 1994: 21). As such, departmental goals are normally set in a

way that can cause conflicts among departments and create protective behaviour when it comes to information sharing between employees. The boundaries between departments create gaps among the employees, limiting their ability to communicate across departments. As the hierarchy goes lower, the gap between departments becomes wider and information sharing becomes harder (Chung 1994: 21). Information sharing becomes more complicated when the gaps grows wider because it will require communication with higher authority in the hierarchy where communication platforms exist.

Organizations which have managed a strong and open culture of information sharing between teams and departments will flourish even during tough times (Engel 2011: 20). Breaking down information silos helps organizations not only to fulfil the fast-changing demands of today's customers but also to react quickly when challenged by unpredictable outside forces.

4.2 Methods for Sharing Critical Project Information

Sharing of critical project information is considered a major activity in breaking down silos between departments in organizations. In spite of that, some organizations today still do not have systematic methods for sharing of information between employees of different teams and departments. The methods of information sharing in such organizations have been left to open interpretations by their employees resulting in communication breakdown between employees especially from different departments.

In the long term, this creates information silos between the departments and wastage of resources when similar work is repeatedly done by different departments. As an organization grows bigger in size and structure, the gaps in information silos between departments grow as well. It becomes more critical that systematic information sharing procedures are set up early and clearly to address this issue before it becomes harder to overcome.

Firstly, common organization vision and objectives will provide the foundation to define the collaborative approach to be taken by all employees in an organization. Good collaboration between employees requires everyone to understand overall organization goals and objectives. (Patel et al. 2012) Individual teams may have their own goals to fulfil their individual and team tasks and targets but this should not deviate far from the whole organization goals for collaborative work between departments. Teams that are given tasks

to complete in general terms without clear organization goals and targets will affect collaborative work negatively and limit sharing of information between different teams.

In terms of project teams and project implementation, clarity in communication and information sharing can be created by defining goals and expected project outcomes clearly and early in all projects. The failure to take these initial crucial steps in the beginning of projects leads to discovery of missing information that may cause changes to project plan and cost overruns. (Anantatmula 2010: 16) Clearly defined goals and targets contribute towards mutual understanding for good communication within and between teams during project implementation. With good communication, project plans can be followed closely and cost overruns can be avoided.

Secondly, employees and teams should have easy access to information which is needed for them to complete their tasks. Accordingly, they need the system to maintain information and also make it available when it is required. (Patel et al. 2012) Well managed and utilized information will allow employees and teams to gain better understanding of past and current projects, to be informed of the challenges other project teams are facing, to know from where to find collaborative solutions from within their organization to solve these challenges and to learn critical experiences from other teams in order to improve current and future project implementation.

Organizations with a collaborative work culture invest in keeping and maintaining their information storage well. According to Patel et al. (2012), these organizations provide clear guidelines, policy, information and documentation processes are set in place to ensure that all team members know the information that they should be recording and communicating and how they should do this. Patel et al. (2012) adds that organizations should ensure that the critical information is captured, stored, made available and utilized when needed by any employees. Clear guidelines and collaborative culture of trust between employees encourages information sharing and exchange which leads to organization goals being met.

Employees working in different departments have their own working skills and methods in implementing different tasks. Even though this diversity comes with many benefits to the organization, it can also create conflicting understandings in terms of work processes, language terms, metric system and to a certain degree, behavioural norms as well (Nunamaker Jr. et al 2009: 115). In any large organization structures with different

departments, standards and commonly used terms need to be agreed within the organization. Nunamaker Jr. et al. (2009: 115) states that this is an on-going process where there will be new standards and terminologies required for work processes which are constantly changing. As such, updates and continuous revision of the standards and terminologies needs to be done throughout the life-time of the organization.

Thirdly, there exist various collaboration tools in the market which have been developed specifically for the purpose of information sharing and management. Organizations invest in collaboration tools such as document management and storage systems, online diaries, video conferencing and reporting applications with the goals of boosting information sharing and work collaboration between employees in different teams and departments (Rosen et al. 2007: 269). However, according to Nunamaker Jr. et al. (2009), organization often do not take into account the additional work which is required by the employees to utilize these technologies from their regular work tasks. This is a point that needs to be taken into serious consideration by any organizations that plan to implement new collaborative tools.

Employees avoid using collaboration tools when they are required to put in extra work to use these technologies which is separate from their regular work. Implementation initiatives for these tools fail when employees are spending longer time amid their busy schedules to complete their task by utilizing new technologies. Systems that require employees to download software to be installed into a dedicated computer fail to take into account that employees may not be using the same computer every day. (Nunamaker Jr. et al. 2009: 116) Multiple software platforms which perform different functions demands that employees are constantly switching between platforms. Employees will eventually spend more time on the platforms which they are using most of the time and have the most functions, while foregoing the other platforms altogether. Accordingly, this creates an inconsistent utilization of the collaborative tools in the organization.

In order to implement collaboration tools effectively, one way would be to embed these tools into the existing work process and system (Nunamaker Jr. et al. 2009:116). This would allow implementation of new functions to the existing system without the need for employees to spend more time on additional systems. Another way would be to implement the 'right' tools which are able to cut down on existing work processes and remove the need to use multiple systems in the day-to-day work of the employees (Rosen et al. 2007:268). These new tools are easily accessible to employees such as cloud based

software which can be accessed on any web-browser and smart phones, removing the need for a dedicated computer to perform their functions.

Lastly, the organization needs to ensure the employees have the essential skills for usage of collaboration tools which are implemented and also for the act of collaborative behaviour (Patel et al 2012). Investing in the tools is the first step to build the system for information sharing and collaborative work. However, by having an overly optimistic view on the collaboration tools without having a practical implementation plan, this creates a potential barrier to an effective utilization of the tools (Patel et al. 2012). Hence, the employees should be provided sufficient training and guidelines to ensure proper utilization of the collaboration tools.

There are other factors that support collaborative behaviour related to the underlying culture and habits of the organization or team. Many teams have collaborative culture in their organization but they are not adept in collaboration methods. They are encouraged to collaborate, they are eager to collaborate but they do not know how to work well together in their own team and also in cross-team situations. (Gratton et al. 2007: 105) Organizations should be aware of the skills and behaviours that are required to execute specific collaborative tasks and provide training based on these needed skills to their employees.

A fairly recent study shows that certain skills are crucial in collaborative work between teams and departments, namely appreciation of others, engagement in purposely communication, creative conflict resolution and program management (Gratton et al. 2007: 106). By providing training based on these skills to employees, it can make a positive difference in team performance and build healthy professional relationship among employees. Accordingly, this leads to better collaboration between employees from different teams and departments in organizations.

4.3 Roles and Responsibilities in Sharing Project Information

In an organization, each employee from the lowest until the highest rank of the organization structure has their own roles and responsibilities. Each employee has specific responsibilities to perform multiple roles in fulfilling their work tasks which were set out

and their roles can be functional by each individual and team-based where they are interacting with one another and other teams. Employees of an organization are similar to each musician in an orchestra. If each member not only plays their part to their best but is aware of the others in the orchestra and plays together as a team, great music is created. If any of the team members is not playing to their optimal capabilities together in the orchestra, the music will only sound mediocre at best. Therefore, in order to achieve the best performance in any organizations, all employees must know their roles and responsibilities clearly and the roles and responsibilities of others in general. (Lunn 1997:10) Similarly in terms of information sharing and collaborative working between teams, each member must know their own roles and responsibilities. Collaboration is improved when individual and team roles are harmonized to meet organization goals.

Firstly, cross-team information sharing and work collaboration requires specific effort from employees to have a clear understanding of roles and responsibilities in different departments which can be difficult to achieve. Research shows that collaboration improves when the roles of individual employees are clearly defined and well understood by all. As such, individual employees know which of their tasks can be done independently and which needs to be done collaboratively through discussion and information sharing with others from within their own team and across other teams. (Graton et al 2007: 108) This clarity will enable employees to spend more time and energy working on their delegated tasks instead of using time and energy to negotiate roles and protecting their own territories.

In the situation where the leaders have to choose the main priority between defining the specific approach towards achieving the team goals or defining the roles of each individual team member, the benefit comes in choosing the latter. Teams are more likely to collaborate together if the direction to achieve the organization goals is left ambiguous as long as the roles of each teams and their members are defined clearly. (Gratton et al. 2007: 108) Teams will approach the direction towards its organization's goal as a task in creativity and are more likely to collaborate together to achieve it. However, role ambiguity and role conflict can result in physiological strain and poor performance in the whole organization in the end (Patel et al. 2012). When employees are working in such stressful environment, they lose focus of their roles and real work tasks. Therefore, roles of each individual team member have to be defined clearly.

Secondly, leaders represent the impression of the teams that they lead both internally and externally. They drive their teams' directions and paths towards the goals they want to achieve. As such, leaders play the crucial role of information sharing role models to encourage their team members to emulate their actions (Rosen et al. 2007: 269). Rosen et al (2007) adds that, leaders are responsible for clarifying expectations on the use of collaboration tools for information sharing and train employees on the usage of it. Therefore, leaders are responsible for establishing common rules on information sharing for all the employees in their team and enforcing these rules with their teams. Employees need to be informed of the importance of information sharing in order to achieve their team and organization goals.

Rosen et al. (2007: 269) states that leaders are also responsible for developing communication routines, such as regularly scheduled meetings, videoconferences, or other form of communication. Leaders are also responsible for consistently asking for updates from their teams and providing updates of other teams' work (Rosen et al. 2007: 269). This means that leaders practise what they preach by consistently acting on the routines which have been developed and using collaborative appropriately to improve information sharing. When everyone follows through with the scheduled updates and information sharing routine, this leads to successful collaboration across different teams.

Thirdly, when implementing any new initiatives, organizations typically face resistance to change. In order to motivate employees to embrace changes, leaders are responsible for providing not only clear information and benefits of new initiative but also incentives to employees as well (Krauss 2014: 26). Similarly, in terms of information sharing initiatives and utilization of collaboration tools, employees can be motivated by rewards provided individually and also to their teams. Leaders are responsible for providing rewards for positive behaviours in information sharing (Engle 2011: 20) and employees who adhere to common rules of information sharing.

Performance measurements are usually based on individuals and teams which can create barriers in work collaboration and information sharing between employees and different teams (Krauss 2014: 24). Leaders together with Human Resource department are responsible for updating performance measurements and rewarding incentives that encourages work collaboration and information sharing. Employees are still measured individually with new measurement to be based with criteria that support information sharing (Crawford-Cook et al 2004: 13). In order to encourage collaborative work, rewards

should be more focused on team goals rather than individual goals, thus providing motivation for employees to work together.

Lastly, the implementation of new initiatives will require continuous support and commitment of resources after the initial investments. When implementing utilization of collaboration tools in information sharing, leaders must accept that in order for the initiatives to be successful implemented, resources have to be invested even after the primary investment of the tools (Patel et al. 2012). Patel et al. (2012) also state that employees will need additional time to familiarize themselves with the tools and new working processes. New information sharing methods may require new collaborative activities between employees that build communal spirit and are not related to their project implementation work (Gratton et al 2007: 106). The value-added responsibilities and tasks for utilizing new collaborative tools may not be directly connected to their core work in the organization. However, if these resources are not committed by the leaders toward information sharing and collaborative work (Crawford-Cook et al. 2004:13), the implementation of such initiatives will unlikely be successful in the long run.

4.4 Conceptual Framework for Best Practice of Cross-Team Communication in Breaking Down Silos

The findings from the best practice of cross-team communication in breaking down silos from academic literature and business journals that are relevant for this thesis are summarized into a conceptual framework as shown in Figure 9. The conceptual framework consists of two main elements needed for cross-team communication in sharing of project information in customer project implementation. The first element states the methods for sharing critical project information and the second element states the roles and responsibilities for sharing project information. Both of these elements are linked together for the information sharing during customer project implementation. The relevance of these two elements to the weaknesses of current state is shown in Figure 9 below.

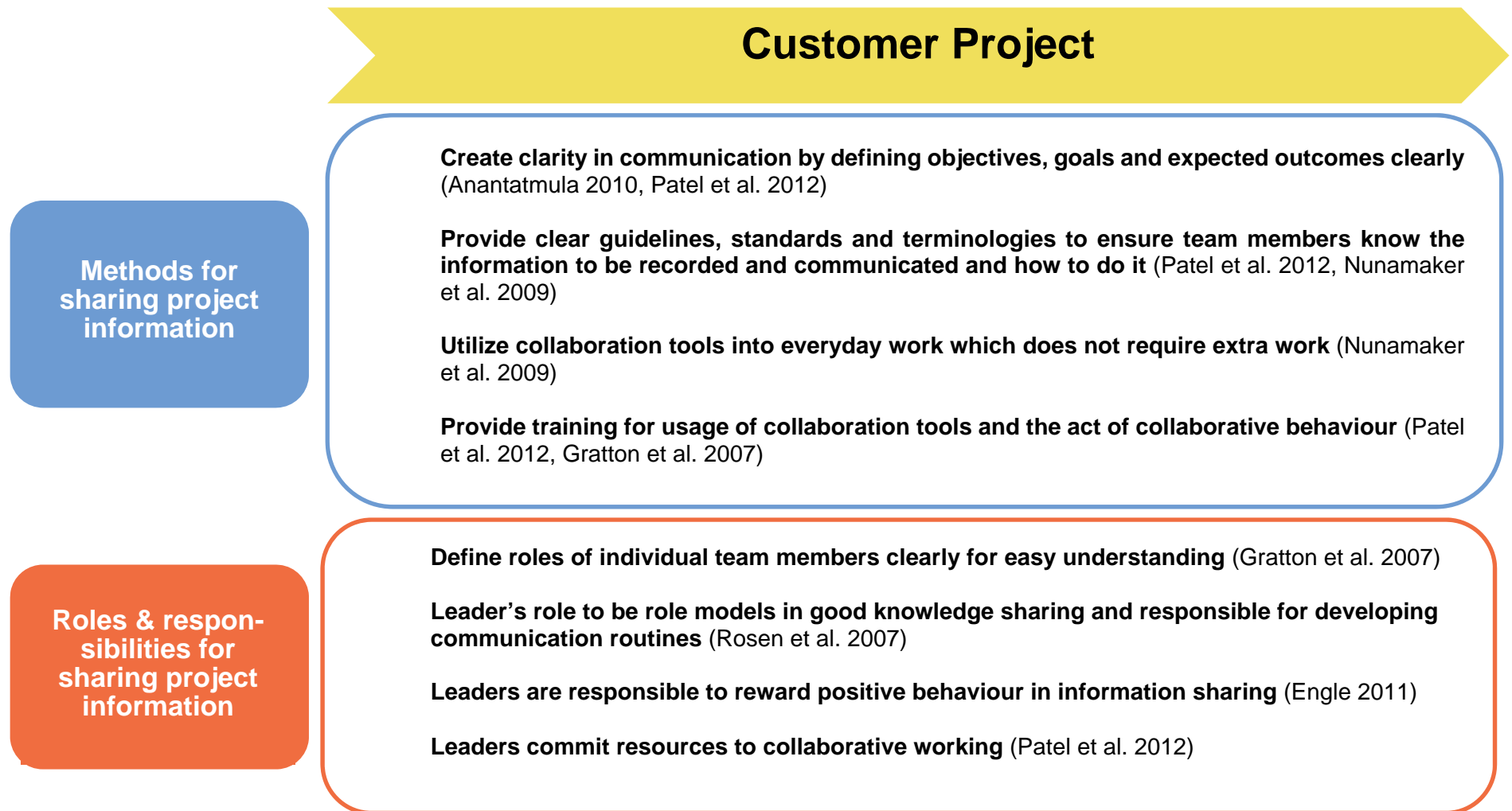


Figure 9. Conceptual Framework for Best Practice of Cross-Team Communication in Breaking Down Silos.

As seen in Figure 9, in the course of implementing customer projects, the two elements which are important for teams in an organization to break down information silos are methods to share critical project information and roles and responsibilities of team members in sharing project information. In each of these two main elements, there are detailed sub elements which explain the main elements in more detail.

The methods for sharing critical project information elements start with creating clarity in communication in teams by defining objectives, goals and expected outcomes clearly to all team members early on in all projects. Following that, clear guidelines, standards and common terminologies are provided to all team members to ensure everyone knows the information to be recorded and communicated and how to do it. Collaboration tools are implemented and utilized into everyday work which does not require extra work for team members. Training is provided for the usage of collaboration tools and also the act of collaborative behaviour to all team members for improved information sharing and collaborative across teams.

In the roles and responsibilities for sharing project information element, it states that the roles of individual team members are defined clearly for easy understanding by all. Leaders play the role of role model in good information sharing and are responsible for developing communication routines in their teams. Leaders are also responsible for rewarding positive behaviour in information sharing. Finally, in order to ensure the successful implementation of information sharing initiatives, leaders are responsible for committing resources to collaborative working.

These two main elements form the basis for teams in an organization to break down information silos across teams and departments. In the next section, this conceptual framework is applied in building up the development plan for the case company.

5 Building Proposal for Developing the Cooperation of Project Teams across Product Areas

This section utilizes the findings from the current state analysis (Section 3) and the conceptual framework (Section 4) to build the proposed action plan for the case company to improve the cooperation of project teams across different product areas. This is done in two workshops with the stakeholders.

5.1 Overview of Proposal Building Stage and Findings from Data 2

Firstly, the proposal building workshops started with presentation of the findings from the current state analysis to the stakeholders. Secondly, the conceptual framework for the best practice of cross-team communication in breaking down silos was introduced to the stakeholders. Thirdly, the stakeholders discussed and came up with ideas and solutions to improve the business challenge based on the findings from current state analysis and the conceptual framework. Finally, the ideas and solutions were used to create the initial proposal

Two main weaknesses which need to be improved were identified from Data 1 interviews in the current state analysis. Firstly, the interviews revealed that there are no methods, procedures or tools for information sharing among the project teams. Secondly, the roles and responsibilities of project teams are unclear concerning cross-team critical communication. These issues were summed up in the interview with one of the stakeholders, as follows:

Project managers know the needs of customers but do not tell or inform each other because there is no method, procedure or tool to do so. Also Project Managers don't feel it's their role to do so.

Data 1: Interviewee 2, Product Manager

Based on the weaknesses which were identified in the current state analysis, best practices from other organizations and academic literature were then studied to find the best possible solution to improve these two key issues. These issues are reflected in the conceptual framework in two main elements, namely the methods for sharing project information and roles and responsibilities in sharing project information. They are discussed in more detail in Sections 5.2 and 5.3.

Two workshops were held where all stakeholders who participated in the interviews for the current state analysis were invited to attend. However, not all stakeholders attended the workshops due to business trips that coincided with the workshops. Overall, five out of the eight stakeholders participated in the two workshops. In the workshops, the results from the current state analysis were presented firstly and this was followed by a presentation of the conceptual framework which was developed based on the literature studies done by the researcher. After reviewing these two aspects of the thesis findings, the stakeholders discussed the ideas which can be used to improve the cooperation between different teams across different product areas. The workshop minutes form the basis for Data 2 in this thesis.

Based on the information from Data 2, an initial proposed action plan is created. The initial proposal is divided into two segments, with each covering both elements of the methods for sharing project information and roles and responsibilities for sharing project information. The first segment discusses the action plan to enhance cooperation at different project stages. This is explained in detail in Section 5.2. The second segment discusses the action plan in enhancing cooperation in the overall work situation in the Performance Group. This is explained in detail in Section 5.3.

5.2 Enhancing Cooperation at Project Stages

The project delivery has been divided into four different stages, beginning with the Starting Point, followed by Project Implementation, then Customer Feedback and finally After Sales. At these different stages, there are specific methods and roles and responsibilities for project information sharing which can be improved to enhance the cooperation between different teams. Each of these improvements are discussed in detail in the following sub-sections.

5.2.1 Starting Point

At the Starting Point stage, the Project Manager play the roles of Offer Manager and is responsible for preparing the customer offer based on customer requirements or from the tender documents. The Product Managers share the services which are available from their product areas and the Project Manager will then prepare the customer offer

which fulfils the customer requirements. Additionally, the Project Manager identifies the possible value added options on top of the main customer offer. At the Starting Point, these additional options are kept minimal and are related to the main customer offering. Project Manager gathers all the necessary project information from the discussions with all the Product Managers in order to prepare the Customer Offer. When the offer is accepted by the customer, the Project Manager continues with the next step as the Project Manager to the said customer. By being involved right from the Starting Point stage, the Project Manager faces minimal challenge of information breakdown between Starting Point stage and Project Implementation stage.

5.2.2 Project Implementation

After the customer has accepted the Customer Offer, the project proceeds to the Project Implementation stage. At this stage, the project team works to deliver the services which were set out in the Customer Offer. While implementing the project, the project team has a good opportunity to identify the other customer needs which are unfulfilled by the Customer Offer. Sometimes, the customer themselves approaches the project team to ask for solutions and services which are out of the scope of the Customer Offer. The Project Manager's responsibility is to identify and inform any additional customer needs to his company. When additional customer needs are identified, the Project Manager contacts directly the relevant Product Managers. In case when the exact product areas are not known, the Project Manager contacts his/her own immediate superior who then will contact the relevant Product Managers. With the information of additional customer needs, the company can provide further services to the customer on top of the original customer offer.

During the Project Implementation stage, Project Engineers are responsible to fill in work activities to project diary (FRIDA). The work activities and project status can be tracked and shared this way with each team member and also with other project teams as well. The Project Managers can organize and plan the manpower resource better in the Project Implementation stage when project statuses are shared among project teams. This can assist in preventing work delays and in some cases even speed up the project work. The Project Manager is responsible for ensuring that his team members are utilizing the project diary (FRIDA) constantly to keep their work progress updated.

5.2.3 Customer Feedback

When the Project Implementation stage is completed, the customer is requested to provide feedback regarding the delivery of services which had been provided to them by the respective Project Team. The feedback from the customer is then handed over to the Product Managers, Sales Managers and Department Head. The Product Manager is responsible for presenting the findings from customer feedback to the respective Project Team. The Product Manager is tasked to discuss these findings from customer feedback with the project teams in order to identify the positive actions to keep and the areas to improve for future project deliveries. The Product Manager is also responsible for sharing the findings to teams from other product areas via team meetings and case company's information sharing portal, SharePoint.

5.2.4 After Sales

Once the Customer Feedback stage is completed, the After Sales stage takes place immediately where new service offerings are proposed to the customer. The Project Manager together with the Product Manager and Sales Manager discuss and strategize internally the follow-up offers to the customer. The Project Manager is responsible for informing the Product Managers and sharing information regarding other customer needs which may have risen during all of the project stages. In the same time, Project Manager informs the Sales Manager the relevant persons in the customer's organization with specific needs. With a detailed and thorough information exchange between these three parties, a robust strategy can be formulated at the After Sales stage.

5.3 Enhancing Cooperation in Overall Work

In addition to the improvements in specific project delivery stages, there are improvements that are crucial to be implemented at all project delivery stages and overall work situation in the Performance Group to enhance cooperation between project teams in all product areas. These improvements covers the overall work situation in the whole department. The methods and roles and responsibilities for sharing project information are listed in three categories, namely Tools and Training, Meetings and Information Management. Each of these categories are discussed in detail in the following sub-sections.

5.3.1 Tools and Training

Collaboration tools are already used in the daily work of all employees in the Performance Group. However, at the moment, email and calendar software (Outlook) and file sharing application (SharePoint) functions are used inconsistently between the team members. Still, the management of Power Solutions have also decided to invest in new collaboration tools (FRIDA and M-Files) to improve information sharing in the business unit.

In order to ensure the consistent utilization of all the collaboration tools, guidelines and functions of the tools would need to be defined. The management would need to be responsible for setting up a task force for implementation of new collaboration tools and developing guidelines to ensure a consistent utilization by all employees. The task force will define the functions of the tools and explain the reasons and benefits of existing and new tools to all employees in the department. After discussing with all employees in the department, the task force will decide on how the tools are used and develop guidelines for the utilization of the collaboration tools.

Guidelines for the existing collaboration tools (Outlook and SharePoint) would need to be developed as soon as possible to allow all employees to benefit from the utilization immediately. Outlook's Calendar functions need to be fully utilized by all employees in the Performance Group and at the same time be made fully open and transparent to all. This information of personnel resource status will assist Project Manager to locate available resources when the need arises. SharePoint information sharing methods would need to be defined and documentation coding and storage would need to be established in order to enable all team members to share and find information with ease. Documentation coding and sharing is discussed further in Section 5.3.3.

All employees in the Performance Group would need to be provided with training on the utilization of all the collaboration tools to ensure that the functions of these tools are used consistently by all and the benefits of these tools are fully applied in daily work to enhance cooperation between all project teams. The management needs to be responsible for providing training for all employees with suitable incentives. The incentives can be for example, having training camps out of office site which incorporate team building activities, setting the completion of training programs as part of employee's KPI or providing

training certificates to employees who complete the training programs. Training for utilization of all collaboration tools would need to be made as a standard for all new recruits as part of orientation program when they join the department.

For the Project Managers to be able to identify additional customer needs and make additional service offerings to their respective customers, they need to increase their knowledge and competencies regarding service offerings in all product areas inside the Performance Group. The Product Managers would need to be responsible for providing training and information sessions about available services in their product areas to the Project Managers. This is a reoccurring process that would need to be done whenever there are new services developed in the respective product areas. Accordingly, the Project Managers will be kept up to date with the latest service offerings.

5.3.2 Meetings

One of the most efficient and fast ways to share and disseminate information is done through meetings. Even though team members are constantly engaged with their project and daily tasks, sufficient time should be set aside for team members' engagements through scheduled department meetings and information sessions.

A Monthly Update session needs to be held in the Performance Group to inform all team members on the high and low points of the department. The Department Head needs to be responsible for holding this update session. The Monthly Update sessions consist of quick summaries of all active projects in the department, status of department goals and EHS (Environmental, Health and Safety) issues. These sessions will be held on the first Monday of every month for up to 30 minutes. In addition, a notification board will be provided to show all the current active projects and the project managers who are responsible for them. The department head needs to be responsible for revising the notification board monthly after the Monthly Update sessions. Open information regarding all project statuses enables Project Engineers and Project Managers to take initiatives to support and be active in other projects.

A Project Managers Meeting (PMM) needs to be held every quarterly for the Project Managers to update the status of on-going projects and share learning experiences of projects which have ended. This meeting is beneficial to share information regarding the availability of resources and knowledge of challenges faced by other project teams. In

this meeting, the Customer Feedback findings from completed project can also be shared with all teams. This meeting will be a half day program and will be opened to all employees in the Performance Group. The Project Managers, as part of their job scope, need to be responsible for presenting and disseminating their project information in Project Managers Meeting. The Department Head needs to be responsible for championing and chairing the Project Managers Meeting. He would also need to be responsible for committing resources in allowing all employees to participate in this meeting.

A proposed schedule for meetings is shown in Table 5 below.

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Update Session	○	○	○	○	○	○	○	○	○	○	○	○
Project Managers Meeting			○			○			○			○

Table 5. Proposed meeting schedule.

As shown in Table 5, the suggested meeting schedule will give sufficient information to all team members in the Performance Group. The Monthly Update sessions will inform the summary of monthly department situation. The Project Managers Meeting will be held quarterly and this schedule is suitable to address a more detailed status of the projects. The fiscal year for the company starts in April and a meeting in March will be able to give an up-to-date status check of all the projects before the financial year ends. In addition, the meeting in June will be suitable to be held before most of the employees start their summer holidays.

5.3.3 Information Management

In order to utilize the information sharing applications, SharePoint and M-Files, to their fullest potential as an efficient information sharing and storing system, systematic documentation coding or numbering needs to be established. Standards on how documents are stored also need to be set out in the guidelines. A systematic document management will ease all team members in sharing and obtaining necessary information for their project and daily tasks.

The document labelling needs to be started by codifying documents in addition to the document name which is currently done. The document coding system will be separated

into 5 segments, starting with *Customer Site*, *Document Type*, *Area of Discipline*, *Document Status*, and *Version Number*. An example of the document coding system can be seen in the example below.

The general document code starts as:

AAA-BB-CC-DD-xx (document name)

For example, a selected document is made for Krakow Power Plant (*Customer Site*) for a project (*Document Type*) in the field of automation (*Area of Discipline*). The document is a final as-built document (*Document Status*) and has been revised twice (*Version Number*). With this known information, a team member can refer to the proposed coding table to label this document. The proposed coding table is shown in Table 6 below.

	Segment Description	Code	Name
AAA	Customer Site	HAN	Hanasaari Power Plant
		HEM	Hemweg Power Plant
		KRA	Krakow Power Plant
		SUO	Suomenoja Power Plant
		WRO	Wroclaw Power Plant
BB	Document Type	TD	Tender/Offer Document
		PJ	Project Document
CC	Area of Discipline	AU	Automation
		EE	Electrical
		ME	Mechanical
		PR	Process
DD	Document Status	BD	Basic Design
		DD	Detail Design
		FD	Final Design
xx	Version Number	01	
		02	
		03	
		...	

Table 6. Proposed document coding table.

Based on the information shown in Table 6, the selected document is coded as follow:

KRA-PJ-AU-FD-02 Logic Diagram

New codes are created if the item for the document is not found in the coding table. Dedicated persons or team needs to be responsible for managing document storage,

updating the coding table, updating guidelines and ensuring the guidelines for document management are followed by all team members. They will also be the key contact persons for all team members to clarify any uncertainties regarding document management. The Department Head needs to be responsible for nominating these persons to this role. Special incentives would need to be provided to the nominated persons because this is considered an additional task to their daily tasks.

5.4 Summary of Initial Proposal

The initial proposal for developing the cooperation of project teams across product areas is set out in an action plan diagram. The action plan lists all the methods and roles and responsibilities for sharing project information in project stages and overall work situation. This action plan is shown in Figure 10 below.

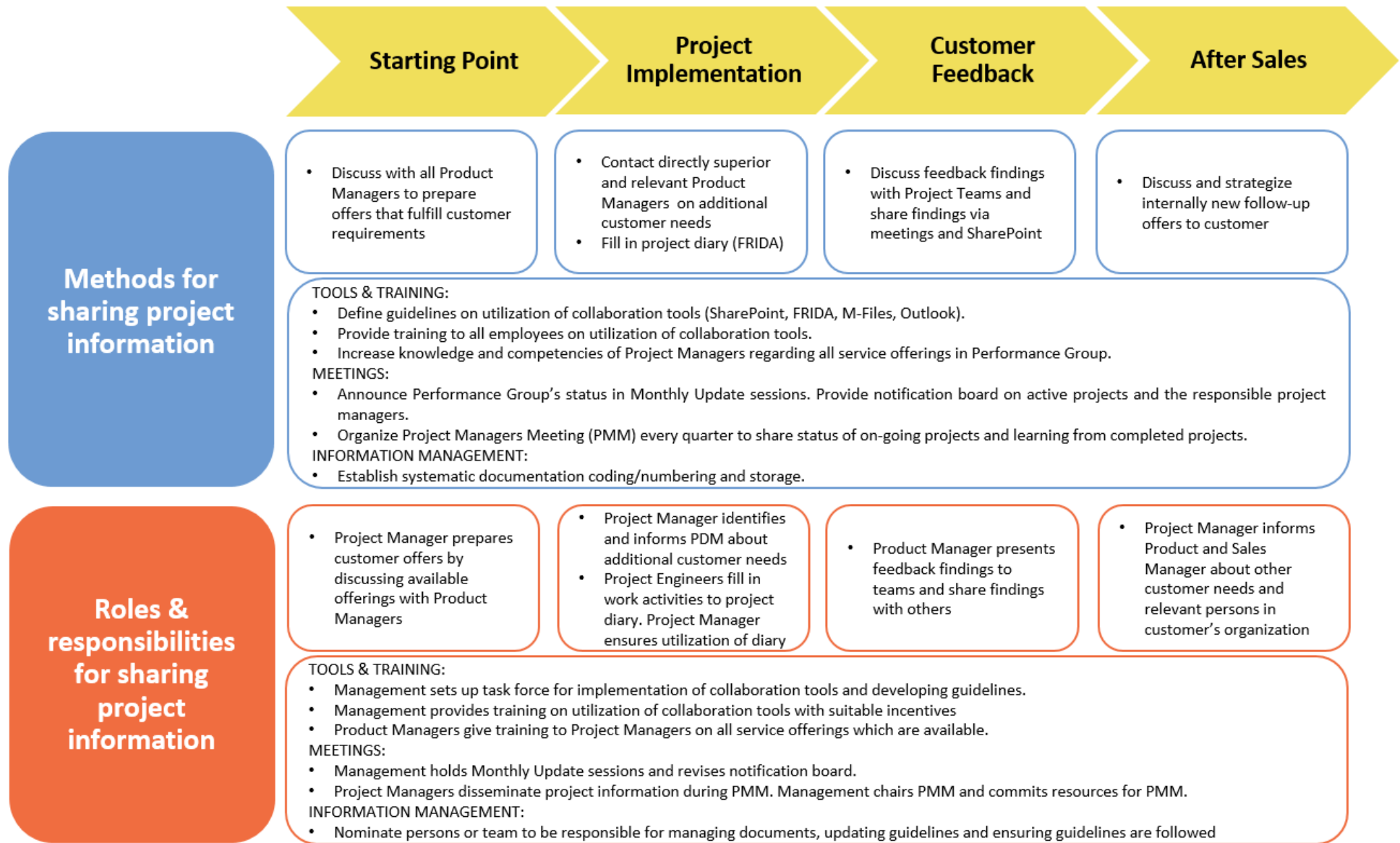


Figure 10. Initial Proposed Action Plan for Developing the Cooperation of Project Teams across Product Areas.

As shown in Figure 10, the initial proposed action plan to enhance cooperation of project teams is divided into two segments; 1) project stages, and 2) overall work situation. In both segments, they cover the methods and roles and responsibilities for sharing project information. In each project delivery stage, there are actions set out in each stage that covers the methods to enhance team cooperation and the respective roles and responsibilities of different team members to act upon these methods. Similarly, in the overall work situation, actions are set out with methods and their respective roles and responsibilities in three categories, namely Tools and Training, Meetings and Information Management. The proposed action plan aims to enhance the cooperation of team members in information sharing in the Performance Group.

In the next section, this initial proposed action plan is validated and improved for the final proposal.

6 Validation of the Proposal for Developing the Cooperation of Project Teams across Product Areas

This section discusses the methods of validating the initial proposal (see Section 5). The feedback from the validation is stated and taken into account for the final proposal. After the final proposal is completed, it is given to the company management to be approved for implementation in the department.

6.1 Overview of Validation Stage

Firstly, the validation of the initial proposal was done in a workshop with the stakeholders who had participated in the initial interviews in the CSA stage (the Project Managers and Product Managers) and the Department Head who is responsible for approving the proposed action plan for implementation in the Performance Group. The workshop started with a presentation of the findings from the initial one-to-one interviews for the CSA, the conceptual framework and initial proposal that was created in the earlier workshops. All participants in the workshop shared their opinions and improvement ideas on the initial proposal to develop the final proposal.

Secondly, after the first validation workshop, a second workshop was held in a smaller group together with the Product Managers to discuss the main priorities in the initial proposed action plan and how to move forward with the action plan. The workshop memos from these two validation workshop form the basis for Data 3. Based on the information from Data 2, the final proposed action plan is created.

6.2 Developments to Initial Proposal

The feedback for the initial proposed action plan discussed in Section 5, was collected from the workshop with the Project Managers, Product Managers and Department Head. The feedback from this work is shown in Table 7. The nature of the feedback is emphasized with colours and symbols: green and ☺ signify positive feedback, yellow and 😐 signify neutral feedback and finally red and ☹ signify negative feedback.

Persons	Direct Quote (Data 3)	Nature
Department Head	"The proposal is good in general because it addresses some existing issues that we already noticed and points out new issues which we did not see before."	😊
Product Manager 1	"The actions that are listed in the proposal are clear, straight forward and practical."	😊
Product Manager 2	" These actions are all doable"	
Project Manager 1	"The action plan is clear and detailed."	😊
Project Manager 2	"We are not able to develop any guidelines for M-Files until the contract has been signed with software supplier."	😐
Department Head	"It is difficult to implement and ensure the guidelines are followed without employees' discipline and motivation."	😞

Table 7. Feedback on the initial proposal.

The yellow feedback signifies neutral feedback because it implies the current reality that the information sharing software (M-Files) is currently not in used. The guidelines for utilization of M-Files would need to be started once the software has been purchased and is ready for implementation in the company.

The red feedback signifies negative feedback because it shows the uncertainty in regards to implementation of the action plan. However, this feedback covers a different topic of the thesis. The feedback discusses the topic of employee motivation and discipline in general and not on the feasibility of any specific actions. Therefore, there are no content changes to be made to the initial proposal, but the main priorities will be highlighted .

Following the first validation workshop, a follow-up workshop was held with the Product Managers to discuss the initial proposal in more detail. The workshop focused on finding the main priorities in the initial proposed action plan which need to be implemented immediately in the Performance Group. These main priorities were chosen based on the

speed of implementation, the available resources and the impact on the rest of the action plan.

Firstly, the knowledge and competencies of the Project Managers regarding all service offerings in the Performance Group would need to be increased. When the knowledge and competencies are increased, the Project Managers would be able to prepare customer offers in the Starting Point stage, identify additional customer needs in the Project Implementation stage and strategize internally with the Product and Sales Manager on customer offers in the After Sales stage. Secondly, Monthly Update sessions need to be held and followed with postings on notification board showing the active projects and the responsible project managers. The updates of the Performance Group will allow all team members to know what the projects and customers are that the department is working with currently and seize any opportunities to discuss with the relevant project managers for information sharing. Thirdly, Project Managers Meeting (PMM) needs to be organized every quarter to share status of on-going projects and learning from completed projects. This meeting will allow the sharing of customer feedback between all teams and assist team members to strategize on the customer offers in the After Sales stage.

The other actions in the initial proposal need to be implemented gradually in order to improve the cooperation of the project teams across all product areas in Performance Group.

6.3 Summary of Final Proposal

Based on the feedback received, the initial proposal was updated to form the final proposal of an action plan for developing the cooperation of project teams across product areas. The action plan is set out in a diagram as shown in Figure 11. There are no dramatic changes between the initial proposal and the final proposal. The main change is the highlighted main priorities in the action plan to be implemented immediately in the Performance Group.

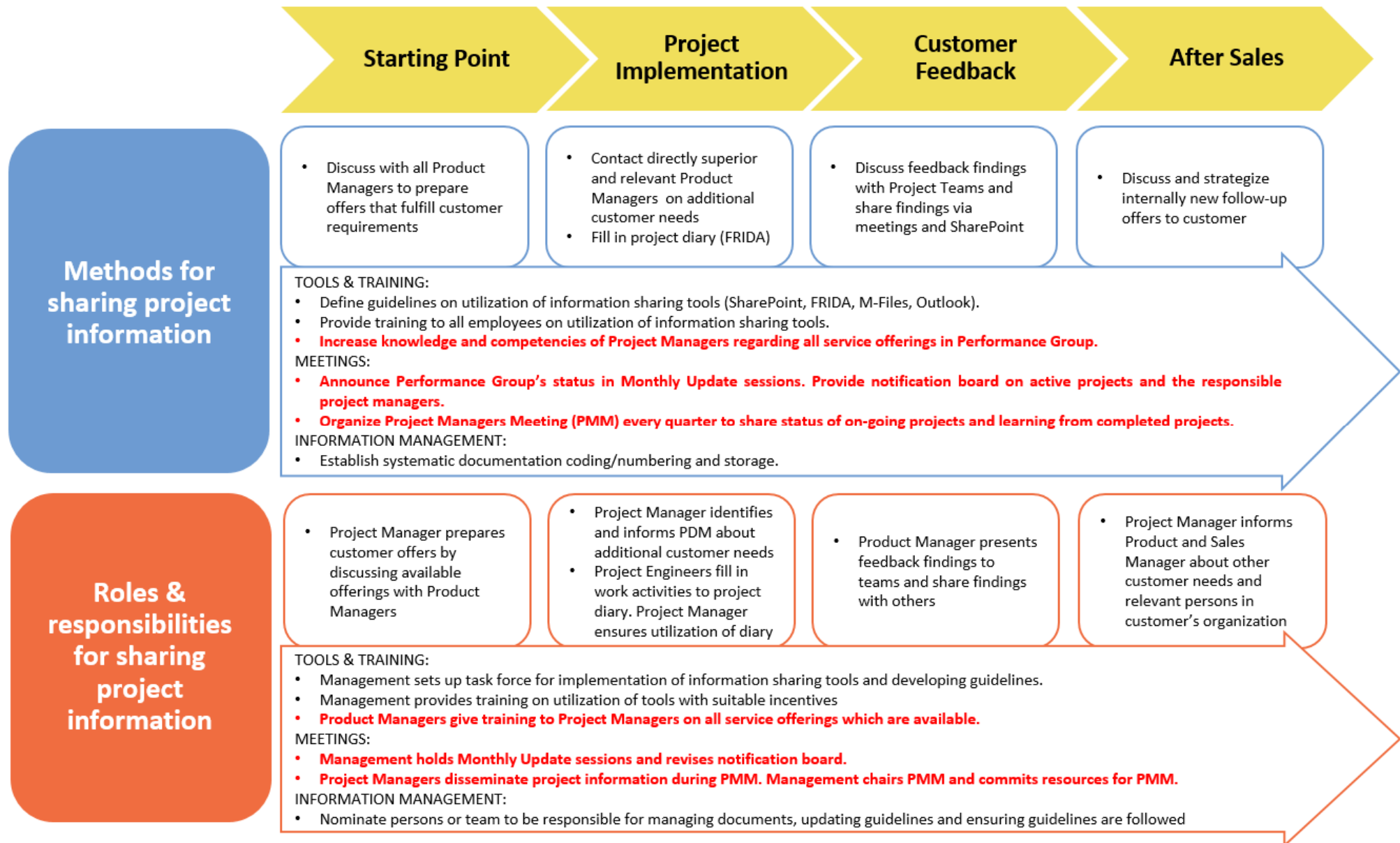


Figure 11. Final Proposed Action Plan for Developing the Cooperation of Project Teams across Product Areas.

As shown in the final proposed action plan, the action plan is divided in two elements that are crucial to address the weaknesses that were identified in the current state analysis. These elements are methods and roles and responsibilities for sharing project information to enhance cooperation between teams. The action plan is set out in two separate segments, namely in project stages and overall work situation. In project stages, it begins at the Starting Point stage, this is followed by the Project Implementation stage, then the Customer Feedback stage and finally the After Sales stage. In the overall work situation, actions are set out with methods and their respective roles and responsibilities in three categories, namely Tools and Training, Meetings and Information Management.

The three main priorities to be focused on and implemented immediately are; 1) to increase knowledge and competencies of Project Managers regarding all service offering in Performance Group, 2) to announce Performance Group's status in Monthly Update sessions and to provide a notification board showing all active projects and the responsible project managers and 3) to organize Project Managers Meeting every quarter to share on-going projects and learning from completed projects.

6.4 Recommendations

The next steps will be to follow-up on other actions in the action plan, namely to define guidelines on utilization of information sharing tools, to provide training to all employees on utilizing these tools and to establish systematic documentation numbering and storage. At the moment, there is existing information sharing software (Outlook and SharePoint) which are being used in the department and in the same time, new information sharing software are being acquired (FRIDA and M-Files) to be used in the whole Fortum Power Solutions business unit. For the moment, the usability of existing software is not finalized yet. The implementation plan and functionality of the new software have also not been decided yet. There could be a possibility the new software may be implemented in the Power Solutions business unit and not only in the Performance Group. The utilization of existing software, mainly SharePoint, may change as well when these new software are implemented. Therefore, it will be best to proceed with these actions only after the final decisions on the exact software utilization plan for the Power Solutions business unit are made.

Additionally, responsible persons need to be nominated to each of the actions in the action plan. The clearly defined goal and time deadline of each action would need to be set out in order to measure the progress and success of the implementation of this action plan. If proven successful, the next step is to propose the action plan to be implemented in the whole business unit.

7 Discussion and Conclusions

This section presents the summary of the thesis and evaluates the outcome of the thesis. The evaluation focuses on thesis outcome versus the objective as well as relevance, logic, validity and reliability of the thesis.

7.1 Executive Summary

The objective of this thesis was to develop the cooperation of project teams across product areas focusing on utilizing all services available within the Fortum Power Solutions Performance Group towards meeting customer needs. The chosen organization is a department inside Fortum Power Solutions, a business unit that provides technical services in energy industry in Fortum Oyj. The department consists of three product areas and several project teams with each implementing customer projects that are handed over by the sales managers. The project teams in each product area work in silos, i.e. separate from the other product areas and this has led to individual project teams not being aware of the entire span of services that are provided by other product areas. This means that customers who typically have needs in addition to the bespoke product area's service offering, are not afforded other service offering from the two other product areas to fulfill these additional needs. Hence, business opportunities are lost. The outcome of the research is an action plan to enhance the cooperation between project teams in breaking down communication silos that exist in the department.

The current state analysis (CSA) was conducted in one-to-one interviews with stakeholders in the Performance Group. On the strengths side, the study found that the existing project implementation process is clear and understandable by all stakeholders in the department. As such, the process is followed well by all in the department. At the same time, there is a healthy work relationship among project team members of different product areas where general cross team support is easily provided when the needs arise. There exists an open working relationship between all team members whereby they are able to ask and communicate freely with each other on a general level.

However, the study found weaknesses in cross-team communication regarding different customer requirements which needs further improvement. There is currently no existing pathway for cross-team interaction in the project implementation process and there is a lack of platform for knowledge sharing among project teams of different product areas.

This has caused project teams to work in silos where they are mainly focused on their own product areas. A more detailed study shows that there are no methods, clear procedures or tools for information sharing among project teams. In addition, the roles and responsibilities of project teams are unclear concerning cross-team communication. These weaknesses have created information silos in the department which needed to be tackled to enable project teams to be aware of the entire span of services which are available by other product areas in order to utilize these services to meet customer needs.

The initial proposal to enhance the cooperation of project teams is in order to break down information silos in the form of an action plan. The initial proposal was created with information from one-to-one interviews with stakeholders in the department and the conceptual framework. The conceptual framework was created by studying the best practice from other organizations and academic literature. Based on the findings from the CSA and conceptual framework, workshops were conducted with the stakeholders to build an initial proposal.

The initial proposed action plan is divided into two segments, with each covering both elements of the methods for sharing project information and roles and responsibilities for sharing project information. The first segment discusses the action plan to enhance cooperation of project teams at different project stages. The project stages begin at the Starting Point stage, followed by the Project Implementation stage, then the Customer Feedback stage and finally After Sales stage. The second segment discusses the actions in overall work situation in the Performance Group. The actions are set out in three categories, namely Tools and Training, Meetings and Information Management.

The initial proposed action plan received positive feedback in the validation workshop with the stakeholders including the Department Head. The action plan sets out to develop the cooperation of project teams across product areas with many practical and clear actions to be taken. Subsequently, a follow-up workshop was held with Product Managers to identify the main priorities in the initial proposal to be implemented immediately in the Performance Group. As a result, the three main priorities are highlighted in the final proposal. This helps state and provide improvements to the challenges which exist in the Performance Group.

7.2 Objective vs. Outcome

The objective of this thesis was to develop the cooperation of project teams across product areas focusing on utilizing all services available within the Performance Group towards meeting customer needs. The outcome is a detailed action plan to enhance the cooperation of project teams across product areas in sharing project information and breaking information silos in the Performance Group. This action plan leads to the project teams being aware of the entire span of services available by other product areas. Hence customer needs in relation to the bespoke product area's service mix may be satisfied with services available from the two other product areas. Therefore, the outcome of this thesis fulfills the objective that was set at the beginning.

7.3 Thesis Evaluation

The research design has been planned and followed through the course of this thesis. In order to gain a clear and consistent view of the current situation in the case company, the researcher conducted interviews with stakeholders from different positions of the company. The results were further supported by the existing company documentation to confirm the information which were obtained from the interviews. The conceptual framework was created based on the information which had been obtained and literatures that are related to best practice in other organizations. An initial proposal was created in workshops together with the stakeholders and this initial proposal was then validated with the stakeholder that had participated in this thesis. A final proposal was created after this validation stage and presented as the outcome of this thesis.

The researcher has taken effort to check the data collection, analysis methods and research procedures against principles of quality research in order to ensure the quality of the thesis process and outcomes. These principles include, and are not limited to, relevance, logic, validity and reliability.

7.3.1 Relevance

In academic field, *relevance* can be defined as learning experiences that are connected to real world issues, problems and context (Great School Partnership, 2013). For this research, this can be further related to issues and challenges in the business environment. In order to ensure the relevance of this thesis, the business challenge, objective

and outcome was discussed with the case company management in the very beginning stage, firstly to determine if the thesis is addressing an issue which is relevant to the company.

Secondly, the thesis has to be checked if it will be beneficial and possible to be applied to the company's business environment. In the same time, the thesis was also discussed with the thesis supervisor and presented to an open audience of other lecturers and fellow students to examine its applicability in the academic field. The relevance of this thesis for the company has been checked during the validation workshop on the initial proposal with the company stakeholders including the Department Head. The feedback received has been positive and the Department Head has also given the permission to move forward to implement the actions which were set out in the action plan.

7.3.2 Logic

According to Merriam-Webster dictionary (2017), *logic* is defined as “a particular mode of reasoning viewed as valid or faulty” and “interrelation or sequence of facts or events when seen as inevitable or predictable”. Both of these definitions suit the context of good research principle, especially for this thesis. With a view to ensure logic for this thesis, the outcomes have to be constantly checked against the objective of the research. The findings, solutions and understanding can be readily understood by others. This can be ensured by constant discussions with stakeholders, supervisor, lecturers and fellow students. Decisions made during the course of the research will be grounded with sound and factual arguments. The logic of this thesis has been checked firstly with a research design which is clear and in relevant order. The research design has been followed throughout the whole research. Secondly, the outcome of this thesis is compatible with the objective.

7.3.3 Validity

Validity of research can be divided into two elements, internal and external validity (Quinton and Smallbone 2006: 126). Internal validity is defined as estimation of whether a study delivers what it promises. This can also be explained as whether the outcome of a research which is measured is indeed what the researcher planned to measure in the first place. In the case of this thesis, the internal validity has been followed with the study

delivering to its promise of a clear action plan as the outcome. External validity, on the other hand, measures to what extent the results of a research can be applied outside of its intended situation. The external validity cannot be confirmed because the results of this research have not been tested and validated outside the case company.

For the thesis to be valid, it has to first ensure that the researcher conducting this research has enough industry knowledge and experience to tackle the business challenge. In this case, the researcher has been working in the industry and has 13 years of industry experience.

Secondly, proof of evidence trail should be present throughout the research. This can be ensured by the safe keeping of field notes (questionnaires) which are obtained from interviews and discussions. The field notes are kept safely and attached as appendices to this thesis report. In addition, the researcher returned all field notes to the interviewees for checking and confirmation of their accuracy. Company documents which are used for the research are stored well and can be accessed at any time for referencing.

Thirdly, the amount of data obtained is deemed to be sufficient and have reached saturation level when they consistently return the similar information. After interviewing a select number of stakeholders, the findings showed similar information. At this point, it is not necessary to conduct a further data collection exercise.

7.3.4 Reliability

Reliability is the ability to demonstrate that the procedure of the research can be repeated with the same results if repeated by different researchers in the future (Yin 1994: 33). The reliability of the research is ensured by collecting data from multiple sources. The data from interviews with stakeholders of different teams (sales, project implementation and product developer) to reviews of company documents and customer satisfaction results are collected in order to identify the full picture of the current state in the case company. This also ensures minimal errors and biases. This method of using multiple data sources is known as triangulation. The field notes which were obtained from the interviews and discussions are included in the Appendices section to ensure transparency and as future reference for other researchers to repeat this research if deemed necessary. Finally, the researcher bias is taken into consideration by stating the role of the researcher in the case company and by conducting the research in a neutral approach

during all the data collection stages. This has been strengthened by involving stakeholders to participate, evaluate and co-create the action plan.

7.4 Final Words

Even though this thesis set out to address the business challenge as detail as possible, there are limitations to the research. Firstly, the research focuses only on the gaps in the existing process which are causing the lack of cross-team interactions. Secondly, the study and proposal cover only the method and roles and responsibilities for sharing project information even though there were some other weaknesses which had been identified, for example gaps in responsibilities for obtaining customer feedback, lack of marketing skills by project managers and lack of motivation and discipline in project teams.

For a more comprehensive improvement, the future studies should include the areas of People and Culture and Organization Design and Structure. The author of this thesis welcomes the future researchers in improving this business challenge even further.

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Interview Field Notes (Data 1)

Code of Informant	PM1
Informant's position	Project Manager
Date of interview	16.01.2017
Duration of interview	1 hour
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <ol style="list-style-type: none"> 1) Customer announce what they need 2) Prequalification – send invitation to selected contractors 3) Tender preparation 4) Tender Evaluation 5) Winning contractor selected – sign contract 6) Project implementation 7) End of project 8.1) Warranty work 8.2) Repeat for example: Jaworzno repeated six boilers in one order 8.3) Customer ask for other services due to good results of project implementation (usually done at the higher level management of customer with similar level from Fortum's contact person) <p>This is generally the procedure for Burner Team</p>
2	<p>What are the roles of Project Team in this process?</p> <ol style="list-style-type: none"> 2) small involvement to prepare reference project 3) preparing technical specification, project and HSE documentation, meeting potential customer 6), 7), 8.1) 8.2)
3	<p>How are the customers' needs identified?</p> <ol style="list-style-type: none"> 1) customer announcement – describe in tender invitation and (very important) clarified further during the meetings 2) good experience, customer ask for more what services we can provide

4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>Not very well.</p> <p>Have general idea what product/service are provided by other teams.</p> <p>However, have no idea what type of projects are done, who are the customers, what are the scope of work that are carried out by the other teams, what solutions had and can be provided to their customers. and what the benefits to customer, especially compared to our competitors, as well as our weaknesses</p>
5	<p>What are the strengths in this process/procedure?</p> <p>Good communication with customers through management meetings to suggest more offerings</p> <p>Good experience in own services, know how to carry out own projects, how to sell own team's services</p> <p>Good team dynamics, flexible and independent, low hierarchy. Operate almost like small company but with big corporate backings (customers feel less risk), The information gap between company management and project team is small.</p> <p>Bosses know what project team are doing</p>
6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>Documentation and knowledge sharing is limited. This could be caused by the way of working, culture. Don't put too much effort to documentation work, rather focused on getting the work done.</p> <p>Focus on what we had done before and what we know. Focus on keeping exact copy of repeat services. This is because we are comfortable and more confident to do things we are familiar with because this will minimize mistakes and risks.</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>Communicate more with customers. But first we need to know own products and what we can offer</p> <p>Challenge: during project implementation, there is too little time to do find out what customer needs. More extra time is needed for this.</p> <p>More experience and wider scope in the energy industry is needed to identify customer needs</p>

	<p>Also contact on right level, nowadays contact with e.g. operator level may give some hints but they does not necessarily provide information needed about investing in new services or products</p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Carrying out project as good as possible, leaving customer satisfied and wanting more service from us</p> <p>Similarly, first to know our own products/services and what we can offer</p>
8	<p>How can the management support in improving these gaps? <i>(to motivate Project Teams)</i></p> <p>Promoting more from higher level management as most decision are made at this level and not at project team level. These high level management are the key decision makers and influencers. Harder for Project team leader to identify more customer needs.</p> <p>More frequent internal meeting/updates, where are we working, who are our customers, what projects and products, what's provided to customers, what's the benefit of our services and our strength. Wider scope of knowledge of other team's work. Currently once a year.</p> <p>Breaking/loosening hierarchy so that not only the bosses and teams themselves know what is happening</p>

Code of Informant	PM2
Informant's position	Project Manager – Thermal Performance
Date of interview	16/1/2017
Duration of interview	1 hour
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1) Pre-qualification 2) Offer 3) Negotiation 4) Contract signing 5) Kick-off 6) Planning 7) Delivery 8) Test run 9) Hand over 10) Warranty period and after sales</p> <p>There is a standard for Project Delivery Process</p>
2	<p>What are the roles of Project Team in this process?</p> <p>5) to 9) for project implementation Sometimes during 1) and 2) for technical preparation</p>
3	<p>How are the customers' needs identified?</p> <p>During 1) and 'request for offer' period when sales team visits the customers Warranty and after sales period, discussion with customers about further services that they might need.</p>
4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>Teams are, Thermal Performance, Environmental Performance, Plant Life Cycle. They understand quite well. Part of the project teams know what other team do but do they understand what they do and can they support these team.</p>
5	<p>What are the strengths in this process/procedure?</p>

	<p>Process is well known and standardized. Most of the work process is also based on contract and explains processes that are required. Limited room for changes</p>
6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>Mix roles of project teams in different project at the same time. Not sure what needs to be done at different time line.</p> <p>Project team are set very late (kick-off) and sometimes some parts of teams are missing. Project team doesn't exist before signing. Mainly only products/sales team who are involved before</p> <p>Process cannot change so easily when something else changes and there is only one process. This is because contracts are not done in detail by taking into account when problems arises.</p> <p>Decision makings are strict with contracts. Issues need to be handled by sales team.</p> <p>Not much marketing can be done by project team because they lack knowledge of overall power plant processes to identify and suggest solutions to customers. Project team usually have project mentality while customers have plant operations mentality.</p> <p>Other issues or customer needs are identified during project implementation but not raised because customers doesn't want to pay (expect all issues to be included to the project price). Project teams are careful to raise issues.</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>Maybe can be stated in contract how Project team can give new offerings</p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Discussion with customers to ask questions about situation in plant to identify their needs (during test runs and warranty period). Other times, no time for project teams to do so, for the fear they might lose focus of project in hand.</p> <p>Project feedback session, discussions of further development. However, this is mainly done with designer, sales team and higher level management.</p>
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p>Gap: project team are changing all the time</p>

	<p>Taking part in higher level meeting with customers</p> <p>Project team and manager already set earlier during offering stage</p> <p>Project teams are changing all the time. Better to keep it more similar.</p> <p>Training for process and project delivery</p> <p>Implement product info meetings more often (every quarter)</p> <p>More informal meetings sessions (coffee table talks, Monday morning meetings) to inform what's the situation with the Performance team.</p>
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Code of Informant	PM3
Informant's position	Project Manager – Burners
Date of interview	17/01/2017
Duration of interview	1 hour
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1.1) Meet customers and sell all service (ST)</p> <p>1.2) Meeting with customer on issue or project they need</p> <p>2.1) Customer tell what they need</p> <p>3) Offers made to customers (with other packages, customized to customers' needs)</p> <p>4) Negotiation</p> <p>5) Contract signing</p> <p>6) Kick-off</p> <p>7) Project implementation</p> <p>8) Handover</p> <p>9) Warranty period and after sales</p>
2	<p>What are the roles of Project Team in this process?</p> <p>From 6) to 8)</p> <p>Technical offer and technical advice for stage 3)</p> <p>PT is set-up after contract signing</p>
3	<p>How are the customers' needs identified?</p> <p>Pick up hints (ST) during normal discussions. ST have to listen actively</p> <p>Advance discussions & lead customer to what they need</p> <p>Asking the right questions. Customers may not even know their own needs</p>
4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>Quite well. There are grey areas and still room for improvements and info sharing.</p> <p>Common meeting to share info will be good</p>
5	<p>What are the strengths in this process/procedure?</p> <p>Standard procedures, we know what to do with instructions given. No big surprises</p>

6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>Sometimes it's hard to follow when PT resources are spread out every where PT not involve with sales, misunderstanding of project delivery after promises are made and unknown information flow. Exists big gaps and info cuts. Cause by ST doing one thing and PT doing another thing. Limited resources.</p> <p>PT work in box, focused in own work and not much interactions with customer other than project, due to time limit, budget limits</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>This seems to be a challenge to our standard procedure. Not easy to PT team due to limited time and budget</p> <p>Outside view/advisor not from project team, come to visit and audit. Ask questions to project teams. They may see gaps which are not seen by PT.</p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Look and listen more actively</p> <p>Knowledge first of our own products/service line to enable us to identify customer needs</p>
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p>Make sure there is information flow between all groups knowing what other teams are doing. This is responsibly of management to ensure that.</p> <p>Short informal (coffee talk) sessions once every quarterly to update on achievements, problems, solutions of team projects. Sharing resources if there is need, knowing what are works and solutions done by other teams.</p>

Code of Informant	SM1
Informant's position	Sales Manager -
Date of interview	17/01/2017
Duration of interview	1h 30 min
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1.1) Public tender 1.2) Direct discussion with customers 1.3) Regular customer visit 2.1) Site visit –screening (sales team visit) 2.2) Specification/ needs from customer 2.3) Discuss what needed and what can be offered 3) Offer 4) Contract signing 5) Project implementation 6) Handover 7) Warranty & After Sales, Feedback (further offerings are discussed)</p>
2	<p>What are the roles of Project Team in this process?</p> <p>Mainly 5) and 6) Sometimes technical offers preparation work during stage 3)</p>
3	<p>How are the customers' needs identified?</p> <p>Public tender announcement, discussion/meeting (usually customer announce what they want but not their needs)</p>
4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>Awareness level is not so good.</p>
5	<p>What are the strengths in this process/procedure?</p> <p>Procedure is done – good knowledge with clients (sales team) Enough resources for Project team to be involved in different projects Good network and flexible enough to get outside resource when needed Not standard products – customized to each customers</p>

6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>Handover from sales to project team – big gaps. Best to involve project team early on during sales period (not only at the end of sales)</p> <p>Knowledge of project team are not enough about other teams, so they cannot sell/identify customer needs. Project team are mainly focus on their own services</p> <p>Contacts with client after project end is not enough to provide or identify more customer needs. The focus is on the project completion</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>Keeps ears open and listen more to the customer in the projects</p> <p>Be flexible to change and listen to customer's other issues</p> <p>Asking questions</p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Hear about/identify other issues</p> <p>Pay attention & raise these issues to customers</p> <p>Building trust with customers</p>
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p>Understand instructions for Sales and Project Delivery process. Are these processes useful?</p> <p>Projects are very unique and incentives have to be defined clearly. This is a big challenge as project can last more than a year and overlaps between fiscal year.</p> <p>Incentive for continuous or further services is something to think about</p>

Code of Informant	PM4
Informant's position	Project Manager – Thermal Performance
Date of interview	18/01/2017
Duration of interview	1hr 30 mins
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1.1) Customer have needs 1.2) Regular schedule meeting 1.3) Announce public tender 2.1.1) Contacts Fortum (existing customer) 2.1.2) Goes to Conference/Trade Fair 2.3) Pre-qualification 3) Meets and discuss with Fortum 4) Site visits 5) Offer made 6) Negotiation 7) Contract signing 8) Project implementation 9) Handover 10) Warranty period</p>
2	<p>What are the roles of Project Team in this process? 8) and 9) Experts opinion for technical offer (stage 5) During commissioning, feedbacks are given by old PT to new PT</p>
3	<p>How are the customers' needs identified? Regular customer site visits/meetings Bidding process – we listen (critical) Customers contact and inform us directly and then we propose solutions During project implementation, discussions mainly about on-going project but possible for additional work to be sold Feed ideas to customers, customers doesn't know their needs.</p>

4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>Yes and No. Knows something but also very little.</p> <p>Without knowing each other's work, there's no connection and we cannot see any needs for customers</p> <p>How much to tell each other what we are each doing. Is it necessary and what is the level of details to know? Maybe a procedure of what to tell</p> <p>There are performance day but how useful is that?</p>
5	<p>What are the strengths in this process/procedure?</p> <p>Close/near and open working relationship where all teams are able to ask and talk freely.</p> <p>Most cases PT have no issues to adapt to new changes, flexible to change. Understand that our work are mostly customized.</p> <p>Good motivation for new things (high motivation)</p> <p>Help can be found with other teams and department</p> <p>Many ideas and solutions are available and the SM put this in line</p>
6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>Tender procedure are confusing and hard to prepare because sometimes resources are not available for example during summer/peak period. Alternative resources (not real experts of field) are collected from elsewhere and not proper offers are made to customers</p> <p>No time for PT team to do other things then exact project. (limited resources, too small organization)</p> <p>Not enough knowledge in PT. Hard to see in the context of needs, so needs are not able to be identified as offer. Cause by lack of job rotation.</p> <p>Even if additional needs are identified, hard to convince customers to buy/pay for it. Customers assume everything is included in base contract. Base contract made too general that has too many grey areas for such arguments</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>First PT needs more experience and knowledge of power plant</p> <p>When face issues which cannot be solved, PT should discuss with other PT and experts. Once we know real issues, then this can be inform to customers and it could be also additional needs to customers</p>

	<p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Asking from other teams to find out what services we have first, then only provide the service information to customers</p>
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p>Management must first show real interest in project overall situation and not just the problems.</p> <p>Motivate the teams to share knowledge and information</p> <p>Show interest, not just general visit to our project. See the project in lower level and put more time to do so</p> <p>Identify training/education needs of PT</p>

Code of Informant	PDM1
Informant's position	Product Manager – Thermal Performance
Date of interview	19/01/2017
Duration of interview	1hr
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1.1) Customer have needs 1.2) Regular customer meetings 2.1) Announce tender bid 2.2) Propose and explain our service 3) Make offer to customer 4) Negotiate 5) Sign contract 6) Implement work 7) Hand over 8) After sales</p>
2	<p>What are the roles of Project Team in this process? 6) and 7) Sometimes at 2) and 3)</p>
3	<p>How are the customers' needs identified? Meetings or discussions with customers</p>
4	<p>How well does the Project Team understand the services provided by other teams in Performance group? Rather good though it can be improved. More project cases should be known and shared with each other.</p>
5	<p>What are the strengths in this process/procedure? When core specialist are available, good work can be done. Specialists do their core work. Customers' needs fulfilled Good knowledge scale to meet customers (there are SM, PDM, PT available) Procedure is standard, people are confident and comfortable to complete tasks</p>

6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>No main procedure for all to follow</p> <p>Co-operation between SM, Product M, PT are not good. Messages are not clear between them</p> <p>Knowing need by customers but not told/inform to each other because there is no methods, procedure or tool to do so. Also PT don't feel it's their role to so.</p> <p>PT are personally driven and not target driven for sales</p> <p>PT work and focus in silo. Don't have awareness of marketing/sales role. Not used to it because it is out of their comfort zone. Doesn't want to go to other areas they are not specialized in. Traditional working mindset where specialist work in their own areas and not easy to change.</p> <p>PT have issue to be flexible and not follow procedure</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>Technical factors to be found onsite during project implementation</p> <p>See what customers need. Resources? Tool?</p> <p>Meet the key persons in customer side who are interested and motivated to discuss issues and buy services</p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Make time to propose scope to customer...but may not necessarily work. Customers are busy too</p>
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p>Guidelines – identifying customer needs first and then only identify our services for them</p> <p>Incentive/bonus. KPI needs to be identified (Alan: more knowledge training)</p> <p>System to key in leads (M-Files). Propose/mention to right person to pick up on these leads</p>

Code of Informant	BM1
Informant's position	Business development Manager
Date of interview	23/01/2017
Duration of interview	1 hour
Document	Stakeholder Survey, Fortum PS 2015 One Fortum, Customer Satisfaction Survey results, Fortum PS 2015, Questionnaire

	Questions
1	What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure? <i>-not applicable</i>
2	What are the roles of Project Team in this process? <i>-not applicable</i>
3	How are the customers' needs identified? <i>-not applicable</i>
4	How well does the Project Team understand the services provided by other teams in Performance group? <i>-not applicable</i>
5	What are the strengths in this process/procedure? (discussion center around how customers see us) Staff: Good technical knowhow, service minded, good cooperation Communication: Clear communication, close contact, open dialogue Reliability: Keep their promises Understanding customer needs: Flexible, Proactive, Solutions oriented
6	What are the weaknesses in this process/procedure? What are the causes for this weaknesses? (discussion center around how customers see us) Staff: Lack of resources, physically located too far Price: High as compared to other similar service providers Reliability: Late report/feedback after finished projects Communication: Informing customers on news and changes, amount of technical documentation
7	How can Project Team support/assist in: i) identifying customer needs

	<p><i>-not applicable</i></p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p><i>-not applicable</i></p>
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p><i>-not applicable</i></p>

Code of Informant	PDM2
Informant's position	Product Manager
Date of interview	27/01/2017
Duration of interview	1 hour
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1.1) Customers have issues 1.2) Regular customer visits 1.3) Marketing campaign 2) Customer contact us 3) Discussion with customer 4) Propose solutions 5) Offer and negotiation 6) Order made/contract signed 7) Project implementation 8) Delivery 9) Handover 10) After sales</p>
2	<p>What are the roles of Project Team in this process?</p> <p>From 7) to 9) Sometimes during tender/discussion (3) with customers. Provide technical details</p>
3	<p>How are the customers' needs identified?</p> <p>Regular visits and discussions Sales manager identifies new customers. (Question: how to keep this relationship) Product managers are also involve in sales and tender phase</p>
4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>Product managers know each other's products very well. Knowledge is limited between project teams.</p>
5	<p>What are the strengths in this process/procedure?</p> <p>We have wide range of services that covers all fields on the power industry. We are technically competent with modern, high level of knowledge and skills</p>

6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>People are not aware of all the services & product that we provide. This is caused by lack of sales skills and mindset by project teams and experts. This leads to lost opportunities.</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <ul style="list-style-type: none"> - project managers/experts to be contact person for customer - product and project managers' role to discuss with customers after the project (feedback session), ask and identify customer needs <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <ul style="list-style-type: none"> - during RfQ period, it's hard to sell something else. Maybe possible to suggest additional options. - When there are interest from customers to develop/test/improve certain areas in their site, they are more open to other services. We have to see the bigger picture for them to sell more service. Provide to the customers a holistic package. Good chance to get bigger projects. - Bring/inform already optional services available during the beginning of tender stage of the project to give ideas to customers for next follow-up projects. This gives the customers some idea beforehand and easier to continue with after sales services.
8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <ul style="list-style-type: none"> - Provide training – basics of sales and marketing to project managers and experts to be able to communicate in both sales and technical manner with the customers. - Provide training – of our products, especially on areas which are close to each other's field. Experts are not comfortable to sell what is too far from their expertise. Identify experts to their area of expertise & train on products that are related to their skills. - Encourage experts to inform customers about fields they are not familiar with and suggests experts who knows the field to customers. - Bonus matrix; something to think about - Job rotation by taking into account who are the experts and who have multi-skill sets.

Code of Informant	SM2
Informant's position	Sales Manager
Date of interview	30/01/2017
Duration of interview	1 hour
Document	Questionnaire

	Questions
1	<p>What are the steps currently used to provide services to the customers? (describe the steps if possible) Is this a standard process/procedure?</p> <p>1.1) Request for quotation 1.2) Existing customer 1.3) Lead from customer 1.4) Lead from other teams 1.5) Framework agreement 2.1,2,3,4&5) Contact client 2.1&5) Client contact us 3) Meet client to discuss 4) Proposal/Offer/Negotiation (possible to go to 1.5) 5) Order/Contract 6) Work implementation 7) Work End/Handover) 8) Feedback 9) After Sales (possible to go to 3)</p> <p>No standard procedure/process. There is Standard process for big offers (you can discuss more on this process with Anne Muilu), this offers base often on Request for quotation</p>
2	<p>What are the roles of Project Team in this process? 6) to 9) Participating in marketing meeting during point 3)</p>
3	<p>How are the customers' needs identified?</p> <p>Discussion- constantly trying to understand customers' process and plans. Not only discussing own work and project, small talk is also polite and give opportunity to constructive debate. Build trust with customers, and give to customers benefits (support)</p>

	Take leads/information and understand customers' issues with your feedback (proposals how to solve issues)
4	<p>How well does the Project Team understand the services provided by other teams in Performance group?</p> <p>It varies a lot person by person. It seems that those with power plant working experience have more understanding of overall services and process provided by other team. The more specialize experts who have less experience in power plant operations doesn't know/haven't had possibilities to learn the other services as well.</p> <p>It's of course a question of attitude also.</p>
5	<p>What are the strengths in this process/procedure?</p> <p>We are flexible with our customers, also our personnel</p> <p>We are flexible working across teams-switching teams when needed.</p> <p>Why don't we discuss enough about each other's (daily) works and projects?</p>
6	<p>What are the weaknesses in this process/procedure? What are the causes for this weaknesses?</p> <p>Experts need to support Sales team with target to sell during work execution . This lack of selling/marketing mentality is cause by lack of understanding in sales and marketing. Also sometimes there is fear there will be more follow-up work/tasks given, or the fear that the client don't like Experts with high selling attitude</p> <p>After sales could be done better...at the moment it's merely to close the project.</p> <p>There is really needs to get more lead for invitation to tender for the Sales Team.</p> <p>How can this be done?</p>
7	<p>How can Project Team support/assist in:</p> <p>i) identifying customer needs</p> <p>Knowledge-everyone knows first their own teams and then other teams services</p> <p>Good relationship with customers. Experts can have direct discussion with customers because of their technical knowhow and trust from customers.</p> <p>ii) increasing more services to the customers (besides services that are provided by own Project Team)</p> <p>Identify and suggest more additional work during project/work implementation stage which can add value to customers</p> <p>Work with high professionalism to build the impression that we are interested to solve customers' problems.</p> <p>Contacting time to time as a Supplier or as a friend/Colleague</p>

8	<p>How can the management support in improving these gaps? (<i>to motivate Project Teams</i>)</p> <p>More team meeting should be held to share leads/contacts/information and discuss ongoing works and (new) products.</p> <p>Sharing own work and expertise</p> <p>More active participation from management to discuss other group works and Customers</p> <p>Product managers can share monthly reports and updates to everyone</p>
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Workshop Memos (Data 2)

Date 29.03.2017

Place Piispanportti, Espoo

Time 09:30 - 11:00

Participants Project Manager 1
Project Manager 2
Researcher

1 Thesis workshop 1

The workshop started with a recap of the progress of this thesis by the researcher and the findings from the one-to-one interviews which were done in January 2017. Workshop started with introduction of the conceptual framework for this thesis regarding project information sharing in Performance Group.

DISCUSSION OF IMPROVEMENT PROPOSAL AS STATED BELOW:

METHODS:

- Organize quarterly Project Managers Meeting to update status of on-going projects and feedback session for projects which had ended. (PM1)
- Project Managers Meeting is beneficial to share information regarding availability of resource and challenges faced by project teams. (PM1)
- Customer feedback session to be done internally with all project teams together. (PM2) Currently, not defined clearly the task for project closing meeting.
- Project Managers Meeting, half day program, sharing of all active projects status and closing project in Performance Group.
- Project Managers Meeting is open to all in Performance Group (project managers, project engineers, product manager, head of department) (PM1 and PM2)
- Currently, team meeting are held in own Product Area and then to Power Solution (business unit) quarterly meeting. There is no Performance Group meeting. (PM2)
- Performance Day should be held at least twice a year (currently once a year) focusing on current and future projects mainly. (PM1)
- Outlook Calendar to be fully utilized (first step) by all in Performance Group and fully open and transparent to all (second step). (PM2)
- Define the functions, reasons and benefits of available and new tools (SharePoint, FRIDA, M-Files) fully to all in Performance Group. (PM2)
- Decide how to use available and new tools

- Mobile version of project diary to be available for easy recording when internet connection and laptop/PC are not fully functional. (PM2)
- Training and guidelines for tools utilization to be provided to all in Performance Group with suitable incentives. (PM2)
- Systematic documentation coding and numbering to be established. (PM2)

ROLES & RESPONSIBILITIES:

- Project Managers role to implement project and share information of project to all in Performance Group.
- Project Managers are responsible for presenting and dissemination of project status in Project Managers Meeting, as part of project job scope. (PM1)
- Responsibility from management to commit hours/days (resources) for employees to organize Project Managers Meeting. (PM1 & PM2)
- Site Managers and Project Engineers to be responsible for diary entry. (PM2)
- Project Managers to ensure utilization of diary entry by project team members. (PM2)
- Dedicated person or team to be responsible for document management, updating the guidelines and ensuring tools are utilized as per guidelines by all employees of Performance Group. (PM2)
- Management to be responsible for championing Project Managers Meeting, and ensuring information sharing is done constantly in Performance Group.

ADDITIONAL:

- Customer feedback to be responsibility of Product Manager, not the customer and probably not neutral if it was done by Project Manager.

Date	03.04.2017
Place	Piispanportti, Espoo
Time	10:00 - 11:30
Participants	Product Manager 1 (PDM1) Sales Manager 1 (SM1) Sales Manager 2 (SM2) Researcher

1

Thesis workshop 2

The workshop started with a recap of the progress of this thesis by the researcher and the findings from the one-to-one interviews which were done in January 2017. Workshop started with introduction of the conceptual framework for this thesis regarding project information sharing in Performance Group.

DISCUSSION OF IMPROVEMENT PROPOSAL AS STATED BELOW:

STARTING POINT:

- Project managers can ideally start as the Offer Manager. Responsible from the start. Becomes Project Manager of said project if offer is accepted by customer. (SM1 and PDM1)
- Offers are made based on customer requirement/tender document. Project managers to discuss with other Product Managers to identify possible value added options for customer offering. At starting point, additional option should be minimal and related to main offering. (SM2)

PROJECT IMPLEMENTATION:

- Project Manager identify additional needs of customers, inform to immediate superior and relevant Product Managers. (SM2)
- Increase competencies of Product Managers through information sessions and training about services of other Product Area. (SM2)
- Training for Project Teams on usage of tools.

CUSTOMER FEEDBACK:

- First step, discuss feedback findings with project teams. (SM1) Things that we have done and what are customers' opinions. (PDM1)
- Sharing of feedback across teams for information and experience sharing.
- Internally, discuss between Project Managers, Product Managers and Sales Managers on the approach of obtaining customer feedbacks. Can be done in two different levels (project and management level) if necessary and case by case for most optimal feedback session. This means not only

sending customer feedback form to customer and waiting for their replies.
(*)

AFTER SALES:

- Assess potential of customers and needs. Discussion between project managers and product managers to plan strategies and what can be offered (PDM1)
- Product managers analyze information from different levels of customers to find suitable persons internally to follow-up with customers.
- Identifying customers' wants from actual need after initial project needs

GENERAL:

- Monthly notification session by the Department Head to announce the High and Low points. (PDM1, SM2)
- Notification boards to show active projects and who are Project Managers responsible.
- Open information to all, engineers and project managers can take initiatives to support and be active in other projects. Products Managers are not the only ones that are finding and pooling resources for different teams.

ADDITIONAL:

- Consistent meet-up time with customer should be at least once every 6 months.
- Sharing leads between product areas of all departments in Power Solutions via email and collaborative tool (Pelican)

Workshop Memos (Data 3)

Date 07.04.2017

Place Piispanportti, Espoo

Time 09:30 - 10:30

Participants Product Manager 1 (PDM1)
Product Manager 2 (PDM2)
Project Manager 1 (PM1)
Project Manager 2 (PM1)
Department Head (DH)
Researcher

1

Thesis workshop 3

The workshop started with the recap of the whole thesis progress, findings from one-to-one interviews in January 2017 and proposal building from workshops in the last two weeks.

Workshop then continued with the initial proposal for action plan for enhancing cooperation between teams in Performance Group.

DISCUSSION OF THE PROPOSAL ARE STATED BELOW:

- The findings points out some existing issues that need to be addressed. (DH)
- There are new points and ideas for improvement which can be implemented to improve the communication across teams. (DH)
- In general, the proposed action plan gives good practical suggestions which can be implemented in Performance group. (PM1 and PDM1)
- Key to the implementation lies in the discipline of employees to follow guidelines (DH)
- Employees motivation needs to be considered in order to implement the action plans (DH)
- Guidelines for new software (M-Files) cannot be develop until it is purchased and implemented in the company (PM2)
- Department Head asked the Product Managers to have a follow-up meeting with researcher to discuss the proposal in detail and how to implement the action plans in Performance group.

Date	10.04.2017
Place	Piispanportti, Espoo
Time	12:00 - 13:0
Participants	Product Manager 1 (PDM1) Product Manager 2 (PDM2) Researcher

1 **Thesis workshop 4**

Following the previous workshop, a follow-up workshop was held with the Product Managers to identify the main priorities in the Initial Proposal to focus on. The priorities are based on the criticality and the ease of implementation to Performance group based on current situation.

FEEDBACK DISCUSSION OF THE PROPOSAL ARE STATED BELOW:

- The top four actions which had been identified are as follow:
 - Increase knowledge and competencies of Project Managers regarding all service offerings in Performance Group (PMD1)
 - Announce Performance Group's status in Monthly Update sessions. Provide notification board on active projects and the responsible project managers (PDM1)
 - Organize Project Managers Meeting (PMM) Every quarterly to share status of on-going projects and learning from completed projects (PDM2)
 - Discuss and strategize internally new follow-up offers to customer...additionally, customer handling plan (PDM2)