

Change Management within Project Processes

– A case study at Alfa Laval

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Master Thesis

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February, 2008**

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PREFACE

Two engineering students conducted this thesis, as a final examination in the pursuit of a master's degree in mechanical engineering at Lund University. The thesis has been conducted at the Department of Design Sciences at the Faculty of Engineering. The management of project organisations has been our object of studying.

The objective of this study is to observe how our case company, Alfa Laval, works and how they conduct business. After deepening in this area our intention is to conduct an analysis which ties our theoretical references to the gathered empirical information to be able to present a thesis of interest for our target group.

We want to express our gratitude to Richard Persson and Åke Skarstam at Alfa Laval in Lund, who has given us vast amounts of time and help to make us understand the project management procedure. Also other involved parties at Alfa Laval are given a thank you by us.

Finally, we also want to thank Professor Per Odenrick and Assistant Professor Annika Olsson for their help as our supervisors.

Lund, 2008-01-14

Johan Mattsson
Fredrik Wikström

ABSTRACT

More and more corporations around the world is starting to work in project form and leaving their traditional function based way of organising themselves behind. This leads to new ways of driving and implementing changes and improvements. It requires another approach and this approach has to deal with the individual employee in a greater extend. Alfa Laval often questions how to make a project to a success story. Helping them making a project a success story is the methodology tool PROMAL containing several steps. Concept, system, et cetera is initially coming from an idea and continues according to PROMAL with a Feasibility phase, Pre Study phase, Implementation phase and finally a Closure phase. OD Supply is a function in the division of Operations that works cross functional and today they deal with two major interrelated issues, that can be called the Gap.

- The Gap derives from varies factors involving different parties in the project organisation.
- Through changed project management the factors can be dealt with more efficient and thereby minimising the Gap.

The objectives in this thesis are to help OD Supply identifying and coping with the Gap.

We have chosen to use an inductive approach. The reason for this is that the authors think it is more beneficial for the thesis to start with the OD Supply's view of the problem. We are going to start performing interviews and gathering empirical information, all to be able to get a fundamental view and perspective on the situation and circumstances in practice. The method used to analyse the gathered data is best described as a comparing analysis on the base of pattern matching. We have, based on a broad comparison of theory and our research, searched for similarities and differences and tried to draw conclusions and analyse the cause of the various results.

We have decided to choose that Change Management is defined as the process of implementing change as efficiently as possible and letting the change reaching its full potential. To be able to do so we have choosen to describe Change Management with the help of three other aspects. These three aspects will be the cornerstones which will build up the foundation of our thesis and they are as follow; Project Management, Tools for efficient Project Management and Cooperation and Participation among the Project Managers.

In the Theory chapter the authors present twelve different theories. Under the subcategory Project Management, four theories are presented. These are Project Organisation, Factors for successful Project Management, Different Project Management Styles and the Four Rooms of Change. Next subcategory, Tools for efficient Project Management, is broken down into Characteristics of a generic project model, Lean Production, Six Sigma and Lean Production vs. Six Sigma. Cooperation and Participation at a Project Management Unit is the final subcategory and contains Competence within a group, Idea Generation and Prioritizing, Follow up and feedback, and Competence development.

In the Empirical chapter the authors present eleven different aspects. Under the subcategory Project Management, four aspects are discussed. These are Project Management at Alfa Laval, Project Managers view of PROMAL, the Steering Committee, and Project Recievers. Next subcategory, Tools for efficient Project Management, is broken down into PROMAL, Lean Six Sigma and PROMAL and DMAIC together as one. Cooperation and Participation at a Project Management Unit is the final subcategory and contains Efforts to increase the

Cooperation and Participation, Generation and Prioritisation of Ideas, Follow up of Projects and Project Managers, and Competence development.

In order to analyse the organisations that are benchmarked and to be able to compare them with OD Supply at Alfa Laval Lund, the authors has created a matrix describing the characteristics of the organisations, the Wildlife Matrix. The organisations which have been benchmarked are Alfa Laval OD PHE, Alfa Laval Tumba, Electrolux AB, Ericsson AB, Högånäs AB, IKEA, Siemens Industrial Turbomachinery AB, and Sony Ericsson.

Differences occur when using methods for implementing various concepts, processes, strategies and methodologies and that these differences are deviations between strategy and practice that we define as the Gap. During our period of collecting information at Alfa Laval and other companies we have found where the Gap occurs. The factors that create the Gap is the interactions between Project Manager and the Steering Committee, lack of follow up, too slow speed in the projects and a need of a better competence development within OD Supply. In order to decrease, or even better eliminate, the Gap these factor is required to be handled. The authors have made a step model in how to manage the Gap and try to minimise it.

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1. INTRODUCTION

In this chapter the background of the paper is presented. Discussion about problem formulations, purpose and delimitations are also made. The disposition on how the thesis is built up is presented at the last of this chapter.

1.1. Background

More and more corporations around the world is starting to work in project form and leaving their traditional function based way of organising themselves behind. This leads to new ways of driving and implementing changes and improvements. It requires another approach and this approach has to deal with the individual employee in a greater extend. At the same time the individual employee as to be formed and trained into the greater good of the organisation. The project orientation enables an organisation to cope with the dynamic environment and surroundings. This kind of organisation is a temporary organisation which thereby can be adjusted towards the circumstances meanwhile it is a well-proven way of solving problems.¹ It provides a short term solution on how to deal with new upcoming problems and thereby be able to address them even in the long run. However, project orientation requires much more of its members than the traditional organisation do. The projects success is in great degree depending on the individual project members' skills and their abilities. With this in mind, it is vital that the project members are highly trained in the art of project orientation and what it mean to work in a project based organisation. It is also vital that they with ease are able to provide the right information and motivation to the receivers of a project. All of this, just for making sure the project will be a success story.

1.2. Problem Formulations

Alfa Laval often questions how to make a project to a success story. Helping them making a project a success story is the methodology tool PROMAL containing several steps. Concept, system, et cetera is initially coming from an idea and continues according to PROMAL (Project Management Alfa Laval) with a Feasibility phase, Pre Study phase, Implementation phase and finally a Closure phase.

When using methods for implementing various concepts, processes, strategies and methodologies differences occur. The differences are deviations between strategy and practice, later defined as the Gap. How Alfa Laval deal with information and communication during a project life cycle may also contribute to the ever increasing Gap.

Different stakeholders' involvements in different phases of the processes are vital to the success of a project. They have to be involved in the right phase at the right time, meanwhile the knowledge level regarding the project between the stakeholders need to be the same. The department of Operations Development (OD) needs to have more knowledge on how to achieve this.

¹ Marttala, Anders. & Karlsson, Åke. *Projektboken – metod & styrning för lyckade projekt* Lund: Studentlitteratur 1999.

- The Gap derives from various factors involving different parties in the project organisation.
- Through changed project management the factors can be dealt with more efficiently and thereby minimising the Gap.

1.3. Objectives

To ensure the success of this thesis it is essential to gather a wide range of theory enabling more comprehensive view of the conditions and circumstances surrounding project management and change management. The gathered theories combined with today's existing Alfa Laval methods should interact and be adapted by the organisation in a useful way. Benchmarking towards other "Best Practice" organisations outside Alfa Laval may also contribute to an improved performance. The authors will also benchmark other departments and divisions within the Alfa Laval organisation. This new point of view should help coping with the occurred differences, called the Gap.

The main objective with the thesis is to identify the Gap and determine for which reasons and in which phases it arises. The Gap may derive from interaction difficulties expressed through attitudes and behaviours or it can derive from weaknesses in the project methodology, PROMAL. Identifying these mainly via interviews will help managing the Gap and thereby increase the success rate of implementing a new concept.

1.4. Focus/delimitations

Focus will lie on the project managers at Operations Development Supply (OD Supply) and their way of driving a project. Their methods and opinions will be our base and influence the thesis. We, as authors of this thesis, have to be aware that they represent one department and not necessarily the entire organisation of Alfa Laval.

Different delimitations that must be considered are that the benchmarking will be conducted only on international manufacturing organisations under Swedish management. These are the attributes of Alfa Laval and are therefore the ones we have used as selection criteria. The authors have also chosen to benchmark at other departments within Alfa Laval than OD Supply that is in interest.

Since OD Supply is working with existing products and processes in their projects, we have chosen to not benchmark or compare with Research & Development organisations or theories.

1.5. Target Group

This thesis is mainly focused towards the project managers at Alfa Laval and other employees at Alfa Laval with an interest of project methodology in general and PROMAL in particular. The thesis can come to affect the working environments of the Alfa Laval employee and he or she should be interested in the thesis even if it is not directed towards them.

Even if no revolutionary ideas may be presented, some light and new perspectives on Change Management will be spread. With this in mind, other target groups, who can have use of our thesis, are faculty in the academic world working with questions related to conducting projects and Change Management.

1.6. Disposition

The thesis is divided into seven smaller sections, based on the characteristics of the topics included in the different sections.

- **Section 1 – *Introduction and Methodology*.** Discussion about problem formulations, purpose and delimitations are also made in the introduction chapter. The methodology chapter declares our chosen methods and explains how the thesis is conducted.
- **Section 2 – *Background information and description*.** The chapter presents background information regarding Alfa Laval, and their industry. Other main concepts are also being defined, such as Change Management.
- **Section 3 – *Theoretical references*.** The chapter describes a number of tools and models within the given area of the thesis. These tools constitute the foundation for the research, which will lead to a conclusion on the basis of the problem formulation.
- **Section 4 – *Empirical research*.** The chapter is built up by the information that has been gathered from the research at Alfa Laval Lund AB.
- **Section 5 – *Benchmarking*.** In this chapter other “Best Practice” organisations are described and studied and their way of dealing with the current circumstances and topics.
- **Section 6 – *Analysis and Conclusion*.** The analysis chapter intends to describe and investigate the gathered data and to compare section 3, 4 and 5 with each other. Finally, based on the comparison a conclusion and recommendations will be made.
- **Section 7 – *Further studies and Method Reflections*.** The first part of this chapter deals with different areas that can be interested for further studies or possible spin-offs. The reflection part includes our rear mirror view of the thesis, dealing with what went right and what went wrong and questions of that nature.

2. METHODOLOGY

This chapter describes how the implementation of the project has been conducted to obtain the declared purpose. Sources are defined and source criticism is presented.

2.1. Approach

To come to a certain conclusion, there are two main approaches to address the problem in question, either a deductive approach, or an inductive approach. Which approach to be used is depending on the amount of theories available within the subject in question. When making a deductive approach, assumptions are made from already existing theories on which hypothesis and statements are created. The hypotheses and the statements are tested through different observations enabling the examiner to come to certain conclusions. The inductive approach operates in reality and begins with an empiric investigation. During the investigation, observations are made which creates generalisations and connections to theories or models. A visual illustration of the approaches is presented in Figure 2.1.²

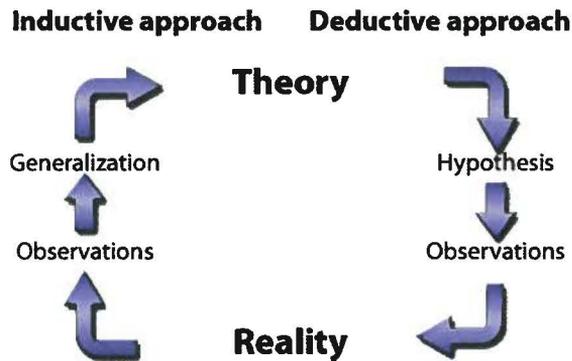


Figure 2.1 - Inductive and deductive approach.

We have chosen to use an inductive approach. The reason for this is that the authors think it is more beneficial for the thesis to start with the OD Supply's view of the problem. We are going to start performing interviews and gathering empirical information, all to be able to get a fundamental view and perspective on the situation and circumstances in practice. Afterwards the written empirical drafts are to be send to the concerned party for verification. After initial empirical research, theories are presented based on our findings. When both theoretical and empirical information are identified an analysis will be conducted. The analysis then builds up the foundation for our conclusion and recommendations.

² Eriksson, Lars-Torsten & Wiedersheim-Paul, Finn. *Att utreda, forska och rapportera*. Stockholm: Liber AB 1997

2.2. Strategy of Information Gathering

2.2.1. Primary and Secondary Information

There are two kinds of information that can be gathered, either primary information or secondary information. Primary information is collected by the examiner him/herself, often through interviews, surveys, or questionnaires. Secondary information have already been gathered and documented by others.³

To be able to assemble a strong theory base for further examination, a gathering of secondary information is made from literature in the Lund University libraries. The primary information is collected from interviews with different employees at Alfa Laval. Their experiences working with projects and Change Management vouch them deep insight of the examined subject in this thesis. The first round of interviews is to be performed with a semi structured interview base with prepared questions, from which broad and open discussions is made. The second round of interviews is also performed with a semi structured interview base, in order to validate certain questions. The interview bases are presented in the Appendix chapter (Appendix 12.2 – 12.5). After conducted interviews with the Project Managers at OD Supply the authors has asked for Project Owners and Project Receivers that they have worked with in projects. We have then got in contact with these employees and interviewed those who have been available. This enables us to get the complete picture of the project process.

As well as primary information has been gathered through interviews within Alfa Laval the authors has made interviews at other organisations, benchmarking. The organisation that has been chosen for benchmarking has the same characteristics as Alfa Laval, meaning Swedish, international and producing. The same interview methods have been used at the benchmarking as the ones used when interviewing at OD Supply. The authors turned to the Human Resources at concerned organisation for help to get in touch with a Project Manager running projects that are similar to the ones at Alfa Laval. All benchmarking has been conducted against project managers. However, at these organisations only one round has been done, but the draft has been sent for verification.

2.2.2. Qualitative and Quantitative Research Methods

Qualitative and quantitative research explains how the information gathered is approached and processed. The qualitative method creates a deeper and more detailed understanding of the reality. The main tool used in this method is for example interviews, which give a deeper knowledge and description of the whole picture. The quantitative method allows more respondents though it usually uses questionnaires with standardised answers.⁴

Due to the topic of the thesis and the nature of our problem, we decide that it would benefit the thesis the most to use a qualitative research method.

2.3. Method of Analysis

The method used to analyse the gathered data is best described as a comparing analysis on the base of pattern matching. We have, based on a broad comparison of theory and our research,

³ Eriksson, Lars-Torsten & Wiedersheim-Paul, Finn. *Att utreda, forska och rapportera*. Stockholm: Liber AB 1997.

⁴ Wallén, Göran. *Vetenskapsteori och forskningsmetodik*. Lund: Studentlitteratur 1993.

searched for similarities and differences and tried to draw conclusions and analyse the cause of the various results.

2.4. Validity, Reliability and Objectivity

2.4.1. Validity

Since the thesis is conducted at the site of Alfa Laval, the access to the organisation has increased and the organisations good insight in our problem formulation and the thesis' purpose has made them able to give relevant answers to our questions. Continuously being able to give us thorough and exhaustive answers is vouching for adequate validity.

2.4.2. Reliability

The reliability of the thesis should be considered to be fairly high, this since a variety of personnel is being interviewed. The thesis is in a good extend based upon primary information which minimize the risk for misinterpretation. The second round of interviews also helps increasing the reliability of the thesis due to earlier possible misunderstandings have a chance to be straightened out.

2.4.3. Objectivity

The fact that several employees, with similar responsibilities and positions, are being interviewed is increasing the objectivity, since one persons view gets a lower impact on the outcome of the empirical research. During this thesis the authors have had a conversation regarding which context is correct or acceptable if questions have arisen. A discussion after every interview is also vital to make sure that answers are understood similar. This is to minimise a single person's impact on the results of the thesis.

2.5. Source Criticism

The empirical data is mainly built on interviews that have been done at Alfa Laval and other companies that the authors chose to benchmark. Depending on the employee's position in the company the collected information could have been subjective. The interviewees might think that they are controlled by the authors during an interview. This may result in that the interviewees withhold facts that they think has a negative impact for themselves or the department they are located at. For the same reason, the interviewees might tell things at a better way than it is in the reality.

Because of that the authors is positioned at Alfa Laval and have the largest contact with employees there, they might be influenced and have a subjectivity with the company. This may result in neglect of interesting facts from the benchmarking, due to the fact that the authors may want to present Alfa Laval in a better matter.

3. BACKGROUND INFORMATION AND DESCRIPTION

This chapter will describe background information regarding this thesis and how the authors define Change Management. How the thesis is built up through three aspects is discussed in the beginning of the chapter. After, Alfa Laval and its organisation are presented together with its area of interest. Last, the department OD Supply and its employees are obtained.

3.1. What is Change Management?

Change is constant within organisations and can occur in all different kinds of features such as processes, products and systems.⁵ Change management becomes increasingly important for organisations in an environment where competition and globalisation of markets are ever intensifying. The success of organisational change programmes and the effectiveness of change management have not always been as planned. It argues that within organisations, change is characterised by diversity and interactions. Within organisations change management is that the organisational change experienced is composed of elements that are not simple and clearly definable, but are interrelated and interacting. Change programme is characterised by diversity and interaction of organisational change and should be managed as a whole by using multiple methods in one intervention. The processes within change management vary from project to project as it is heavily influenced by the commercial structure of the project and the assigned personnel's previous experience with change management.

It is argued that organisational change can be classified into four categories. The first category is changes in organisational process that transform certain inputs into outputs of value for customers. This includes among others product development and order fulfilment. The second category is changes in organisational functions, their organisation, coordination and control. For example, there can be changes in horizontal and vertical structures. Thirdly, there are changes in the organisational culture, such as traditions, values, beliefs and human behaviour in terms of relationships to social rules and practices. The fourth and final category includes changes in power distribution and the factors that influence decision making in organisations. To understand where power is originated and how these sources of power can be developed is a key concern in change management.

If classifying change into the four categories of process, structure, culture and politics is to be of value, it should be possible to take key approaches to change and fit them to the different dimensions of this categorisation, helping them to examine their strengths and weaknesses in relation to the diversity and interaction of organisational change.

In order to implement the changes within the four dimensional view of organisational change as described above there are important factors to consider.^{6, 7, 8, 9, 10}

⁵ Leybourne, Stephen A. "Managing Improvisation within Change Management: Lessons from UK Financial Services". *The Service Industrie Journal*, (2007): 26:1, 73 - 95.

⁶ Cao, Guangming & McHugh, Marie. "A Systemic View of Change Management and Its Conceptual Underpinnings". *Systemic Practice and Action Research*, (2005): Vol. 18, No 5.

⁷ Cao, Guangming et al. "The Need for a Systematic Approach to Change Management – A Case Study". *Systemic Practice and Action Research*, (2004): Vol. 17, No 2.

- Organisational change is characterised by diversity and interaction, which can be distinguished from the diversity of different approaches to change.
- Different types of organisational change need to be managed by different approaches.
- Different types of organisational change are interrelated; they need to be managed together as a whole.
- If the interactions of different types of organisational change are to be effectively managed, the use of mixed methods and methodologies is necessary.
- How is it to be known that the most appropriate decisions are made?

In short, the most significant characteristic of organisational change is diversity and interaction.¹¹

Together with the information above we have decided to choose that Change Management is defined as the process of implementing change as efficiently as possible and letting the change reaching its full potential. To be able to do so we have choose to describe Change Management with the help of three other aspects. These three aspects will be the cornerstones which will build up the foundation of our thesis and they are as follow; Project Management, Tools for efficient Project Management and Cooperation and Participation among the Project Managers.

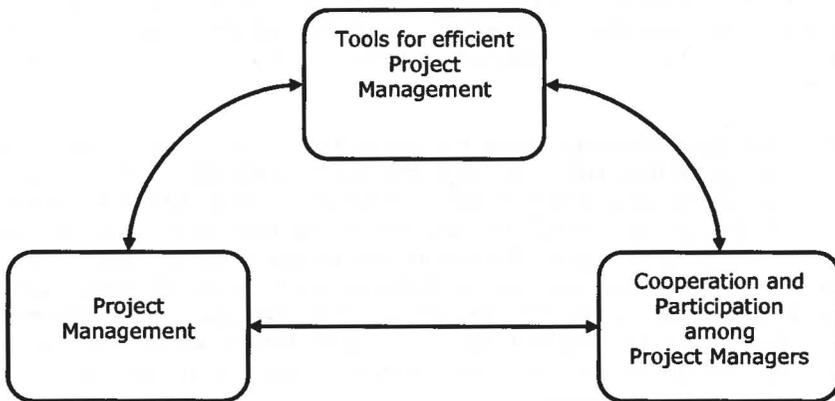


Figure 3.1 - The three aspects of the thesis.

The first aspect, Project Management, involves how to lead a project with regard of the Project Members and the future receivers. This aspect focuses on the soft issues that face a Project Manager. The different parties of a project orientation will be described and even the interaction between them will be considered.

⁸ E. Goodman, Stephen. "Change Management for today's projects – A progress approach". *AACE International Transactions* (2006): pg. CS31

⁹ Cao, Guangming & McHugh, Marie. "A Systemic View of Change Management and Its Conceptual Underpinnings". *Systemic Practice and Action Research*, (2005): Vol. 18, No 5.

¹⁰ Cao, Guangming et al. "The Need for a Systematic Approach to Change Management – A Case Study". *Systemic Practice and Action Research*, (2004): Vol. 17, No 2.

¹¹ Cao, Guangming & McHugh, Marie. "A Systemic View of Change Management and Its Conceptual Underpinnings". *Systemic Practice and Action Research*, (2005): Vol. 18, No 5.

The next aspect is the tools which the Project Manager can rely on. In this section the different methodologies used will be described and discussed. They will also be put against each other and the advantage and disadvantages of the methodologies will be seen.

The final cornerstone that we will discuss is the cooperation and participation among the Project Managers. In this chapter topics like idea generation and prioritisation will be addressed. Follow up, feedback and evaluation will also be examined and especially how it is conducted and on which basis. Also different efforts for increasing the cooperation and participation will be regarded. Finally, competence development of mainly the Project Managers will be presented. Inspecting these three aspects or cornerstones will help us understand the concept of Change Management and hence help us identify and manage our problem formulations.

3.2. Alfa Laval

3.2.1. History

The year 1883 Gustaf de Laval and Oscar Lamm created AB Separator, which was the original name of Alfa Laval in the beginning, in order to produce and sell dairy cream separators. In 1938, Alfa Laval introduced its first heat exchanger. In the beginning of the 1960's it expanded into the spiral heat exchanger market and introduced the industrial plate heat exchanger. 1963 the company changes its name from AB Separator to Alfa-Laval AB and they were planning to create a division for fluids handling. The office in Lund became the international headquarter in the end of the 70's. In 1991, the Alfa Laval group was acquired and became privately owned by an entity within the Tetra Pak group, itself a privately owned group consisting of the industry groups De Laval and Tetra Pak. At the time, Alfa Laval consisted of three major lines of business: a food division, including liquid food processing activities, which was subsequently merged into Tetra Pak; an agricultural division, including farm equipment and systems, which is now De Laval, a subsidiary of the Tetra Laval Group; and an industry division. Today Alfa Laval and Tetra Pak are separated again as two individual organisations.¹²

3.2.2. Organisation

Alfa Laval's organisation was based on three technologies, Separation, Heat Transfer and Fluid Handling previously. A program was launched 1998 that changed the organisation to today's appearance. The concept is based on both centralisation and decentralisation¹³ and to change the organisational structure from a product focus to a customer oriented focus by organising the sales and marketing infrastructure into two divisions covering ten customer

¹² Alfa Laval AB. 10 Oct. 2007

<<http://www.alfalaval.com/ecoreJava/WebObjects/ecoreJava.woa/wa/showNode?siteNodeID=1511&contentID=-1&languageID=1>>.

¹³ Alfa Laval AB. 10 Oct. 2007

<<http://www.alfalaval.com/ecoreJava/WebObjects/ecoreJava.woa/wa/showNode?siteNodeID=2058&contentID=-1&languageID=1>>.

segments¹⁴. The activities with critical mass, such as Finance & Legal, IT/IS, Human Resources, Corporate Communications and Operations, have been centralised.¹⁵



Figure 3.2 – Organisation's structure at Alfa Laval.¹⁶

3.2.3. Operations Division

Operations Division, which is centralised, supports Alfa Laval's two principal divisions that perform the functions purchasing, logistics and manufacturing. The purchasing unit is responsible for purchasing strategy, volume and supply agreements, development of relationships with suppliers and outsourcing. The logistics unit is responsible for all distribution operations in the sales organisation's supply chain between Alfa Laval, the customers and the distributors. The logistics unit is also responsible for inventory management, order processing, warehousing, transport and freight. The manufacturing unit is responsible for all of the manufacturing sites which produce both components and complete products for supply to the customers. The production unit has the responsibility for long-term production planning and development. Alfa Laval's headquarters has the responsible to have sole responsibility for all human resource, information technology and information systems, communications, finance and legal activities.¹⁷

¹⁴ Alfa Laval's Annual Report, Form 20-F. For the Fiscal Year Dec. 31, 2002.

¹⁵ Alfa Laval AB. 10 Oct. 2007

<<http://www.alfalaval.com/ecoreJava/WebObjects/ecoreJava.woa/wa/showNode?siteNodeID=2058&contentID=-1&languageID=1>>.

¹⁶ Ibid.

¹⁷ Alfa Laval's Annual Report, Form 20-F. For the Fiscal Year Dec. 31, 2002.

3.2.4. Key Technologies

Alfa Laval is a global provider of specialised process engineering solutions and equipment based on three key technologies. These are heat transfer, centrifugal separation and sanitary flow technology. Alfa Laval sells its products to over 100 countries. The products that Alfa Laval sell individually and in combination with each other to form systems and solutions, are designed to improve the performance of their customers' manufacturing processes. Alfa Laval's key technologies are heat transfer technology, centrifugal separation and sanitary flow.

Heat transfer technology contains heat exchangers that are used in a variety of industries for applications such as heating, cooling, ventilation, evaporation and condensation of fluids. Due to the many applications in which heat exchangers can be used, there are a very large customer base consisting of plant owners and operators of manufacturing facilities within industries such as marine, oil and gas production, refining, heating, ventilation and air conditioning, food processing and power generation.

Centrifugal separation technology includes centrifugal separation equipment, systems, and decanters which are used to separate liquids and solid particles from liquids. Examples of applications include fuel oil cleaning systems for ship engines and power stations, the separation of cream from milk in the dairy industry and the removal of sludge from water in waste-water treatment plants. The products are important in areas such as process industries, crude oil extraction and production and waste-water treatment.

Sanitary flow technology contains pumps, valves and installation material, including piping and connections. These are used for fluid handling applications such as the production of dairy products, beverages, food, health and beauty products and pharmaceutical products. Alfa Laval provides its product in the food and beverage industry and waste-water treatment, power generation, biochemical and pharmaceutical industries.

Alfa Laval's customer segments are organised into two divisions, the Equipment division and the Process Technology division. Alfa Laval markets and sells products in the Equipment division to customers that have a well defined and regular product based equipment need. In the Process Technology division, Alfa Laval markets and sells its customers with specialised or unique solutions for industrial systems and processes.

Each of the Equipment and Process Technology divisions is responsible for the worldwide marketing and selling of Alfa Laval's products, systems and parts and services with respect to their respective customer segments. The Equipment and Process Technology divisions are also responsible for research and development for their respective customer segments. Operations division supports the organisation that performs centralised purchasing, logistics and manufacturing functions.¹⁸

3.2.5. Product Groups

Alfa Laval focuses on product groups and Operations covers eleven different product groups. These product groups is divided and formed on the basis of the key technologies. Every product group is run by a product group manager and has its own responsibility. It is often that the product groups are the receivers of the project managed by OD Supply¹⁹.

¹⁸ Alfa Laval's Annual Report, Form 20-F. For the Fiscal Year Dec. 31, 2002.

¹⁹ Persson. Richard. Personal interview. 2007-09-10.

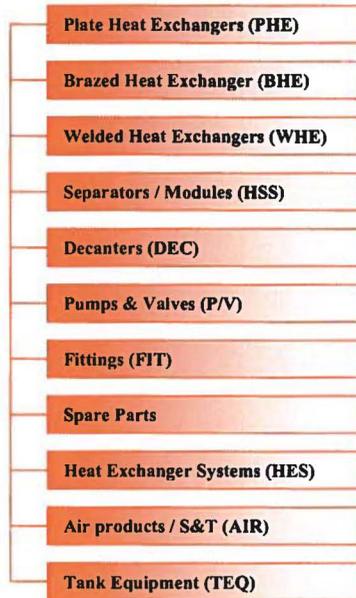


Figure 3.3 - The product groups at Alfa Laval.²⁰

3.2.6. The Market

The impetus behind Alfa Laval's restructuring was a commitment to shift their focus from their products to their customers. Alfa Laval's products and services, however, remain based upon the three key technologies of heat transfer, centrifugal separation and sanitary flow. Alfa Laval newly created Equipment and Process Technology divisions, therefore, continue to operate and compete in their traditional markets for heat transfer, centrifugal separation and sanitary flow products.

The markets for plate heat exchanger and centrifugal separation technology, in particular, have high barriers to entry, principally due to the need for: proprietary design and manufacturing techniques; large capital investments required to replicate the necessary manufacturing infrastructure; and a well-established brand and historic track record of product quality and reliability.

The market for plate heat exchangers has historically been characterised by strong growth and a small number of global players. Plate heat exchangers represent the fastest growing segment of the European and US heat exchanger markets. Alfa Laval believe this is due to the more compact size, modular design, lower price and higher energy efficiency of the plate heat exchangers as compared to the more traditional shell and tube heat exchangers technology. As end users become increasingly confident with the plate heat exchanger technology, Alfa Laval believe that the European, Asian and US markets will continue their strong growth as traditional shell and tube technology is replaced with plate heat exchanger technology.

²⁰ Intranet, modified figure, 10 Oct. 2007.

As heat exchangers improve in sophistication, after-sales support has become an essential service for end users. There has also been a greater emphasis on giving advice to customers relating to the operation and maintenance of equipment. Customer support has therefore become an important competitive factor. The market for parts and services business generates high margins but is highly fragmented, consisting of a number of small companies which primarily operate on a local basis.

The centrifugal separation market is served primarily by a small number of global players. In recent years, there has been a move away from conventional methods of separation, such as gravitational separation techniques towards centrifugal technology. Unlike conventional techniques, which require regular interruption to the process in order to allow cleaning to take place, centrifugal separation is a continuous process. Alfa Laval believes that their customers are becoming more confident in the application of centrifugal technology, particularly in relation to the clarification process within the brewing industry. However, Alfa Laval expects the highest growth to come from the biotechnology, pharmaceutical and environmental industries.

The market for sanitary liquid handling equipment historically has been characterised by slow market growth and a large number of small, regional industry participants, particularly in relation to commodity products such as butterfly valves and installation material. In recent years, growth among the industry participants has been achieved by consolidation, resulting in an increase in market share. It is expected that further significant consolidation among smaller industry participants will continue. Competitors principally compete on product range, price, a well established brand name, delivery time and distribution networks.²¹

3.3. Operations Development Supply

Operations Development Supply (OD Supply) is a function in the division of Operations that works cross functional. This department consists of eight employees, supervised by a manager, which work as project managers within Operations Division. Because of its cross functional way of work they work with the entire supply chain from Alfa Laval's suppliers to its customers.

The eight project managers in the department have its own niche. This is because they are working within such a large area. The area is the supply chain from supplier to customers via production. These eight Project Managers within OD Supply has one of these three areas, supplier, production or customer, as their area of expertise. There are two Project Managers who operate with the suppliers, two within the production and finally two with customers. Of course, there is no problem for the Project Managers to operate in another area but their expertise is in that area.



Figure 3.4 – A generic model of the Supply Chain.

²¹ Alfa Laval's Annual Report, Form 20-F. For the Fiscal Year Dec. 31, 2002.

3.3.1. The Project Managers within OD Supply

There are eight Project Managers at OD Supply and they are described below²²:

Martin Axelsson, a LTH alumnus, has no real alignment in the Supply Chain. Axelsson works in the entire supply chain in various projects where ever needed. However, forecasting projects and projects regarding business system are typical projects run by Axelsson.

Markus Ekendahl, a Linköping University alumnus, operates to the “left” of the Supply Chain towards supplier. He focuses his work on vendor relationships and runs projects of this nature. He tries to work close with the suppliers and develops their ability to fit to Alfa Laval’s requirements.

Niclas Fagerbeg, a LTH alumnus, operates to the “right” of the Supply Chain towards customers and distribution. Mainly, he works with project associated with outsourcing of distribution and shipping and the overall coordination of these areas.

Maria Jacobsson, a LTH alumnus, operates to the “right” of the Supply Chain towards customers. One of her bigger projects involves the order system at Alfa Laval and trying to coordinate the order system of all the satellite sites in the Alfa Laval umbrella. This project is called one4AL and is one of the bigger projects handled by OD Supply.

Ann Loftorp, a LTH alumnus, operates to the “left” of the Supply Chain towards suppliers. She works with different projects which are rationalising the processes associated with the vendors. For example, she is running one big procurement project, which implements VMI ,Vendor Managed Inventory, at Alfa Laval.

Niklas Löfmark, a LTH alumnus, is mainly working with Lean Six Sigma and he is trained to the level of a Master Black Belt. He is one of only two Master Black Belts at the entire Alfa Laval enterprise. Due to this, one of Löfmark’s most important responsibilities is to train other employees at Alfa Laval in the theories of Lean Six Sigma.

Lars Palebo, a Chalmers alumnus, operates in the “middle” of the Supply Chain with production related projects. Palebo often runs projects that focus on the business systems at Alfa Laval, for example Movex.

Richard Persson operates in the “middle” of the Supply Chain with projects related to inventory and manufacturing issues and development of processes.

²² Project Managers. Personal interviews. 17 Sep. – 31 Oct. 2007.

4. THEORY

The theories that are used in our thesis are presented below in this chapter. The theories are broken down into more detailed information in the subcategories. In order to easy follow the chapters there is a coherently between the empirical chapter and theory chapter.

4.1. Project Management

4.1.1. Project Organisation

The term project is widely used in various contexts and applications areas. To be able to communicate in a proper matter, it is important to define what a project is and which the characteristics of the project are²³. The definition of a project can be described in three bullets;

- Time determined; a project has a start and an end.
- Separated from the regular organisation
- Clearly defined objectives

For a project to succeed, a project organisation must be defined. Every party or role has its own responsibilities and work tasks. Below is a model of how the project structure is organised;

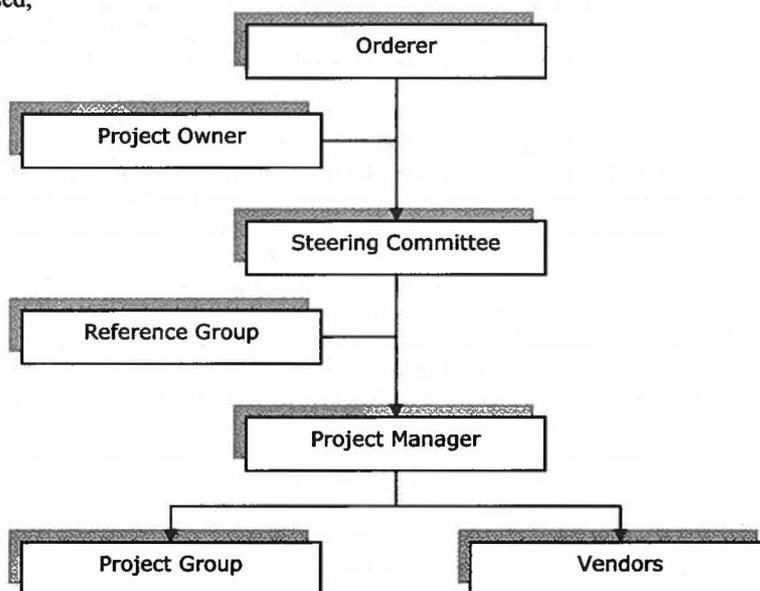


Figure 4.1 – A generic Project Organisation²⁴

²³ Marttala, Anders. & Karlsson, Åke. *Projektboken – metod & styrning för lyckade projekt* Lund: Studentlitteratur 1999.

²⁴ Marttala, Anders. & Karlsson, Åke. Modified figure. *Projektboken – metod & styrning för lyckade projekt* Lund: Studentlitteratur 1999.

The Orderer is always one single person and responsible for the project initiative and sets the time and resources frame. The purpose and direction of the project is established by the Orderer. He or she is also the one who nominates Project Owner, Project Manager and representatives for the steering committee. The authorities of the Project Owner and Project Manager are also determined by the Orderer.

The Project Owner is the head of the Steering Committee and has full responsibility for the entire project and everything associated with the project. The Project Owner has to allocate the necessary resource required by the project. He or she must also promote and defend the project both within the organisation and externally towards clients. It is the Project Owners duty, in consultation with the Steering Committee and Project Manager, to appoint members of the project group. On a continuously basis the Project Owner has to make sure that the receivers demands, requirements and needs are met. The Project Owner is also the one who needs to support and advice the Project Manager and in difficulties and needs of changes assist him/her. During the run of the project, the Project Owner must make sure that the project's progressing. This is easiest done through status reports and communication with the project group.

The Steering Committee, which is lead by the Project Owner, work as a decision making body and every major decision must be anchored with the Steering Committee. Example of major decisions is when a phase ends and a new one is to start. The Steering Committee needs to be able to make fast decisions regarding the projects direction and resources allocation. With this in mind it is crucial that the members of the Steering Committee have the adequate authority to make the right calls. If the Steering Committee cannot make the decisions themselves, the purpose of the Steering Committee gets minimised. It is the responsibility of the Steering Committee to support the Project Manager and give him the necessary backing required by the project.

The reference group possesses expertise and technical competence that may be required for solving different difficulties that occurs during the projects run. The reference group has no decision making authority, they are strictly advising and suggesting. Through the reference group different stakeholders are involved and their inputs are coming through this channel.

The Project Manager is responsible for the execution of the project. He/she is doing this by understanding the group members need and create motivation so that the project can progress. The Project Manager is responsible for coordinating the group members and the different tasks assigned to the project. He/she must also make sure that the project is completed in time and within budget. Various risks or problems that might arise must be identified, analysed and reacted to by the Project Manager, this enables the project to run more smoothly. Among the Project Managers duties lies also to spread the proper information, this is done through communication plans, information spreading, and progress reports.

The Project Group is made up by its members, who are chosen based on their technical skills and expertise. The purpose of the Project Group is to share their experience and thereby let the project proceed according to plan. The project members are the link between the project organisation and the regular organisation.²⁵

²⁵ Marttala, Anders. & Karlsson, Åke. *Projektboken – metod & styrning för lyckade projekt* Lund: Studentlitteratur 1999.

4.1.2. Factors for Successful Project Management

To successfully manage a project, a holistic view is needed. However, the holistic view can be broken down into five parameters or factors. These are clarity, structure, process awareness, discipline, and visions²⁶.

In the term of clarity, such aspects as the purpose of the project and its scope are included. If the single individual is not sure of the clarity, he/she cannot motivate neither him/herself nor others involved in the project. This parameter makes sure that every involved party has interpreted the project specification in the same way.

The temporary organisation's ability to solve problems is due to its structure. The structure provides steering to the project and supplies the necessary resources, both human and material, while structure stands for order and the framework for the project, process awareness represents the creativity needed for a successful project. The process awareness is closely related to the structure, the distinction is that process awareness deals with the emotional aspects of the project. It is up to the Project Manager to find the balance between structure and process.

Discipline is a prerequisite for working in a project. Through discipline project members accept each other and the certain way of running the project. Without this factor, nothing would ever be done within the project. An assigned task may feel boring and non-stimulated and it requires therefore discipline to complete.

The main drive force within a project is to be productive and to have achieved something good. To be able to reach the objective of the project, project group must have a clear vision of what to accomplish and the vision must be shared among everyone in the project group. In an ideal situation, everyone concerned by the project think that the project is of high importance and really values the project.

To gain speed in a project is a new competitive advantage and helps the projects be success stories. There are three major benefits of decreasing the lead time of projects; competitive advantage, higher profitability and fewer surprises. The ability to quickly respond to needs from the market and customers increases the market leverage for an organisation and hence the organisation's competitive advantage. Increased speed of a project leads to that the deliverables and the outcome would be taking into action earlier and thereby can the benefits of the projects be utilised in an earlier stage. The third benefit of increased speed in a project is fewer surprises. The conditions and requirements set in the start up of the project will not have time to change as much if the project is conducted with high speed.²⁷

4.1.3. Different Project Management Styles

When leading a project the Project Manager has to be aware of the approach and style they are representing. Different approaches result in different focus in the project and the progress and success of the project becomes depending on the approach. The organisational context and atmosphere determines in great extent the choice of project management style. Five various styles are often described and these are as followed; education and communication, collaboration and participation, intervention, direction, and coercion and edict.

²⁶ Marttala, Anders. & Karlsson, Åke. *Projektboken – metod & styrning för lyckade projekt* Lund: Studentlitteratur 1999.

²⁷ Cooper, Robert. *Winning at New Products*. Reading, MA: Perseus Books, 1993, 2ed.

The first style, education and communication, focuses on explaining and describing the reasons and the purposes of the project. This approach works best when there are communication problems and the organisation lacks information and proper information channels, which can stimulate communication. The downside of this approach is that it requires rather much time and is time inefficient. The best circumstance or situation to apply this approach is for incremental changes.

The next style is called collaboration and participation and is the process of implementing projects or changes by involving as many parties as possible which will be affected by the change. The advantage of this approach is that it provides a positive attitude towards change and decreases the resistance. Increased ownership and commitment to decisions of the change are other positive outcomes that can be reckon with. Even this approach is time consuming and most of the solutions are presented within the underlying paradigm of the organisation. This approach has the same scope of use as the previous approach, education and communication.

Intervention is the name of the next approach and this approach involves delegation of the different elements of the project. The project manager is coordinating the process of change and is delegating different tasks or elements to various parts of the organisation. Examples of this can be that the idea generation is done in one part of the organisation while the planning and data collection is conducted by another party. Benefits of this approach are that the process is controlled and the numbers of actors involved in the change increases. On the other hand this approach may perceive as manipulative. This approach works well both for incremental change as well as for non crisis transformational changes.

Direction is the next approach and uses an authority figure to establish clear future strategies and which changes will be made. Basically, this approach is a traditional top down approach, in which the project manager in association with the steering committee dictates the change and how it is implemented. The advantages of the direction approach are that it is clear and works with a high level of speed. The disadvantage is that there is an obvious risk for lack of acceptance. This approach works best on changes of a transformational nature.

The last approach is called coercion and edict and means exactly what it sounds like. The change or project is forced on the organisation through power and it is necessary when the organisation is facing a major crisis. During crisis is the only time to use this approach, but it is also the only one that will work under these circumstances.²⁸

4.1.4. The Four Rooms of Change

There are four different aspects or mindsets, which can be presented as four psychological rooms, in which we all live in when dealing with changes. The rooms are connected and can only be access in a sequential order. The four rooms can be described as shown below:²⁹

²⁸ Johnson, G. et al. *Exploring Corporate Strategy*. Harlow: Pearson Education Ltd, 2005 3ed.

²⁹ Janssen, Claes. *förändringens fyra rum* Borås: Wahlström & Widstrand, 1996.

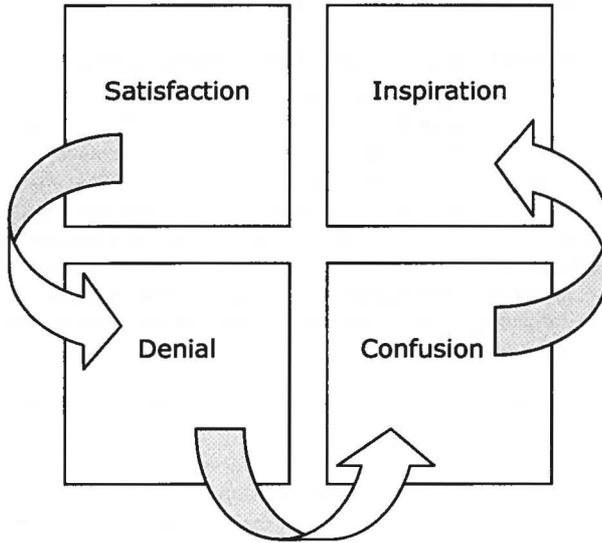


Figure 4.2 –The theory of the Four Rooms of Change³⁰

In the first room, the room of Satisfaction, people are pleased with the situation and they have no urge for a change. In this room people have a relaxed attitude towards the situation, which they are familiar with. They feel part of an ordinary group, where no one protrudes from the rest. This room represents of a status quo mode and, as the room is called, a general satisfaction.

The Denial room is the next room and this room characterises of an effort to retain the status quo and to disguise the change and reject it. As the room's name indicates, the people are in denial and do not want to deal with the upcoming change. The people in this room are without feelings and the present situation is disturbing, empty and mechanical. To be able to keep up a good face is important and they are concerning what other people are thinking about them.

The third room is called the Confusion room. In this room people have a feeling that something is wrong but they cannot put their finger on the problem. They do not know if the problem is internal within themselves or if the problem lies within others. People are maladjusted and possess restrained feelings of fear, anger and sadness. In this room people are experiencing doubts and insecurity regarding themselves and the change, if it is right or not.

The fourth and final room is the room of Inspiration and Regeneration. It is in this room which creates changes. To be a part of the development is a typical feeling in this room. The present situation is important and is intensively connected to the people in the room. The people in this room are full of energy and clarity, they want to make a change for the better and has radical ideas for doing so.³¹

³⁰ Janssen, Claes. Modified figure. *förändringens fyra rum* Borås: Wahlström & Widstrand, 1996.

³¹ Janssen, Claes. *förändringens fyra rum* Borås: Wahlström & Widstrand, 1996.

4.2. Tools for Efficient Project Management

4.2.1. Characteristics of a Generic Project Model

Every project goes through a project life cycle, which consists of four different phases, conceptualisation, planning, execution and termination. The conceptualisation phase determines the scope for the project and under which circumstance to work under. The objectives and the ways of reaching them are also described in this phase. The next phase establishes the plan for achieving the objectives and is called the planning phase. Budgeting, scheduling, and resources allocation are examples of typical activities done in this phase. The execution is the actual project itself when it is getting implemented in the organisation. In this stage performance capabilities are secured and verified, also materials and resources are procured. Lastly, the projects get terminated and closed. In this phase the project is completed and handed over to the clients.³²

When leading a project there are ten factors to consider. These are illustrated in the figure below:

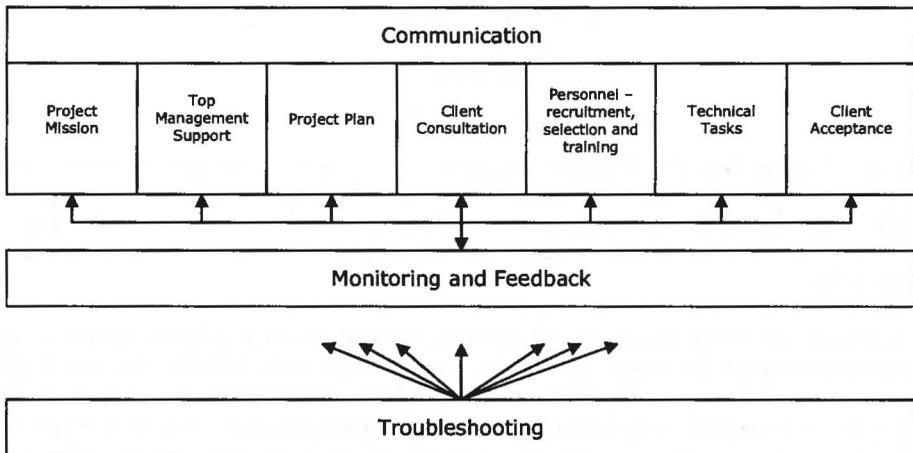


Figure 4.3 - The factors to consider when managing a project.³³

Factor 1 – Project Mission. The first step of a project is to clarify the objectives and the deliverables. Since a project is costing the organisation resources, time and energy, it is vital that the needs and purposes are well described and defined. To be able to see the entire picture and where the project fits in with the strategic direction are also of high importance.

Factor 2 – Top Management Support. As soon as the idea is somewhat described it is crucial to gain the support of the top management. If top management does not support the idea or the project it can be seen by the organisation as unnecessary or unimportant. Especially in the launch of the project it is important with support from top management.

Factor 3 – Project Plan. To be able to succeed with the project, it is important to get off to a good start. The project plan can help achieving the success. In the project plan all necessary

³² Katz, Ralph. *Technological innovations Management*. New York: Oxford University Press, 2004, 2ed.

³³ Katz, Ralph. Modified figure. *Technological innovations Management*. New York: Oxford University Press, 2004, 2ed.

activities are to be defined, also the resources must be allocated. To be able to measure the progress of the project are also part of the project plan.

Factor 4 – Client Consultation. The term client means whoever who will receive the project. The receiver may often be an internal customer, such as a department within the organisation. Since all projects are done for the customer, it is crucial to put his/hers needs in the front room.

Factor 5 – Personnel – recruitment, selection and training. When trying to reinforce a change, it is always important to have the necessary and right resources. Therefore, it is of high importance to select the right personnel. If the necessary personnel are not accessible, the choice of recruiting new personnel or to train existing personnel arises and faces the management.

Factor 6 – Technical skills. The run of a project is depending on how involved people understand the purpose and consequences of the project. The organisation itself must also possess the adequate technology required by the project.

Factor 7 – Client Acceptance. The bottom line of a project is the satisfaction of the customer. The customer, no matter internal or external, must accept the solution and just because the other factors are met, this one necessarily is not.

Factor 8 – Communication. As the figure (Figure 4.3) shows communication is the over heading factor and must be considered in every other stage. Communication within the project group is crucial and just as important the communication is with the rest of the organisation.

Factor 9 – Monitoring and feedback. This factor enables the project manager be on top of problems and be able to solve them ahead of time. Giving feedback regarding the progress of the project lets the key personnel know how the project is developing. It is this factor which ensures the quality of the project.

Factor 10 – Troubleshooting. There are no projects that are conducted without any problems. The entire project team must be capable to identify problems and address them with a proper approach. The team should contain such technical expertise that problems can be solved when arising.

4.2.2. Lean Production

Lean Production not only successfully challenged the accepted mass production practices in the automotive industry, significantly shifting the trade-off between productivity and quality, but it also led to a rethinking of a wide range of manufacturing and service operations beyond the high-volume repetitive manufacturing environment.³⁴

To explain lean production, the best way is to use craft production and mass production. Craft production is when a company uses highly skilled workers and simple but flexible tools to make exactly what the consumers ask for, one item at a time. For example, this can be custom furniture, works of decorative art and an exotic sports car. The problem with craft production is that the goods cost too much for the consumer. This is why mass production was developed in the beginning of the twentieth century as an alternative.

³⁴ Holweg, Matthias. *The Genealogy of Lean Production*. Cambridge. University of Cambridge. 2007.

Mass production is when a company uses narrowly skilled professionals to design products made by unskilled or semiskilled workers tending expensive, single-purpose machines. Standardised products in very high volume are the outcome of mass production. Because the machinery costs so much and is so intolerant of disruption, the company adds many buffers such as extra supplies, extra workers and extra space to assure smooth production. Since change over to a new product costs a large amount of money, the company keeps standard designs in the production. This results in the consumer gets lower costs but at the expense of variety and by means of work methods that most employees find boring.

When a company uses lean production it combines the advantages of craft and mass production, while avoiding the high cost of the former and the rigidity of the latter. Lean production employ teams of multi skilled workers at all levels of the organisation and use highly flexible, increasingly automated machines to produce volumes of products in enormous variety.

Lean production is “lean” because it uses less of everything compared to mass production. One of the most striking differences between mass production and lean production lies in their ultimate objectives. Companies which are using mass production has an limited goal which is an acceptable number of defects, a maximum acceptable level of inventories, a narrow range of standardised products. Companies which are using lean production set their sights explicitly on perfection such as continually declining costs, zero defects, zero inventories and endless product variety.

With lean production people will find their job more challenging and they will be more productive. At the same time they may find their work more stressful, because a key objective of lean production is to push responsibility far down the organisational ladder. Lean production calls for learning far more professional skills and applying these creatively in a team setting rather than in a rigid hierarchy.³⁵

4.2.3. Six Sigma

Six Sigma is a process improvement methodology and goes far beyond problem solving. Process improvement is intended to be a permanent change to the way a process works by reducing the impact of sources of variation on critical process characteristics. How to improve a process depends on the nature of sources of variation in the process.³⁶ Six Sigma says that focus on reduction of variation will solve process and business problems. By using a set of statistical tools to understand the fluctuation of a process, management can begin to predict the expected outcome of that process. If the outcome is not satisfying, associated tools can be used to further understand the elements influenced that process.³⁷

Six Sigma is referred to be a programme and uses a methodology called DMAIC which stands for Define, Measure, Analyse, Improve, and Control to identify and eliminate waste.^{38, 39}

³⁵ Womack, James P., Jones, Daniel T. and Roos, Daniel. *The Machine That Changed the World*. New York: Macmillan Publishing Company, 1990.

³⁶ Ward, Sophronia and Poling, Shelia R. “Six Sigma: The Power of Understanding Process Behavior” *Quality* (2007): 46, 9.

³⁷ Nave, Dave. “How To Compare Six Sigma, Lean and the Theory of Constraints”. *Quality Progress* (2002).

³⁸ Fergusson, Douglas. “Lean vs Six Sigma”. *Management Services* (2006): 50, 4.

³⁹ Nave, Dave. “How To Compare Six Sigma, Lean and the Theory of Constraints”. *Quality Progress* (2002).

- **Define.** Practitioners begin by defining the process. They ask who the customers are and what their problems are. They identify the key characteristics important to the customer along with the processes that support those key characteristics. Later the existing output conditions are identified along with the process elements.
- **Measure.** Key characteristics are categorised, measurement systems are verified and data are collected.
- **Analyse.** The intent is to convert the raw data into information that provides insights into the process. These insights include identifying the fundamental and most important causes of the defects or problems.
- **Improve.** Solutions to the problem are developed, and changes are made to the process. Results of process changes are seen in the measurements. In this step, the company can judge whether the changes are beneficial or if another set of changes is necessary.
- **Control.** If the process is performing at a desired and predictable level, it is put under control. The process is monitored to assure no unexpected changes occur.

Focusing on the primary area of variation reduction produces other effects too, quality is improved. Another effect when through the reduction of variation of all the processes, the overall performance of the organisation will be improved. Improving all of an organisation's individual processes could actually have a detrimental effect on the company's ability to satisfy the customer's needs though. The realised savings to the system might be less than the cost of all the improvements.⁴⁰

A six sigma team is identified for a specific area or project. This team often includes people who are certified as Green Belts led by either Black Belts or Master Black Belts. As change management, Six Sigma tends to focus on costs, quality and schedule.⁴¹ While executive management plays a critical role in setting the stage for a Six Sigma culture, they play an indirect role in the tactical piece of Six Sigma. The direct roles in Six Sigma are:⁴²

- The project sponsor, called the Champion.
- The project team leader, called either the Black Belt or Green Belt.
- The project team members.

⁴⁰ Nave, Dave. "How To Compare Six Sigma, Lean and the Theory of Constraints". *Quality Progress* (2002).

⁴¹ Fergusson, Douglas. "Lean vs Six Sigma". *Management Services* (2006): 50, 4.

⁴² Eckes, George. *Six Sigma Team Dynamics*. New Jersey. John Wiley & Sons, Inc., 2003.

4.2.4. Lean Production vs. Six Sigma

Concepts	Lean Production	Six Sigma
Origin	The quality evolution in Japan and Toyota	The quality evolution in Japan and Motorola
Theory	Remove waste	No defects
Process view	Improve flow in process	Reduce variation and improve processes
Approach	Project management	Project management
Methodologies	Understanding customer value, value stream, analysis, flow, pull, perfection	Define, measure, analyse, improve and control
Tools	Analytical tools	Advanced statistical and analytical tools
Primary effects	Reduce lead time	Save money
Secondary effects	Reduces inventory, increase productivity and customer satisfaction	Achieves business goals and improves financial performance
Criticism	Reduces flexibility, causes congestion in supply chain, not applicable in all industries	Does not involve everybody, does not improve customer satisfaction, does not have a system view

Table 4.1 – Comparing between Lean Production and Six Sigma.⁴³

Even though Six Sigma and Lean Production have the same origin the concepts have developed differently. The improvement projects in a Six Sigma programme are conducted in a wide range of areas and at different levels of complexity in order to reduce variation. When the project members have reduced the variation in a process, and hence achieved the business goals, increased the profit or lowered the cost, this improvement is visualised to the top managers at the company. Often some of the top managers are also involved in the performed improvement projects. As a result, the Six Sigma programme receives necessary support from the managers at the company. Lean Production is a discipline that focuses on process speed and efficiency, or the flow, in order to increase the customer value. Project groups are usually the approach to perform the necessary improvements.

In Six Sigma there are two major improvement methodologies, one for already existing processes and one for new processes. The principles of Lean Production are understanding, customer value, value stream, analysis, flow, pull and perfection. The Lean Production principles are different compared to the methodologies in Six Sigma, as they are not cyclical in nature and are not focused on how to perform improvements.

In general, Six Sigma programmes have been successful at integrating advanced improvement tools and from very simple tools to more advanced statistical tools. During the training programmes in Six Sigma, one learns how to choose the most appropriate tool and how it should be applied. In addition, the selection has to be verified in order to assure that the appropriate tool was chosen. Lean Production has a variety of tools that are available for reducing or eliminating waste. In summary, the tools in Lean Production are more analytical than in Six Sigma.

⁴³ Andersson, Roy, Eriksson, Henrik and Torstensson, Håkan. Modified table. "Similarities and differences between TQM, six sigma and lean" *The TQM Magazine*. Vol. 18. No 3. 2006.

In Six Sigma it is argued that the projects are selected in such a way that they are closely tied to the business goals or objectives. Normally, goals are set so that the customers' need will be satisfied. Before starting a Six Sigma project, the improvement has to be proven so that the results will be in economical savings for the company. This result in the fact that all improvements in a Six Sigma programme are economically justified. When starting a Lean Production project with the objectives to reduce the lead time of a process, the analyses of the customers demand has to be made first. One more objective is to increase customer satisfaction. In addition, increased productivity and an inventory reduction are common effects of successful Lean Production projects.⁴⁴

4.3. Cooperation & Participation at a Project Management Unit

4.3.1. Competence within a Group

It is found that it is a basic discipline that makes groups work. It is also found that groups and good performance are inseparable; you cannot have one without the other. Teamwork represent a set of values that encourage listening and responding constructively to views expressed by others, giving others the benefit of the doubt, providing support, and recognising the interests and achievement of others.

A working group's performance is a function of what its members do as individuals. A group's performance includes both individual results and what can be called "collective work-product". A group needs a purpose to believe in to be able to become a powerful unit of collective performance. Groups develop direction, momentum and commitment by working to shape a meaningful purpose.

Most successful groups shape their purposes in response to a demand or opportunity put in their path, usually by higher management. Management is responsible for clarifying the charter, rationale and performance challenge for the group, but management must also leave enough flexibility for the team to develop commitment around its own spin on that purpose, set of specific goals, timing and approach. A good group invests a large amount of time and effort to exploring, shaping and agreeing on a purpose that belongs to them both collectively and individually.⁴⁵

Irrespective of a company has a functional perspective or if it is built on goal oriented groups the co workers within the groups need to control a wider area than before. This results in that the co worker need to participate in necessary tasks and an increased involvement in planning and in indirect work. The development in knowledge is important in management towards the co workers within companies that use line organisation. A vital task for the goal oriented groups is to seek time, in which the co workers get an opportunity to gain new knowledge and skills.⁴⁶

4.3.2. Idea Generation and Prioritizing

To assemble or generate a couple of ideas is a creative process. Brainstorming and lateral thinking is the most common methods to develop ideas. With help of the problem analysis

⁴⁴ Andersson, Roy. Eriksson, Henrik and Torstensson, Håkan. "Similarities and differences between TQM, six sigma and lean" *The TQM Magazine*. Vol. 18. No 3. 2006.

⁴⁵ Katzenbach, J. R. and Smith, D. K. "The Management of Cross-Functional Groups and Project Teams". *Harvard Business Review*. Vol. 17, 1993.

⁴⁶ Hart, Horst. *Att förändra och leda morgondagens arbete*, Stockholm: Graphics System 1996.

requirements is found to satisfy the customer. It is vital that the solutions should fulfil these requirements and to work these out, the environment have to be stimulating, otherwise there is no creativity but only restrictions. A clinch factor to succeed with creativity within a process is the maturation. To issue new ideas demands courage of the individual group member as well as trust within the group. This demand support and back up from the other group members together as they need to give and take constructive criticism.

To develop ideas can be trained, both individual and together as a group. The largest problem is to be able to limit the thoughts and keep within a realistic area. Other ways to increase the process is to make study visits within other type of businesses.

Brainstorming is a good way to elicit many and unconventional ideas. The ideas can be combined or developed as well. The group which is brainstorming needs different knowledge and background. It is important that the problem is explained for the group members a couple of days before the meeting, this to let the group members a deeper understanding. All ideas during the meeting should be noted and written down. The group members are not allowed to give negative criticism during this stage.

There are functions that decrease the creativity within groups and organisations. Some of the most common functions are homogenisation, caught in a habit, fear for change, fear for complexity, territory thoughts and caught in the best idea.

Homogenisation is when a major part of a group consists of ideas that people think have to be right. Often, it is the opposite. Caught in a habit arises when people only use their former knowledge to attack new problem. This function increases the development of new ideas. Fear for changes appears when people feel safe in old habits. These people make resistance for changes to feel secure. A good problem solver can manage complexity and can apprehend many different opportunities without dismiss things that is hard to understand. Some people react negatively to ideas that does not are their own, the so called "not-invented-here-syndrome". Some people can even underrate the ideas because they are coming from the "wrong" person. Wrong person can be a person which is inferior or from another department. It can feel unnecessary to try finding new ideas when there already exist one.

When the evaluation is done and the ideas has been reworked and investigated it is easy to find those who do not fit in and become hard to implement in the organisation. It is vital, in the beginning of choosing idea, to put appose if the customer only is interested on the advantages of the idea. Even the disadvantages needed to be considered when looking at the customer. The other criteria are important as well and should be considered, but only when looking within the organisation together with the project. The different advantages should be compared with each other and graded. The advantages are diverse in importance for the organisation they need to be weighted different. Important to notice is that the proposals costs different dependent on how they are implemented.

Another way to prioritize ideas is to evaluate one proposal at a time. Every proposal is presented in front of a public, where the rational and logical reasons why this proposal is the best are explained. When rational reasons are presented in front of a public it is often noticed that these are emotional reasons instead. Several aspects and approaches is increased with this way to prioritize as well.

In the final it should always be the taskmaster that takes the final decision because he/she has the biggest responsibility.⁴⁷

In summary there are eight criteria that should be considering when finding the best solution of the proposals. These are:⁴⁸

- Advantages
- Disadvantages
- The competitors' strengths and weaknesses
- The substitutes' strengths and weaknesses
- Realisability
- Risk level
- Resources
- Accordance

4.3.3. Follow up and Feedback

All projects should be followed up somehow. This does not result in large increasing of work hours or costs. This extended follow up can often be handled by itself. The documentation within the project has to be fulfilled so that other persons in another time could make the follow up. If there is no one within the project that is doing the follow up the project group should request that they got a final result feedback instead at the end of the project.

A project manager that has an ambition to finish the project within time plan, keep the budget and deliver the result to the customer with agreeable quality has to measure the condition in the project. This can be done with the help of certain data. This data has to be measured and compared with the expected data. The data that cannot be measured cannot be controlled.⁴⁹

The important data that has to be measured are:⁵⁰

- **Follow up of time plan.** Often with tools such as computer programs and these can measure how the project is going based on time.
- **Follow up of cost.** Even if the projects are following the time plan it is not necessary that budget is accordingly. Maybe there has been some overtime to be able to follow time plan.
- **Follow up of comprehensiveness.** Functions that are added in project's specification or activities that are missed is the most common cause for delays and increasing costs in projects. The project manager has to control the new functions through identifying of how they affect time plan and budget. If they have a significant impact on the project these has to be taken into consider in the steering committee where decisions regarding budget and delays are taken.
- **Follow up of quality.** To measure quality is hard. An indication of low quality is the amount of products that has to be reproduced again. Other indications can be changes in documents, construction changes and complaints from customers.

⁴⁷ Marttala, Anders and Karlsson, Åke. *Projektboken – Metod och Styrning För Lyckade Projekt*, Lund: Studentlitteratur 1999.

⁴⁸ Ibid.

⁴⁹ Marttala, Anders and Karlsson, Åke. *Projektboken – Metod och Styrning För Lyckade Projekt*, Lund: Studentlitteratur 1999.

⁵⁰ Ibid.

Not only follow up is important. Even feedback on the Project Manager and the Project Members are essential to check if one has understood the other person's message and to react to what they said and done. It is necessary to state the praise's reasons with any positive feedback. Giving negatively feedback is generally difficult. However, it is bad management to avoid any negative feedback. Making them formally and professionally will make it comfortable for both parties. In order to make negative feedback you can aim to express your negative opinions honestly, but in a positive manner, clearly project an understanding of what went wrong and why, draw out ways to improve poor performance/behaviour and take the negative feedback away from the emotional area by being objective and not personal.⁵¹

4.3.4. Competence Development

Continuous improvement, which is one of the most important factors for an organisation which wishes to gain a competitive advantage, is often tightly linked with the competence development of the organisation. Product and process development, which continuous improvement is all about, requires in a greater extent improved competences and capabilities. Just as important as obtaining new competence is to be able to utilize the new competence. To be able to successfully deal with these kinds of questions the organisation has to be able to learn, it is not just the individual employee who has to learn. Considering this a model between individual learning, organisational learning and continuous improvements are presented, exemplified below:⁵²

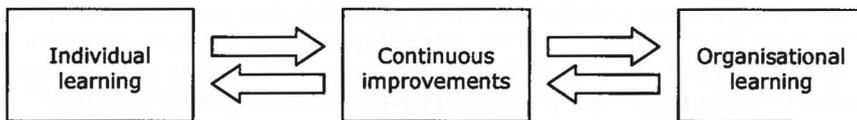


Figure 4.4 – A generic system for competence development.⁵³

Even though competence development through courses, education and seminars are important, it is far from the only kind of competence development. The intangible so called lessons learned or competence that is obtained through experience and trail and error is just as important, if not even more important. It is crucial to set up the organisation in such way that it facilitate for learning for all employees and through their daily work.

But just because an organisation has that kind of individual learning it does not mean that the organisation learns. For the organisation to gather up the learning made by the employees regarding procedures, policies, strategies, and routines there must be a system or methodology for doing so.

A vital difference that must be considered when facing learning is the character of the learning. Learning can be divided into efficient and effective learning. Efficient learning means to do the things right while effective learning means doing the right things. Traditionally, learning is tailored after certain given objectives, which are not disputed, and the learning is striving for reaching the objectives as easily as possible and become as good as possible in this area. Hence, this kind of learning can be described as efficient learning.

⁵¹ Pillai, Madhu P. *Human Side of Project Management*. Khobar: International Transactions, 2006.

⁵² Nilsson, Tommy. *Ständiga förbättringar- om utveckling av arbete och kvalitet*. Solna: Arbetslivsinstitutet, 1999.

⁵³ Nilsson, Tommy. Modified figure. *Ständiga förbättringar- om utveckling av arbete och kvalitet*. Solna: Arbetslivsinstitutet, 1999.

Efficient learning often asks the question “how”, but may lose the focus of “why”. On the other hand, effective learning is the other way around and enables the employees to redefine, interpret, and set the tasks within the frames of the organisation. Efficient learning helps solve defined problems, while effective learning helps define undiscovered problems. With this in mind, it is crucial for the organisation to possess both efficient and effective learning.⁵⁴

⁵⁴ Nilsson, Tommy. *Ständiga förbättringar- om utveckling av arbete och kvalitet*. Solna: Arbetslivsinstitutet, 1999.

5. EMPIRICAL RESEARCH

This chapter has the same model as the theory chapter in order to ease the reading and to create a red line. As in the theory chapter the main titles are broken down into sub categories in order to present the reader more detailed information.

5.1. Project Management

5.1.1. Project Management at Alfa Laval

Alfa Laval has a definition for what a project is and what it involves. They are defining a project as an activity that is carried out for a limited period of time, uses specific resources, has a defined objective or goal, and requires a temporary well defined organisation. The project is answerable for reaching the objective at the right time for the right cost. The project has the total responsibility to reach the goals according to the project description.⁵⁵

A Project Manger has the operational and executive responsibility of delivering the project within its specification. The Project Manager also has the authority to take decisions within the scope of the approved project specification and to choose and decide among available options provided by either the Steering Committee or the Project Owner. Further on the control and following up of the assigned project resources lay in the Project Manager's hands. He/she also suggests and manages the project team and determines the project specification together with the Project Owner. During the project, the Project Manager is responsible for administration, documentation and information regarding the project. He/she is also the one who conducts status reports, risk analysis and to report possible deviations. The main objective for the Project Manager is to ensure the overall quality and success of the project. All of this he/she needs to do within the framework of standards and procedures which defines the project orientation.⁵⁶

As of today, the individual Project Manager works on average with three or four different projects. Most often they work on their projects by themselves with no official support from the other Project Managers at OD Supply. However, all of the Project Managers expressed that the other Project Managers are easy going and they do not hesitate to ask each other for help, if so is needed this happens in an unofficial matter. Lately some efforts have been made to unify the projects and drive several projects in linked areas towards the same bigger objective and thereby let several Project Managers work in the same direction, meanwhile they are working with their own projects. The members of OD Supply feel that the strength of their department are their combined competence or as one of the Project Managers put it: "Combined competence is a higher competence".

When asked to describe what the Project Manager believes is important when leading a project, they all come down to the same three parameters; communication, clarity and commitment. The first one is communication, they all feel that to be able to motivate the project members it is vital that the members know what is going on and for what reason it is happening. If the work force is aware of the changes and accepts them, the resistance of

⁵⁵ Alfa Laval AB, Intranet, 9 Oct. 2007 <<http://alround.alfalaval.com/alapps/> [What is a project?]>.

⁵⁶ Alfa Laval AB, Intranet, 10 Oct. 2007 <<http://alround.alfalaval.com/alapps/> [Project roles]>.

change should be lower according to the Project Managers' experience. The second parameter is clarity, the communication that is communicated must be clear and should not be able to be misunderstood. It is more important to give a clear answer, even if it is negative, than to give a vague answer with room for a lot of interpretation. The next parameter is commitment, both from the Project Manager him/herself and from the Steering Committee. If both these parties are committed to the project, their enthusiasm and passion should grow in the project group and every involved party will start to feel the same way and thereby be ready to put in that extra effort necessary for the success of the project.^{57, 58, 59}

5.1.2. Project Managers View of PROMAL

Generally the different Project Managers enjoy working with PROMAL and the benefits that it offers. They all agree that a project model is needed and it definitely helps the projects. All the standardised documentation and templates for different activities makes it easier for Project Managers, members, Owners and Steering Committee to talk the same language and to be on the same page. Since all documentations have the same layout, the set up time to understand the document gets minimised and the efforts can instead be directed towards the contents of the document and thereby increase the efficiency of the project and optimising the Project Manager's time and energy.

However, the documentation can lead to loosing focus of the project itself and that proper documentation gets more important. The documentation requires a lot of time and takes resources away from the project itself. This is especially true when driving smaller projects. In these kinds of projects some of the Project Managers feel that all of the documentation of PROMAL is too heavy and that an easier version, PROMAL light, would benefit the progress of smaller projects. This easier version should not include every part in the templates and not all templates should be included. One possibility that also was addressed by the Project Managers is to combine the Feasibility phase with the Pre-Study phase and only have one phase before the realisation phase. As it is today, according to some of the Project Managers, these two phases can be hard to distinguish and the point where one ends and the next start can be difficult to identify.

The advocates of PROMAL argue that the difficulties and heaviness associated with PROMAL derives from inexperience using the methodology. Further on, these Project Managers states that as long as PROMAL is closely followed it is not that heavy and actually pretty easy to use, presupposed that you are trained in the methodology. Therefore no PROMAL light is needed it will only create confusion and uncertainty regarding which methodology to use. It can be hard to estimate if midsize projects should be managed through the original version or through the light version.

Another problem that was experienced by most of the Project Managers is the interaction with the Steering Committee. How and when the Steering Committee is to be involved is not clearly defined in PROMAL. It was suggested that the involvement of the Steering Committee was to be defined in the same way as the link between PROMAL and DMAIC, a Six Sigma tool used by some projects, is defined. This would create clarity and the Project Manager would be able to even more focus his/her energy and time towards the project itself, without doubts or dark clouds hanging over the shoulder. It was addressed by several project managers that it has to be easier to interact with the Steering Committee. It was also expressed

⁵⁷ Project Managers. Personal interviews. 17 Sep. – 31 Oct. 2007.

⁵⁸ Project Owners. Personal interviews. 2 Oct. – 6 Nov. 2007.

⁵⁹ Alfa Laval AB, Intranet, 10 Oct. 2007 <[http://alround.alfalaval.com/alapps/\[Project roles\]>](http://alround.alfalaval.com/alapps/[Project roles]>).

that the Steering Committee not always seemed prepared and that they uses the meetings to read the material and not be able to give competent steering.⁶⁰

5.1.3. The Steering Committee

The Steering Committee consists of the Project Owner and important stakeholders, such as major resource owners, receivers and when needed also different specialists. The specialists are included to secure competence for the right decisions. It is recommended that the Steering Committee do not exceeds seven members, excluding one Steering Committee chairman.

The role and objectives of the Steering Committee is to work as decision making body, and thereby they also have all the commercial and financial responsibility of the project. It is also the Steering Committee's responsibility to be prepared and to take an active role in steering meetings. Another objective of the Steering Committee is to be committed to the project and to support the Project Manager when he/she meets difficulties.

Other responsibilities for the Steering Committee include tollgate decisions, even commercial and business related decisions. They also need to make resolutions and decide about project issues and possible deviations from different specifications. To align the organisation based on the need of the project is another responsibility that the Steering Committee has. To be able to secure and guarantee that the project meets customers' need, expectations and requirements are also a vital responsibility for the Steering Committee. They also need to make sure that these factors are communicated throughout the project organisation. The Steering Committee is also responsible for promoting the project throughout the organisation. Another topic on the Steering Committee's table is to approve the project team.

The Project Owners states that to be able to steer a project properly and in a satisfying way the Project Manager and the Steering Committee has to be on the same page. This is not always the case and the steering for some projects is not as good as it should be. The Project Owners would prefer that the Project Manager is proactive and initiate contacts with the Project Owner at an informal matter between the steering meetings. The Project Owners explains that both the engineering and the commercial aspects of a project are important, focus should instead lie on the critical issues which can jeopardize the project.

The use of PROMAL is good for Alfa Laval it enables projects to be conducted in the same way and different parties of the projects to speak the same language. However, the Project Owners argues that the Project Managers in collusion with the Steering Committee can adjust the methodology and only address the applicable areas.^{61, 62}

5.1.4. Project Receivers

The Project Receivers enjoys working with PROMAL, they believe that PROMAL provides a structure and frame for the project. It enables everyone to talk the same language and through PROMAL every involved party knows what is expected from them. The strengths of the methodology lie within its ability to cope with decisions making. The Project Receivers questions the need for PROMAL light, the structure of PROMAL is too important. Instead they state that the right attention and support is of importance. The flexibility of the Project Manager use of PROMAL is enough.

⁶⁰ Project Managers. Personal interviews. 17 Sep. – 31 Oct. 2007.

⁶¹ Project Owners. Personal interviews. 2 Oct. – 6 Nov. 2007.

⁶² Alfa Laval AB, Intranet, 10 Oct. 2007 <[http://alround.alfalaval.com/alapps/ \[Project roles\]>](http://alround.alfalaval.com/alapps/[Project%20roles]>).

To decrease resistance for the new project and to make it more appealing for the organisation there are two aspects to consider; "What's in it for me?" and the launch of the project. These two areas are dealt with through information according to the Project Receivers. Through the progress of the project, the Project Receivers feels that information is good and thereby also the resistance low. However, in the launch of a project the information could and would be better. This kind of information should include the purpose of the project.

Being a main site and be involved in developing the project is mainly positive according to the Project Receivers. This gives them a chance to have an input to the project and they can adjust and steer the project in their preferred direction. Sure there can be some start up difficulties and child deceases, but overall the benefits poise the drawbacks.

The Project Receivers do not see any major difficulties in the interaction between the Steering Committee and the Project Managers. The Project Receiver is often a member in the Steering Committee and it is through this forum, that the Project Receiver gets his/hers information. An interaction that the Project Receivers argues works not so good is the hand over of projects from the Project Manager to the organisation. There is too big of difference between the different organs. The Project Managers possess much more competence and expertise regarding the subject of the projects and expects the organisation to understand the project and handle some fine tuning at the hand over stage.

The follow up of projects are left to the organisation to conduct and it can be hard for them to do the follow up, since it at this point has become a part of the regular duties. It was asked from the Project Receivers to let the follow up be included in a post implementing stage and thereby a part of the original project. It was also stated that in DMAIC projects the controlling and follow up work better. In these projects the limitations are also set harder, PROMAL projects have a tendency to float away and lose focus.⁶³

5.2. Tools for Efficient Project Management

5.2.1. PROMAL

PROMAL is Alfa Laval's own made project model. PROMAL stands for Project Management Alfa Laval and is used whenever a project of a certain size is to be conducted. The size limit is roughly 30 000 €. The model consists of six different sequential phases all ending in a separate tollgate, in which a decision is made. The tollgates work as decisions points and decide if to kill, hold or move on with the project.

The first phase is not really a phase, but more an initiation of the project. This stage is called the Idea phase and at this point a need or a strategic direction is pointed out. Any kind of idea can be addressed and moved on to the next phase. In the next phase, Feasibility study, the idea is identified and pinned out. At this stage a basic estimation of the proposed project is done. Resources, costs, benefits and savings are presented at a rough basis. This stage should observe the idea from a broad and wide perspective. The purpose of the Feasibility stage is to increase the understanding of the idea and how it may come to affect the organisation. The Feasibility study discharges into a Pre-study specification.

⁶³ Project Receivers. Personal interviews. 1 Oct. – 1 Nov. 2007.

After approved specification the Pre-study is started. The Pre-study can be described as a more comprehensive and detailed version of the Feasibility study. In the Pre-study different parameters are estimated at a higher level. Different scenarios and problems are to be identified. The main purpose of the Pre-study is to prepare for an efficient realisation phase of the project. A good end result requires a good Pre-study. The achievements of the Pre-study may very well be the most important document of the entire project, this document is called a project specification. The project specification sets out the direction and objectives of the remaining project. It should provide a uniformed and agreed view of the project.⁶⁴

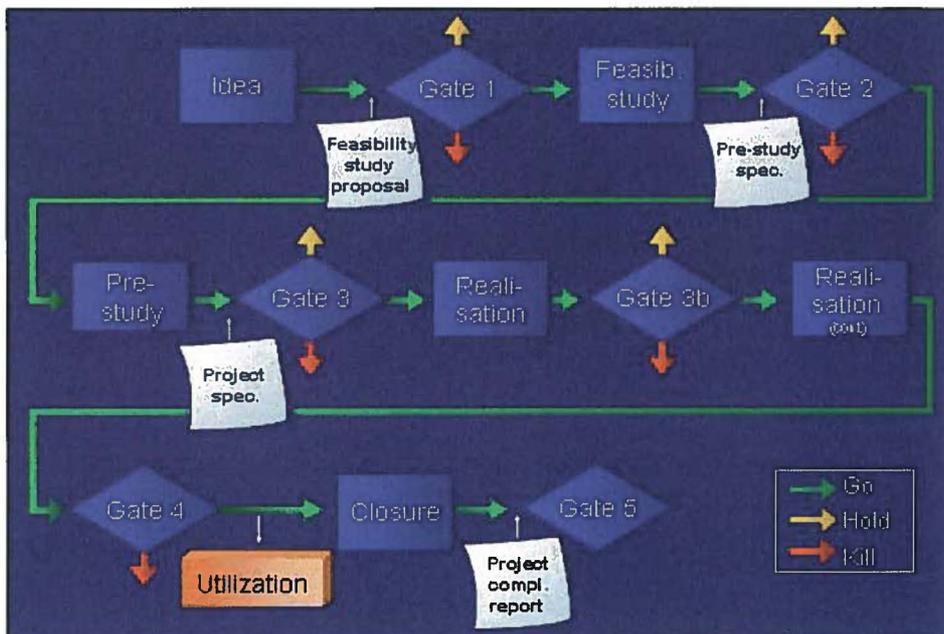


Figure 5.1 – the methodology PROMAL used at Alfa Laval⁶⁵

At this point next stage is the Realisation of the project itself. The Realisation is the phase, which takes the longest time and therefore also the most focus and resources in the project. In the middle of the realisation phase a tollgate is placed. This is done because there might be a need of taking a decision to hold, kill or move on with the realisation. At a continuously basis status reports are due. All involved parties should take part of the status report, so they are aware of the progresses of the project. Afterwards, the Realisation continues and gets completed and the project process reaches another tollgate, in which the utilisation of the project gets determined. The deliverables of the project are then compared with the original project specification.

At a final stage of the project, a closure phase is conducted. A distinct end of the project is important. The Closure should be described in the Project completion report, with a purpose

⁶⁴ Alfa Laval AB, Intranet, 9 Oct. 2007 < <http://alround.alfalaval.com/alapps/> [PROMAL]>.

⁶⁵ Ibid.

to learn from both success and failures. The closure phase may also include some sort of follow up of the deliverables.⁶⁶

5.2.2. Lean Six Sigma

As stated earlier PROMAL is the standard project methodology used by Alfa Laval AB. This is the only methodology used worldwide at all sites within Alfa Laval. However, at the Lund site, the Six Sigma philosophy is combined with the Lean Manufacturing philosophy and Lean Six Sigma is created. Six Sigma is focusing on quality and Lean Manufacturing is focusing on speed, thus better quality should be reached faster. Depending on the nature of the project, the project manager has the opportunity to choose which methodology to use.

Most Project Managers at Alfa Laval are trained to be either green belted or black belted. To be “green belted” means that you work beside your regular job responsibilities with Six Sigma projects. A “green belt” work under the guidance and supervision of the “black belts”. The “black belt” focuses on execution of Six Sigma projects.⁶⁷



Figure 5.2 – The Six Sigma tool DMAIC.⁶⁸

The most common Six Sigma methodology is DMAIC, which stands for Define, Measure, Analyse, Improve and Control. This is also the methodology used by Alfa Laval. In the define phase the problem is identified and later on also defined. Next phase measures and describes the problem ahead. The third phase analyses data and selects root causes. The improve phase implements the suggested recommendations and thereby hopefully solves the problem. The final stage is the control phase in which the results are followed up and are sustained.⁶⁹

5.2.3. PROMAL and DMAIC Together as One

To be able to use both PROMAL and DMAIC simultaneously, there must be set how the two methodology work together and how to make them co exist. This is determined as shown in the figure below. The different milestones, which build up DMAIC, can easily be associated to each phase and tollgate in PROMAL.⁷⁰

⁶⁶ Alfa Laval AB, Intranet, 9 Oct. 2007 < [http://alround.alfalaval.com/alapps/\[PROMAL\]>](http://alround.alfalaval.com/alapps/[PROMAL]>).

⁶⁷ Project Manager. Personal interview, 17 Sep. 2007.

⁶⁸ Löfmark, Niklas. Modified figure. Unpublished.

⁶⁹ Project Manager. Personal interview, 17 Sep. 2007.

⁷⁰ Ibid.

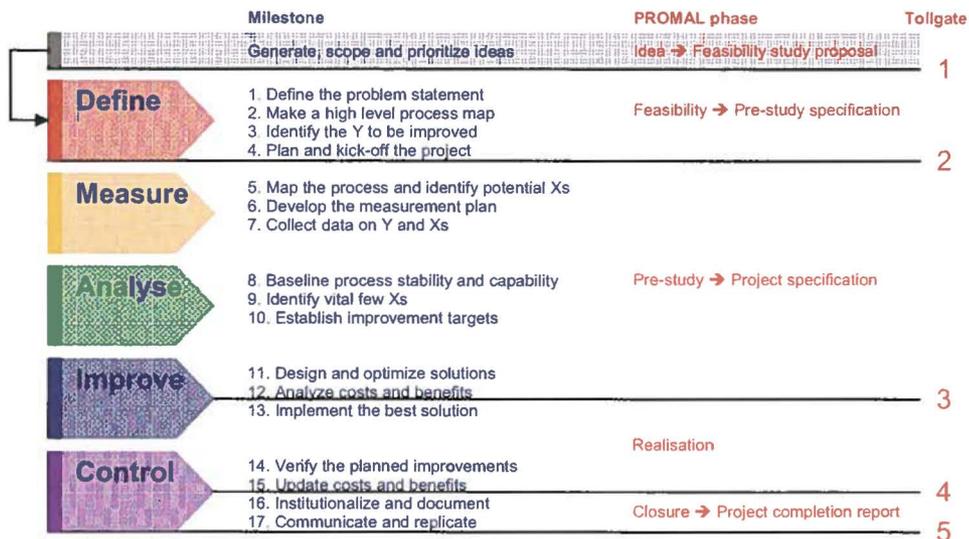


Figure 5.3 – The correlation between DMAIC & PROMAL.⁷¹

PROMAL and DMAIC are supplementary to each other and has their own strengths. They are both working in the same direction and are not cancelling out each other. When working with projects PROMAL gives an overall frame, while DMAIC provides more detailed checklists and milestones. PROMAL is used successfully in develop and investment projects and DMAIC is better in process project. According to one of the two Master Black Belts at Alfa Laval the follow up and post implement phase is better defined in DMAIC. These areas were also addressed by the other Project Managers as inferior in PROMAL. Also the lack of an “as is” analysis is enforcing the need for DMAIC as supplement.⁷²

5.3. Cooperation and Participation among the Project Managers

5.3.1. Efforts to Increase the Cooperation and Participation

The Project Managers at OD Supply are all working on their own projects autonomous from each other. This leads to that one Project Manager does not know what another Project Manager is working with, even though they are sharing hallway and has offices next to one another. To cope with this, once every two weeks they are having meeting and present for each other what they are doing. This makes it possible for the Project Managers to know what their colleagues are doing. OD Supply is using a competence matrix where information regarding every single Project Manager’s competence and knowledge is showed. Also due to the competence matrix, the Project Managers know which competence the other Project Managers have and know who to ask for help when they are having trouble with a project.

Lately the department is trying to coordinate their projects in a way that several projects are directed towards one common outcome and are addressing one area of improvement. Doing so will make the Project Manager working closer together meanwhile they are working on

⁷¹ Löfmark, Niklas. Modified figure. Unpublished.

⁷² Project Manager. Personal interview, 10 Oct. 2007.

their own project. Another effort to increase the cooperation between the Project Managers is the "20 hours" initiative. This initiative means that every Project Manager are supposed to spend 20 hours in another Project Manager's project and thereby both learn how other Project Managers are leading projects and dealing with different situations and new technical expertise.⁷³

5.3.2. Generation and Prioritisation of Ideas

The origin of a project, which will be run by OD Supply, differs from project to project. The Project Managers states that often are projects initiated by the Senior Manager of OD Supply. He is initiating projects on different bases. Projects can derive from a need from the organisation itself in the form of improvement potential project or as cost savings projects. Secondly project may rise as request from customer demands and what the sales companies wants to offer. Thirdly they can descend from the strategies developed by the executive management. Projects with different origins are accepted by the organisation in various ways. Projects that derive from the organisation are easier to push through since there are less resistance behind these ideas and the need for the project is more obvious. Projects that the Project Owner or the executive management are associated with are also easier to push through due to the fact they are given more weight and power when first introducing and then later on when they are up and running. Projects are rarely initiated by the Project Manager himself, his responsibility is to execute projects not to come up with them.

OD Supply does not have a method for prioritising projects, instead they are relying on the expertise of their Senior Manager. The Senior Manager is part of a Steering Committee in which the projects are prioritised. He states that the prioritizing of projects is based on their immediately need and impact at the organisation. Also the available resources are considered when starting a project. No projects are to be started without the proper resources. Since it is hard to determine start date for a project, it is more important with the lead time of a project compared to the end date, due to the natural correlation between start date and end date.

Even though the Project Managers at OD Supply has their own field of expertise and competence, they are considered to have good enough Project Management skills and would be able to lead any project no matter what the technical character of the project. With this in mind, projects can be assigned to the different Project Managers based mainly on their availability. Sometimes competences are regarded as well, in these cases it can be done due to high level of expertise involvement in a rather complex project. It is not always the case that the highest relevant competence is the most important when assigning projects. Some projects are assigned to a Project Manager with lower competence in the specific area due to encouraging of work rotation or competence widening of the Project Manager.⁷⁴

5.3.3. Follow up of Projects and Project Managers

In PROMAL there is a Closure phase, which make sure that the project is ready for being accepted by the organisation. However, there is no post implement phase, in which a rear mirror view of the project can be done. In this stage the project should be evaluated in retrospect and it should be determined if the project actually deliver what it was set out to deliver in the first place. The majority of the Project Managers would very well see this new stage being introduced to the PROMAL methodology. They argue that being able to access

⁷³ Project Managers. Personal interviews. 17 Sep. – 31 Oct. 2007.

⁷⁴ Senior Project Manager. Personal interview. 31 Oct. 2007.

the retrospect view of a project will help them develop in their roles and that they can benefit from earlier projects when dealing with new difficulties in the new projects.

Different parties are encouraged to criticise, both positively and negatively, the other parties in the project structure. The follow up on the roles involving a project is not done in a predefined and structured matter. As of today the Project Managers are evaluated once a year, when they are having an annual performance evaluation based on their overall performance as Project Manager, not associated with the separate projects. It was requested from most of the Project Managers to be given more structured feedback at a regular basis linked with the projects to supplement the overall performance evaluation.⁷⁵

5.3.4. Competence Development

In the beginning of the employment all Project Managers are trained in Project Management and in the project methodology, PROMAL. The possibility for competence development among Project Managers at Alfa Laval is high and it is emphasized from management to develop the competence. It is on the Project Manager him/herself to make sure that he/she possesses the necessary training. Further training and seminars in various areas are provided. At the local Intranet, Alfa Laval University is presented for all the employees in the organisation. At this site all internal training is presented. OD Supply has a competence matrix in which the overall competence of the department are broken down on the single Project Manager. This tool helps identify needs at the department and the Project Managers can easier determine in which field to search for more training. Six Sigma is widely spread and the opportunity to become either green belted or black belted is provided. All Project Managers at OD Supply should at least be equipped with a green belt.

It was suggested from one of the Project Managers that they should start consulting external, outside of Alfa Laval. The benefit of this would be to gain more experience and learn from other organisations and thereby increase their own competence. The external consulting should only be supplementary to the work at Alfa Laval and not interfere with this. Some guidelines for how to charge other companies and charge internally and a correlation there between has to be worked out, so that not Alfa Laval suffer from this new field of work. Also how much time to spend internally/externally has to be decided, somewhere in the 80/20 region were proposed. However, OD Supply's Senior Project Manager is against this proposal since lack of time and he thinks it is unnecessary.⁷⁶

⁷⁵ Project Managers. Personal interviews. 17 Sep. – 31 Oct. 2007.

⁷⁶ Ibid.

6. BENCHMARKING

This chapter presents the information that the authors have collected outside Alfa Laval Lund. The Wildlife Matrix is also presented which shows how the companies are placed comparing to each other. The companies are also presented in this chapter before the empirical information is obtained.

6.1. The Wildlife Matrix

In order to analyse the organisations that are benchmarked and to be able to compare them with OD Supply at Alfa Laval Lund, the authors has created a matrix (Figure 6.1) describing the characteristics of the organisations. The x-axis describes the kind of improvement, whether the change is continuous or disruptive. The y-axis describes the impact the change has on organisation and how many involves by the change.

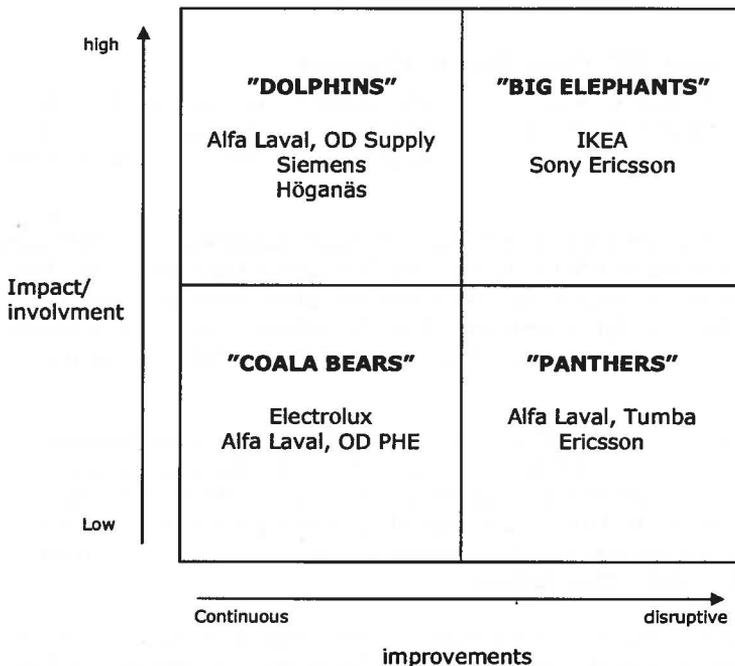


Figure 6.1 - The Wildlife Matrix mapping the benchmarked organisations.

Dolphins

This category contains organisations where projects affect many employees within the firm, just like dolphins affect a lot of seamen. The dolphins always know where they are heading and they are visible and seen by people at sea. The projects placed in this quadrant are of the same character, meaning they are goal oriented and are seen by a bigger part of the organisation.

Big Elephants

These projects are big and involve many people. People notice when the project is implemented in the organisation, because they are changing the environment radically and affecting many of the organisation's employees. The project is paving way through the organisation, just like a horde of elephants marching cross the savannah.

Koala Bears

The Project Members are not visible to the organisation, they are disguised just like the Koala bear is disguised in the eucalyptus tree. The projects take time to progress but they are all the time working against the same objective. The projects do not involve many employees, but the outcome can be of strategic importance.

Panthers

The projects are silenced and not many people can see that the project exist within the organisation, until it is implemented and suddenly the organisation is change. The authors compare this with panthers sneaking up on the pray and attacking before the pray understood what strike them.

6.2. Alfa Laval, OD Plate Heat Exchanger

The plate heat exchanger is Alfa Laval's main product. They believe that plate heat exchangers combine high efficiency with low investment and operating cost. It consists of a pack of metal plates with portholes for the passage of two fluids, between which heat transfer takes place.⁷⁷

Within the Operations Development unit there are more departments than OD Supply. Another department is responsible for the Plate Heat Exchanger product group and is working with similar tasks as OD Supply but within projects related directly to the plate heat exchanger and thereby are their projects also more of a technical nature. This department is also located at the Lund site and is called Operations Development Plate Heat Exchanger, OD PHE.

At OD PHE projects on average last for about 18 months and the Project Managers at OD PHE generally work with one prioritised project at the time. They think that one project at the time is good and you are able to focus your energy and resources towards this project. It can be good to be Subproject Manager or to be supporting another project for a new perspective while running the prioritized project. The assignment of projects is based on availability and projects have to wait for the proper resources.

When described what is important with a project it comes down to the scope and limitations of the project. These has to be well defined when the project is to be started and should preferably not be change during the project. It is also important with a proper Pre-study and to agree on what to do within the project. If the Pre-study is not properly prepared it is hard to make the project into a success.

To get the Project Members involved and enthusiastic about the project helps motivate them. Backgrounds information and understanding for the project is vital to spread throughout the project group. It might also be nice to start of the project with a Kick off of some kind. To

⁷⁷ Alfa Laval's Annual Report, Form 20-F. For the Fiscal Year Dec. 31, 2002.

only give a way about 80 per cent of the difficulties involving the project and let the organisation itself figure out the remaining 20 per cent can help create decrease resistance and help coping with the not-invented-here-syndrome.

The weakness with PROMAL is that some of the documentation can be apprehend as heavy and to comprehensive. However, this can easy be dealt with and avoided with proper training in the methodology. The strengths of the methodology exceed this drawback. The strengths include that same language is used and that PROMAL provides a basis for what to do and what is expected.⁷⁸

6.3. Alfa Laval Tumba, Separators

Alfa Laval uses technologies based on centrifugal force to separate liquids from other liquids or solids from liquids by rotating a vessel at very high speeds. Alfa Laval's separators are vital to raising quality and productivity in different areas.⁷⁹

At the Tumba site, Alfa Laval is producing their separators, and the way of working here is different compared to the one in Lund. At the Tumba site PROMAL is used as well. The Project Managers at Tumba states that PROMAL's function is on an overall level as a frame for Project Management. They have improved the methodology and in every phase checklists have been attached. The Project Managers argues that to make PROMAL work successfully the Project Manager himself needs to be flexible and understand which parts are important and which are not applicable. If this is done properly the need for PROMAL light is redundant.

The Project Managers at the Tumba site are generally working with three to five project, but feels that optimally would be to work with one major project and one minor. First of all, this falls into that they can put more energy and resources at one major project. Second, if they got tired or get stuck in the major project they can always work with the minor one instead, and wait for inspiration before they can continue the major one. This would able them to balance their time better and be more efficient. The projects that are driven in Tumba originates both from the sales companies, and in the extension from the customers, and internally from the organisation itself.

The important parameters for driving a project are stated to be involvement, participation and clarity. With involvement means to try to involve as many future concerned employees as possible in as early stage as possible. Among the involved it is then necessary to create participation and that they are striving in the same direction against the same objective. They have to be aware of the scope of the projects and there must be no room for interpretation and the clarity of the project is vital for the success of the project according to the Project Managers in Tumba.

Every sixth week the Project Manager is reporting to the Steering Committee and this is done with the help of status reports. When standing in front of the Steering Committee the Project Managers prefer to focus on the economical aspects of the project. The technical aspects are supposed to be solved in the project group itself and not to bother the Steering Committee with these issues.⁸⁰

⁷⁸ Project Managers. Personal interviews. 22 Oct. – 6 Nov. 2007.

⁷⁹ Alfa Laval's Annual Report, Form 20-F. For the Fiscal Year Dec. 31, 2002.

⁸⁰ Project Managers. Personal interviews, 12 Oct. 2007.

6.4. Electrolux AB

6.4.1. Company Description

Electrolux is a global company that sells home appliances and appliances for professional use. Electrolux products include refrigerators, dishwashers, washing machines, vacuum cleaners and cookers. In 2006 Electrolux had 60,000 employees. The Electrolux Group's operations are divided into Consumer Durables and Professional Products. Consumer Durables account for 93 percent of Group sales. The products are sold under several brands and half of the products are sold under the global brand Electrolux. The group's largest markets are in Europe and North America.⁸¹

1916 Wenner-Gren decided to buy a large share of stocks from Elektromekaniska and became therefore a board member. 1918 Elektromekaniska merged with AB Lux to be able to produce higher volumes and the year after this the company changed name to today's name, AB Electrolux.⁸²

In addition to the president and CEO, Executive Management includes the five sector heads and the four executive staff heads. The president and CEO are responsible for ongoing management of the Group in accordance with the Board's guidelines and instructions. Executive Management holds monthly meetings to review the previous month's result.⁸³

6.4.2. Project Management

At Electrolux the Project Manager work with several projects simultaneously, but they prefer to work with one major project and maybe some minor projects as exoneration. The projects may originate from three different sources; the sales company, as savings projects or to secure quality. The projects are then assigned to the Project Manager based on competence and in some degree availability.

The aspects to consider when running projects according to Project Managers at Electrolux are communication, action and well established routines. It is important to communicate with other departments and with the factory, doing this enables the project to run more smoothly. With action the Project Manager means that you have to follow up different tasks and not only send out email and hope that is enough. With the help of well established routines, there will be less resistance from the factory's employees.

The Project Managers often work with their own projects separate from each other, but special projects can be run by a project group instead. However, they are not afraid of asking each other for help or input regarding their projects, but they do not have any formal project teams.

All information regarding projects is saved in a database and accessible at a later stage. This is a part of their project methodology. At Electrolux they think it is good to have a methodology to follow, it makes it easier to understand each other and to know what to do. There is an imminence of confusion if no methodology is to be used. The weakness of having a

⁸¹ Electrolux. 23 Oct. 2007 <<http://www.electrolux.com/node176.aspx>>.

⁸² Electrolux. 23 Oct. 2007 <<http://www.electrolux.com/node272.aspx>>.

⁸³ Electrolux. 23 Oct. 2007 <<http://www.electrolux.com/node181.aspx>>.

methodology is that projects can be bureaucratically and increase the lead time of the project.⁸⁴

6.5. Ericsson AB

6.5.1. Company Description

Ericsson was established 1876 by Lars Magnus Ericsson. At that time the company was a repair shop for telegraph equipment. Ericsson supply network equipment and services that make improved telecommunication. Through Sony Ericsson, Ericsson offer mobile devices as well.⁸⁵ Sony Ericsson Mobile Communications joint venture launched its operations in 2001.⁸⁶ Ericsson develops and produces the equipment inside the cellular phone such as printed circuit board and sells the construction, which is the right to use Ericsson's design⁸⁷. Today Ericsson has 24 000 employees and is located in 140 countries⁸⁸. Below are Ericsson's organisation chart in which the Strategic Business Units can be identified.

6.5.2. Project Management

At Ericsson the most important factors are focus on what the project is set out to deliver and the purpose of the project. This may be hard to define in some projects, therefore it is vital to be clear as Project Manager and leave no space for misunderstandings and misinterpretations. To be able to cope with this Ericsson has developed a project methodology which is highly used and appreciated. The benefits of having a methodology is that prior experiences will be accessed and previous mistakes can be avoided. Using the same methodology also enables the organisation to talk the same language. The weakness with the project methodology at Ericsson is that it is tailored towards Research & Development and that it thereby can be hard to use on other sorts of projects.

When running projects it is important not to lose focus of the deliverables of the project and to maintain the purpose of the project. Doing so will help motivate the project members and they will also need the right support to work their best. Since the surroundings and external environment is dynamic and keeps changing it is crucial to be able to prioritise projects and their impact on the organisation.

To have knowledge and awareness of the topic associated with the project is important at Ericsson. The Project Manager needs to be experience and posses technical expertise. After important milestones or at the completion of a project, controls and follow ups are conducted. At these times the project group gets together and discusses the results. The physical completion report is less important than the process itself. At this time the Project Manager is given personal feedback and can be able to learn from the project.⁸⁹

⁸⁴ Project Manager. Personal interview. 11 Oct. 2007.

⁸⁵ Ericsson. 23 Oct. 2007 <<http://www.ericsson.com/ericsson/corpinfo/compfacts/offering.shtml>>.

⁸⁶ Ericsson. 23 Oct. 2007 <<http://www.ericsson.com/ericsson/corpinfo/compfacts/history/index.shtml>>.

⁸⁷ Project Manager. Personal interview. 15 Oct. 2007.

⁸⁸ Ericsson. 23 Oct. 2007 <<http://www.ericsson.com/ericsson/corpinfo/>>.

⁸⁹ Project Manager. Personal interview. 15 Oct. 2007.

6.6. Höganäs AB

6.6.1. Company Description

The company's origins are in coal mining, bricks and pottery, but today Höganäs' core competence is in metal powder technology. 1797 Höganäs coal mining starts and this is the established of Höganäs AB. In the 1930s, iron powder was compacted and sintered to make components and since then the use of metal powders has grown dramatically. 1968 was the first time Höganäs AB started a foreign sales subsidiary outside Sweden, England. Today Höganäs AB is situated among other in France, Japan, China, Brasil and USA.⁹⁰

6.6.2. Project Management

The Project Managers at Höganäs work with investment projects or with improving existing processes. They are trying to work with one project at the time if possible. The main responsibility of the Project Manager is to be in control.

Motivation is increased by delegate responsibilities and authorization. To help and support the Project Members are also vital tasks of the Project Manager, which will help motivate the team. The informal day-to-day contact is more important for the success of the project than the formal meetings and documentation. The Project Managers feels that verbal information about project progress is better than written reports.

The important aspects of project management at Höganäs are involvement, clarity and well defined scopes of the project. Involvement is important because it decreases the resistance towards changes and the project gets accepted by the organisation in a whole other way. The clarity and well defined scope helps increase the efficiency of a project. This hinders the projects from loosing focus and enables them to produces their deliverables. If the start of a project comes of at the wrong foot it is hard to parry and the project will not be as successful as it could have been.

At Höganäs they work with a project methodology which is described in a project handbook. In this handbook the different parties involving a project is defined and their area of responsibilities are determined. The various phases and stages are also clearly discussed and defined in the handbook. The assignment of projects is normally based on the availability of the Project Managers. In big projects there is one Project Manager who has the overall responsibility and the other has the roles of a Subproject Manager. At Höganäs they are arguing that shared responsibility equals risk for no responsibility.⁹¹

6.7. IKEA

6.7.1. Company Description

IKEA sells low price products, including furniture, accessories, bathrooms and kitchens at retail stores around the world. IKEA's core business is the selling of home furnishings and to develop and purchase IKEA products in relationship with suppliers.⁹² IKEA has 120 000 employees and there are a grand total of 270 IKEA stores in 36 countries. As of December

⁹⁰ Höganäs AB, 18 Dec. 2007 <<http://www.hoganas.com>>.

⁹¹ Project Manager. Personal interview. 5 Oct. 2007.

⁹² IKEA Group. 31 Oct. 2007 <http://www.ikea-group.ikea.com/corporate/about_ikea/index.html>.

2007 the IKEA Group itself owns 239 stores in 24 countries, the other stores are owned and run by franchisees outside the IKEA Group.⁹³

IKEA was established 1943 by Ingvar Kamprad. 1951 IKEA starts to send out the IKEA catalogue to private persons and right afterwards they started to design its own furniture and products. 1956 IKEA tested to make flat packages to decrease the costs in the distribution. The first IKEA store in Australia opened 1975 which was the first one outside Europe.⁹⁴

6.7.2. Project Management

An example of a project is to develop a product that is going to be in the forthcoming IKEA-catalogue. Within the kitchen area the project's founding is to develop kitchen products and find suppliers on right quality and price level. A project can also run to improve working methods.

IKEA of Sweden is one of the IKEA companies situated in Älmhult. This company is in charge of the range development logistics and purchasing. In IKEA of Sweden there are more or less ten different Business Areas. Each Business Area is responsible to develop their range. The Business Area Kitchen & Dining is working with business development of the whole kitchen system and the dining furniture. The range is developed in Älmhult, produced in many different countries and sold in the IKEA stores around the world.

When a project starts people from other departments can be summoned into the project to increase the knowledge wideness of the product and the company's organisation. People who are concerned by the project are often a project member. If projects take more time than planned it results in that the end date is pushed forward.

A project might contain of several project managers where one has the main responsibility. Because of every project have members from several departments or IKEA companies the sub Project Managers are representing different departments or companies. This is to have a viewpoint from several angles within the project. The projects can be divided into several sub projects, this makes it easier to have a holistic view within the project and use the competence through IKEA.

To motivate the project members it is vital to make them understand the changes that the project results in. They need to have a holistic view as well which makes a greater understanding in the project. The project members need to feel that they are a part of the changes.

The team has to follow the planned milestone and activity deadlines. The product complexity and the planned sale start in the stores around the world are taken in consideration when the deadlines are planned by the Team.

It is the team responsibility to follow up if the product has been started in the IKEA stores. After six to twelve months sales of the new product the Project Leader will get an indication if the new product has been a success of a flop.

⁹³ Project Manager Personal interview. 16 Oct. 2007.

⁹⁴ IKEA. 31 Oct. 2007 <http://www.ikea.com/ms/sv_SE/about_ikea/timeline/full_story.html>.

The project status is followed continuously in the Business Area. When a problem occurs this is addressed in a Business Area Management meeting, which are held at least once a month, in order to get the project back on track.

To report to the Steering Committee the Project Manager makes oral or written status reports. The IKEA intranet is used to inform how the projects are progressing. Here is information regarding the project easy to find for the members. Most of the employees get an education in how to run and implement a project when they start at IKEA if they are hired to manage projects.⁹⁵

6.8. Siemens Industrial Turbomachinery AB

6.8.1. Company Description

Siemens Industrial Turbomachinery AB (Siemens) develops, produces, sells and maintains products from gas and steam turbines to complete power plants and facilities of compressor both to national as well as to international customers. The products are used to generate electricity, steam and heat. They are also used for drift sources for pumps and compressors within oil and gas market. In Finspång there are 2 100 employees and here is the head quarter situated as well.⁹⁶

6.8.2. Project Management

Project Managers work with investment and change projects within Siemens. A project consists of a project manager, specialists and up to ten employees. Projects occur from the market which demands a certain need, from the organisation or when quality problem appear.

Siemens has checklists on what a project should contain. Among others projects should contain machine operator, buyer and two persons who are responsible for the outside- and working environment. A project manager has two to four projects at the same time. Projects can be divided within several project managers if lack of time or resources arises. When dividing projects it is difficult to know where the responsibility changes Project Manager.⁹⁷

Project Manager believes that ambience between the employees is vital in a project. This creates acceptance in the project members. There are four activities in order of importance that the project manager should put their focus on.⁹⁸

1. Environment and security
2. Quality
3. Delivery accuracy
4. Costs

From these focuses the project manager has to consider which activities are most important within the project.

The members in a project's steering committee are the Operation's Supervisor, Head of "the relevant division" and Head of the Production Development Division. Here is the Operation's Supervisor and the Head of "the relevant division" project receiver and the Head of Production Development is Project Owner. The Head of Production Development is always

⁹⁵ Project Manager. Personal interview. 16 Oct. 2007.

⁹⁶ Siemens. 30 Nov. 2007 <http://www.sit-ab.se/en/p_nav1.html>.

⁹⁷ Project Manager. Personal interview. 25 Oct. 2007.

⁹⁸ Ibid.

the chairman in the Steering Committee. The Project Manager reports when he/she thinks it is needed to the Steering Committee not using a template. The problems that are discussed during the Steering Committee's meetings, which the Project Manager is summoning, are time plan, the economy and goals. When technical problems have arisen which the Project Manager cannot solve by him/herself or together with the project members they are discussed in the meetings as well.

Siemens are using a methodology when projects are implementing in the organisation. This methodology is mainly used when project are amounted to 1 000 000 Swedish crowns. The methodology is excellent when new employees are starting up a project. In order to ensure greater success of the projects there are checklists that states how and what to do when. According to Siemens there are no disadvantages to use this methodology. The greatest strengths with the methodology are that there is a distinct responsibility distribution and a checklist to support the project members. The methodology contains a follow up after the project is closed which is vital in projects in Siemens.

To succeed in a project a Project Manager has to put his/her focus on the technical specifications and participation between the project members. It is the project's member number and personnel that decides how big of a budget the project disposes. This is decided by the head of the Project Managers. The one who will manage a project is decided from the person's knowledge by former projects and availability.

In order to achieve motivation from the Project Manager's view it is important to have different work tasks, responsibility and flexibility in the duties. Feedback is a vital activity in the process to develop the project members, both positive and negative criticism. The organisation becomes more positive to receive changes if the idea comes from them and if they participate more and more. It is even better if the organisation can be present and affect the decisions. If resistance arises in projects it is important that the Project Managers require more participation among the project members and more detailed information to them.

At Siemens they use an activity that is called Visual Steering. This is a meeting which is held once a week and where the Project Managers tell about his/her own project and its problems. The project that are taken into consider in this meetings are only the ones with problems. Then, every one of the Project Managers can give feedback and tips on how to solve the problems. This meeting is 15 minutes long and can never exceed this time.⁹⁹

6.9. Sony Ericsson Mobile Communication

6.9.1. Company Description

Sony Ericsson Mobile Communication (Sony Ericsson) is a joint venture of Sony Corporation and Telefonaktiebolaget LM Ericsson and was established in 2001. Sony Ericsson Mobile Communication is a global provider of mobile multimedia devices, including phones, accessories and PC cards. Sony Ericsson undertakes product research, design and development, manufacturing, marketing sales, distribution and customer services. Executive management is based in London and R&D is in Sweden, UK, France, Netherlands, India, Japan, China and the US. Today Sony Ericsson has over 7 500 employees from over 40

⁹⁹ Project Manager. Personal interview. 25 Oct. 2007.

countries.¹⁰⁰ Two of Sony Ericsson's objectives are to be number three regarding market share and to have 9 000 employees in 2009.¹⁰¹

6.9.2. Project Management

An example of a project is to control the cellular phones physical distribution. To have control regarding the cellular phone, the package, the country, the volume etcetera when distributing the cellular phones to its destinations are also parts of the project. A project can last six to 18 months depending on the complexity of the cellular phone and contains of between 300 to 500 co workers. A project contains of one project manager and four to five sub project members.

A Project Manager at Sony Ericsson has one project at a time. This is beneficial in the beginning of the project since there is a start up time which includes new information that has to be screened and new project members that need to be informed. This phase takes a lot of the project manager's time. In the final phase there is less to do because this is when the project is handed over to the receiver. A proposal from the project manager is that another project could begin in the final phase so that the projects imbricate. The project manager could process two small projects at the same time.

When manage projects communication and cooperation is important, as well as time plan and dead lines. The projects are executed at different ways depending on the project. To motivate the co workers the project often starts with a kick off where project members get to know each other. It is vital that the project members understand the importance why this project has to be implemented in the department. With a holistic view it makes it easier for the project members to comprehend the changes.

The methodology Sony Ericsson use is called PROPS and is developed within Ericsson and was sold to an external consulting company and today several companies use this methodology. Within Sony Ericsson it is said that PROPS should be used when projects are implemented. There is an internal group that changes this methodology depending on how the project looks like. This group can extend a checklist or merge two toll gates in to one. The strengths with PROPS are that it is well established in the organisation and the group members know what to do when. The project manager does not have to follow the methodology which results in that PROPS is quite flexible. This is connected with that a project manager manages every projects different. One weakness is that it takes too much time to update the documentation that is needed for the Steering Committee and future purposes.

Every project has its own homepage on the local intranet. Since the group members can see what is happening within the project and what decisions have been made. This homepage contains among others information, status reports and different decisions.

The Steering Committee's main task is to make decision during the project. The project manager has meetings with the Steering Committee when it is needed. When decisions should be made they have an extra meeting.

Project arises from a department that has responsibility of all Sony Ericsson's projects. This department gets most of its projects from the sales companies but as well from other

¹⁰⁰ Sony Ericsson Mobile Communication. 19 Oct. 2007 <<http://www.sonyericsson.com/>>.

¹⁰¹ Project Manager. Personal interview. 23 Oct. 2007.

departments within Sony Ericsson. The department has a portfolio of projects which they hand out to responsible department.

The organisation decides which employee should be in what project. The head of the organisation knows the employees better and know who suite which project. There are no problems finding resources that are needed in projects, but if lack of resources arises Sony Ericsson takes external consults for help.

When new employees start at Sony Ericsson they got a mentor who helps the first time in the organisation and in difficult situations. Instead of having education in the system or in project managing the mentor help the employee out. This works very well according to the project managers and it is an easy way to find themselves in the organisation and in the new position.

The project managers have status and progression meetings every week. On these meetings they report if differences have occurred in time, costs and direction. When the project is closed another project is opened which is handling the same cellular phone. This project does not contain the same employees but new ones. In this project follow ups are included and are an important action. Regarding individual follow up there is no enounced activity but it happens sporadically.¹⁰²

¹⁰² Project Manager. Personal interview. 23 Oct. 2007

7. ANALYSIS

This chapter is has also the same model as the theory and empirical chapter in order to ease the reading and create a red line through the thesis. The empirical information and the theory is compared in this chapter and the authors have analysed it from an Alfa Laval view. The empirical information from the benchmarking are analysed as well and compared to Alfa Laval.

7.1. Project Management

7.1.1. Project Organisation

Both academic theory and Alfa Laval defines project in the same way. Its time span is clearly defined and both start and end dates are determined. The projects' objectives and how it is organised is also aspects common for both theory and Alfa Laval. It is good that Alfa Laval has defined what a project is and even better that they have defined it in a proper matter. Doing this will give them the benefits of using the project organisation and enables them to cope with the dynamics of the surroundings and the external environment.

The definition of the Project Manager is also similar and the focus point is that the Project Manager has the executive responsibility. Other areas of responsibility addressed both by theory and Alfa Laval is alignment of the group members and making sure the project is finalised within budget and on time.

Even the Steering Committee is defined properly by Alfa Laval according to the theory. They are the decision making body with overall responsibility, both commercial and technical. Alfa Laval's Steering Committees are assembled by important stakeholders, who mostly sit on important chairs in the organisation, this lets them make tough decisions and they also have the authority to do so. This is of high importance according to the theory and it is therefore good that Alfa Laval complies with this. However, the role of the Project Owner, could be better defined and enforced to a greater extend. As of today, the Project Owner is just defined as the head of the Steering Committee. Even though this is the most important role of the Project Owner this is not his/hers only role. For example, the Project Owner is the one who has to promote and defend the project towards both management as well as the regular organisation. If comparing the relation between Project Owner and Project Manager in theory and at Alfa Laval, the relation is much closer according to theory. At Alfa Laval the Project Owner and the Project Manager are working further apart. We figure that this has to do with the fact that the Project Managers originates from a separate department and no unofficial contact between the Project Owner and Project Manager is done. Even though this is not directly expressed in the theory, it must help the relationship if the involved parties also have an unofficial connection and relation.

The Orderer is not clearly defined at Alfa Laval, though he/she often becomes Project Owner as the project gets started. To separate the Orderer from the Project Owner can lead to advantages that Alfa Laval is missing of today. If the Orderer and Project Owner is not the same person, the Project Owner gets the responsibility to inform the Orderer. This responsibility leads to that the Project Owner has to prepare information to the Orderer, information that can be used to brief the rest of the Steering Committee. Hence, giving the

entire Steering Committee more information regarding the progress of the project, this enables them to do a better job. This has been a problem within Alfa Laval earlier and may be solved by separating the Orderer from the Project Owner. On the other hand involving more persons in the project management requires more time from qualified resources. Time they might not have and the consequence might be just another uninformed management resource to deal with. Due to this reasons, Alfa Laval will probably suffer the last consequence and therefore should the Orderer still be the same physical person as the Project Owner.

Alfa Laval usually does not use a Reference group in their projects. Instead, they are relying on that the Project Manager has the necessary technical expertise. This approach requires skilled Project Managers with high competence. OD Supply must be considered as a unit with high competence, meaning this prerequisite definitely is met. However, in the case of technical assistance the Project Managers has no forum to turn to. The unofficial environment at the department must cover this need, and are also doing so most of the time.

7.1.2. Factors for Successful Project Management

The theory presents five factors for successful project management and for getting the expected result from the projects. These are clarity, structure, process awareness, discipline, and visions. After investigate what is important for OD Supply it came down to three factors; communication, clarity, and commitment. Even though only one of the aspects is the same, the other aspects are implicating the same message.

The aspect, which OD Supply has in common with the theory, is clarity. OD Supply is also interpreting clarity similar to what is stated in the theory. The underlying meaning is that information and communication is spread with no room for different interpretation and that the scope and range of the project is understood in the same way by all involved parties.

The two aspects of discipline and visions presented by the theory can be derived to OD Supply's aspect of communication. The theory is presenting it in another way, but it means the same as what OD Supply means. With proper and good communication the motivation will increase and the project will progress. It is this outcome that the aspects of discipline and visions are putting across just as well.

The process awareness aspects message is pretty much the same message that is presented by OD Supply's factor of commitment. They are both dealing with increasing the passion and creativity about the project in question. The commitment factor does so by encouraging and enthusiasm and thereby letting the project group grows. The process awareness factor focuses on creativity and letting the group members express themselves through the project process. Even if it is put in words slightly differently, the point is the same.

The fifth aspect presented in the theories, structure, has no real given equivalence by the aspects presented by OD Supply. However, this does not mean that the organisation does not care about this aspect. Instead, this aspect is address as a prerequisite in the other aspects presented by OD Supply and derives from the use of PROMAL. In the aspect of clarity the resources wanted and also needed for the project are addressed. This is an area which the theory presents under the structure aspect. The steering area and how a project is supported through steering, which also is presented under the structure aspect by the theory, are addressed by OD Supply under the communication aspect.

Conclusively, even though only one of the aspects is presented similar, all aspects explained in the theory are also considered and valued by OD Supply. They are just named differently and the point is not what to call the aspects, but to address the meaning of the aspects.

At OD Supply they are focusing on the lead time instead of the start and end dates, which enables them to do projects in any order possible and when necessary resources are available. However, they do not have any specific efforts for trying to decrease the lead time of a project. The benefits they would have of decreasing the lead times would be the same as the ones mentioned in the theory; these are increased competitive advantages, higher profitability, and fewer surprises. Especially the third advantage, fewer surprises, should feel appealing for OD Supply. As of today it was expressed by some of the Project Managers at OD Supply that the projects where changed during the time they were run and thereby surprises arise. The increased speed of projects should minimise the surprises and let the project deliver what it was set out to deliver in the first place.

7.1.3. Different Project Management Styles

The projects that are run by OD Supply are often of continuous improvements' character. These means that the first two approaches presented in the theory chapter are most suitable. These two approaches are education and communication, and collaboration and participation. It is also these two approaches that are used by OD Supply in some sort of combination. There are no obvious paradox using both approaches, in fact they are combined successfully.

The benefit of combining the two is that they in this way deals well with both exchange of information and decreases resistance for change. These are two aspects that are of high importance when trying to run projects of continuous improvements' nature where the immediate purpose of the project may hard to see at once. Even if both these approaches requires a lot of time, just let them take time, the results poises this drawback. To decrease the lead time of a project is important, but this can be done in other ways and to change management style is not the way to go.

As stated above most projects are continuous improvements projects, but there are also projects that change the organisation radically. These projects may also be run by OD Supply and this unit is used to the management styles of education and communication, and collaboration and participation. These styles are not the proper styles to use for these kinds of projects and there might be complications when trying to run these projects.

7.1.4. The Four Rooms of Change

Alfa Laval has to be aware of that during the run of a project it is important to understand that the involved parties all have to go through the Four Rooms of Change and that everyone does this in their own pace. Some go through all rooms rapidly, while others go through some rooms quickly and other rooms slowly. Some people take a long time going through all four rooms. This leads to that even if everyone starts at the same time, preferably when the projects start, everyone will not be on the same place at the same time after a while into the project.

All people start of in the first room and the action that starts moving people to the next room is a proposal of an idea or project. People are not easy to move and in the next room they will try to avoid the new project by trying to cover it up or disguise the need for the change. Most likely they will reject the idea. At this point it is up to the ones that already left the room, often the Project Manager or some management resource, to motivate the others and getting

them into the next room. Ways of dealing with people in the denial room is to spread information, explaining the needs and purposes of the projects and which consequences the project will have on the organisation and which consequence not running the project will have.

When the idea or project is rooted in the organisation and the employees have moved on to the confusion room, this room has to be dealt with. At this stage people feels awkward and uncomfortable with the change and the entire situation. To be able to move people on it is important to let the information turn into communication instead and create forums in which people feel safe and secure enough to ask all kinds of questions. It is important that the Project Manager knows the answers and is well informed regarding the project.

Finally, people will arrive in the room of inspiration, and now it is important to gather up all ideas and be able to put them in to use. The best way of doing this is to maintain the channels of communication created in the previous room and encourage people to speak their mind. However, even if it is the same channels that are used, it is vital to separate the forums. The fourth room, which characterise of brainstorming, can increase the confusion of the ones left in the third room.

As stated above, it takes people different time to reach the fourth room. It is therefore of high importance to maintain the activities directed to the early rooms throughout the entire project process. The risk of leaving someone behind will get minimised if doing this. As of today, no structured way of dealing with the different rooms are established at Alfa Laval.

7.2. Tools for Efficient Project Management

7.2.1. Evaluation of PROMAL

When trying to determine whether or not a project methodology is of good quality regarding the aspects, which are important for a project, it is good to compare the methodology with the one presented in the theory.

Factor 1 – Project Mission. PROMAL describes the objectives and the deliverables well, both in the Pre-study specification and in the Project Specification. A Cost-Benefit-Analysis (CBA) is also conducted and this identifies the need of resources and time, vital aspects according to the theory. With this in mind we will say that this factor is met in the project methodology used by Alfa Laval.

Factor 2 – Top Management Support. After each phase a tollgate decision must be taken and these decisions are taken by the Steering Committee. The Steering Committee consist of personnel at high positions in the organisation, some top management other almost top management, so therefore would we argue that also this factor is met by PROMAL.

Factor 3 – Project Plan. Every phase in PROMAL are well defined and consists of a specification. These specifications are the same as a project plan. This means that PROMAL considers this factor as well. However, at Alfa Laval the specifications might be changed during time and therefore set the project plan aside.

Factor 4 – Client Consultation. The Project receivers are more often than not a member of the Steering Committee and therefore well aware of the project and its progression. They have

also all the possibilities in the world to tailor the project just as they want it. Once again, PROMAL is regarding the factor in a satisfying way.

Factor 5 – Personnel – recruitment, selection and training. All the Project Managers at OD Supply are recruited for specific position, which all deals with projects. They are then trained in different areas, such as project management and the project methodology. The group members are chosen based on their competence, experience and willingness to work in the project. Therefore, we consider this factor to be met and dealt with in a proper matter.

Factor 6 – Technical skills. Alfa Laval is a technical organisation and is often dealing with state-of-the-art technology. The education level is also high, for instant at OD Supply more than 90 % of the employees have a master's degree in engineering. In other words, this factor is not an issue for the organisation.

Factor 7 – Client Acceptance. Due to Alfa Laval's way of assembling the Steering Committee, with the project receiver as a member, the client gets the opportunity to influence the project and the chance of approving the project will increase. Considering this, we would state that also factor 7 is met by Alfa Laval.

Factor 8 – Communication. In PROMAL there is one part that is called the communication plan and this clarifies how the communication is to be conducted and carried out. Overall, the different parties involved in the projects expresses that the communication works well. However, there were a couple of dark clouds, the Project Managers expressed that in some cases the Steering Committee was hard to communicate with. The project receivers stated that in the launch of a project, the Project Manager had a harder time to communicate the purpose and objectives of the project. With this in mind, we as authors do not feel that this factor is completely met. There are good initiatives and thoughts that have good growing potential, but it have not all come to place yet.

Factor 9 – Monitoring and Feedback. The monitoring part we feel is good, the Project Managers are required to conduct status reports on the projects and report to the Steering Committee, this ensures the quality of the project. The feedback part during the project is also fair enough, since everyone is encouraged to give each other feedback, no matter their position in the project organisation. However, the feedback and evaluation conducted at the end of the projects are not enough. No real, structured feedback is given neither to the Project Manager nor the Steering Committee.

Factor 10 – Troubleshooting. Alfa Laval's projects are lacking a reference group, which could help solve the problems that will arise. However, OD Supply possess such as high level of expertise that the Project Manager often with the help of his/hers group manages to solve the problem. The other Project Managers are also to consider as a resources and this poises the lack of reference group, at least in our opinion.

7.2.2. The Need of PROMAL Light?

There are some obvious benefits of introducing a lighter version of PROMAL. For instant, the lead time of smaller projects will decrease and more projects would be run. This is a huge benefit, which could increase both the competitive advantage and the profitability of Alfa Laval. PROMAL light would also ease the workload in smaller project, energy and time needed for the documentation associated with PROAML could be spend on the actual project.

The drawback of PROMAL light is the risk of not choosing the correct version; two different versions can create confusion of which version to apply for the project. Also the opinion difference in how heavy PROMAL actually is, is also reason for not introducing a lighter version.

The use and need of PROMAL light is debated among the Project Managers at OD Supply, Alfa Laval. We would argue that the need and immediate use of a light version is not flagrant. We do believe that the drawbacks presented earlier are of to high importance. The confusion of which version to use are to us a large drawback. Especially when considering the flexibility provided by the original version.

7.2.3. How Lean Six Sigma Contributes to Alfa Laval

At the Lund site, Alfa Laval are not only using PROMAL as project methodology. They are also using the Lean Six Sigma concept and the methodology within this concept, the DMAIC methodology. As stated earlier the two methodologies are supplementing each other and have different using areas. Since there are no counter effects of using both methodologies they can both be applied by OD Supply and Alfa Laval. However, it is therefore crucial that the Project Managers are well trained in both methodologies and knows the strengths and weaknesses of the methodologies. If they do not possess this knowledge, it can create confusion when choosing methodology and the less suited methodology may be chosen. If the right knowledge is possessed, preferably through training, the Project Manager would be able to use the methodology most suited for the project. PROMAL will provide more successful result in develop and investment projects, while DMAIC is used with better prosperity for process projects.

Areas in which PROMAL is inferior, such as follow up and “as is” analysis are areas in which DMAIC is strong. To be able to integrate these parts into PROMAL would help this methodology to grow to a new dimension. If comparing the two methodologies, as done in Figure 5.3, there are different DMAIC milestones which could be used for strengthening PROMAL. For instant milestones 1, 16, and 17 would help PROMAL deal with the “as is” analysis and the follow up. DMAIC is also expressing a heavier focus on what PROMAL is calling the Pre-study.

One drawback of using the two methodologies can be that DMAIC only is used in Lund. A project of typical DMAIC character can be started in Lund and as the project progresses, it is realised that other sites must be involved. At this point, it can be confusing for the other site to get in contact with an entirely new methodology and change to PROMAL is not that easy and will require quite increased work load.

7.3. Cooperation and Participation among Project Managers

7.3.1. Competence within a Group

The Project Managers within OD Supply says that they have good communication and can easily ask each other when problems arise in an individual project. However, the authors noticed that the Project Managers do not know fully what kind of project the others are managing. This might depend on a good communication between the Project Managers on a personal or general level compared to discussing the project on a detailed level. It becomes difficult to understand problems that the other Project Managers will have and discuss it with this kind of communication. As the theory says the team needs a purpose to believe in to be

able to become a powerful unit of collective performance. In order to achieve this it is important that the Project Managers have a communication on a different level as well as today's. With more meetings during the week and informal meetings this could be achieved within OD Supply.

Since the Project Managers have different knowledge there exist a competence matrix in order to know where and what to develop regarding the competence. If the matrix works and is honest it is a perfect way to succeed with competence development.

It was suggested from some of the Project Managers to start consulting external. The authors do not believe in this since it is easy to lose the commitment to Alfa Laval. Because of a higher profit margin from other organisation it might become that they start to work more and more within that organisation instead for ease the competence into Alfa Laval. In the same time Alfa Laval can lose their confidence in the Project Manager since he/she put a lot of his/her energy and resources in other organisations than Alfa Laval.

It seems from the authors' view that the management has left a large responsibility to OD Supply and its Project Managers. Katzenbach and Smith¹⁰³ discuss that the management should leave enough flexibility for the team to develop commitment and this has been implemented within OD Supply in a successful way.

In order to gain control in a wider area that a group need, according to Hart¹⁰⁴ they have to participate in necessary tasks and an increased involvement in planning. OD Supply's Senior Project Manager encourage that each Project Manager should at least spend 20 hours a year within someone else's project within OD Supply to gain knowledge and learn how other managers run projects. However, according to the authors this is not done in the needed extension by any of the Project Managers since there is lack of time and interest. To increase participation within OD Supply the Senior Project Manager should make this as a rule instead of today's recommendation. This would increase the competence within OD Supply since they do not only increase the communication but cooperation as well.

7.3.2. Idea Generation and Prioritising

Alfa Laval has no structured idea generation methodology. This can obviously be a drawback, though ideas might not be generated in the extension needed. To have a structure methodology can also be inhibiting and suffocate the creativity. The most important factor when trying to generate ideas, no matter if there is a methodology or not, is that the environment, in which ideas are to be generated, is stimulating and encourages to creativity. At OD Supply the organisational working climate is easy going and fairly flat, which enables the employees to speak their mind. The organisation is also non prestigious and the Project Manager bounces ideas of each other at a normal basis. These are typical characteristics of a creative environment.

The fact that the Project Managers are open with each others and tries ideas on one another also strengthens the next important factor for idea generation, which is brainstorming. Even if the brainstorming is not done in sit down sessions, as it is traditional done, it is vital to have this environment. In this case the department is brainstorming all the time at a lesser degree and can thereby generate several ideas.

¹⁰³ Katzenbach, J. R. and Smith, D. K. "The Management of Cross-Functional Groups and Project Teams". *Harvard Business Review*. Vol. 17, 1993.

¹⁰⁴ Hart, Horst. *Att förändra och leda morgondagens arbete*, Stockholm: Graphics System 1996.

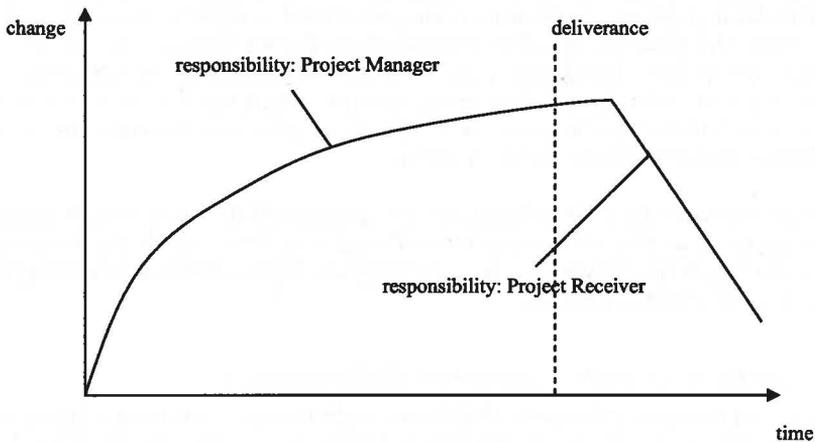
In the theory eight criteria for prioritising projects were presented. If comparing these with OD Supply's projects and their origins, the result would be as follow:

The aspects of advantages or disadvantages are considered by all projects no matter which origin they have. These aspects are general for all projects and the advantages must always poise the disadvantages for realise the ideas. The strengths and weaknesses of the competitors and substitute are aspects that are especially considered by the management and in some degree also by the sales companies. It is these two organs who are interested in the outer world and what it is doing. The risk level is an aspect that lays management close to heart. There can not be too big of a risk for a project, if management is to approve of the project. The aspects of realisability and resources are the two aspects, which the organisation are considered the most and feels are the most important when prioritising projects. The accordance aspect describe in the theory chapter is considered both by management and by the organisation. However, it is considered in different ways. Management is considering the accordance with the product portfolio and the future strategic direction of the firm, while the organisation considers the accordance against the existing production and how good a fit the new project has.

Since all the Project Managers are considering to have good enough Project Management skills, the possibility to run projects increases, due to the fact that a project do not have to wait on a specific Project Manager. Different organisations have different views on which knowledge is important for successful project management, if it is technical knowledge or project management skills that are important. At OD Supply they prefer a middle way, in which the Project Manager possess good project management skills and possess technical skills as well. We think this is a good approach, since it enables more Project Managers to run projects and at the same time the Project Managers need to have technical expertise, since they are working at a high technological firm. The technical expertise also increases the trust from the organisation towards OD Supply and its Project Managers.

7.3.3. Follow up and Feedback

During the interviews at Alfa Laval that the authors have done they discovered that there are a lack of follow up and feedback. Regarding follow up there exist follow up through status reports during the project is running. The status reports measure time plan, costs, comprehensiveness and quality (see Appendix 12.1). As the theory says this is the important data that should be measured in the follow up. The authors believe that there should be more than a status reports to report to the Project Owner. A document with more details should be required. However, the problem lies within after the project is closed and delivered to the organisation. After a project is closed and the responsibility lays at the organisation there are no follow up that controls that the change still is in progress. The authors believe since there are no follow up after a project is closed the change slowly goes back to its original structure.



Figur 7.1 – how the change goes back to equilibrium after deliverance.

As the figure (Figure 7.1) shows it is important to have follow up after deliverance to constrain going back to equilibrium since the Project Receivers often do not have the competence and knowledge to continue with the changes. The authors believe that the Project Receivers do not know what to do after deliverance since there are too big gap in competence between Project Manager and Project Receiver. We also believe that there is no force to keep going with the change because of lack of information. In summary there has to be a follow up after the closure phase to be able to succeed with the project.

As of today the Project Managers wishes to have especially feedback from the Project Members both during the project and after the project is closed. In order for the Project Manager to develop, he/she requires feedback according OD Supply. Today's feedback consists of an evaluation from the Senior Project Manager once a year. However, the Project Managers do not believe this is enough since they need feedback from the employees that cooperate within the projects as well. As the theory says personal feedback is essential to check if the employees have understood the messages from the Project Manager. Otherwise the Project Manager will still work as he/she always has done and will continue in the same way. Oral negative criticism can be hard to give why an example can be written criticism instead.

7.3.4. Competence Development

Alfa Laval enables their employees to educate themselves. As described earlier a wide range of education and training is offered, it is encourage by management that the employees develops their competence. This is typical individual learning, more individual learning that the Project Managers do is through their daily work. Through the competence matrix OD Supply maps all the competence of the department and this enables the Project Managers to learn from each other. Also the "20 hours" initiative is activities that let both the individual and the organisation learn from the projects.

Much of the traditional learning from seminars and courses often focuses on efficient learning and since OD Supply's Project Managers attends these sorts of activities they are well trained in the art of efficient learning. The Project Managers have, as stated above,

mostly master degrees in engineering and a trademark for these people are that they are used to tackle undefined problems. Consequently, they are trained in effective learning. Another factor that helps increasing the effective learning of the Project Managers is that they are writing their own project specifications. In the project specifications the objectives and deliverables are to be defined, ergo they are not already defined and it is up to the Project Manager to do the most of the situation. To be able to set your own objectives are evident signs on abilities learned through effective learning.

A more structured follow up at the closure phase of a project will enable the Project Manager and project group to develop their competence through reflections, which are made when formulating the follow up. The process is more important from a competence development perspective than the actual end product.

7.4. Lessons to learn from other organisations

There are several functions and aspects that other companies see as advantages during their processes. It is only the functions and aspects that are different compared to Alfa Laval Lund AB that the authors will mention in this chapter.

7.4.1. Operations Development, Plate Heat Exchanger

Generally the Project Managers work with only one project at a time which makes their energy and resources are more focused. The project speed increases as well since there can be Subproject Managers that support throughout the entire project.

Just giving away 80 percent of the suggested solution to the organisation and letting them figuring out the remaining 20 percent by themselves is an easy way to let them think that they invented some of the changes. This decrease resistance and increase the involving thinking in the organisation.

The idea of letting the organisation itself contributing to the solution is a good idea. However, since Alfa Laval, OD PHE is defined as “Koala Bears” their suggestion is hard to apply by OD Supply.

7.4.2. Alfa Laval Tumba, Separators

Alfa Laval Tumba has detailed checklists in the methodology’s phases which leads to that the projects have a strong structure. This means more documentation, more homogenous and less flexibility among the Project Managers.

Alfa Laval Tumba believes it is vital to involve future concerned employees at as early stage as possible. This is to provide them time to think over the change and give them an opportunity to challenge or provide other aspects to the Project Manager.

During the Steering Committee meetings only economical problems and aspects are discussed since the main point is to make decisions.

Since there are problems distributing information and distributing the proper information at Alfa Laval Lund it is vital to focus more on the information aspect. Through early information channel the Project Receivers become more change disposed which result in a greater speed in the projects and they believe that they are a part of the change.

Alfa Laval Lund should focus on their problems with the Steering Committee as well. In order to let the Steering Committee meetings to do what they are supposed to do, would be to only discuss economical problems as long as the technical problems can be dealt on a lower level within the organisation. Even though Alfa Laval, Tumba do not characterised as the same animal as OD Supply there are lessons to learn. For instance to focus on mainly commercial aspects in the Steering Committee meetings is a lesson to learn.

7.4.3. Electrolux AB

In order to succeed with six projects at the same time the Project Manager has to be aware of the time schedule of every single project. This to secure that the project is finished in time. When working with one project and changing over to another one it takes some time, which increases with the number of projects.

Project Managers at Electrolux work closely with the factory and other departments. One factor why they are working with the factory is that they have their office in the production. Working with the factory makes the perspective wider and easier to reach the line with information. Information makes less resistance and therefore easier to implement changes. Motions and proposals are taken into consider much better since the employees dare to challenge the Project Manager with a stronger communication between each other. Cooperation with other departments develops the changes from different angles and different aspects with different solutions. Negative decisions takes longer time because a longer distance for the information to travel.

Functions to adopt into Alfa Laval might be the closeness with the production in the factory. Information are spread automatically much faster to the affected employees which decrease resistance. According to the authors Electrolux is defined as a "Koala Bear" and their contribution could be hard to fully scale into OD Supply. As of today OD Supply already has proximity to a production facility.

7.4.4. Ericsson AB

Ericsson has a methodology that is highly developed because of it is early adopted and large use from other companies. This makes the project easy to understand among the employees within Ericsson since they have used this methodology in a long time and "speaking the same language".

At Ericsson it is important that the Project Managers has technical knowledge and expertise to succeed with the projects. This makes it easier to understand the terms and when exchanging information with other employees there are no misunderstandings.

When the project has finished certain milestones and tasks personal feedback is giving to the Project Manager. During the project is running the project group get together and discuss problems and data. This results in information sharing among project members and discussions that might develop the process.

In order to achieve high results and to develop the project members the Project Manager is giving feedback to them after the completion of the project. During this process it is important that the Project Manager is giving out negative feedback so that they learn from their mistakes.

Having group meetings with the project members could be important to adopt into Alfa Laval. Since information is difficult to reach out to the project members this becomes an easy way to fulfil this need. However, to apply this can be hard since “Dolphins” organisations involve more people in projects than “Panthers” organisations.

7.4.5. Höganäs AB

At Höganäs the Project Managers are working with only one project at a time. This makes that they can put their whole energy on this one. The project’s lead time decrease due to this which makes the surroundings change less according to the organisation. Less change outside the organisation results in less change within the project. All this together decrease the lead time even more.

The project members have formal meetings when it is needed. The informal day-to-day contact with the project members is more important for the success of the project. Not only that personal contact arises but information gets stronger as well. The formal meetings get a faster process when the project members already have information regarding problems and other aspects. Together with a personal contact the group members have an easier way to understand each other and be able to work in a better work environment.

The organisation feels that written reports and common documentation are unnecessary and do not increase the value of the projects’ activities. This works only in a company where the project managers are well established within the organisation and the project methodology. When new employers start within the organisation they have it difficult to understand the processes and culture. Looking back on former projects to get ideas is not available without written reports.

Projects can be managed by more than one Project Manager. In these cases there is always one who has the final responsibility where the other one act as a Subproject Manager. When there are two managers it is easy to share thoughts and ideas with each other. In the same way the managers get a view in how other Project Managers manage projects.

In order to gain speed in projects within Alfa Laval they might working with only one project at a time. This also leads to fewer changes within the process of the project since the environmental changes in the surroundings are less. Höganäs have a large focus during their pre study phase which increases the projects’ speed since there is less confusion in the implementation. Since both firms are defined as “Dolphins” these two lessons are not that hard to apply at OD Supply.

7.4.6. IKEA

When a project is starting at IKEA employees from several departments are gathered as the project group. Departments that are affected by the project often have representatives that become project members. Since there are a wide group of people with different knowledge and background it increases the perspective and the knowledge within the group.

A project can easy contain up to five Project Managers working together. It is important though that one of these has the main responsibility to be able to make decisions. A disadvantage with this is that it can be too many wills within the group which result in a longer decision-taking process.

Since the Project Managers get an education in how to manage projects before they start with their tasks it result in some basic knowledge in managing project and IKEA's methodology. This makes the first project much easier in the same time as they will not miss vital information regarding IKEA's strategy to process projects.

One task to develop into Alfa Laval is the education of how to run projects before the Project Managers start with projects. As said before this makes it easier for the Project Manager and vital aspects and functions cannot be missed. Another task that would be fulfilling in Alfa Laval is to involve several departments through their representatives in the project group. This provides a better holistic view in the process. As a "Big Elephant" IKEA's projects are more disruptive and therefore can they be hard to apply at OD Supply.

7.4.7. Siemens Industrial Turbomachinery AB

In Siemens's methodology there is large structure on how to manage projects through checklist that they have. This not only result in that the employees within Siemens increase their understanding but also new Project Managers get an easy start since they know exactly how to do. Siemens uses their methodology when the budget is over 1 000 000 SEK which leads to that small projects become more flexible since there are no use for the methodology.

Projects within Siemens are divided between more than one Project Managers which leads to a wider knowledge within the project group. This makes it easier to attack new problems that require different knowledge. It might be hard to know where the line that separates the responsibilities between the Project Managers is.

One vital activity that develops the process within the projects is that Siemens uses positive and negative feedback on the project members after the project is closed.

In order to get knowledge of all the projects within the department Siemens uses an activity called Visual Steering which shows how the projects are going. Information is shared in much larger scale thanks to this and the cooperation within the group increase fundamentally. Every meeting that is located fifteen minutes every morning makes the group members collaborate through discussions regarding the projects' problems. Contact on a personal level arises here as well, which has an outcome in better cooperation and easier to exchange ideas.

Alfa Laval needs to get better with the cooperation within OD Supply. Having meetings every morning increase this ability to have better relationships between each other. Since the Project Managers within OD Supply have expertises within a certain area it is necessary that this knowledge get exchanged to the other Project Managers. However, knowledge exists in the documentations but not all have time to read these through. These meetings make the exchange of knowledge increasing and therefore develop the group as a whole. Since the Project Managers has lesser control over what the others Project Managers and what they do this would be a perfect step to increase information exchange.

Siemens uses theirs methodology when budget is over 1 000 000 SEK which is quite much even for such a large company. Compare to Alfa Laval which has a limit on 30 000 €. Although it increases the flexibility among the Project Managers the authors think it is too large budget for the Project Managers to handle for them selves without having a structure.

Having weekly meetings among the Project Managers, just like Siemens, can be good for OD Supply and could increase their feeling of alignment and therefore increase the performance level for OD Supply. Since they are “Dolphins” as well it showing that it could be done.

7.4.8. Sony Ericsson Mobile Communications

At Sony Ericsson the Project Managers only work with one project at a time since it is enough tasks in every project. This guarantees that every project’s start up have its required focus. The projects are more time focused compared to Alfa Laval which make that the Project Managers have to be focused at only one project to be able to finish in time.

That every project starts with a kick off results in that the project members have a closer connection and therefore more open with communication to each other. When a new project is open the project members are glad and satisfied and have something to look forward to because of the kick off.

There is an internal group that develops the methodology for just a certain project. This makes that the methodology is suited for every project. Since the methodology is more focused on develop and technical projects this is more needed for other projects. In order to increase the success of implementing the methodology there is always one member from the internal group that cooperates in the project.

New employees get a mentor that will show them how to do during the project. Since Sony Ericsson do not have any education regarding how to run projects and how to implement the methodology this becomes a good compensation. This empowers the communication within the group as well. However, if the mentor work in a way that does not develops the organisation the way he/she should do, the new employee are learning the same way. Another disadvantage is that it becomes hard for the new employee to develop his/her own way to run projects.

Once a week the project’s Project Manager has a meeting where status reports are done and feedback is discussed. This results in a faster knowledge to know if the project is taking another direction than it should do. When the main project is closed another project is starting with exactly the same product but with new people. This makes that every project has a constant feedback where it is simple to figure out how the project is doing.

Since the methodology at Alfa Laval is aimed to R&D projects it is harder to implement this in the projects that OD Supply is running. In order to constrain this there is a need to have an intern group that change the methodology to fit the project such as Sony Ericsson has. This would increase the project’s speed since the methodology is adapted to the project.

Since there have been new employees within OD Supply in the last few years even new thoughts have come into consideration. In order to increase their ability to run projects in the beginning of their employment they should have had a mentor that helped them develop their position within the organisation. The internal communication at OD Supply would have been increased as well.

Meetings with the Steering Committee are placed at a time when the Project Manager thinks it is needed, which is not too often. Having meetings once a week increases the ability to manage the project in right direction since it become easy to change the project’s course. At

meetings problems are discussed and follow ups are made which constrain changed directions in the project.

Alfa Laval has large problems to follow up their projects. Since the difference in knowledge is large between OD Supply and the Project Receiver there arises a gap which is hard to fulfil. In order to make sure that the project is still running after deliverance to the organisation a new project has to be started where data and results should be analysed.

Sony Ericsson is “Big Elephants” and their ideas can be hard to apply within OD Supply. However, to have a mentor when first joining the department is terrific in order to increase the communication and the start up level. Since OD Supply is relatively small the Senior Manager is able to work as a mentor for the entire group.

8. CONCLUSIONS AND RECOMMENDATIONS

The recommendations are presented in this chapter and they are discussed as well together when comparing with the Wildlife Matrix. A step model is presented in how and in which order to implement the conclusions and recommendations into Alfa Laval.

8.1. Clear Definition of the Gap

As we said in the problem formulation section, differences occur when using methods for implementing various concepts, processes, strategies and methodologies and that these differences are deviations between strategy and practice that we define as the Gap. During our period of collecting information at Alfa Laval and other companies we have found where the Gap occurs. The factors that create the Gap is the interactions between Project Manager and the Steering Committee, lack of follow up, too slow speed in the projects and a need of a better competence development within OD Supply. In order to decrease, or even better eliminate, the Gap these factor are required to be handled. The authors have made a step model in how to manage the Gap and try to minimise it. The model recommends what to do in what order and also explains why it should be done.

8.2. A Step Model that Minimises the Gap

8.2.1. Interaction between Project Manager & Steering Committee

It is expressed by several involved parties that the steering provided by the Steering Committee in some cases is not good enough. We believe that the reason for this derives from substandard communication between the Project Manager and the Steering Committee. Our recommendation for dealing with this issue is to establish a method for how to report to the Steering Committee. We would like to add a template for the presentations to the Steering Committee. As of today, status reports are used, and even though they are good, they do not instruct the Project Manager what to report, which areas to address and how to address them. The method should include what kind of issues to be raise. In our opinion the issues to rise should be the commercial ones and the ones which are critical for the progress of the project. If introducing this sort of reporting, we think that the Steering Committee meetings should increase in efficiency and the committee would be able to direct the projects better.

The Project Owner must also be sure of his/her role and the responsibilities associated with the role. There is more than just being the head of the Steering Committee to the Project Owner role. He/she must also realise that the marketing and defending of projects are the tasks of a Project Owner. To be able to do this, knowledge about the project's content is necessary. Knowledge which often is possessed by the Project Manager. Therefore the Project Owner has to work closer to the Project Manager and thereby will their relationship strengthen, just like the theory suggests.

8.2.2. Structured Follow up

The authors believe that OD Supply have a lack of follow up and feedback. They do have a follow up due to the status reports but that is not enough to be able to use it completely. There is a need for a better follow up in order to succeed with the projects within OD Supply. Since

the Project Owners argues about that it is up to the Project Manager how the follow up is going to be. The authors think that it is necessary for the Project Owner to intermediate in this process to get a better view in how the project is progressing.

After the project is delivered to the organisation there is a large risk that the management goes back to its equilibrium and the project can be seen as a failure. To constrain this it is important that a follow up exist in this process as well. An easy solution to solve this is that the Project Manager make an own follow up together with some of the Project Members in the organisation. The result for the follow up should then be analysed and depending on the analysis the Project Manager should decide if there is a need to do something about the project or not.

DMAIC contains a follow up in its methodology. Since there is a Master Black Belt in Six Sigma within OD Supply, DMAIC is used in some projects. The projects that use DMAIC got a good follow up which also is seen after the project is finished. In order to achieve the same success in projects that the DMAIC projects there should be a follow up in the PROMAL methodology. The follow up that should be done a certain time after deliverance is very important to be able to succeed with the implementation within Alfa Laval.

8.2.3. Faster Projects

We believe that with the help of step one and two the speed of the projects will increase. With better steering and better interaction between the Project Manager and the Steering Committee will let the project run smoother and thereby decrease the lead time of the project. If the interaction also improves, some matters will be solved in an unofficial matter and at an earlier stage of the progression. This leads to decreased lead time of a project.

A side the already proposed actions, there are more actions to take for decreasing the lead time. We suggest that the Project Managers only runs one project a time and that they start spending more time in the Pre Study phase. These two recommendations will, according to us, increase the speed of the projects even more. If they are just managing one project, there will be need for set up times and the Project Manager will be able to focus all of his/her energy and resource towards the single project. Spending more time in the Pre Study will help the Project Manager to be more prepared in the realisation phase and ready to handle a variety of scenarios. This will also increase the clarity about the project and the real work within the realisation can start earlier and more efficient. A better Pre Study will also increase the communication between the Project Manager and the Project Receiver in the start of a project, an area of concern.

If the projects' speed is increased, the projects will experience few surprises. This will lead to better projects, which will be more profitable and increases the competitive of Alfa Laval. However, it is important not to stress through the project cycle just for decreasing the lead time, the four rooms of change also needs to be address throughout the project.

8.2.4. Competence Development

Since the Senior Project Manager has recommended that every single Project Manager can try to be present 20 hour a year in another's project it could develop the competence within OD Supply. According to the authors this should not be a recommended task since the Project Managers will not complete it because of lack of time and energy. It should instead be a task that Project Managers has to do and thereafter write a short report that will be analysed together with the Senior Project Manager and the Project Manager that had company.

The authors discuss that the Project Managers do not know in what project the other Project Managers are in. In order to increase this there should be a weekly meeting where OD Supply get together and discuss all the problems that has arisen in the projects. When a problem has been presented it will be followed by a discussion and brainstorming. In this way all within OD Supply is involved in every project which will encourage discussions also after the meetings. The competence within OD Supply will increase since they are learning from other Project Managers. These meetings will also make so that every one know in which project everyone are working with which results in better involvement.

9. FURTHER STUDIES

Further studies are studies that could be done after this thesis in order to complement the analysis that is done here. An implement phase that is included in PROMAL is discussed in this chapter.

As described, this thesis is conducted according to the PROMAL methodology. The feasibility phase is represented by a paper written by five technology students at LTH. The paper is called "En studie av förändringsarbetet på Alfa Laval – att skapa intern efterfrågan"¹⁰⁵ and was part of the LTH course named "MTT095 Project in Material Handlings and Work Organization".

This thesis is representing the Pre-study phase of PROMAL, and was conducted after input from the feasibility phase. The thesis will also include a set of recommendations for how to implement the suggested changes for handling the situation. These recommendations will result into the objectives of the project specification needed for the realisation phase.

The next step will be to implement the suggested recommendations and to realising them into the organisation. This step will be the first step that has to be made after our completed thesis. It is when the implementation is done, that our recommendation can start to benefit Alfa Laval.

During the process of our thesis, we have discovered different areas in which further studies can be successfully done. The communication within the Steering Committee and how the members within the Steering Committee interact with each other is an area we think should be investigated further. This investigation should lead to some interesting findings, which may help Alfa Laval succeed with their project implementation.

To further examine the receiving end of a project and their point of view regarding the projects can also be vital for the success of the projects run by OD Supply and implemented into the organisation. Their opinions may help decrease the differences between OD Supply and the receiving unit. Even though we have gathered some opinions of the project receivers, there are room for deeper understanding of the project receiver and conducting an investigation starting from their point of view and role.

The complex role of the Project Manager is also suitable for further studying and has also been studied deeper by Elisabeth Fridh parallel as our thesis has been conducted. Her paper is called "Var sitter kompetensen? – en studie om villkor för lärande i arbetet"¹⁰⁶ and is a part of her pursue of a master's degree in Human Resource Development and Labour Relations.

Another area, which we have felt lays outside of our focus points are international site and how projects are ran and the perception of OD Supply at these sites. There might be lessons to learn from foreign sites and they might have other issues with the project implementations. Identifying these and cope with them can help Alfa Laval to succeed with their projects.

¹⁰⁵ Andersson, Linn et al. *En studie av förändringsarbetet på Alfa Laval – att skapa intern efterfrågan*. Unpublished.

¹⁰⁶ Fridh, Elisabeth. *Var sitter kompetensen? – en studie om villkor för lärande i arbetet*. Unpublished.

10. METHOD REFLECTIONS

This chapter discuss if the method was the right way to do the thesis. Maybe another method should be used instead of the one that the authors choose.

The authors have chosen to use an inductive approach in the thesis which has been resulting in both advantages and disadvantages. The advantages that we have found are that we have a very good picture from a practical Alfa Laval approach. We saw directly what was important within Alfa Laval and in this way we did not become locked with certain theories that could have happened otherwise. A wider perspective within the thesis is also easier to get. We have not expurgated anything during the interviews in order to find in a later perspective what should be important or not. This approach also makes the thesis more aimed to investigate than to affirm. One disadvantage is that the interviews in the beginning were hard to realise because of lack of information regarding the subjects and topics that was discussed in these. It is easy to miss important theory that could be found if we were looking for theory before we started with the interviews. This result in missed facts that might be found within Alfa Laval and that could be important in the authors' thesis.

Have the authors results that could answer the arisen problems that were discussed in the Pre study specification? It is hard for the authors to know this since we are quite locked in our thoughts regarding the thesis and its topics. Even our supervisor at Alfa Laval could have difficulties to see if we have taken the "right" way. Since we have put our focus on the path that we thought is the right path the authors have not considered change path and therefore not have considered other directions. Finally, this method approach the authors have chosen makes it hard to know if they have the results that were discussed in the Pre Study.

The authors have used PROMAL in this thesis process since our Supervisor at Alfa Laval requested this, in order to become familiar with the methodology. This has not been a large change comparing to other reports we have done. The only change we have noticed is the Status Reports every month that the authors have sent to the Supervisor. Due to this though, we have known where we have been at and have had opportunities to find where problems have arisen. Even though not a single problem have arisen through this thesis the Status Reports have shown our Supervisor that we have thought on other directions and in a wider perspectives. Over time our Supervisor has seen what we have chosen. The authors believe that PROMAL has been very good for this thesis and have not taken other methods or directions in mind.

11. REFERENCES

This chapter lists the references used in the thesis.

11.1. Electronic sources

- Alfa Laval AB. 10 Oct. 2007 <<http://www.alfalaval.com>>.
- Alfa Laval AB, Intranet, 9 Oct. 2007 <<http://alround.alfalaval.com>>.
- Alfa Laval AB, Intranet, 10 Oct. 2007 <<http://alround.alfalaval.com>>.
- Electrolux. 23 Oct. 2007 <<http://www.electrolux.com>>.
- Ericsson. 23 Oct. 2007 <<http://www.ericsson.com>>.
- Höganäs AB, 18 Dec. 2007 <<http://www.hoganas.com>>.
- IKEA. 31 Oct. 2007 <<http://www.ikea.com>>.
- IKEA Group. 31 Oct. 2007 <<http://www.ikea-group.ikea.com>>.
- Siemens. 30 Nov. 2007 <<http://www.sit-ab.se>>.
- Sony Ericsson Mobile Communication. 19 Oct. 2007 <<http://www.sonyericsson.com/>>.

11.2. Oral Sources

Alfa Laval Lund

- Axelsson, Martin. Personal interview, 27 Sep. 2007.
- Ekendahl, Martin. Personal interview, 21 Sep. 2007.
- Fagerberg, Niklas. Personal interview, 21 Sep. 2007.
- Jacobsson, Marcus. Personal interview, 20 Sep. 2007.
- Johansson, Ulrik. Personal interview, 29 Oct. 2007.
- Knudsen, Kim. Personal interview, 1 Nov. 2007.
- Källåker, Patrik. Personal interview, 2 Oct. 2007.
- Lofthorp, Ann. Personal interview, 27 Sep. 2007.
- Löfmark, Niclas. Personal interview, 17 Sep. 2007.
- Nilsson, Håkan. Personal interview, 9 Oct. 2007.
- Nilsson, Philip. Personal interview, 8 Oct. 2007.
- Palebo, Lars. Personal interview, 25 Sep. 2007.
- Persson, Richard. Personal interview, 25 Sep. 2007.
- Richter, Jens. Personal interview, 15 Oct. 2007.
- Skarstam, Åke. Personal interview. 31 Oct. 2007.
- Zanichelli, Robert. Personal interview, 6 Nov. 2007.

Alfa Laval PHE

Emmanuelsson, Mats. Personal interview. 6 Nov. 2007.

Lindberg, Conny. Personal interview. 22 Oct. 2007.

Alfa Laval Tumba

Myrvang, Tommy. Personal interview, 12 Oct. 2007.

Nylen, Lars-Göran. Personal interview, 12 Oct. 2007.

Electrolux AB

Kälvesten, Anna. Personal interview. 11 Oct. 2007.

Ericsson AB

Olsson, Jan. Personal interview. 15 Oct. 2007.

Höganäs AB

Carlsson, Christian. Personal interview. 5 Oct. 2007.

IKEA

Larsson, Zeljana. Personal interview. 16 Oct. 2007.

Siemens Industrial Turbomachinery AB

Isberg, Stefan. Personal interview. 25 Oct. 2007.

Sony Ericsson

Ranhög, Johan, Personal interview. 23 Oct. 2007.

11.3. Written sources

Andersson, Linn et al. *En studie av förändringsarbetet på Alfa Laval – att skapa intern efterfrågan*. Unpublished.

Andersson, Roy. Eriksson, Henrik and Torstensson, Håkan. "Similarities and differences between TQM, six sigma and lean" *The TQM Magazine*. Vol. 18. No 3. 2006.

Cao, Guangming et al. "The Need for a Systematic Approach to Change Management – A Case Study". *Systematic Practice and Action Research*, (2004): Vol. 17, No 2.

Cao, Guangming & McHugh, Marie. "A Systemic View of Change Management and Its Conceptual Underpinnings". *Systemic Practice and Action Research*, (2005): Vol. 18, No 5.

Cooper, Robert. *Winning at New Products*. Reading, MA: Perseus Books, 1993, 2ed.

Eckes, George. *Six Sigma Team Dynamics*. New Jersey. John Wiley & Sons, Inc., 2003.

Fergusson, Douglas. "Lean vs Six Sigma". *Management Services* (2006): 50, 4.

Fridh, Elisabeth. *Var sitter kompetensen? – en studie om villkor för lärande i arbetet*. Unpublished.

- Goodman, Stephen E. "Change Management for today's projects – A progress approach". *AACE International Transactions* (2006): pg. CS31.
- Hart, Horst. *Att förändra och leda morgondagens arbete*, Stockholm: Graphics System 1996.
- Holweg, Matthias. *The Genealogy of Lean Production*. Cambridge. University of Cambridge. 2007.
- Janssen, Claes. *förändringens fyra rum* Borås: Wahlström & Widstrand, 1996.
- Johnson, G. et al. *Exploring Corporate Strategy*. Harlow: Pearson Education Ltd, 2005 3ed.
- Katz, Ralph. *Technological innovations Management*. New York: Oxford University Press, 2004, 2ed.
- Katzenbach, J. R. and Smith, D. K. "The Management of Cross-Functional Groups and Project Teams". *Harvard Business Review*. Vol. 17, 1993.
- Leybourne, Stephen A. "Managing Improvisation within Change Management: Lessons from UK Financial Services". *The Service Industrie Journal*, (2007): 26:1, 73 - 95.
- Marttala, Anders. & Karlsson, Åke. *Projektboken – metod & styrning för lyckade projekt* Lund: Studentlitteratur 1999.
- Nave, Dave. "How To Compare Six Sigma, Lean and the Theory of Constraints". *Quality Progress* (2002).
- Nilsson, Tommy. *Ständiga förbättringar- om utveckling av arbete och kvalitet*. Solna: Arbetslivsinstitutet, 1999.
- Pillai, Madhu P. *Human Side of Project Management*. Khobar: International Transactions, 2006.
- Ward, Sophronia and Poling, Shelia R. "Six Sigma: The Power of Understanding Process Behavior" *Quality* (2007): 46, 9.
- Womack, James P., Jones, Daniel T. and Roos, Daniel. *The Machine That Changed the World*. New York: Macmillan Publishing Company, 1990.

APPENDIX

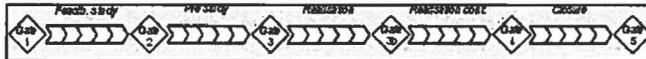
In this chapter different attachments are presented.

Status Report

Project status report



Subject	Ref. No.	Proj. No. / Cost C.	Page 1 / 2
Issued by	Department	Date	Previous Report
Project Manager	Steering Committee		



Illustrate the status in graphics by coloring the steps (use the "Fill color" function in the toolbar for drawing).

<u>Completed milestones and foliates:</u>			
•			
•			
<u>Completed tasks since last report (results):</u>			
•			
•			
<u>Deviations from plan:</u>			
•			
•			
<u>Near term tasks and actions:</u>			
•			
•			
<u>Project risk status:</u>			
•			
•			
<u>Next milestones and foliates:</u>			
•			
•			
<u>Project budget follow-up:</u>	Man hours (Currency)	Costs (Currency)	Total (Currency)
• Estimate (Date):			
• Budget (Date):			
• Actual (Date):			
<u>Comments:</u>			
•			
•			
<u>Time schedule follow-up:</u>			
•			
•			
<u>Issues raised / concerns:</u>			
•			
•			
<u>Open issues to be decided:</u>			
•			
•			

Interview guide – Project Manager

Bakgrund

- Vad är Din bakgrund? Internutbildning / LTH?
- Vilka sorts projekt arbetar du med?
- Förklara och berätta om Ditt senaste projekt.
- Hur många projekt arbetar du med?/Genomförs projekten parallellt eller ett åt gången?

Projektledning

- Hur leder Du ett projekt?
- Leder du olika projekt på olika sätt? (Hänsyn till komplexitet)
- Känslomässiga förändringar gentemot tekniska förändringar
- Hur motiverar du dina medarbetare (linjechefer/mottagare/lokala projektledare)?
- Hur förmedlar du information till dina medarbetare (linjechefer/mottagare/lokala projektledare)?
- Hur går Ni tillväga för att implementera projekt?
- Upplever Du problem med implementeringar?
- Hur upplever du att medarbetaren ser på förändringar / pros and cons?
- Sker utvecklingen parallellt med tillverkningens kompbilitet?

Projektfördelning

- Hur uppkommer ett projekt?
- Fördelning av projekt / vem får vilket?
- Överlämnas projekt till någon annan inom OD / varför / tar Ni en fas var eller när kunskap krävs / är det alltid samma person som Ni överlämnar till?
- Kommer Ni med egna projektidéer eller kommer dem ”uppifrån”?
- Sker det något informationsutbyte och tillvägagångssätt mellan ”siterna” / internationellt?

PROMAL

- Hur mycket utnyttjar Ni PROMAL?
- Vad tycker Du om PROMAL / Ev. förbättringar / Bra eller dåligt?
- Bortsett från PROMAL, har Ni någon standardisering av arbetsmetodik?
- Jobbar andra avdelningar inom OD med PROMAL?
- Är PROMAL för tungt? Krävs det en PROMAL light?
- Intensitetsnivå mellan gaterna / överlappning / kritiska linjen?

Samarbete

- Samarbetar Du med andra inom OD / På vilket sätt / Frivilligt eller krävs det?
- Jobbar ni enskilt eller i grupp / är ni alltid samma personer i en grupp?
- Har ni samarbete med andra medarbetare på andra avdelningar inom OD?
- Hur mycket bedrivs i tvärfunktionella projekt?
- Bortsett från implementeringen, hur samarbetar Ni med andra avdelningar / Input från medarbetare / tar Ni in medarbetare från t.ex. produktion?

Uppföljning

- Bli Ni uppföljda efter ett projekt / behövs det / krävs det / i vilken utsträckning / vill Ni det?

Interview guide – Project Owner

Bakgrund

- Vad är Din bakgrund? Internutbildning / LTH?
- Vilka sorts projekt arbetar du med?
- Förklara och berätta om Ditt senaste projekt.
- Hur många projekt arbetar du med?
- Hur mycket av din tid lägger du på projekt

Projektuppkomst

- Hur uppkommer ett projekt? Från OD eller linjen
- Är det skillnad på projekt med olika härkomst
- "försöksite" positivt eller negativt

Projektets gång

- Vems ansvar är det för införsäljningen? Ditt eller Projektledaren (hur och av vem)
- Hur motiverar du projektledare/linjechef
- Hur förmedlar du information till dina medarbetare (linjechefer/mottagare/projektledare)?
- Resursallokering
- Samarbete med styrande kommitté
- Samspelet med linjechef (ledarskapsstil auktoritär/demokratisk)

PROMAL

- Hur mycket utnyttjar Ni PROMAL?
- Vad tycker Du om PROMAL / Ev. förbättringar / Bra eller dåligt?
- Bortsett från PROMAL, har Ni någon standardisering av arbetsmetodik ang projekt?
- Är PROMAL för tungt? Krävs det en PROMAL light?

Uppföljning

- Blir Ni uppföljda efter ett projekt / behövs det / krävs det / i vilken utsträckning / vill Ni det?

Kontakter

- Två linjechefer som vi kan prata med

Interview guide – Project Receiver

Bakgrund

- Vad är Din bakgrund?
- ”Vanliga” arbetsuppgifter?
- Vilka sorts projekt arbetar du med?
- Förklara och berätta om Ditt senaste projekt.
- Hur många projekt arbetar du med?
- Hur mycket tid lägger du på projekt?

Projektuppkomst

- Hur uppkommer ett projekt? Från OD eller linjen
- Är det skillnad på projekt med olika härkomst
- ”försöksite” positivt eller negativt (Referenssiter). En site i taget, Lund först
- Får du välja vilka projekt du vill vara med i?
- Får du välja vilka från linjen du vill ha med i projektgruppen?

Projektets gång

- Vad tycker du om förändringar i allmänhet
- Vad tycker din linje om förändringar
- Är det bra med OD?
- Vem går du till vid svårigheter (ägare eller ledare)
- Hur motiverar projektledare o projektägare dig?
- Hur motiverar du din organisation?
- Hur blir du informerad under projektets gång?
- Har du kontakt med styrande kommitté

PROMAL

- Hur mycket utnyttjar Ni PROMAL?
- Vad tycker Du om PROMAL / Ev. förbättringar / Bra eller dåligt?
- Bortsett från PROMAL, har Ni någon standardisering av arbetsmetodik?
- Är PROMAL för tungt? Krävs det en PROMAL light?

Uppföljning

- Blir Ni uppföljda efter ett projekt / behövs det / krävs det / i vilken utsträckning / vill Ni det?

Interview guide – Project Manager, Benchmarked

Bakgrund

- Vad är Din bakgrund? Internutbildning / LTH?
- Vad gör ert företag?
- Vilka sorts projekt arbetar du med?
- Förklara och berätta om Ditt senaste projekt.
- Hur många projekt arbetar du med?
- Genomförs projekten parallellt eller ett åt gången?

Projektledning

- Hur leder Du ett projekt?
- Leder du olika projekt på olika sätt? (Hänsyn till komplexitet)
- Känslomässiga förändringar gentemot tekniska förändringar
- Hur motiverar du dina medarbetare (linjechefer/mottagare/lokala projektledare)?
- Hur förmedlar du information till dina medarbetare (linjechefer/mottagare/lokala projektledare)?
- Hur går Ni tillväga för att implementera projekt?
- Upplever Du problem med implementeringar?
- Hur upplever du att medarbetaren ser på förändringar / pros and cons?

Projektfördelning

- Hur uppkommer ett projekt?
- Fördelning av projekt / vem får vilket?
- Överlämnas projekt till någon annan (olika faser olika kompetenser)
- Kommer Ni med egna projektidéer eller kommer dem ”uppifrån”?

Projektmodell

- Har ni någon projektmodell?
- Är det bra eller dåligt?
- Hur fungerar projektmodellen
- Styrkor/Svagheter med er projektmodell
- Olika projektmodeller beroende på storleken/komplexitet av projektet

Samarbete

- Jobbar ni enskilt eller i grupp / är ni alltid samma personer i en grupp?
- Hur mycket bedrivs i tvärfunktionella projekt?
- Tar Ni in externa konsulter?
- Bortsett från implementeringen, hur samarbetar Ni med andra avdelningar / Input från medarbetare / tar Ni in medarbetare från t.ex. produktion?

Uppföljning

- Blir Ni uppföljda efter ett projekt / behövs det / krävs det / i vilken utsträckning / vill Ni det?
- Hur går den till?



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