GÖTEBORGS UNIVERSITET

# Successful IT project delivery in a multinational organisation

**A case study of success factors for IT project delivery in a multinational organisation.**

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# Abstract

Projects are one common way of driving organisational change. It is therefore important to drive the right projects and that they are successful, delivered on time, cost and with the right quality. The trend is that projects are failing even though a lot has been done to increase the success rate, many projects are failing. The main purpose of the thesis was to understand how to achieve IT project success in a large multinational organization and give an idea of what can make the difference between success and failure. The result of the thesis is a guide on aspects to include to increase IT project success.The scientific approach was hermeneutic and the research method was both quantitative and qualitative. The thesis reviewed project performance based on literature and compared it with IT project results in a large multinational case company during one year. The conclusion was that, distance to the head quarter can be a challenge but treated in the right way it will be an advantage tying the local unit and the head quarter together. There was a difference in the project performance depending on gender so the aspect of "leading gender" should be taken in to consideration. It is important to focus on the right aspects when it comes to time, cost and scope. Too much focus on one factor will affect the others and it may not always be the right factor. Skilled project managers and sponsors make a difference to secure project delivery. Depending on the project different methodologies could be used such as waterfall or Agile but it is important that the corporate model is known, used and accepted by the organisation. Projects are only one part of the organisational ecosystem and it is important that the project(s) and the rest of the organisation are in balance.



**Keywords:** IT Project Management, IT Project Success, Multinational IT Projects, IT Project Management and Gender, IT Project Management and distance from Head Quarter



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# Sammanfattning

Projekt är ett vanligt sätt att driva organisationsförändring. Det är därför viktigt att driva rätt projekt och att dessa projekt är framgångsrika det vill säga levereras i tid, håller budget och levererar rätt kvalitet. Trenden är att många projekt misslyckas även om mycket har gjorts för att öka antalet lyckade projekt. Huvudsyftet med denna uppsats var att förstå vilka faktorer man behöver ta hänsyn till för en framgångsrik IT projektleverans i en stor multinationell organisation. Uppsatsens resultat kan ses som en vägvisare för vilka aspekter som ska tas hänsyn till för att öka möjligheten för att projektet ska lyckas. Den vetenskapliga ansatsen var hermetisk och forskningsmetoden både kvalitativ och kvantitativ. Uppsatsen genomlyser alla IT projektleveranser under ett år i ett multinationellt företag. Slutsatsen är att avståndet till huvudkontoret kan vara en utmaning men hanterat på rätt sätt kan det vara en fördel där huvudkontoret och den lokala enheten knyts närmare samman. Det finns en skillnad i projektets framgång baserat på kön, så frågan om vilket som är det ledande könet i organisationen är en aspekt att ta under övervägande. Det är viktigt att fokusera på rät aspekt när det kommer till tid, budget och tillämpningsområde. För stor fokus på en av faktorerna kommer att påverka de övriga faktorer. Skickliga och erfarna projektledare och sponsorer gör en skillnad för att säkerställa en framgångsrik projektleverans. Beroende på projekt så kan olika metodiker användas så som vattenfall eller Agil, men det är viktigt att modellen som används är känd inom organisationen. Projekt är bara en del av organisationens ekosystem och det är viktigt att projektet och resten av organisationen är balanserar varandra.

**Sökord:** IT Projekt ledning, IT Projekt framgång, Multinationella IT projekt, IT Projektledning och kön, IT Projekt ledning och avstånd till huvudkontoret

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# 1. Introduction

## *1.1 Background*

The world around us is changing in an increasing speed and according to Stieber (2014) many companies today are not able to handle constant change. They seize to exist due to the fact that they are not able to face the pace of change. The development has moved from linear to exponential. To be successful the organizations have to balance "business as usual" as well as innovation and operations at the same time (TSO, 2009). Stieber (2014) calls this to have a redundant organization, it is able to cope with doing business as usual and innovation (projects) at the same time. Ramazani and Jergeas (2015) support this thought by stating that projects play an even more important role in the organizations today than before.

A failure to cope, with both business as usual and change, means that the company will seize to exist, so to handle constant change as well as developing the management process has to be a part of the company culture if the company should survive Stieber (2014). One way of coping is to "de-projectify" the project and its members and by that make the distinction between the line organization and the project less firm. This will according to them lead to that more project work will actually be performed (Palma and Lindahl, 2014).A project is a temporary organization that is created for delivering projects and business benefits according to a business case A project is identified (separated from business as usual) by the following artifacts (TSO, 2009);

- is used to drive change
- is a temporary solution, when the project is delivered the project will be dissolved and handed over to business as usual. The project should have a start and an end point.
- is cross functional involving different skills and organization
- is unique and are more risky than business as usual

Standish Chaos Manifesto 2013 (Standish Group International, 2013) states that the following success factors need to be fulfilled to secure a successful project delivery;

| Factors of Success | Points |
|---|---|
| Executive Management Support | 20 |
| User Involvement | 15 |
| Optimization | 15 |
| Skilled Resources | 13 |
| Project Management Expertise | 12 |
| Agile process | 10 |
| Clear Business Objectives | 6 |
| Emotional Maturity | 5 |
| Execution | 3 |
| Tools and infrastructure | 1 |

*Figure 1: Project success factors (Standish Group International, 2013)*

Palma and Lindahl (2014) argues that business and industrial companies often see projects and the project organization as the "vehicle for innovation and growth". The organization on the other hand does often not understand and value of the project work in the same way as the business as usual. There is an "imbalance in power" where the business as usual often is the winner. The project based way of working is competing with the more traditional functional and divisional way of working.

Cooke-Davies (2002) sees projects as part of a "corporate project management practices" that creates the base for the "management practices on individual practices". The picture below shows how the corporate project practices create a good environment for the individual project so that they can perform in the best way possible. All in all this will lead to a changed corporate capacity and/or performance.

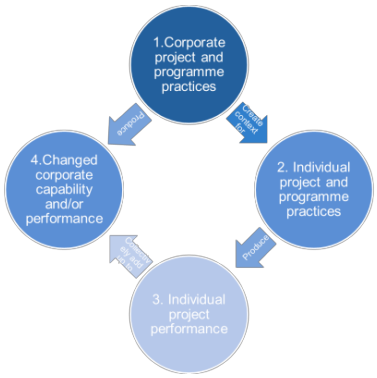



*Figure 2: The Corporate context for Project (Cooke-Davies, 2002)*

Formal project management competence is increasing among project managers but projects fail in an equally high rate. Ramazani, George Jergeas (2015) states that new and different approaches needs to be developed to increase the project success.

## 1.2 Problem discussion

In the beginning of industrialisation production efficiency was built on machines, tools and distribution lines. When IT was introduced it was first used to rationalize the production but evolved over time and went from being a foundation for the production to being a foundation for the organisation (Lundberg, 2009). Today IT is a fully integrated part of the organisation and how the IT is operated can mean the difference between success and failure for an organisation. The environment where most business are operating today is constantly changing why the organisation needs to be able to change at the same pace to survive. The expectation is that an IT project should be able to support that process (Remeny et al, 2007).

This is also the view of Stiber (2014) who claim that today's organizations, to be able to survive on a long term basis, have to be able to change and follow the development in the environment it operates in. In many organizations projects are used as the engine for driving this change (Stiber, 2014). To be successful it is therefore also important that the delivery of the change projects are successful. What is project success - the most common definition of project success is that the project is completed within time and budget and in accordance to the quality originally specified (Standish Group International, 2013). This is also called "the iron triangle" and is primarily used for IT projects, (Atkinson, 1999 and Ramos and Mota, 2014).Waterige (1998 p 59-63) concludes that the stakeholder view of the project should be incorporated in the project success factors. In the thesis time, cost, quality and the stakeholder view is included in the definition of project success.

When looking at the project success rate, according to Standish Group International (2013), less than 50% of the projects are delivered successfully. This is not good considering the importance of project delivery.

1) Project success 39 %
    a. The project is delivered on time, on budget and with the initially specified quality
2) Project Challenged 43%
    a. The project is delivered and the result is in operation but it is not delivered on budget, in time and does not have the initially specified quality
3) Project Failed 18 %
    a. The project is cancelled prior to project delivery

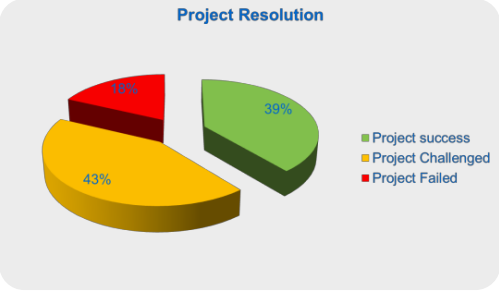



*Figure 3: Project Resolution (Standish Group International, 2013)*

Organizations have been working with projects for over a decade but still the project success rate is still alarmingly low (Cooke-Davies, 2002). Could there be other unidentified aspects that have not been taken in to consideration in previous research that have a strong impact on the project success rate?

## 1.3 Aims and research question

The main purpose of this thesis is to understand how to increase the IT project success rate in larger organizations. The aim is to investigate what unidentified aspects what unidentified aspects that can make the difference between success and failure. This thesis would especially like to contribute to increase the understanding of what aspects that need to be considered to generate a successful IT project delivery.

To accomplish this, the following research question will be answered:

**-what aspects should be taken in to consideration to increase the IT project delivery success rate in a multinational organization?**

*In this thesis project time, cost, and quality was considered as project success factors*

In order to answer the research question the following viewpoints have been chosen:

- *Management of Cost, Time and Quality*
- *Projects in a Management context*

## 1.4 Delimitation

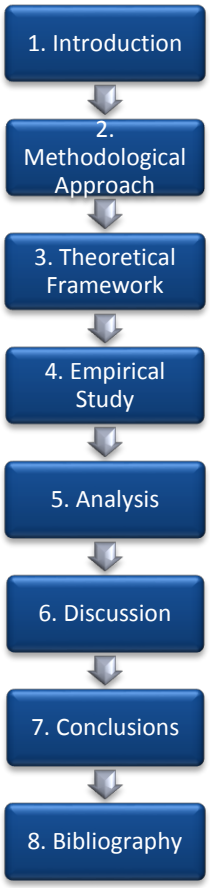
This theses is focusing on how projects are driven in organizations and what additional aspects that would possibly increase the success rate. Success is in this context based on the Standish Chaos Report 2013 (Standish Group International, 2013);

There are a lot of different models, tools and processes for project management but this is not the focus of this thesis and this kind of information is regarded as outside the scope of this thesis.

The concept of project and portfolio management has changed over the last years and in some way become a “buzz” word in many organizations but a deep-dive in to clarification of these concepts is also not included in this thesis.

## 1.5 Disposition

This thesis is divided in to six different chapters. Each chapter is introduced by a brief description of what could be found in the chapter.




1. The introduction gives the background for the thesis, describes the problem area and the aim of the thesis. It also contains the research question.
2. In the methodological chapter a description of the research model can be found as well as argues for the scientific approach and the choosen research model. The selected litterature for the thesis are included in the chapter together with a description of how the empirical study was set up and the data collected. In the chapter vailidity and reliability aspects are also described.
3. The theoretcial framework is introduced by a desription of the most commonly used expressions in the thesis, also the Chaos Manifesto 2013 is briefly described as well as different angels on problem and project management. Research on the Google project delivery model is presented and after that if and how gender is connected to project success.
4. In the chapter containing the empirical study the case company is described as well as the popultion of the statistics for the empirical study. The result of the empirical study is presented.
5. In the analysis chapter the reference frame is compaired to the findings from the empirical study.
6. The discussion chapter clarifies the findings in the thesis and comprise arguments for the conclusion.
7. Based on the analysis and discussion the conclusion chapter gives a brief description and summary of the conclusions.
8. All references used in the thesis can be found in the bibliography. It include books, web-sites as well as white-papers.

# 2 Methodological Approach

In this chapter the methodology for the thesis where explained. The first section describes the scientific approach followed by the data collection and the methodology used to collect the data, in a reliable way. The research question was answered using collated data while studying suitable theory. The facts was matched with project performance for 50 IT projects in a multinational organization during one year. The result is then validated by key individuals in the organization.

## *2.1 Scientific approach*

The goal of the thesis was to study and try to understand and interpret the objects researched. Therefore a hermeneutic view was used as the base for the scientific approach in the thesis. (Patel and Davidsson, 2013).

## *2.2 Research Model*

The theoretical framework was used in the thesis as the frame for analyzing the statistics and the interview results from the case company. The Theoretical Framework was divided in to two sub categories, Projects in Management Context and Managing Cost, Time and Quality. The subcategory Projects in a management was containing three sub categories, Project Management Methodology, Project Management in a Multinational environment and Gender. The sub category Managing Cost, Time and Quality was divided in to three subcategories Cost, Time, Quality.

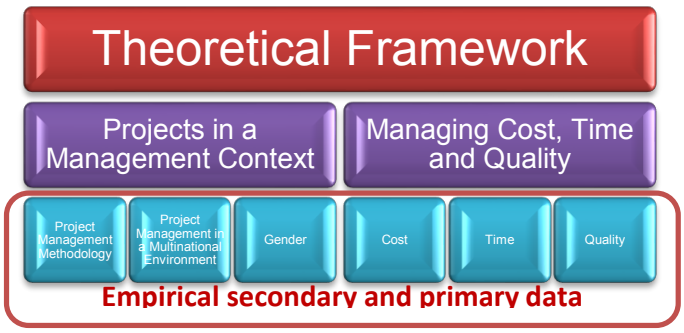



*Figure 4: Research Model – Theoretical framework*

## *2.3 Literature study*

The theoretical frame is according to (Patel and Davidsson (2013) based on theories and models. In this thesis the theoretical frame was based on a collection of secondary data from the literature study and a relevant selection of theories and models.

Literature used for the study has primarily been academic research articles and books. They have been found using the library on Chalmers, Gothenburg University and Google Scholar. Key words has been project success, project management, project management and gender,

project management success aspects, project management and distance to headquarter, project management method. For more information about the theoretical frame please see chapter 3.

The secondary data was statistical information collected from a database in the case company. The database contained information about the case companies IT projects.

There was due to the large number of people involved in the projects in combination with a restricted time frame not possible to perform interviews with the total population of the project stakeholders. A sample population representing the key stakeholders where therefore chosen (Patel and Davidsson, 2013). Primary information was collected in the interviews and the responses were analysed together with the statistics from the IT projects. The theoretical frame was the base for the analysis. For more information about the analysis of the data please see the analysis chapter.

## *2.4 Empirical data*

Empirical data is data that is a result of observations of the reality. Empirical means experience, so empirical data is the knowledge gained through observations from the reality, the world surrounding us (Patel and Davidsson, 2013).

The empirical data in the thesis consisted of qualitative and quantitative data (Patel and Davidsson, 2013) from the case company. According to Patel and Davidsson (2013) quantitative research methods includes using measurements when collecting the data as well as statistical methods to analyze the data collected. Quantitative research, on the other hand, is focusing on "soft data" e.g. qualitative interviews and interpretative analyses, often verbal analyses of the collected material.

### 2.4.1 Primary data

Qualitative data (Patel and Davidsson, 2013) in the thesis was collected in interviews with respondents from the case company. The interviewees was chosen based on their roles and responsibilities in the organization and their extensive knowledge and experience of IT projects and project management. The aim with the interviews was to verify the statistical result and not to produce new data (Patel and Davidsson, 2013). There was a mixture between male and female respondents.

The selection of the respondents where based on:

- Role – Project Manager or key stakeholder of an IT project
- Responsibility – responsible for delivering or receiving an IT project
- Knowledge and experience – at least 10 years of IT project experience

1. Female Process Lead (R1)
2. Male Process Lead (R2)
3. Manager for Professional Services (R3)

4. Female Project Manager (R4)
5. Male Project Manager (R5)

The interviews was semi structured (Patel and Davidsson, 2013) and the interviewees where asked to reflect on the statistical result according to the following template;

1. Cost
2. Time
3. Quality
4. Project Management Methodology
5. Project Management in a Multinational Environment
6. Gender

Invitations for the interviews where sent to the respondents prior to the meeting. The interviews were held at the case company and took in general 30 minutes to one hour. Notes where written down during the interviews.

### 2.4.2 Secondary data

The quantitative data, which consisted of statistical data from 50 IT projects, was the complete statistical data set from one multinational organization´s IT projects during one year. The common denominator for an IT project in the case organization was that the project had at least one IT component. This included both pure IT projects (such as e.g. upgrades) but also projects where the IT component was the smaller part (e.g. changes in the HR process that demanded a new way of working and therefore a new upgraded system). The reason for using the complete population was to show a correct picture of project success and failure.

The projects included had the following common denominators;

1) The project was closed latest quarter 4, 2014
2) Project budget was (primarily) over 500 KSEK. These projects was always documented in the project management tool. Some projects was below 500 KSEK, if requested by the line organisation to be included in the project organisation for increased control.
3) The project had a project manager. Depending on the project size and complexity, in some cases it had two project managers, one driving the business changes and one driving the IT changes.
4) The project had an existing sponsor survey (to measure project quality from the sponsor point of view),
5) The projects had or had not been through the PMO start and/or close gate
6) the project was documented in the project management tool
7) Cost, time and quality was measured at the end of the project.
8) To anonymize data, all specific project information have been removed and replaced either with a number or a letter from the alphabet.

9) All projects was evaluated using three different categories, cost, time and quality;
    a. Cost- was measured by the ability of the project to keep cost in accordance with the original baseline. The threshold is 20% over or under the budget is inside the green span, 21-39 % is regarded as amber and more than 40 % over budget was recorded as red.
    b. .2 Quality - was set using the sponsor survey where the sponsor answers if he/she was pleased with the delivered quality. The response could be yes (green), partly (amber) and no (red).
    c. Time - the same logic was used as for cost. Within 20% (green), 21-39% over the time limit (amber) and more than 40% over the time limit -the project was red.

## 2.5 Analysis

The analysis of the result was performed with a prejusticed statistical review of the available statistics from the case company. It was especially important no to have any pre-set assumptions on what to find in the statistics to be able to discover "unbiased and unintentional" facts. Based on the result relevant literature was studied to find related research. To "verify" the result from the statistical and literature research interviews was conducted. According to Kaplan and Duchon (1988) using more than one method minimize the risk of potential analytical mistakes and oversights. It can also lead to new insights would not have materialized if only one method would have been used (Kaplan and Duchon, 1988).

## 2.6 The reliability and validity of the study

When collecting and analyzing the empirical data used for the research the complete data set for one year of projects was used. This is not to remove data or clean the data in a way that can be misleading for the research. All structured data regarding the projects where used for the research, not leaving out any aspects. No data cleaning took place before the research. The data is collected monthly in a system and by the organization and is 100% complete.

To validate the result interviews have been made with stakeholders in the organization. The interviews where semi structured based on the outcome of the statistics research. The intention was not to add new data but to verify the data discovered.

Ethical considerations - the content of the statistics and the interviewed respondents are anonymized to protect the organization and the respondents, not making it possible to point out the case company in itself or the respondents. The case company, names, process descriptions and titles has therefore been changed.

## 2.7 Ethical considerations

The case company, the content of the statistics and the interviewed respondents are anonymized on purpose. This is to protect the organization and the respondents not making it

possible to point out the case company in itself or the respondents. The case company, names, process descriptions and titles has therefore been changed (Patel and Davidsson, 2013).

# 3 Theoretical Framework

In this chapter there will be a short introduction to some of the most common definitions, roles and responsibilities when it comes to projects. The detentions are all based on the description made in the Prince2 framework (Stationary Office, 2011).

Thereafter follows a section describing how different kind of problems can hold different kind of challenges and opportunities but often have their own kind of solution (or a combination thereof).

## *3.1 Common expressions used in the thesis*

In the following section some of the most commonly used expressions in the thesis will be described.

**Project success**
The project is completed on-time, on budget and with the right quality Standish Group International (2013)

**Prince2**
PRINCE2 is an acronym for Projects in Controlled Environments, version2 and it is a project management methodology. The UK government agency Office of Government Commerce (OGC) has developed the methodology (Stationary Office, 2011).

**Project**
A project is a temporary organization that is created to deliver one or several products in accordance to an agreed and approved business case. A project has a defined start and end and involves a team of people with different skills; it is unique and works outside of the frame of "business as usual" (Stationary Office, 2011).

**Project Manager**
The project manager drives the project according to time, cost, quality, scope, risk and benefit realization set up by the steering group (Stationary Office, 2011).

**Steering group**
The steering group is accountable for the success of the project. The group reports to the commission authority. The steering group makes the decisions for the project and can delegate responsibility to the project manager but never accountability. The steering group is headed by the sponsor that takes advices from the other participants in the steering group but this is not a democracy – the sponsor is the key decision maker (Stationary Office, 2011).

**Sponsor**
The sponsor is responsible for the project and is the insurance for that the project is focusing on delivering the expected results (Stationary Office, 2011).

**Stakeholder**
Stakeholder(s) is responsible for the specification of the user needs, that users are aligned with the project management team and securing that the solution will fulfil the needs of the users in accordance with the business case (according to quality, functionality and usability) (Stationary Office, 2011).

## *3.2 Successful IT projects support the organisation*

In this section theories will be presented on how successful IT projects can support the organisation.

In the early days of industrialisation the efficiency of the production was based on machines, tools and distribution lines. Production and distribution together with the quality of the product was the foundation on which success was built. The organisations evolved and so did IT. It became a serious player, first as a tool in automating production lines, later IT was used not only to rationalize the current business but also to create new businesses. It went from being a foundation for the production to being a foundation for the organisation (Lundberg, 2009).

According to Remeny et al (2007) IT and the IT department is today a fully integrated part of the organisation. How the IT is operated can mean the difference between success and failure for an organisation. If IT and IT projects are not performing in a good way there is therefore a major risk says Ward and Daniel (2006) that IT and IT projects are being viewed as high cost/low value, it has to prove its value. Driving the IT projects in a good way can on the other hand help the organisation to realize the benefits of the IT project the IT unit can have another role, it can be the unit that has a strategic capability that could enhance the organisations competitive capability claims Remeny et al (2007). IT as an integrated part of the organisation in combination with the constantly changing environment has had a huge impact on how IT projects are driven;

1) Today the performance of the IT projects are evaluated based on the value and business benefits the project brings to the organisation. This has evolved from the time where an IT project was evaluated based on the performance and quality of the code.
2) IT projects are also seen as an integrated part in the evolutionary development of the system but also of the organisational processes. (Remeny et al, 2007).

The environment where most business are operating today is constantly changing why the organisation needs to be able to change at the same pace to survive. The expectation is that an IT project should be able to support that process (Remeny et al, 2007)

## *3.3 Project success factors*

According to the research by Ramos and Mota (2014) one common way of measuring project success is by comparing time, budget and requirements specified before start with the

outcome when closing the project. Atkinson (1999), states that the "iron triangle", measuring time, cost and quality is deeply related to measuring project success rate especially in IT projects.

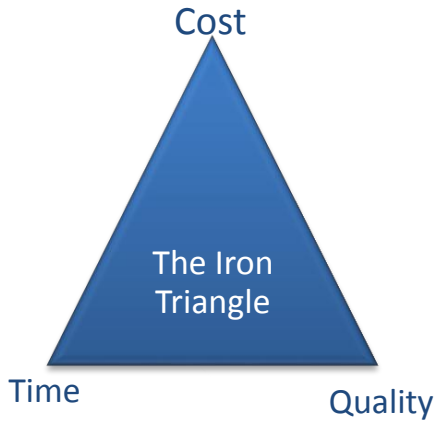



*Figure: 5 Atkinson (1999)*

There is though some criticism to the "traditional golden (or iron) triangle" (time, cost quality) saying that it is not taking all factors affecting a project success in to consideration (Pandremmenou et al, 2013, Atkinson, 1999).


*Figure 6: The golden Triangle (Ramos and Mota, 2014)*

The opponents to this model mean that what is affecting a project success or not is more complex. Cost and time are our best guesses, quality is a "phenomenon" since it is so much dependent on people's beliefs, and it is often changing during the project life cycle (Atkinson, 1999). Project management is brought up as one factor affecting project success but on the other hand some researchers claim that a project can be a success even if is run in a poor way as well as it can be a failure even though it is run in a very good way (Pandremmenou et al, 2013).

Other factors brought up are communication that is seen as a show stopper if not working in a proper way. In IT projects the technical denomination and way of communicating can be very difficult for a non-IT person (e.g.) to understand. It will affect the project in a bad way if the customer do not understand what is communicated and are not able to make good decisions based on the information. Additional success factors are project education in the organization

and project maturity level in the organization, (updated) risk register, roles and responsibilities, short projects – meaning no longer than 3 years, a good change process, measuring benefits, program and portfolio management practices, lessons learned and learning from experience (Ramos and Mota,2014).

Peltokorpi (2015) states that, to be able to compete, multinational organizations are heavily dependent on the knowledge transfer to and from the headquarters to the subsidiaries. It is a competitive advantage if a corporate language exists and is used to share knowledge. Knowledge sharing often contains structural knowledge and tacit knowledge. When tacit knowledge is transferred it has to be made accessible to others.

Pandremmenou et al (2013) would like to add factors to the "traditional golden triangle" such as effective project management administration, customer satisfaction with project deliverables, value creation for the enterprise, stakeholder satisfaction and reaching the project scope.

Sanjuan and Froese (2013) claim that are primarily two factors that have the largest impact on project success:

1) If the project organization is not aware of how well their project management practices work in comparison with best practices on the market place, then how could they now that they are working according to leading practice?
2) The project organization is partly unaware of the standards existing in the organization and is not fully convinced that about the value that project management standards brings. This means that standards exist but not used.

In this thesis project success is measured according to the "iron triangle" measuring time, cost and quality (Atkinson, 1999). When measuring and discussing what is supporting project success, project management is included in the thesis as one part as well as project management methods. Communication is not brought up as a separate subject but is included as a part of the overall scope.

In addition to the above success factors, distance and gender are brought up as supplementary supporting factors since there is a geographical context as well as a gender context in the case company. There reason for that is that there are both projects performed close to the head quarter as well as far away. There are also both female and male project managers and sponsors in the organization.

## *3.4 Managing Cost, Time and Quality*

To be able to deliver a successful project, on time, cost and with the right quality - change, complexity and uncertainty has to be managed as a complex interconnected system in which the different dots are connected with each other.

### 3.4.1 Managing change

Steiber (2014) says that there is and will be an even higher demand for organizations to change to be able to survive in the rapidly changing world. This will demand a shift in how we manage our organizations. Much of the literature still brings up "old facts" regarding how companies should be organized, measured and managed, this even though we know that it is the creativity, and knowledge of our co-workers that is the real asset.

A company in a rapidly changing environment that is able to survive in the long run has according to Stieber (2014) six common management principles;

1. **Dynamic capability**
   The ability to have a fingertip feeling on what is going on in the environment and is able to regroup and adapt if necessary.
2. **An organization aimed at renewal**
   To do last minute changes will not do the trick. You have to be in line with the environment around you to be successful. Continuous improvements are needed to be able to be successful in the long run.
3. **The individual in focus**
   This principle is built on the thought that each person has an inner will to be creative. The challenge for the company is to create an environment where it is possible for the employees to be creative and release all their inner potential. This creates an innovative power that will help the company in its struggle to be continuous innovative.
4. **The organization has redundant capacity**
   The organization need to have the ability to do both day to day production as well as being inspirational and creative. One challenge is to be able to take care of the energy that is created when an organization is set to handle both types of work in the same organization.
5. **Openness and networking**
   Different companies are by nature more or less open. Some have tight boundaries while others have less. The thought is that a company does not have the ability and or energy to solve and come up with all solutions on all challenges by themselves. By networking the company can benefit from the work that other organizations do.
6. **Systematic approach**
   This principle is about having a systematic approach where the main focus is that we are all included in a system and you need to handle things that are in the system and affecting you – good and bad.

### 3.4.2 Managing complexity

There are according to (Hancock, 2010) different kind of problems in projects and the trick is to find the right solution to the right problem and not the wrong solution to the wrong problem. If the wrong kind of tools and techniques are applied to the wrong kind of problems there will be a lot of waist in time and cost, not to talk about human interaction – and it will

also lead to a lot of frustration and a problem not solved properly. Therefore it is, according to Hancock (2010) important to define the problem in to the right kind of category to be able to solve it in a proper way.

To some extent the complexity of a project is determined by what problem the project tries to solve. If the problem type is defined before the project starts the possibility to deliver a successful project increase. This due to the fact that the project manager and the organization have a greater possibility to prepare in a good way i.e. asking the right questions, choosing the right delivery model.

#### Tame problems

Tame problems are problems that can be thought of as simple and straight forward. They have casual relationships and can usually be solved by using analytical methods such as the waterfall method. Also other more process oriented methods such as Prince2, Six Sigma and Lean is working well in finding a solution to this kind of problems (Hancock, preface, 2010). Tame problems can be solved in consensus (Hancock, 2010).

#### Messes

Messes on the other hand are where the level of the system complexity and/or clusters of interrelated and interdependent problems create a messy problem to solve. This is not solved just by using a straight forward method but needs to be looked at from several different angels. To solve the problem, a systematic approach where the whole system is considered to be part of the problem and therefore also the solution, should be used (Hancock, 2010). The solution to messes is a systematic approach that involves looking at processes, working in cross functional teams and developing a learning organization. “Messes demand a commitment to understand that how and what we are doing here will affect what we will be doing there in the future” (Hancock, 2010).

#### Wicked Messes

In the wicked messes both behavioral and dynamic complexity coexists in the same time. To solve the behavioral complexity the project manager or problem solver needs a great portion of relationship skills in combination with the ability to facilitate the relationship challenges. When it comes to dynamic complexity systems thinking combined a high degree of conceptual thinking is needed (Hancock, 2010).

These kinds of problems is not possible to solve one by one in isolation but needs to be solved by creating a common reality that is agreed among the stakeholders. This kind of solution requires a great deal of trust and that the stakeholders understand the solution which in turn demands stakeholder participation. The solution will be satisfying but there will not be one single silver bullet solution to the problem but will instead create one or several good enough acceptable solutions. (Hancock, 2010). The solution/future scenario (s) needs to be based on “common good” and possibly also on common sense for the stakeholders to come to a conclusion about an acceptable future scenario that they all can support (Hancock, 2010).

### 3.4.3 Managing the system

The definition of a system is according to Magoulas and Pessi (1998) every connected event that contains at least two different objects can be called a system. For a project there are several interacting systems that have to be handled for the project to be successful; the project (inside the system), other ongoing projects, the wider organizational system, and the market place where the company operates.

Each part in the system is affecting the other but for the persons that are inside the system it is usually very difficult to see how the different dots are connected since they are inside the system. It is easy to get caught in the system, it affects the way we behave, how we make decisions, set goals and interpret norms in the organization. Senge (1995)

Benefits of a project often are delivered after the project – when it is finished and is put in to production (in operations). This demands cooperation between the project (that is inside the pro4ect system) and the sponsor (that is in the wider organizational system) (Cooke-Davies, 2002).

## *3.5 Projects in a Management context*

Trivellasa and Drimoussisb (2013) can see a clear connection between the project managers behavioral aspects and the project success. Competences such as a high degree of emotional, management and behavioral maturity more often produce a successful project. The most appreciated competences are related to;

- Behavior
    - efficiency
    - values appreciation
    - openness
- Management
    - Teamwork
    - customer service
    - system control
- Emotional maturity
    - social awareness

Ramazani, , George Jergeas (2015) states that to be able to succeed as a project manager you need to be strong in critical thinking, be good in communication and skilled in working with teams. They also have to be able to handle "complexity, uncertainty as well as continuous technological and organizational change".

Many organizations see a project management certification as a guarantee for that the project manager will be successful in delivering projects. According to Ramazani, George Jergeas (2015) this is not correct, developing the project management competency in the organization

is a long term commitment, done preferably in a systematic and continuous learning approach. For success trainings should be accompanied by coaching and mentorship in the organization.

### 3.5.1 Project Management methods

Traditionally there are two existing models for project delivery where waterfall is the big traditional model and Agile is the "new" model that has emerged over the years.

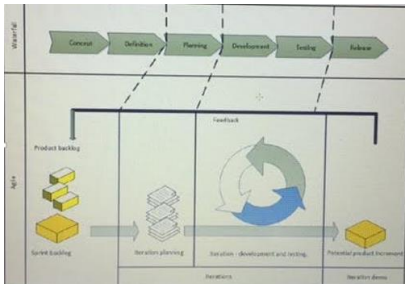



*Figure 7: Waterfall model and Agile Model (Mahdevan et al, 2015)*

#### Waterfall

The waterfall methodology is a software development methodology commonly used for IT development projects. Known problems with the model is that it generates a lot of rework and the software quality is of question due to that the testing phase. This way of working can also create a lot of rework in the project (Petersen et al, 2009). The waterfall model demand a lot of front-loading since the solution design is decided in the beginning of the project. This can create problems later when the solution is tested. If the solution does not work as intended there is a big risk that much of the work needs to be redone (Mahdevan et al, 2015).

1) The project starts with describing the concept to be developed
2) The next step is to define the solution
3) Thereafter development project is planned
4) The solution is developed and then tested
5) The last step is to release the solution for production

#### Agile

The agile development methodology described below is different from the waterfall method in many ways. In the waterfall method it is the systems responsible that is in charge of the development. When it comes to an agile project it is the business or "the customer" that is responsible for the development. Often in close cooperation with the systems responsible function. The development team is co-located during agile development which is not the case using the waterfall model. Daily meetings are used to keep track of the progress of the development. The iteration cycle is short and contain only a few weeks in the agile methodology (Mahdevan et al, 2015).

1) An Agile project start with compiling the sprint backlog. It is a list with prioritized items.

2) The next step is the iterative development planning.
3) After that an iterative process including development and testing takes place.
4) The solutions coming out of the development is demonstrated to the requestor.
5) When something that is developed is demonstrated and ready for release it is handed over to production

Introducing an agile methodology in to a "waterfall" organization demand consideration about the difference between the methods e.g. that the development control is moved from the information system department to the business responsible department. This can change the power relationship in the organization (Mahdevan et al, 2015).

### 3.5.2 Project Management in a multinational organization

Andersson et al (2010) describe that in a multinational organization where the head quarter and then subsidiaries are spread out around the world there is an ongoing conflict regarding control and freedom. The head quarter is heavily dependent on the subsidiaries to gain and keep their competitiveness on the market place. They are also largely contributing in creating knowledge and increased competence. Too much freedom will on the other hand make the subsidiaries focus more on their own benefit than on the benefit for the whole organization.

The head quarter could be viewed (by the subsidiaries) as the "commander-in-chief "that that has the knowledge and ability to have and keep the control over the multinational company. It could also be seen as the absent landlord that does not create any value, is ignorant and destroys what the subsidiaries have built up. Andersson et al (2010) promotes the view of the head quarter of a multinational company as one that "orchestrates" the activities in the "global factory".

The culture also makes a difference in transferring knowledge; some people and cultures are more engaged by intrinsic benefits while others may be more engaged by extrinsic benefits Intra firm transfer of knowledge, especially tacit know-how is shown as especially hard due to that it is less "codify-able"(Zhang et al, 2014).

The knowledge transfer is depending on (Zhang et al, 2014);

- cultural differences as well as cognitive differences between the sender and the receiver
- structural relationships can make the knowledge transfer more difficult depending on the organizational hierarchy.

### 3.5.3 Project Management and Gender

#### Gender and organization

According to Waahl et al (2013) there are different rules for men and women in an organization and that their performance are judged using different scales. What is acceptable for each of the genders are dependent on the norm in the organization. The "leading" gender

normally sets norm in the organization. This power relationship is learned by new employees when joining the organization. Symbols for power and culture could be ethical, esthetical and emotional. It could be connected to dress codes, metaphors, stories about organizational heroes, language, how you behave, myths, values, rules and rituals.

Norm and deviant are used when it comes to analyzing an organization based on power. When the norm is a male and the deviant a women the organizational culture is based on the male perception of men and manhood. They set the rules in the organization and the women are looked upon as deviants and is compared to the male norm e.g. when it comes to performance

In an organization where men are the norm women will be more visible – for good and bad. They have to represent all women in the organization (since they are the minority). They will be seen as a symbol for all women. This can lead to a stressful situation since the female will have to do her job in a good way, it will not only affect herself if she fails, and it will also affect other women in the organization. In this kind of organization the female project manager will be referred to as the good female project manager instead of just a good project manager.

The norm group always prevails and as such a male group can think that they are complete only containing men and advocate competence before gender. They are "inside" the norm and are not able to see what is lacking since they do not experience the problems with not belonging to the norm group. This is also the reason for women advocating blended groups in these situations (Waahl et al, 2013).

#### Leadership style

Turner and Muller (2005) states that leadership style and competence of the project manager have no impact on project performance. But, the project manager's emotional intelligence affects the perception of project success. Factors such as the project managers perception of her/his performance in the project, the project teams perception on project performance and also the clients perception of project performance has an effect on the project managers perception of success. This is a contrast to the management literature that describes that the leadership and competence have a big impact on team performance. The project management skill set are changing to include different leadership styles. Today it has to include both hard and soft skills. According to Bucle and Thomas (2003) these skills are connected to our inherited gendered systems and female and male project management leadership. Wajcman (2002) states that the management experience of women and men are alike, it is the typical male narrative describing leadership that is the problem. Since the traditional male management style is used as measurement, females have problems identifying with the description.

# 4 Result - statistical data and interviews

In the following chapter the result of the statistical study as well as interviews is analysed starting with the overall statistics followed by a more detailed description of each project measurement and statistical result. The different statements from the respondents are included in the end of each section. The responses are marked with R1-R5 depending on who (of the respondents) that made the statement.

## *4.1 Description of the Case Company*

The case company is a multinational organization in the manufacturing industry. Head quarter is located in Sweden and the number of employees is more than 46 000 in 140 countries. The products manufactured and sold is from almost every section in the manufacturing industry ranging from automotive to wind and water as well as the home electronic devises and sports.

In the case company many development projects has at least one component containing IT. To get a collated picture and control over of all IT development projects, all IT projects "belong" to the IT department. The company is using a standardized method and way of working. Both the method and the way of working is accepted and implemented in the organization.

The IT department is headed by a CIO reporting to the finance manager. All IT projects are approved by a board where the different processes in the company are represented. The board meets on a regular basis discussing different questions; one of the items on the agenda is IT project approval. For the project to be approved or denied by the board the project request needs to be presented using the company business case (template).

The number of projects approved is depending on the current environmental (business) situation and how the project fits in to the long term strategy. Business cases are approved, asked for a rework- revisit or are denied. The business case should show the cost, and also cost impact over time, benefits of the project and payback time.

There are three project approval levels;

1. The process in itself can approve projects up to 500 KSEK
2. The decision board decides upon approval for projects 500-4000 KSEK
3. If the project is for more than 4000 KSEK the executive management has to approve the project

## *4.2 Collection of data – description of statistics*

The case study includes 50 IT projects over 500 KSEK that closed 2014. They are closed during the year and it is therefore possible to get complete statistics for each project. And documented in a common way and it is therefore possible to find information needed for the case study. For projects below 500 KSEK there is no formal request for documentation and it is not possible to find any commonly stored information.

The IT project organization handles around 100 projects rolling and per year. They are ranging from 500 KSEK to 1000 MSEK. All projects have a project leader responsible for the project delivery as well as sponsor, steering group and e.g.  The formal project process is built on Prince 2 and all "approved" projects should have an approved project manager certified in Prince 2 (or the internal variant of the process). Mostly the waterfall methodology is used for driving the projects.

Projects progress is reported by using traffic light reporting (red, amber and green) on cost, time, quality, resources and overall once a month to the different stakeholders.

The projects are driven both by internal and external IT Project Manager: s depending on number of projects and if there is a special knowledge or restrictions regarding the project.

## *4.3 Theoretical frame – Case Company statistics*

One way of measuring project success is by measuring the number of successful, challenged and failed projects (Standish Group International (2013). For more information regarding the definitions of when a project is regarded as a success, challenged or failed please see chapter 1.2.

The statistics for the case company is as follows;

- Project success 34%
- Project challenged 32 %
- Project failed 34 %

## *4.4. Managing Cost, Time and Quality - statistics and interviews*

A successful project is on time, cost and with the right quality. In this section the statistics for the company will be presented.

**Cost**
Cost is measured by the ability of the project to keep cost in accordance with the original baseline. The threshold is 20% over or under the budget is inside the green span, 21-39 % is regarded as amber and more than 40 % over budget is recorded as red.

**Quality**
Quality is set using the sponsor survey where the sponsor answers if he/she is pleased with the delivered quality. The response could be yes (green), partly (amber) and no (red).

**Time**
For time, the same logic is used as for cost. Within 20% (green), 21-39% over the time limit (amber) and more than 40% over the time limit -the project is red.

### 4.4.1 Managing Cost

Looking at the cost variable for all projects, 57% of the projects are green, 30% are red and 13% are amber.

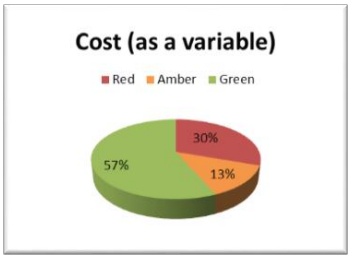



*Diagram 1:Cost (as variable)*

Cost is categorized in three different levels. The first category is for projects up to 500 KSEK, the next is for projects from 500 KSEK-4 MSEK and the third is the projects from 4 MSEK and up. The different levels have different approval paths in the organisation.

For the projects up to 500 KSEK, only the projects where the organisation asks the PMO to take care and run the project is included. The other projects below 500 KSEK is run in the line organisation and not reported in the project management tool which is the reason for this data not being included in the statistics. The category from up to 500 KSEK should therefore not be seen as the complete sample of projects in that category in the organisation.

In the case company the projects used 102% of the total project budget i.e. a small overspending of budget but inside the + 20% range allowed for projects.

For the projects over 4 MSEK 60% are read with regards to cost while for the projects ranging from 0-500 KSEK 50% are red and for the projects 500 KSEK-4 MSEK, 14% are red and 22% are amber. This implies that large projects have more difficulties keeping cost. In the cases where the projects have not been able to keep cost (over 4 MSEK) they have gone over the limit with between 2 and 18 MSEK. The green projects in this category, on the other hand, have gone under the limit with between and 4 MSEK. Does this imply that it is difficult to calculate cost and get it right for large projects?
For the small projects the red projects have exceeded the budget with 5 KSEK up to 500 KSEK.

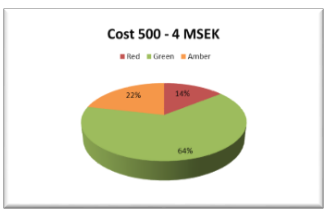



*Diagram 2: Cost - 500 KSEK, Diagram 3: Cost 500-4 MSEK*

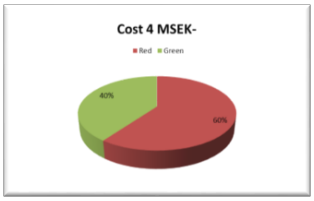



*Diagram 4: Cost 4 MSEK-*

**Interviews - cost**

All respondents agreed that project success was dependent on project size. In the section below the respondents answers therefore are divided in two sections, one for small projects and one for large projects, since the responses was different depending on the size of the project.

**Small Projects**

That a small project does not keep cost is not so strange, 10 hours has a huge impact on a small project.(R1) These projects are usually not driven as "real" projects (R2). You underestimate the project work needed, you think that "this is a piece of cake", it will take three weeks and then it takes three months (R5). You may even be a bit sloppy with the estimation because it is so small (R2). Small project have a hard time getting prioritized by stakeholders (R3).
We are fairly good with the projects in between small and large and they are usually delivering in a good way (R2).

**Large projects**

For large projects it is important to break down it in to sequences or phases that are easier to handle. It is easy to get lost in the details and not having enough control over the complete project (R1). It is crucial to continuously break down the project in to smaller pieces and evaluate cost, how the project delivery moves forward, and work still do be done (R4). They are difficult to predict because of the size (R5). To do a proper collection of requirements that gives a true picture is really difficult for large projects. In Agile you use to say that "It is better to be roughly right than precisely wrong". Do not put too much time in to calculating and planning, but try to be fairly close to the truth (R4). To do a prestudy before the project is one way to get closer to the truth (R3). "Only God knows from where the budget from the larger projects comes from". "It is the budget that steers the outcome not the project scope". "The will is often bigger than the budget" (R5). "You are usually eager to start the project immediately and do not have time to wait for a pre-study" (R2).

### 4.4.2 Managing Time

Looking at time for all projects is interesting, the complete bulk of projects used 179% of the total time schedule, and only 9% of all projects are green when it comes to time, 43% is

amber and 48% is red. It is more common not to keep time than to do it. 20% of the projects where late more than one year.

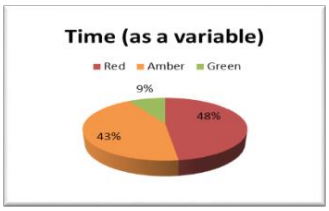



*Diagram 5: Time (as a variable)*

**Interviews - Time**

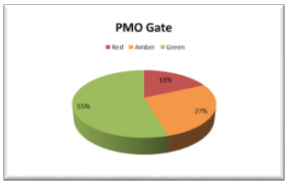
It is too easy to get an approval from the steering group regarding extended time for a project. It is a question of company culture. Time is not a holy cow, but can be changed (R3). We are too optimistic and have too many things going on at the same time (in this case we mean the complete company) the projects are re-scoped during the projects life time; it is difficult to have focus on just one thing at the time (R4). Our processes are too complicated with many involved parties (R2). Many people are involved in each project and we have long lead times (R1). One question can be sent to 10 people for response, this takes time. A workshop takes one month to set up (R5). We have a complicated relationship to our supplier(s) when requesting development (R4).

### 4.4.3 Managing Quality

**Overall project quality**

The overall project quality, on time, cost and quality is affected by if the project has been reviewed in the PMO Gate or not. The PMO Gate is a gate where the project organization, the architects, technical infrastructure and the receiving organization reviews the project directive, including cost, scope, benefits, time plan, and resource plan. The project get a go (it is ok to proceed with the project) a no go (the project have to improve in some vital areas before proceeding, the project have to come back to the gate for a new approval) and conditional go (the project can proceed but needs to take some actions and report back to the gate when this is done).

In the case company 89% of the projects were green on quality. There is a difference if the project has been through a PMO Gate or not. The projects that have been reviewed in the gate are 18% red, the projects not reviewed in the gate 33% are red.



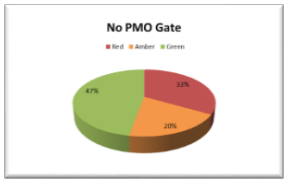




*Diagram 6: PMO Gate, Diagram 7: No PMO Gate*

Looking at how the different variables are affected if there is a PMO Gate or not. The biggest effect is on time and cost. If the project has been reviewed in the gate there is a bigger risk that it will take longer time but on the other hand it will be more likely to keep cost.

**Interviews – overall quality**

Using the PMO Gate makes people increase the quality of their work; they will make a greater effort to pass the Gate (R3). If there were no gate, probably 20% of the project would start without a project workbook (R1). The PMO Gate increase the project time but it is worth it since it increases the quality (R2). You as a project manager also get the project viewed/checked from several different angels (R5). It is therefore important that the right people participate in the gate to get the right "effect" (R1). The PMO Gate is important and it increases the quality a lot (R2).

The PMO Gate is a control gate to secure that you have thought your project through and secured that you have the right prerequisites (R2). If a project is started without "having all the ducks in a row" the result can be anything (R1). It is important to understand that there are many people that are interested in the result and how the projects proceed. It is good to have a firm PMO that sets the rules (R2). It is important that we get it right and that we do the right things (R1).

**Project quality (as a variable)**

Quality is measured in a survey done after the project where the sponsor responds about the quality. The result shows that most stakeholders are very pleased. Only 13% are amber and no projects are red when it comes to quality.


*Diagram 8: Quality (as a variable)*

**Interviews- quality as a variable**

The project quality has generally increased but we need to be firm with business requirements. In that case the % would have been lower than today. If a project is re-scoped this is also included in the sponsor survey (R3). We could improve in prestudies and make a better work in the beginning of a project. Often we work in the wrong way, functions instead of processes (R5).

The sponsor engagement is varying a lot. In some cases we find the sponsor when the project is closed and then we fill in the end of project survey. Maybe it would be better to call the sponsor instead of using a template to fill in. Some of the sponsors that I have met have not

been 83% satisfied when I talk to them, do they not dare to respond that in writing (R5)? One way to increase quality even more is to make sure that the sponsor understands their role in the project, roles and responsibility. Here the PMO could be a good support – "someone to hold hands with through the process" (R2).

How a project is set up is important for the end result (R1). If the project manager is experienced he/she will know by experience what can take longer time, cost more money and will plan for some space in the project plan to cover the unexpected (R3).

## *4.5 Projects in a Management context - statistics and interviews*

In this chapter the analysis of how a project is effected by the project method used, if it is driven near to the head quarter or on a far distance as well as the gender of the project manager and/or the sponsor. The chapter starts with the overall aspects before it moves in to a more detailed description of the specified aspects.

### 4.5.1 Project management – overall aspects

The case company is divided in to six different processes. Between the processes there is a difference if "the process" is used to drive projects, is using the project methodology and has experienced project managers and sponsors, some of them driving more than one project at the same time and/or during the year. To illustrate the difference that could occur between the processes two processes has been chosen, representing the span and the project maturity in the organization. For process B they have a lot of changes in the project organization, in process E the state is more stable, sponsors and project managers are using the project methodology, sponsors and project managers are usually driving more than one project at the same time. The difference in numbers is that Process B has less green 33% compared to 50% for process E. Process E has no red but amber. Process B has 67% red projects but no amber projects.

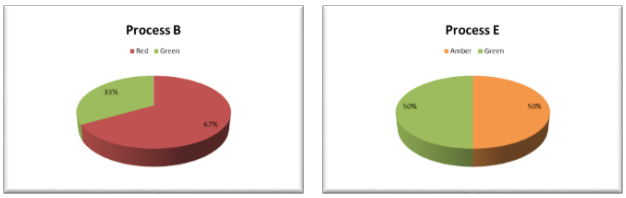
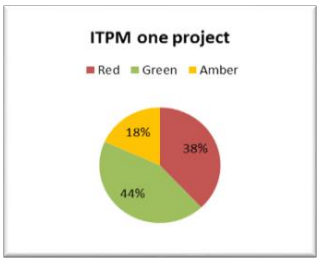



*Diagram 9: Process E*

Looking closer at the experience of driving projects, when project manager are driving more than one project the projects are more often green 66% versus 44% and less red 21% verses. 38%. More than one project means in this case either two or more projects in parallel and/or in sequence. One project manager in the organisation could drive up to 6 projects at the same time, depending on size and complexity of the projects.



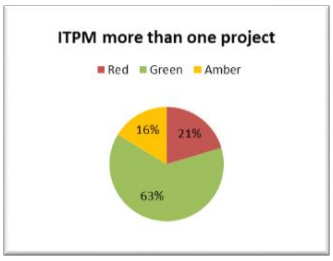




*Diagram 10: ITPM one project, Diagram 11: ITPM more than one project*

**Interviews- project management overall aspects**

If the project manager and/or sponsor are experienced he/she will know by experience what can take longer time, cost more money and will plan for some space in the project plan to cover the unexpected. The people raise the level (F1, F3).

It is good that we have a methodology, but maybe there should be different ways of actually doing the projects since they are not all the same (R4)? We should have different depths and templates depending on the project (R2). We have to be pragmatic and use the right methodology for the right project (R1). If we are going to change or add a methodology to the waterfall methodology this will put different demands on our teams and how to work together. On the other hand, just using one method (as it is today) is not the long term solution (R4).

We need to be faster and more flexible and not so firm in our structures, by that I do not think that it will be so easy to change (R1). Prince 2 is a good framework but inside the framework we should be able to have different methodologies when it comes to product development. Agile and SCRUM could be a good alternative (R4).

The workbook is (the internal project methodology) is too complicated for small projects (R2). We need a lean version of it for small projects. In that way it would be able to catch smaller projects in a structured way instead of them "living their lives in the hallway". They are today ambitious projects kick-started with no management to make it cheaper. We therefore need to be able to differentiate between small and large and the ones in between to make it more flexible and fit for purpose than today (R5).

### 4.6.1 Project Management in a multinational environment

**Distance from headquarter**

In the case company there is a difference in average project cost and number of red projects depending on how close to head quarter the project is driven. Projects driven from the head quarter have a larger average cost than projects driven elsewhere.

The projects driven from Europe have less red and amber than the projects driven from Asia and North and South America.

The projects driven from Asia have on the other hand less red than the projects driven from North and South America.

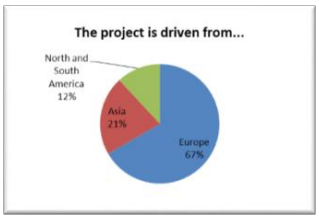



*Diagram 12: Where is the project is driven from?*

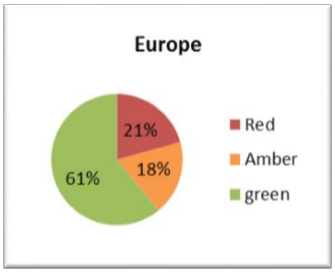



Diagram 13: The project is driven from Europe

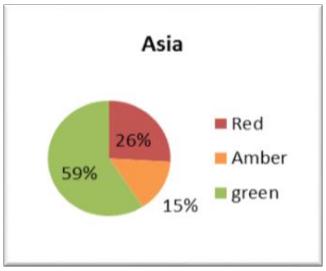



Diagram 14: The project is driven from Asia

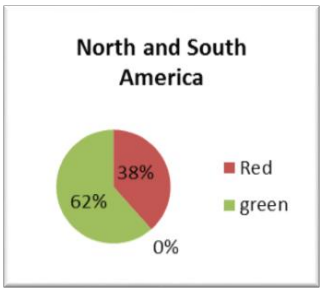



Diagram 15: The project is driven from North and South America

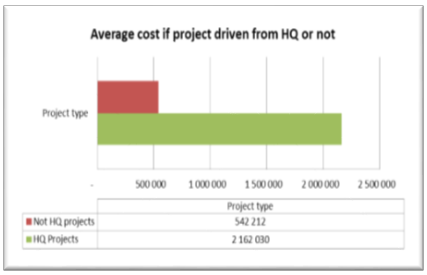



*Diagram 16: Average cost in SEK if the project is driven from HQ or not*

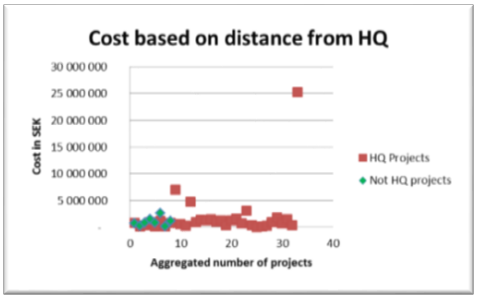



*Diagram 17: Cost in SEK based on distance from HQ*

**Interviews – distance from head quarter**

Latin America is far away from headquarters – it is difficult to help (R3). The structure and order in a project is also depending on the cultural context in which it operates (R2). In Latin America they usually like to do it their own way but in Asia they are generally very eager to follow the recommendations from Head Quarters. They want to do the right thing and do as the manager says (R3). In Latin America they also have their own managers which needs they try to fulfill. Their needs are not always the same as the headquarters (R2).

The differences are cultural and availability of information. By culture I here mean how you look for information. In Europe information flows over the boarder not only in written format but also oral since you is closer to Headquarters and the people making the decisions (R3).

The biggest difference is in language and culture, not so much in distance to headquarters. You have to be present independent of where the project is. For Europe it is easier since we often man the project from here. It is important with much presence to deliver a successful project (R5).

North America and Europe have a more developed project culture than Latin America –"don't bother about corporate – go your own way", you do not want to follow the processes set up by head office. The head office has a bigger buy in in Asia than in Latin America (R2).

### 4.6.2 Project Management and gender

The female project managers and sponsors average cost per project is lower than the average project cost for the projects driven by a male project manager or sponsor. The cost spread is also larger for the male projects than for the female projects (female project manager and/or female sponsor).

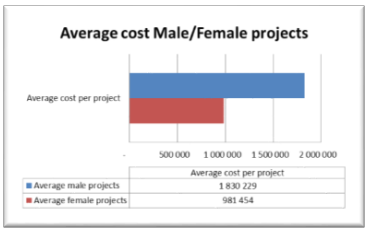



*Diagram 18: Average cost in SEK Male/Female projects*

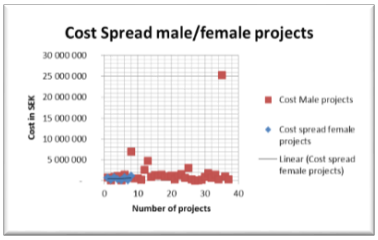
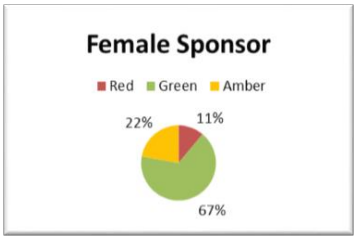



*Diagram 19: Cost in SEK spread male/female projects*

#### Gender Sponsor

There is a difference in the result if the sponsor is a male or a female. If the project has a female sponsor there are fewer red projects but more amber than if there is a male sponsor. 19% of the projects are driven by female ITPM: s, 81% of the projects is driven by a male ITPM.



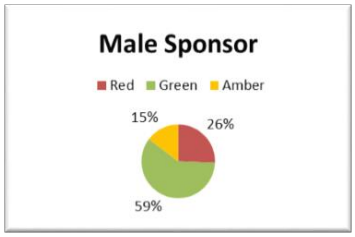




*Diagram 20: Female Sponsor, Diagram 21: Male Sponsor*

#### Gender ITPM

Looking at gender as a variable of project success? In the material it is obvious that there is a difference depending on if the project manager is a male or a female. What is the reason for the difference we could only speculate in but it seems like the female ITPM: s have fewer red

projects 4% vs 26% and more green 67 % vs 60 %than the males. 13% of the projects have a female sponsor, 87% of the projects are driven by a male ITPM.


*Diagram 22: Female ITPM, Diagram 23: Male ITPM*

**Interviews - gender**

The female sponsors and project managers in the organization are usually more competent and senior. They are role models, best of breed in their area. If not they will not stay, they will choose to do other things instead. They are often driven by ability to deliver a result. They have an extreme order and structure; they know the complete competence area. Men can still stay in a knowledge area even though they are not the best of breed since they usually do not take failure or negative feedback personally, they "wig their tail" anyway (R3).

As a female you are generally less prestigious and this makes it easier to cooperate, you are able to get the decisions that you need, using the information and communication that you have. Females focus more on the problem and are more pragmatic, they follow the 80/20 rule when solving problems (R5).

Women are fewer than men in our organization; we are so few that we better make the best out of it. There are more demands on us, we are so few, and it is a patriarchate organization, a male structure. We are not treated in the same way as the men. The pressure on us is bigger (R4).

Women take the project manager and sponsor role more serious than men. They are generally better to listening in to the signals "between the lines"; the female intuition should not be underestimated. Women are more concentrated on what they do – I (as a man) can more float around doing several things at the same time. Just look at the results in the school, the girls are more ambitious. When they get something that they should do/perform, they try to do it in a really good way (R5).

Rules, routines and quality, females adhere to the rules in a better way than men. They do not question everything all the time but the flip side is that it can take longer time – it is important to choose the right people. If you have a really "heavy" female project manager that knows what she is doing and knows the business, this is both unique and appreciated in the company (R2).

# 5. Analysis

In this chapter the analyses based on the empirical data (statistics and interviews) from the case company in combination with the theoretical framework is performed. The chapter is divided in to two main areas that unfold in to six sections; managing cost, time and quality, project management in a multinational environment, gender and project management methodology. As the last step in each chapter a brief summary and conclusion section is included.

## *5.1 Theoretical frame*

Looking at the total project success rate in the case company it is 34%. This is slightly lower than in the Standish Chaos Report 2013 where it is 39 %. The case company has less successful projects than the average company. This is probably due to the fact that time is included in the success factor calculation. As visible in the statistics regarding time, 83% of the projects in the case company is delivered late during 2014, 20% of the projects that were delivered more than one year late.

The challenged projects in the case company were 32 % while in the Standish Chaos Report 2013 43%. The challenged projects where a bit less in the case company. One reason for this could be that all projects are reviewed in a quality gate (PMO Gate) before they are allowed to start. Issues that are likely to produce problems in the delivery are often caught and sorted out before project start.

The number of projects that failed where 34% in the case company, in the Standish Chaos Report 2013 it was 18 %. The number of failed or premature closed projects was a lot higher in the case company than in the Standish Chaos Report 2013. One reason could be that a review of all the projects on hold where performed during 2014. A great deal of them where closed since they had been on the "waiting list" for a long time and where no longer of any interest to deliver.

## *5.2 Managing Cost, Time and Quality*

In this chapter the analysis of how to manage cost time and quality is performed.

### 5.2.1 Managing Cost

One of the parts in the Iron or Golden project triangle is cost (Pandremmenou et al, 2013, Atkinson, 1999). Cost and Time is easy to measure and according to our "best guesses" while quality is a "phenomenon" (Atkinson, 1999).

When looking at the complete project portfolio 102% of the total project budget was used in the case company. This means that almost all projects are within their cost range. In the case company there is a strong culture to keep the budget. It is not OK to overspend in the projects. According to one of the interviewees there are a lot of different actions connected to overspending the budget, so you do not want to do that. For time on the other hand there are no such "control mechanisms" so it is easier to overspend time. One respondent stated that the budget sets the scope of the project.
The "true" overspend number is though hard to estimate since only external cost is calculated and integrated in the projects, internal resources are regarded as "free of charge".

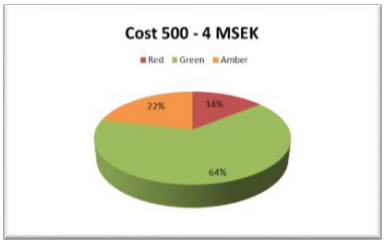
Looking at the statistics from the case company small and large projects are most challenging to drive. These projects are more often red on cost. The interviewees states that small projects are usually not driven as "real" projects; you are underestimating the administration needed and think that this is easy –" it will take three weeks and then it takes three months instead".

A large project is more complex than a small one; it is difficult to define all the requirements in a good way from the business. This is easier in smaller projects. As one respondent stated - smaller projects are usually more fun since you can see both the start and the end of the project.
According to the Chaos report 2013 (Standish Group International, 2013)large and complex projects are difficult and more complex and their recommendation is therefore to divide large projects in to smaller more Agile projects to secure a successful delivery. One of the respondents also confirmed that one thought for the future is to (for large and complex projects going on for a long time) change project manager after each phase to get new energy in to the project.

Using the Agile methodology you say that "it is better to be roughly right than precisely wrong". By this the interviewee meant that too much time should not be spent in the beginning of the project trying to do precise estimates, instead try to come fairly close to the truth is good enough to be able to start.

The respondents also thought that too many large projects are going on for too long. They should be broken down in to sequences or phases that are easier to handle. This will also be better for the people involved in the project as they will be able to see "the light in the tunnel".

*Diagram 24: Cost -500*



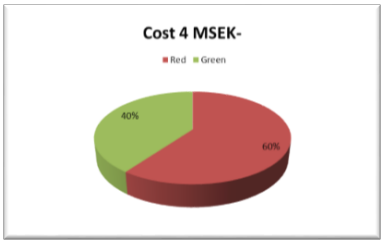




*Diagram 25: Cost 500-4 MSEK, Diagram 26: Cost 4 MSEK-*

**Conclusion – managing cost**

Depending on company culture, how project cost is calculated, measured and approved this may be the most measurable target, but it is important to secure that the right numbers are measured and matched towards each other to be able to show a true project picture.

### 5.2.2 Managing Time

In the case company 83% of the projects are delivered late and 20% of them more than one year. It is more common to miss on project time than to keep time.

One reason could be that there are no actions involving higher management if the project fails on time as long as it keeps cost. This is also confirmed by the interviewees in the case company.”It is too easy to get an approval from the steering group regarding extended time for a project. It is a question of company culture, the time is not a holy cow, but can be changed.

It could though be questioned if the project is still delivering a good and needed result if it is more than one year late? One more reason for projects being late could be that there is no control of internal resources and they often spend their time in many different projects not focusing on one or two at the time

According to the interviewees “we (the case company) are too optimistic and have too many things going on at the same tie, our focus is too cut up in pieces and we are sliced thin between many different tasks at the same time as well as that the project requirements and scope change over time.

The organization lack what Stieber (2014) calls double capacity, to be able to work both with maintenance and development at the same time. Most of the resources in the organization are working both with development and maintenance. The risk is though that the projects take a long time since resources are “sliced thin” due to that they are involved in both development and maintenance and if there is a serious incident maintenance is always prioritized.

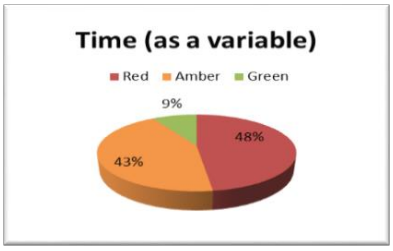



*Diagram 27: Time (as a variable)*

**Conclusion – managing time**

It is important to find the right balance between development and business as usual in the organization; otherwise it will be difficult for the projects to deliver result. They project team will constantly be thorn between development and maintenance and the risk is that the one that is most urgent will get the most attention, not taking in to consideration what would be the best for the complete organization.

### 5.2.3 Managing quality

One of the parts of the "Iron triangle" (Atkinson, 1999) is quality. It is the most difficult category of project success to measure since it can vary from project to project and can be measured in a number of ways.

In the case company quality is measured using a sponsor survey, if one question in the sponsor survey is red the complete survey becomes red, 89% of the projects were green on quality in the case company. Asking the interviews about the high number one response was that "The sponsor engagement is varying a lot but the project quality has generally increased. Today it may be too easy to reach the project quality goal since also the eventual re-scoping along the way of a project delivery is included in the sponsor survey. This means that the sponsor in general will get what he/she requests, i.e. the project will go on until the right level of quality has been reached but the project time line will be dragged out in time.

This may not be the best way of driving a project but as stated by (Pandremmenou et al, (2013) - a project can be a success also when it is driven in a bad way.

The reason for the high quality score could also be the reason for so many projects being delivered late – since many projects will go on until the right quality has been achieved and the sponsor/stakeholders are satisfied.

If the problem with the long time for project delivery is corrected it could mean that the quality needs to be lowered to speed up project delivery.

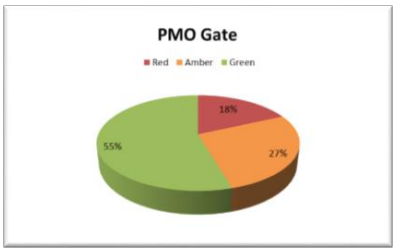
Pandremmenou et al, (2013) add some success criteria's to the more traditional golden or iron triangle such as customer satisfaction with project deliverables, stakeholder satisfaction and value creation for the organization. In this case the organization may be delivering according

to expectations, quality and sponsor satisfaction is more important than delivery on time, hence the prolonged time for the projects but mostly with satisfied stakeholders.

**PMO Gate**

The PMO Gate in the case company has evolved over three years' time in to the current format. When starting up the PMO Gate not all projects where "forced" in to the gate. Looking at the statistics from the case company it is therefore possible to compare the difference between the projects being reviewed in the gate and the ones not being reviewed in the gate. The gate primarily deals with projects over 500 KSEK since the projects below 500 KSEK (usually) are run in the line organisation.

Looking at the project success rate in the case company there is a difference if the project has been through a PMO Gate or not. The projects that have been reviewed in the gate are 18% red, the projects not reviewed in the gate 33% are red. According to Senge (2006) the structure is always affecting the behavior and the result, in this case it seems like it increase the quality and the ability to deliver the project successfully.



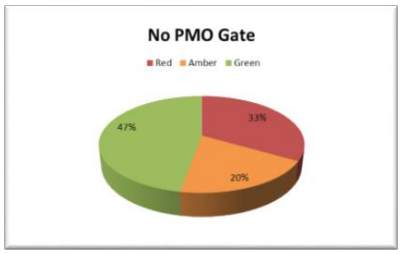




*Diagram 28: PMO Gate, Diagram 29: No PMO Gate*

According to the interviewees in the case company "Using the PMO Gate makes the project manager increase the quality since they will make a greater effort to pass the Gate".

Also you as a project manager get the project viewed/checked from several different angels in the gate. To be successful it is therefore important that the right people participate in the gate to get the right "effect".

If you have a project goal but are not sure how to get there the participants should use their experiences to make the best decision (Hancock, 2010). He also states that complex and dynamic problems is not possible to solve one by one in isolation but needs to be solved in a group creating an agreement among the stakeholders. In the gate several different stakeholders' viewpoints are incorporated and there is a mutual agreement on the next steps going forward.

The interviewees also point out that the PMO Gate is a control gate to secure that you have thought your project through and secured that you have the right prerequisites. If a project is started without "having all the ducks in a row" the result can be anything (as one of the

interviewees said). The same interviewee also said that "It is important for the project to understand that there are many people that are interested in the result and how the projects proceed". By this the respondent meant that it is important with the monthly reporting and the common gates to secure both quality but also communication about the project to all the stakeholders.

Cooke-Davies (2002) say that a project is one part belonging to a wider enterprise wide ecosystem. To be successful the complete ecosystem has to be taken in to consideration. By reviewing all projects in the PMO Gate and creating monthly project status reports the balance in the ecosystem is secured.
This is also the view of Stiber (2014), you need to have a systematic approach on projects, where the main focus is that we are all included in one system and you need to handle things that are in the system and affecting you – good or bad.

#### Conclusion – managing quality

Projects are one piece of the organizational ecosystem. As such projects need to be in balance with the rest of the organization. Setting up a framework that use the knowledge and power in the organization in the right way will be beneficial to the project delivery.

## *5.3 Projects in a Management context*

According to Trivellasa and Drimoussisb (2013) there is a connection between how the project manager behaves and if the project will be a success. In their research they have seen that a high degree of emotional, management and behavioral maturity often lead to project success. In addition to these aspects Ramazani and Jergeas (2015) states that the project manager also need to be an able to have critical thinking, be able to communicate in a good way and capable of handling complexity.

In the case company the internal project managers have been working for a long time, their profession is project management. They also get regular training in combination with knowledge and lessons learned sessions to secure a continuous learning. Project managers are either recruited in to the organization or hired for projects. They are requested to have a project management certification as well as a long and documented project management experience.

Ramazani and Jergeas (2015) claim that a certification is no guarantee for that a project manager will be able to drive successful projects. Their point is that to accomplish that there has to (in addition) be internal trainings as a complement as well as coaching and mentorship. The case company has the continuous trainings in place as well as the learning from others experience and in some cases mentoring.

Looking at the statistics project managers that drives more than one project is more successful than the ones that are driving only single projects during the year (66% vs. 44% and less red 21% versus. 38).

There is similar statistics for sponsors. If a sponsor run more than one project a year, the project is more likely to be successful. This is probably depending on that the sponsors and project managers are learning from experience. They are also creating a network with project managers and sponsors that they can contact if they run in to problems. The connection is usually done in the trainings, lessons learned sessions or using the PMO to ask for guidance or whom to contact "who has done this before?"

The same tendency can also be observed for the processes. In the processes where the project management method is established, accepted and used and where project managers is an occupation in itself – the success rate is higher than in the processes that lack the knowledge, acceptance and way of working.

### 5.3.1 Project management methodology

In the case company all projects are handled using a "one size fits all" project management model including Prince2 (Government Commerce, 2009) in combination with the waterfall method (Mahdevan et al, 2015).

Interviewees state that "our processes are too complicated, and the project method is not leveraged meaning that the different levels of administration are not used. Today only one level is used independent of project size and/or complexity. The method used today is too complicated for small projects. A light version that could be used for small projects is needed. It is better to actually catch the small projects in a project form instead of them living their own lives out in the hallways.

In the case company projects are heavily frontloaded before start (in accordance with the waterfall method). The interviewee states that it is good that we have a project methodology, but all projects are different and there should be room for treating them differently, depending on size and complexity, with different depths and templates.

We have to be able to move more quickly and not be so stuck in our structures, with that not said that it will be easy. Prince2 is a good framework but in the framework it should be room for different development methods like Agile. I am sure that we have several different ways of doing projects but only one official.

Based on this it would probably be good for the case company to add one more method used under the Prince2 framework. One such method could be Agile SCRUM mentioned several times by the interviewees. The question will then be when to use what model?

#### Conclusion – project management methodology

Different project methodologies could be used for project delivery such as waterfall or Agile, one size usually does not fit all, but it is important that the corporate model is known, used and accepted by the organisation.

### 5.3.2 Project Management in a multinational environment

A large share of all projects in the case company is run out of Europe, even though Europe has still the lowest number of red projects. One reason could be that they are closest to the head quarter both in culture and language. This is according to Zhang et al (2014) a good base for information and knowledge sharing.

The projects driven from Asia are more red then the projects from Europe but less red than the projects from North and South America. What is the reason for this? Is it a pure matter of distance?

One of the interviewees states that "I think that it is more language and culture than distance to the head office. The experience that I have is that the distance has no or very little effect compared to the local culture.

Projects driven from Asia have Asian project managers but their unit is headed by a manager from Europe. In this way the cultural and structural differences are mitigated. The manager that can be seen as the "translating link" between the head quarter and the project managers securing that also the tacit knowledge is translated. According to Peltokorpi (2015) and Zhang et al (2014) it is beneficial for a project (driven on a distance from the head quarter) if the project manager have the opportunity of "translation" of.

For South America there is both a long distance as well as a language and time barrier to the head quarter. There is a strong local organisation that in some cases views the head quarter as the "absent landlord" Andersson et al (2010).

According to the interviewees Latin America is far away from headquarters. They have their own managers and other needs to fulfill. They operate in a way that "screw head office and go your own way". You do not want to follow guidelines set up by head office. In Latin America they usually like to do it their own way but in Asia they are generally very eager to follow the recommendations from Head Quarters. They want to do the right thing and do as the manager says. The head office is more truth worthy in Europe and Asia than in South America.

If the project is going to be successful it is important to find the "translating link" for language, culture and structure (Peltokorpi, 2015 and Zhang et al, 2014). One way could be to have a local project manager that speak the corporate language as well as the local language, has the buy in locally as well as by head quarter, is familiar both with the local as well as corporate culture and has knowledge and tacit knowledge about how to run projects.

The structure and order in a project is also depending on the cultural context in which it operates says one of the interviewees. This includes both culture and availability of information. Included in the cultural aspect is also how you look and search for information. In Europe the information flows over the borders, not only in written form as processes and guidelines but also orally.

North America ran just a few projects 2014 so they did not have such a big impact on the statistics. The projects that where run where using project managers from the Asian team and the result was at the same level as for Asia. This implies that if you have a connecting link between the local unit and head quarter, so they understand each other, there is a greater chance that the project will be a success.

#### Conclusion - project management in a multinational environment

Distance from headquarters has an impact on the project result, but culture has an even bigger effect. This needs to be taken in to consideration when setting up and delivering the project.

### 5.3.3 Project Management and gender

Looking at the statistics from the case company an unexpected picture emerges, -when a project has a female project manager or sponsor the project is more frequently delivering on time, within budget and with the right quality than if the project has a male project manager and/or sponsor.

In the case company projects are practically always delivered on cost and quality but nearly never on time. One reason could be that the company culture implies that you keep cost and scope – time is not as important as long as you keep the other two.

According to the interviewees the female sponsors and project managers take the task more serious, sometimes quite the opposite from men. They are generally speaking better listeners and are able to read between the lines using their female intuition. When it comes to project management females are good at focusing on what they are doing, me as a man can have more of a “split vision”. Just look at the results from school, the girls are more ambitious. If they get a task they try to do it really good says one of the interviewees.

According to Waahl et al (2013) the leading gender sets the norm in the organization, and it is the leading gender that sets the rules in the organization. The other gender is seen as the deviant and their performance is therefore measured against the leading gender.

In the case company the leading gender is male. Many of the projects are run by men and looking at the statistics they are also driving the largest projects.

The leading gender often advocates competence before gender, since they are inside and belongs to the norm group they have difficulties to see and understand the problems with not belonging to the norm group. For the advocate gender it is often not beneficial to try to”be” the leading gender. This is looked upon as an odd way of making yourself up.

The deviant gender will be more visible (for good and bad) in the organization, and will serve as the scale on which other persons belonging to the deviant gender are measured. (Waahl et al 2013).

In the case company the deviant gender is the female, could the reason for women delivering with higher performance be the result of that they are and will be truly visible in the organization? When recruiting a female for working in the organizations an "extra thorough" process is performed (maybe not "on purpose") where only the best applications for the job is chosen since all involved are aware of that of it will affect not only that project manager if she succeeds it will also affect other women in the organization (Waahl et al 2013).

According to the interviewees, female sponsors and project managers in the organization are usually more competent and senior. They are role models, best of breed in their area. If not they will not stay and will choose to do other things instead. They are often driven by ability to deliver a result. They have an extreme order and structure; they know the complete competence area. Men can still stay in an area even though they are not the best of breed since they usually do not take failure or negative feedback personally, they "wig their tail" anyway.

The case company´s aim is to have a split between the genders that is the same as in the company as a whole. In this case it means 30% women and 70% men. One of the interviewee's states – "In an industrial company like this it is really heavy (in a good way) when a female Project Manager comes and she really knows what she is doing – it is really appreciated!"

#### Conclusion – project management and gender

In the case company there is a difference in the project performance depending on gender. The aspect of "leading gender" is therefore one aspect to take in to consideration when appointing project managers and sponsors.

# 6. Conclusions regarding project success factors

The intention of the thesis is to inspire multinational IT organizations on how to increase their overall IT project success rate. Since IT has evolved from being a foundation for the production to being a foundation for the organisation (Lundberg, 2009), it would also increase the organization´s chance of future success (Stieber, 2014).

There are some general conclusions that could be drawn from the thesis on what aspects that needs to be taken in to consideration to increase IT project success;

1) **Managing Quality** – projects are one piece of the organizational ecosystem. As such projects need to be in balance with the rest of the organization. Setting up a framework that use the knowledge and power in the organization in the right way will benefit the project delivery.
2) **Managing cost** – depending on company culture, how project cost is calculated, measured and approved this may be the most measurable target, but it is important to secure that the right numbers are measured and matched towards each other to be able to show a true project picture.
3) **Managing Time** - it is important to find the right balance between development and business as usual as well as the correct level of quality for the project; otherwise it will be difficult for the projects to deliver result (in time) to the organization.
4) **Project management methodology** - different methodologies could be used such as waterfall or Agile, one size usually does not fit all, but it is important that the corporate model is known, used and accepted by the organisation.
5) **Project management in a multinational environment** - distance from headquarters has an impact on the project result, but culture has an even bigger effect.
6) **Project management and gender** - there is a difference in the project performance depending on gender. The aspect of "leading gender" is therefore one aspect to take in to consideration when appointing project managers and sponsors.

***In the end "it is people delivering projects not processes and systems so when it comes to project management it is people that count" (Cooke-Davies 2002)***

## *6.1 Future research*

In the case company male was the leading gender. In the future it would be interesting to investigate if the result would be the same in an organization where the female where the leading gender.

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# Appendix A Sponsor Survey

| | Sponsor Statement | Values |
|---|---|---|
| Q1 | The IT Project Manager understood the needs and scoped the IT project accordingly? | YES/Partly/NO |
| Q2 | The scope changes were well managed (e.g. no changes without Sponsor approval, both negative and positive consequences was thoroughly investigated and clearly communicated)? | YES/Partly/NO |
| Q3 | The time plan (baseline) was adequate to reach the objectives, and it was clearly communicated? | YES/Partly/NO |
| Q4 | Any changes to the baseline (time plan) were clearly and timely communicated? | YES/Partly/NO |
| Q5 | The estimated IT project cost (baseline) was adequate to reach the objectives and it was clearly communicated? | YES/Partly/NO |
| Q6 | Any changes to the baseline (cost) were clearly and timely communicated? | YES/Partly/NO |
| Q7 | The IT project has delivered a product with satisfying quality? | YES/Partly/NO |
| Q8 | The IT Project Manager has clearly requested resources needed to reach the objectives of the project? | YES/Partly/NO |
| Q9 | The IT project has utilized the provided resources in a good way? | YES/Partly/NO |
| Q10 | The IT project had an attitude that helped them to deliver a result, solving your business needs? | YES/Partly/NO |

Comment

## Appendix B Interview guide

Looking at the following statistics from the case company using your own experience, what are your reflections?

1. Cost
2. Time
3. Quality
4. Project Management Methodology
5. Project Management in a Multinational Environment
6. Gender