

CHALMERS



Offshored engineering as a competitive advantage in a consultancy company

Identified communication challenges in an infrastructure project

*Master of Science Thesis in the Master's Programme Design and Construction
Project Management*

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Department of Civil and Environmental Engineering
Division of Construction Management
CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden 2013
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ABSTRACT

Due to increased competitiveness within the construction industry in Sweden one strategic solution is to implement an offshoring element. The purpose of this master thesis is twofold; to study how offshored engineering can be used as a competitive advantage in a large Swedish technical engineering consultancy company and to identify communication challenges in an offshore project. The following definition of offshoring will be adopted; “the transnational relocation or dispersion of service related activities that had previously been performed in the home country” (Bunyaratavej et al., 2011, p. 71). This thesis is based on a qualitative research approach including a case study. The theoretical framework presents previous research regarding strategies and incentives related to offshoring and aspects that can either be barriers or facilitators in an offshore project. These aspects are communication, culture and trust. The studied case is a large infrastructure project in Stockholm where the client is the Swedish Transport Administration. The consultancy company collaborates with an external partner, using an offshore outsourcing approach. This external partner, the offshore company, has had engineers from both the UK and Poland working with the project. Interviews were conducted with employees at various management levels in both Sweden and the UK.

The empirical findings correspond to the theoretical framework in many regards. In a long-term perspective it can be concluded that offshored engineering is a trend and is becoming a common strategy for Swedish technical consultancy companies. The study shows that it is successful to combine a cost incentive with competent resource seeking and this approach should focus on finding the right competence to the right task. It is preferable to establish a long-term collaboration with an offshore company. The findings show that both the offshore company and the consultancy company are unsatisfied with how the communication has worked in the project. More face to face interaction, coherent management, implementation of communication lines and to transfer employees in both directions is recommended in order to ease the collaboration and communication in an offshore project.

Key words: offshoring, offshored engineering, construction industry, communication, culture, trust.

Offshored engineering som en konkurrensfördel i ett konsultföretag
Identifierade kommunikationsutmaningar i ett infrastrukturprojekt
Examensarbete inom Design and Construction Project Management
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SAMMANFATTNING

På grund av ökad konkurrens inom byggbranschen i Sverige så kan ett strategisk alternativ vara att implementera offshoring i en organisation. Syftet med detta examensarbete är tvådelat; att studera hur offshored engineering kan användas som en konkurrensfördel i ett stort svenskt tekniskt konsultföretag samt att identifiera kommunikations svårigheter i ett offshore projekt. Följande definition av offshoring används i uppsatsen; ”gränsöverskridande överföring eller spridning av tjänster som tidigare har utförts i hemlandet” (Bunyaratvej et al., 2011, p. 71). Detta examensarbete är baserat på en kvalitativ forskningsmetod som inkluderar en fallstudie. Teorikapitlet presenterar tidigare forskning om strategier och incitament relaterade till offshoring, samt olika aspekter som antingen kan vara en styrka eller en svaghet i ett offshore projekt. Dessa aspekter är kommunikation, kultur och tillit. Fallstudien är ett stort infrastrukturprojekt i Stockholm där beställaren är Trafikverket. Konsultföretaget har i detta projekt samarbetat med ett externt utländskt företag med en offshore outsourcing strategi. Detta externa företag, offshore företaget, har haft ingenjörer involverade i projektet från både Storbritannien och Polen. Intervjuer var utförda med anställda på olika ledningspositioner i både Sverige och Storbritannien.

Det empiriska resultatet stämmer till stor del överens med den presenterade litteraturen och teorin. I ett långsiktigt perspektiv kan det konstateras att offshored engineering är en pågående trend och blir en allt vanligare strategi iför svenska tekniska konsultföretag. Fallstudien visar att det är ett vinnande koncept att kombinera en strategi för att minska kostnaderna tillsammans med kompetenta resurser. Detta tillvägagångsätt syftar till att använda rätt kompetens till rätt uppgift. Det är fördelaktigt att man upprättar ett långsiktigt samarbete mellan företagen i ett offshore projekt. Resultatet visar att både konsultföretaget och offshore företaget är missnöjda med hur kommunikationen har fungerat i projektet. Mer fysiska möten mellan teamen, samspelt ledning, implementering av kommunikationslinjer samt förflyttning av anställda från respektive företag är rekommendationer som skulle underlätta och förbättra kommunikationen samt samarbetet i ett offshore projekt.

Nyckelord: offshoring, offshored engineering, byggbranschen, kommunikation, kultur, tillit.

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Julia Matwinska & Johanna Pernbom

1 Introduction

The business environment has developed into a global competitive arena where the ability to succeed is dependent on many different aspects. Companies need to adapt both internal and external strategies to keep their market shares. In a study exploring Swedish IT- and engineering consultancy companies and their challenges in the future, this competitive business environment is the main subject (Hammarström et al., 2012). An increasing number of these consultancy companies are expanding their businesses to become multi-disciplinary companies in order to broaden their boundaries and deliver a total solution. The study further concludes that there are four main areas where strategic business solutions should be developed in Sweden; (1) secure the supply of resources, (2) management and communication, (3) develop leadership, corporate culture and diversity, and (4) creating work processes and reuse knowledge (Hammarström et al., 2012, p. 2). The first challenge regarding the supply of resources can be solved through implementing an offshore strategy.

Offshoring is described as relocation of tasks that earlier have been completed in-house (Jarvenpaa and Keating, 2012) and a commonly used definition is “the transnational relocation or dispersion of service related activities that had previously been performed in the home country” (Bunyaratavej et al., 2011, p. 71). Offshoring can be done by using an external company or by relocating internal activities (Koch, 2013). Incentives to offshore have evolved from cost benefits achieved by lower labour cost and today the main incentive is access to well-skilled employees (Jarvenpaa and Keating, 2012). During recent years several companies have adopted the strategy of implementing an offshoring element in order to enhance their competitiveness. Offshoring may occur in one project or can be used as a long-term strategic plan for the company (Jensen, 2009). Jensen (2009) concludes that this way of working is a trend and it might even be the defining characteristic of the business environment of the following decade (Jensen, 2009).

The need of coordination and management in offshore projects is high in order for the projects to succeed and to be cost competitive. In an offshore team the knowledge of “who knows what” and also “who decides who will do what” is important in order for the team to work efficiently, especially in a virtual team (Jarvenpaa and Keating, 2011). Culture also plays an important role in offshore projects since many of the things that we do and how we work are embedded in our culture and can by external persons be misunderstood and thereby disfavour the project. Trust between the offshore and home team is of high importance for the project to be successful (Jarvenpaa and Keating, 2011). Offshoring to low-wage countries implies higher risks that have to be taken into consideration when starting an offshore project. A lower price may be achieved on the cost of poorer quality and in the end this will not be valuable for the company. Higher risk must be taken into the calculation before the decision of offshoring is made (Horn et al., in press).

Offshoring includes many preconditions, which must be fulfilled in order for this type of collaboration to succeed. Since offshoring has been suggested to be the defining trend of this decade (Jensen, 2009) and is becoming more common in Swedish technical consultancy companies (Hammarström et al., 2012), it can be questioned how to approach and work with this strategy. The literature within the field of offshored engineering is limited (Hätönen and Eriksson, 2009; Jensen, 2012). Due to this lack of research, especially within Swedish construction engineering, this thesis

will enlighten some of the aspects that need to be considered when implementing offshored engineering to a project and organisation.

1.1 Purpose and research questions

Due to increased competitiveness within the construction industry and engineering consultancy companies one strategic solution is to implement an offshoring element. The purpose of this master thesis is twofold and based on a case study. The purpose is to study how offshored engineering can be used as a competitive advantage in a large Swedish technical engineering consultancy company and to identify communication challenges. The case study project is a large infrastructure investment in Stockholm, Sweden.

The following research questions have been formulated in order to meet the purpose of this thesis:

- How can offshored engineering be used as a competitive advantage in a technical consultancy company?
- What are the main communication challenges in the case study project? Subsequently, how can the consultancy company approach these communication challenges in offshore projects?

This thesis will result in clear recommendations regarding how the company can work with offshored engineering as a competitive advantage and how to improve the communication in offshore projects.

2 Methodology

This master thesis is based on a qualitative research approach in order to meet the stated purpose and research questions. The study has three main parts; a theoretical framework, findings based on interviews and an analysis and discussion comparing the theory with the findings. The methodology has been an iterative process, which is explained by Bryman and Bell (2007) as a continuous development of both theory and data.

This qualitative research approach includes a case study about one specific project. A case study enables the capability to explore one project and aims to clarify and enlighten the uniqueness in it (Bryman and Bell, 2007). This research methodology enables closeness to the studied project and thereby generates a greater understanding. This is both in regards to the project itself as well as the context and it further gives a high degree of descriptive details related to the studied subject (Bryman and Bell, 2011). When conducting a qualitative research approach the two important aspects trustworthiness and authenticity is put forward by Bryman and Bell (2011, p. 395). Trustworthiness is described by the criteria credibility, transferability, dependability and confirmability. Authenticity is discussed by the criteria fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity. These two main aspects and their nine criteria are suggested as a good alternative for evaluating a qualitative research (see Bryman and Bell, 2011, pp. 395-399).

In order to facilitate the reading of this thesis its structure is presented in Figure 1. The thesis is structured as follows and includes four main parts. First there is a theoretical framework presenting previous research within offshoring and relevant aspects that should be considered in order for an offshore project to be successful. These are communication, culture and trust. The aim of this chapter is to establish a knowledge base for the reader. This is followed by findings collected from the interviews. The findings are thereafter analysed based on the theoretical framework followed by an executive discussion. The thesis ends with conclusions and recommendations to the consultancy company, together with the limitations of the study and suggestion of further studies.

Figure 1 Structure of the thesis.



2.1 Literature review

The theoretical framework is based on a literature review and is divided into two parts that cover the subject offshored engineering, and facilitators and barriers with offshoring. Due to the limited amount of existing research within the field of offshored engineering (Jensen, 2012; Hätönen and Eriksson, 2009), the literature

review is based on previous research from other industries than only the construction industry, mainly the IT and manufacturing business. The aim of the theoretical framework is to introduce and explain the scientific aspects of the subject of this master thesis and to present previous research within the same or related fields. The first section presents offshored engineering in order to give the reader an understanding of which incentives and strategies that are common when implementing an offshore strategy. The second part aims to describe different factors that facilitate or barrier offshored engineering, these are communication, culture and trust. It can be concluded that the theories presented in the theoretical framework in many regards correspond to the empirical findings.

The literature review was done by searching relevant databases connected to the construction industry and offshored engineering, such as; Scopus, Chans, Ebsco etc. The searches were executed by using different combinations of keywords; offshoring, offshored engineering, construction industry, communication, culture, trust, global virtual team etc. Journals were mostly chosen from organisation, business and management areas. Due to a change in the research and the approach towards offshored engineering there have been a focus on articles from recent years, e.g. most from the last five years. Relevant articles were also submitted by the supervisor at Chalmers University of Technology.

2.2 Case study

This thesis includes a case study of a specific project. The project is a large infrastructure project in Stockholm where the client is a public organisation, the Swedish Transport Administration. The company that designs the project is a large technical engineering consultancy company working within multiple disciplines. The consultancy company has in this large infrastructure project worked together with an external and global partner, using an offshore outsourcing approach (see Section 3.1). The external company, hereby referred to as the offshoring company, has had engineers from both the UK and Poland working with the project. The team in the UK and Poland are located at several offices in different cities.

In order to establish a complete picture and knowledge about the project and furthermore to establish a fair result and analysis, interviews were held both in Sweden and the UK. This to get a two-way perspective on important aspects related to the communication in the project. Due to time limitation it was not possible to conduct interviews with the team in Poland.

2.2.1 Interviews

This thesis is based on empirical data collected through interviews with a specific subject. Interviews were held with the consultancy company, the offshoring company and one interview was held with the client. A total of 12 interviews were carried out at the interviewee's offices in Stockholm, Göteborg, Glasgow and Edinburgh. The interviews in Sweden were held in Swedish whereas the interviews conducted in the UK were held in English. The interviewees were chosen because of their role and working tasks towards the case study project. All the interviewees had management positions at different levels and were chosen in order to establish a general and broad

view of the project, and thereby reach a trustworthy and authentic result. The interviewees' management level and organisation is summarized in Table 1.

Table 1 Number of interviews at each company, divided by their management level.

Company	High	Middle	Low
Consultancy company	2	2	2
Offshore company	1	3	1
Client		1	

The interviews have been divided into two separate areas with a different set of interview questions; both with a similar structure but one with focus on communication and the other on strategies. Two of the interviews had focus on offshoring strategies and ten on communication. The interviews regarding the consultancy company's offshoring strategy were conducted with two higher managers. Within the groups the same set of questions were asked, this to ensure that the same information was collected. The interview questions were sent to the interviewees before the interviews and the two sets of interview questions are presented in the Appendices.

All interviews were conducted face to face during March 2013 and lasted approximately one hour each. The interviews had a semi-structured and open way. A semi-structured approach is perceived as flexible and if questions arise during the interview these can be discussed (Lantz, 2007). The interviews were recorded and backed up with notes. The recordings gave the authors a possibility to go back to the interviews and to eliminate possible misunderstandings, the notes gave an indication of what was emphasised during the interviews. It shall also be noted that in order to create an open and trustful climate during the interviews, all the interviewees were informed that their input would be anonymous. The interviewees that wanted to take part of the results before the thesis was published got the opportunity to comment and confirm their contributions to the result, this to avoid incorrectness.

2.3 Findings

The interviews were transcribed and summarized in order to establish a fair and valuable result. The findings are based on the interviews and aim to present a solid and general view of what was expressed and stressed during the interviews. These are not to be seen as only one person's opinion in a specific subject.

Due to keep the anonymousness of the interviewees the quotations are referenced by numbers, where each number represent one specific interviewee. As described the interviewees are categorized dependent on their management level and this is used when the quotations are referenced. Example: Offshore company middle manager 1, Offshore company middle manager 2 etc.

Another important aspect to take into consideration when reading the findings is that eight of the interviews were held in Swedish, meaning that the authors translated the quotations from these interviews.

2.4 Analysis of the results

The results from the interviews were analysed and compared to the theoretical framework. The aim was to locate a pattern, which enables the process to answer the research questions and the purpose of the thesis (Lantz, 2007). The analysis was an iterative process where relevant parts in both the theory and results were considered. In order to establish a consistent and fluent text, irrelevant data was excluded while other parts were added, e.g. additional literature or aspects from the interviews.

The analysis is divided into each research question in order to present a clear context to the reader. The thesis ends with an executive discussion and recommendations about how the consultancy company can work in advance to avoid communication difficulties and how to meet challenges in future offshore project

2.5 Delimitations

It was not possible to conduct interviews with the team in Poland due to a time limitation of this thesis. However did employees in Sweden and the UK describe the general communication in the project, which includes Poland. When the term communication is used in this thesis it should be regarded as technical communication related to this infrastructure project.

The studied project also has other elements of offshoring that was not included in this master thesis.

The case study in this thesis approaches engineering in regards to design and construction, whereas it is differences when offshoring software or other engineering categories.

3 Theoretical framework

In order to address the phenomenon offshoring it should be put in perspective of related theories. This chapter starts with a description of offshoring thereafter are different incentives and strategies with offshoring presented. The chapter continues with theories regarding communication, culture and trust, which are important aspects to consider in order to succeed with an offshore project.

3.1 Offshored engineering

In this thesis the following definition of offshoring is adopted; “the transnational relocation or dispersion of service related activities that had previously been performed in the home country” (Bunyaratavej et al., 2011, p. 71). The similarity of the terms offshoring and outsourcing is furthermore discussed by Bunyaratavej et al. (2011). It is stated that offshoring means when services or products are bought from a foreign-based country, e.g. geographic boundary, while outsourcing refers to when buying from another company no matter its location, e.g. firm boundary. A combination of these phenomenon’s was adapted by Koch (2013) and four different strategic approaches were concluded, see Table 2.

Table 2 *The combination of outsourcing and offshoring and the four main strategies adapted by Koch (2013) from Bunyaratavej et al. (2011).*

	In sourcing	Out sourcing
Onshore	Internal domestic provision	Domestic outsourcing
Offshore	Captive/foreign subsidiary offshoring	Offshore outsourcing

These different strategies are based on if the service (or product) is executed within the company or not, and if this company is located in the home county or not (Koch, 2013). The first strategy with offshoring refers to the use of the own company’s resources that are located abroad while offshore outsourcing means the use of an external foreign company. Both these strategies with offshoring will be discussed in this thesis.

Elements of offshoring can today be found at a variety of tasks and activities; research and development, IT, finance, engineering and administration (Jensen, 2009) and in multiply industries, for example; automobiles, aerospace, telecommunications, computers, pharmaceuticals, chemicals, healthcare, financial services, energy systems and software (Hätönen and Eriksson, 2009). The Offshoring Research Network, ORN, annually presents reports investigating the international development of the offshoring market and uses data from over 1.600 companies and 5.000 projects. In an analysis of the market in 2007 IT was the largest service offshored. Innovation services which include product development, engineering, research and development, is the second largest growing service (ORN, 2007).

Hätönen and Eriksson (2009) explore the development of the phenomenon with outsourcing during the latest 30 years. Even though the article's main focus is on the term outsourcing it is relevant and directly linked to how offshoring has developed. Furthermore, the concept offshored outsourcing is discussed several times and is one of the current and common versions of the phenomenon. Since it became commonly used in the 1980's this phenomenon has gone from concerning purely effective production and cost reduction to becoming a strategic option to transform an organisation and allocating qualified resources (Hätönen and Eriksson, 2009).

The history of outsourcing have been categorised by Hätönen and Eriksson (2009) into three different eras; the big bang, the bandwagon and the current barrierless organisations. Historically all activities within a company were performed internally but in the 1980's outsourcing became a commonly used strategy, therefore the name big bang. Activities that were not perceived as core business were taken over by external, domestic companies with the aim of reducing costs. This was followed by the bandwagon era which meant that more activities were outsourced due to the strategic seeking of new skills and knowledge, both domestic and international. The article describes the third stage, barrierless organisations, as when outsourcing is becoming a necessary demand and a question of survival. Organisations also have to transform in order to collaborate more easily. A summary of the three eras; big bang, bandwagon and barrierless organisations, are presented in Table 3 together with the related characteristics and theories.

Table 3 Summary of the development of outsourcing and the characteristics of each era (Hätönen and Eriksson, 2009).

	Big bang	Bandwagon	Barrierless organisations
Time period	1980's to early 1990's	Early 1990s to early 2000	From early 2000 onwards
Prime motives	Cut costs	Cut costs, capability enhancement and process improvement.	Organisational transformation
Buzzword	Outsourcing	Strategic outsourcing	Transformational outsourcing
Outsource location	Domestic	International	Global
Strategic rationalization	Profit maximizing	Strategic and competitive edge	Survival
Outsourcing objects	Structured and well defined turnkey manufacturing processes	Strategically important organisational process	Projects highly knowledge-incentive and creative in nature
Main theories	Transaction cost theory	Resource/competence-based view	Organisational theories

These stages can further be used when describing a single company's development when using offshoring. Offshoring often starts with the incentive of reducing costs and then develops into a more complex and long-term collaboration and a way to increase the company's knowledge base. However, in a case study by Koch and Jørgensen (manuscript, 2013) it is concluded that this view of different stages in long-term offshoring does not have one single best practise.

Another perspective and one of the reasons to the increased use of offshored outsourcing is the lack of competence in developed countries, while in developing and raising countries the amount of skilled resources, especially engineers, is extensive. This means that the motivation to get a higher education within science and engineering in raising countries is higher than in developed western economies. Due to this the lack of skilled persons in the home country leads to search for competent employee's abroad (Manning et al., 2008).

The lack of literature within this subject has been recognised several times, in the paper by Hätönen and Eriksson (2009) future research within this field is discussed. It is also emphasised that the subject concerning offshoring has become more common in the research field but further steps have to be taken since the lack of answers to the questions what, why, where and how need to be addressed.

3.2 Offshoring strategies and incentives

It has been stated in empirical studies that companies' incentives and strategies change over time when using offshoring. This chapter will describe three identified strategies or incentives when using offshoring; cost reduction, resource seeking and long-term competitiveness.

3.2.1 Cost reduction

As described earlier, cost reduction was the incentive when companies first started to offshore activities. There are mainly two reasons to why costs can be reduced; through (1) process efficiency and thereby generate a higher productivity, and due to (2) that the labour cost are cheaper, e.g. lower wages than in the home country (Cerruti, 2008). This was discussed by Cerruti (2008) who investigated offshoring in IT and fashion industries. Even though these industries are different from engineering and the construction industry it is likewise important to consider the total cost and the uncertainty related to offshoring. The cost calculation must therefore be put in relation to the location where the offshoring activities take place. This since it can result in higher costs due to an unfamiliar environment and unpredicted challenges (Bunyaratavej et al., 2007). A strategy to minimize this risk when engage in business abroad is to investigate different alternatives and choose a country that has a similar business environment as the home country. According to Bunyaratavej et al. (2007) some of the relevant aspects of the business environment in the host country are national culture, political systems, legal systems and economic systems.

However, even if the aim has been to lower costs this has not always been the result and the cost incentive have been criticized to be a too short-term perspective (Cerruti, 2008). Examples of reasons to limited cost savings are unpredicted impacts on logistic processes, inventory, quality standards, customer responsiveness (Cerruti, 2008), managerial training, traveling and cultural differences (Bunyaratavej et al., 2007). It is

furthermore important to calculate the total transaction cost and not entirely focus on the lower wages and thereby get a too optimistic perspective (Cerruti, 2008). This strategy is therefore often related and discussed in the view of transaction cost economics, which considers the total cost (Roza et al., 2011). The concern regarding how well offshoring and outsourcing really works and if cost savings are possible was also investigated in a study by Horn et al. (in press). It was stated that the companies often overestimate cost savings successes. The study showed that three quarters of the studied projects (within the automotive industry) did not reach its estimated success and cost savings (Horn et al., in press). It was therefore stressed that each project should be calculated individually and since there is a risk when engaging in collaboration with low wage countries, alternatives should be considered.

The development of digitalization and availability of IT and communication systems are put forward as important preconditions for the extensive use of cost as an incentive to use offshoring (Roza et al., 2011). Even with large distances between the two partners, these facilitate communication and control.

3.2.2 Resource seeking

Besides the cost reducing incentive, a common reason when implementing offshoring in an organisation is the search for resources and well-skilled employees abroad. The strategy focuses to uphold and/or increase a company's competence by knowledge-seeking and efficiency-seeking, and thereby increase the competitiveness (Roza et al., 2011). The main theory describing this behaviour and strategy is the resource-based view, which discusses competence seeking as a sustainable long-term strategy with offshoring. It is furthermore important that the company identifies the core competences in order to stay competitive. This to know what to offshore and what to keep in-house since the core competences are vital to keep within the company (Cerruti, 2008) and it can become a huge risk to offshore these (Jensen, 2012).

Due to the increasing complexity of both products and services the competition of the available knowledge in the home country is intense, or the competence might not even exist at all in the country. This is a further reason for the search of competent resources abroad and today this even includes the largest companies (Contractor et al., 2010). It is also suggested in a study investigating the international seeking of competences that if companies do not adapt an offshore resource seeking strategy it will become hard for them to find relevant competence in the future (ORN, 2007).

The skills of the employees in the offshore team are important and essential in order to fulfil the task successfully. Some of these qualifications are discussed in Bunyaratavej et al. (2007) as excellent communication and people skills, developed technical skills, expertise in the specific area and understanding in language other than the native tongue. It is also essential that the employees involved in the offshored work are aware of its importance to the company due to increased competitiveness. It has also been concluded that the ability to find the right competence and manage them is the biggest issue for both the home company as well as for the offshored company (ORN, 2007). The resource provider also needs to establish a flexible organisation with flexible specializations in order to meet the demands from the client (ORN, 2007).

As pointed out earlier in this thesis the seeking of resources at large competence pools in foreign raising countries is partly because of the lack of skilled employees in the

home country (Manning et al., 2008). Common resource pools are for example India, China and Eastern Europe (Manning et al., 2008). A study of suitable locations for offshoring did however conclude that companies tend to choose to offshore to countries where the wage difference to the home country are not that large and where the education level and culture is similar to the home country. This to minimize the risk of failure (Bunyaratavej et al., 2007).

Relocating services by seeking resources abroad as a strategy has however been criticized in regards to the risk of hollowing-out, namely how the company's own resources are affected in a long-term perspective. Two different standing points regarding this were discussed in a paper by Jensen (2012) analysing two offshore projects between Denmark and India within the financial and IT businesses. The first perspective is the potential gain of experiences a company can get when its own competences are complemented with external resources. The other perspective is the risk of losing competences when the offshoring company takes over parts that were previous done in-house. The employees in the home country can therefore miss learning opportunities and a knowledge gap can occur. It might even lead to that the external company gain so much experience and competence that they become a competitor in the same core business as the home company instead of continuing to be a partner. In the empirical study by Jensen (2009) this was not the case due to the limited time frame of the study, it was although stressed that this is a relevant risk that needs to be considered when relocating resources. The study did however conclude that the home company's resource stock is in general improved by an offshore project.

3.2.3 Long-term competitiveness

In order for a company to stay competitive on its market it is necessary to develop and be ahead of its competitors. It has been concluded that offshoring nowadays "is no longer a labour arbitrage strategy; it is a game changer, enabling the necessary transformation of multinational organisations into nimble, global competitors" (ORN, 2007, p. 13). When implementing an offshoring element in an organisation it can be due to a variety of reasons and include different activities at different levels. In a long-term perspective it can be incentives of firm growth, expansion to new markets or transformation of the entire company. These different incentives to offshoring and what it can lead to in the future for a company has become recognized in the business environment, namely offshoring is no longer seen as a choice but rather a necessary demand (ORN, 2007).

Firm growth is a common strategy and can take many different shapes, all from buying external companies to set up own departments abroad and to create a long-term collaboration through joint-ventures etc. The governance of these different approaches were discussed in a study by Roza et al. (2011) and three main governance modes were described; the dominant equity mode, the diffused governance mode and the balanced mode. Dominant equity means complete ownership and control while diffused governance involves no ownership and only a limited level of control. The balanced mode is a shared level of responsibility and control, e.g. joint-venture.

The use of several foreign companies at different locations is discussed to be vital in order to attract competent employees due to the enhanced competition of resources. The management of these networks are complex and demands new organisational structures and models. One way to address this raising problem is by engaging in a

collaborating nature with companies in the network (ORN, 2007). This can further be seen as a precondition when implementing an offshore element, e.g. that in order to succeed it might be necessary for either the home or host company to change, or even both (Jensen, 2009). It is further stated that both the home and the host company together need to develop management models in order to achieve their goals. They need to share risks, responsibilities and rewards (ORN, 2007). Another important aspect concluded by Koch (manuscript, 2013) is that it is not sufficient if offshoring is seen as one single project and it should rather be managed as a long-term relationship. This long-term approach should further be adopted to create openness between the companies, even if it only is to be one project with a particular external company. In a case study by Jensen (2012) offshore outsourcing within IT and finance was investigated and it was discussed how transfer of employees between the companies can be an improvement for the communication. In the studied cases employees from the home company were transferred to the offshore company, this eased the collaboration and a relationship was created between the partners.

Another incentive for offshoring is the aim of exploring new markets and thereby broadens the boundaries of a company (Roza et al., 2011). Offshoring can therefore be said to be a way to transform an organisation. Due to geographical distances and different cultures, the home and the host company need to collaborate in a structured way. This to develop both the product itself and the process, this furthermore contributes and facilitates an organisational transformation (Cerruti, 2008).

In a study by Jensen (2009) the organisational learning outcomes from three different offshoring projects between Denmark and India were investigated. The three cases are discussed from the different approaches; strategic level learning and systematic level learning. It is argued that the learning outcomes are important since it is a way to determine if the offshore project is in line with the strategic development and the organisational change. This regards both the home and the host company. The conclusion from the study showed that “when offshoring partnership mature and firms gain experience, the learning effects in both home and host firms evolve over time and differ in many cases from their initial objectives and expectations” (Jensen, 2009, p. 191). Namely, they recognize the opportunity to organisational change and strategic business development (Jensen, 2009).

3.3 Facilitators and barriers

When companies use offshoring, good coordination and communication is of great importance for the work to be efficient and cost competitive. The teams, onshore and offshore, work geographically separated from each other and the knowledge of “who does what” and “who decides who will do what” is critical for the work to be effective (Jarvenpaa and Keating, 2011).

Hätönen and Ericsson (2009) concluded that there is an unsatisfying amount of research dealing with the issue regarding why some projects succeed with offshoring while others fail. It further states that the success criteria to such an evaluation have not properly been developed yet. The perspective of why certain companies and projects succeed was also discussed by Manning et al. (2011) and the study explores two different areas; global trends and firm level experiences/capabilities. In regards to the increased globalisation the competition have become boundary less and more intense. One underlying precondition to this development is the progress of advanced

information and communication technology, ICT. In order to succeed this tool needs to be embedded in the organisation. The perspective of a company's experiences and capabilities is discussed in regards to how knowledge within a company from previous projects including offshoring elements can be used better and what demands are required. It is even stated that some companies work with offshoring "along the way", which means that even though there is a large uncertainty they engage in collaborations and learn over time how to work with it. Other identified challenges were for example; recruiting, developing and retaining talent, coordinating globally dispread innovation activities, and collaborating with external partners.

This chapter discusses some of the important theories and aspects related to offshoring activities with focus on communication in a global environment, and the importance of culture and trust.

3.3.1 Communication in a global environment

Communication can be seen as information that is exchanged between two or more people. Clegg et al. (2008, p. 296) defines communication as "exchange of ideas, emotions, messages, stories, and information through different means including writing, speech, signals, objects, or actions. It may be intentional, such as carefully phrased letters, or unintentional, such as the inferences another person may make about one's body language." Communication needs a language or a code where the information is expressed and first when a receiver interpreted the message, information sharing occurs (Nationalencyklopedin, 2013). It is difficult to draw a define line between communication and information sharing, communication can however be seen as instantaneous and information as continuous (Henriksson, 2007).

For a company to be successful and gain competitive advantage effective communication is of great importance. Communication in this case refers to a two-way exchange of messages without any action and information to a one-way sending of information. In contrast to both communication and information, effective communication is seen as a two-way interactive communication process that results in an action, intended or not (Kalla, 2005).

This master thesis focuses on formal internal communication which here refers to internal communication within an organisation at all levels. To create an effective communication it is beneficial to see that internal communication can be divided into four different areas; business, management, corporate and organisational communication. This theory shows that employees gather information from various sources. Kalla (2005, p. 305) defines the different areas as "business communication addresses the communication skills of all employees, management communication focuses on the development of the managers communication skills and capabilities, corporate communication focuses on the formal corporate communication function, and organisational communication addresses more philosophically and theoretically oriented issues."

Communication is one of the key factors to if a project succeeds or fails, which becomes even more important if the project participants are form different organisations located in different countries (Müller, 2003). The Project Communication Handbook published by the Office of Project Management Process Improvement (OPMPI, 2001, p. 2) defines project communication as "the exchange of project-specific information with the emphasis on creating understanding between the

sender and the receiver". This term is wider than the general definition of communication and includes for e.g. that information should continuously be transferred to all involved stakeholders and also that feedback should be considered (OPMPI, 2001).

Due to the importance of communication an organisation should use communication planning as a management and strategy tool (Macheridis, 2001). In project management it is common to include a communication plan in the project plan (OPMPI, 2001). This plan should be the outline of the communication and function as a guide during the whole project and include five important aspects; (1) Who is involved in the communication process, (2) What is communicated, (3) When is it communicated, (4) How is it communicated, and (5) Who will provide the information that is being communicated (OPMPI, 2001, p. 8).

It is common that a company have a standard communication process that is implemented and embedded in the organisation (Macheridis, 2001). Thereby they can become blinded after a long time and it is therefore important to continuously develop and improve the communication plan in the company.

3.3.2 Global virtual teams

Virtual teams can be described as teams that work together across space, time and organisational boundaries to complete tasks (Clegg et al., 2008). Working in virtual teams is becoming more common and are increasing in numbers. Lipnack and Stamps (2000) describes virtual teams as a group of individuals with unique competences that are located at different sites and must communicate and work through informational technology. It can be said that a team is virtually global when the team is temporary, members within the team have culturally diverse backgrounds, and communicate mainly by electronic tools (Jarvenpaa and Leidner, 1999). Temporary in this context refers to members of a team that might not have worked together before and are not expecting to do so in the future either (Lipnack and Stamps, 1997; Jarvenpaa and Ives 1994). The members in a GVT, Global virtual team, have shared responsibility for the project result and technology-mediated communication makes knowledge sharing and exchange possible (Zakaria et al., 2004).

Many multinational organisations perceive global virtual teams as a competitive advantage. This since the global virtual environment the teams work in can enhance creativity, encourage greater acceptance of new ideas, and produce results that are culturally cooperative. Barriers within a global virtual team can be larger compared to a collocated team, this due to national differences. Cultural, social and linguistic challenges are greater within a global virtual team than in a virtual team where members all origin from the same nationality (Zakaria et al., 2004). Since offshoring refers to a geographical boundary and offshored teams mainly communicate using information and communication technology, ICT, it can be stated that offshored teams can be seen as global virtual teams (Jarvenpaa and Keating, 2012). Ahmed-Kristensen et al. (2013) discusses challenges to offshored engineering were the main ones are presented as; communication difficulties, cultural differences, unforeseen costs and internal opposition. Cross-cultural knowledge transfer is a great challenge in offshoring and is necessary for the project to be successful. The main barriers for knowledge transfer are cultural and communicational difficulties, knowledge tacitness, knowledge gaps, and weak relationships (Ahmed-Kristensen et al., 2013).

When working with global virtual teams two key areas should be taken into consideration; people and technology. Related aspects to these two subjects are presented in Table 4 (Dubé and Paré, 2001). The areas culture and language are vital in order to establish trust and understanding in the team and are described more in detail in Section 3.3.3.

Table 4 Key issues when implementing GVT's related to people and technology (Dubé and Paré, 2001).

People	Technology
Culture	Accessibility, reliability and compability
Language	Appropriate technology use
IT proficiency	

ICT is stated as the underlying precondition to the existence of GVT's (Daim et al., 2012). Examples of common tools to ease the communication in these separated teams are through telephones, fax machines, email, desktop conferences, collaborative software, intranets and virtual private networks. These communication tools do not only need to exist and be implemented in the GVT, but more importantly, the employees need to have the right IT proficiency. Differences in IT proficiency can lead to grouping between the team members since some become more superior due to their better technological skills. This problem could however easily be avoided if the team leader recognize this issue and make sure that all involved get required education and training in ICT usage (Dubé and Paré, 2001).

Related problems with ICT are discussed as hardware and software incompatibility, unavailability and internet capacities and IT infrastructure differences between countries (Dubé and Paré, 2001). In order to avoid that the team becomes frustrated and unable to do their work due to these ICT issues it needs to be reliable and accessible at all locations in the GVT. It is further stressed that the use of videoconferences in the initial stage of collaboration is a good alternative to face-to face communication, since this facilitates trust and communication. However, it is sometimes necessary to have face to face meetings in order for the work to succeed. It has even been discussed that in order to establish a good start for the GVT it is preferable to have a one week long face to face interaction in the start up phase. This will help the team members to get to know each other and build trust, which will enhance the communication during the rest of the project (Daim et al., 2012).

It can be concluded that ICT is not only a question of what technology to use but rather a matter of how and when to use it (Dubé and Paré, 2001). This was further discussed by Daim et al. (2012) in a study exploring communication breakdowns in GVT's and the focus lay on five identified areas that are vital to address. These areas were; trust, interpersonal relations, cultural differences, leadership and technology. It is therefore important to address all of these mentioned aspects, both technological and personally, due to the fact that communication problems can lead to project failure.

3.3.3 Culture

Most individuals belong to several groups and categories of people at the same time and therefore you can say that people have different layers of culture. The first layer is the national layer, which refers to the country of origin, people that have migrated during their life can have multiple national cultures. Since most nations are divided into culturally different regions, ethnicity, religions and/or language groups this is the next layer of culture. Another layer is the gender, which means whether a person was born as a girl or boy and a generation layer distinguish grandparents from parents from children. One of the last layers of culture is the social class layer that is linked to educational opportunities and the person's occupation or profession. For people that are employed a layer of organisational or corporate culture is present (Hofstede, 1997).

Organisational culture differs in many aspects from national culture. To join an organisational culture is mostly done by the employee himself or herself and the employee is only a part of it during work hours and has the possibility to leave it (Hofstede, 1997). Organisational culture refers to deep, basic assumptions and beliefs that are shared within an organisation. This could be beliefs, values and norms that are not visible but guide the employees in their decisions and ways of working. Since this is deeply embedded in the culture, situations of misunderstanding due to different approaches and different ways of working can appear (Clegg et al., 2008). To clarify organisational culture, Schein (2010) has divided culture into three levels see Figure 2.

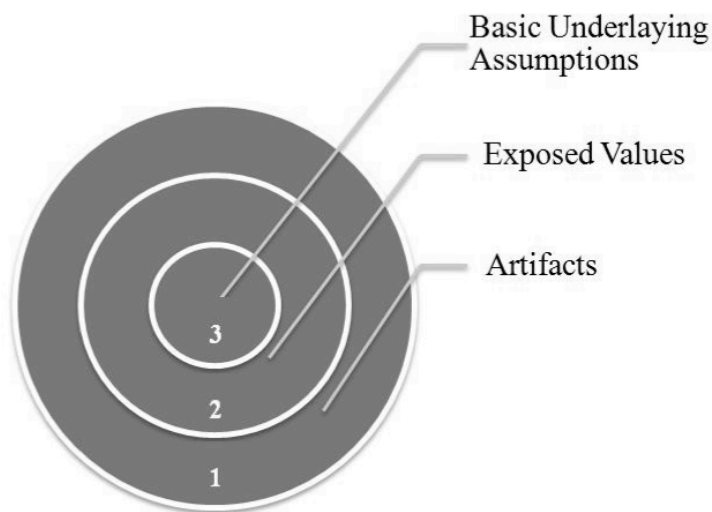


Figure 2 The levels of culture, according to Schein (Clegg et al., 2008).

The levels refer in this case to the degree that the cultural phenomenon is visible. The levels stress from artifacts that are tangible to basic assumptions that is hard to observe. The first level, artifacts, consists of what you can see, hear, and feel when meeting a group in a culture that is foreign. Artifacts include all visible features such as architecture, dress code, language, storytelling, published list of values and rituals among others. An artifact is also the “climate” of the group and observed behaviour. This outer level of culture is easy to see and observe but difficult to interpret. It can be explained by saying that observers can describe what they see and feel but are not able

to explain the meaning of it (Schein, 2010). The second level consists of exposed values which can be said to be norms and beliefs that employees express when talking about organisational issues (Clegg et al., 2008). This level also includes ideals, goals, values, strategies and ideologies. The inner level, basic assumptions, is the level that shapes employees behaviour, thoughts, perception and feeling. The values and beliefs in this level are unconscious and taken-for-granted. This level is the essence of culture and shapes values and artifacts sublimely (Schein, 2010).

When describing intercultural communication the theories of culture and communication can be used as keystones. Upon these, intercultural communication is defined as “the sharing of information on different levels of awareness and control between people with different cultural backgrounds” (Allwood, 1985, p.3). According to Novinger (2001) communication between people from different cultures is more complicated than when people from the same culture communicate with each other. This since we are taught how to behave from a very young age and hence is most of our behavior unconscious. Communication can be seen as a system of behavior that differs from culture to culture (Novinger, 2001).

Language is placed in the outer part of the culture levels but it is by the help of language that culture is transferred. When not knowing the language the shades of a culture are not fully perceived and the person will remain a relative outsider to the culture. To build up a basic intercultural understanding the foreign partner should take on the host partner’s cultural language. By doing this, the foreign partner learns to adopt the reference frame of the host culture (Hofstede, 1997). An important aspect to take into consideration is that language and culture are not connected in the sense that sharing a language means sharing a culture. A difference in language does not either mean that there is a difference in cultural values (Hofstede, 1997).

3.3.4 Trust

Trust is seen as a critical factor for a virtual team to be successful. When trustful relationships exist between team members and leaders the contribution from the team to the organisation is maximized. This due to that trust helps the members to focus on the given task (Yiong and Feng, 2008). Trust in teams gives its members an opportunity to be a part of actions that they do not have full control over and are dependent on the other party to fulfil. This exposes the teams for risks and possible disappointment caused by actions of other team members (Jarvenpaa and Keating, 2012). Trust is in this context described as “willingness of a party to be vulnerable to the actions of another party, based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer et al., 1995, p. 712).

There are two views of trust formation, one that trust takes time to gain and is built up on observations of past behaviour, and the other that trust can be given to members with no prior history before the project starts. The latter is called swift trust, which develops quickly and can be observed before the members even have taken the initial contact (Lionel et al., 2009). In a project where the teams are collocated, working face to face, trust is built on familiarity or likeness to the other team members. In an offshore project communication is less spontaneous and it is harder to get to know the other members and identifying with them, this since communication is mainly computer-mediated (Jarvenpaa and Keating, 2012). Therefore the trust built between

the teams is less interpersonal and based on task processes, meaning distinct requirements and progress towards team goals. Trust takes the form of swift trust in those cases (Jarvenpaa and Leidner, 1999). Yiong and Feng (2008) state that trust affects short-term and long-term virtual teams differently. In short-term virtual teams, swift trust is important and built up through task-oriented and impersonal communication. In long-term virtual teams face to face communication is of great importance for the team to be successful and help members to establish personal relationships (Yiong and Feng, 2008). To have a good communication that gives the team's a viewpoint of each other's situation is very important for trust building (Jarvenpaa and Leidner, 1999).

As mentioned, differences in culture are an aspect to take into consideration when starting an offshore project (Jarvenpaa and Keating, 2011). Culture clashes can harm trust that has been built up between teams and it can be difficult to repair trust when the teams do not meet face to face. Trust built up through computer-mediated channels is more fragile than trust built up by face to face interaction since it lacks interpersonal trust (Yiong and Feng, 2008). Actions that can damage trust are for example; disrespectful behaviour, ineffective leadership, expectations that are not fulfilled, not acknowledging others contribution to the project etc. Trust repair can be done by apologies, forgiveness, explanations and structural changes. To repair trust in teams located at different locations and with mainly virtual contact is more difficult than in face to face teams. Countries can be divided into high-trust and low-trust countries, meaning high-trust countries have an institutional and societal safeguard that protects the trustor, which is missing in low-trust countries. People from low-trust countries may withhold trust and this could lead to trust asymmetry. This means when one party trust the other but is not trusted back (Jarvenpaa and Keating, 2012). Sweden is described as a high-trust society whereas Britain is described as a medium-trust society (Delhey and Newton, 2005).

Language is a barrier that can affect trust between the parties, e.g. different languages can cause perception of groupings which can affect trust (Jarvenpaa and Leidner, 1999). A virtual team is often divided into subgroups, onshore and offshore. Bad communication and behaviours can lead to an "us vs. them" behaviour that can damage trust (Jarvenpaa and Keating, 2012). Actions that can strengthen trust in dispread virtual teams are; creating face time, to set out clear goals and expectations, make the work visible, provide on-going feedback, display team members competence and foster cultural understanding (Ross, 2006 see Yiong and Feng, 2008, p. 38).

3.4 Summary of the theoretical framework

During the literature review three different incentives and strategies with offshoring were identified; cost reduction, seeking of competent resources and long-term competitiveness. These incentives and strategies are taken into account in the following chapters. The theoretical framework lifts forward some of the important theories related to offshoring activities, these subjects aim to give a general overview of which aspects should be taken into consideration for an offshore project to be successful. The theories presented above as facilitators and barriers in offshore projects were communication in a global environment, culture and trust. The theory of communication in a global environment will be emphasised over culture and trust. When presenting communication the focus will lay on communication means and how team members are using ICT. Cultural aspects will centre round language and

corporate culture, this mostly regarding to the difference in working procedures and organisations. Theories regarding trust will discuss how trust is built in teams but also how trust could be damaged by differences in working procedures and language.

4 Findings

Data described in this chapter was obtained during interviews with actors involved in the case study project. The data is divided into three main parts. The first part presents how offshoring can be used within the company as a strategy and what should be considered when starting an offshore collaboration. This is followed by a section describing facilitators and barriers in regards to communication, culture and trust. The last section in this chapter presents suggestions of how this case study project could be improved.

4.1 Offshoring as a company strategy

Using offshoring as a strategy was recognised to become more common in the future but only to a certain level, e.g. quantity and types of project. The interviewees perceived that there were differences working in an offshore project than in an in-house project. The differences mentioned were among others a higher degree of communication, coordination and collaboration, clearer directives and guidelines, and the use of another language.

It was suggested that offshoring is used when a company faces competitive pressure and it has become a common strategy in order to keep market shares. But due to resistance in the construction industry and among competitors it is important to deliver high quality.

During the interviews two different offshoring strategies were mainly described. The first is when companies abroad are hired to design a large amount of simpler parts of a project and this strategy is associated with cost reduction. All interviewees mentioned the reduction of costs as an incentive for starting to offshore projects. It was further discussed that even if an offshore project is done with the aim of reducing the labour costs, it needs to be compensated with something else. This could be input of time and money in the beginning of a project and a high level of management throughout the whole project. The second strategy is competence seeking, which focus on what qualifications that are missing in-house and is therefore sought abroad. The aim is to use the right competence to the right task and project.

“We use the word work share because that is what this is. This is a way of using knowledge from all over the world. The right competence to the right work.”¹

One of the most advantageous approaches with offshoring is when combining these two different strategies, which have been done in the case study project. Namely, when a certain part of the project is offshored and designed with lower labour costs and competent management is at the same time hired with similar cost level as the home country. This approach aims to balance the total cost and at the same time make the project successful. It was further stated that this is a trend that the technical engineering industry aims to follow, just like other businesses before, such as IT and manufacturing. It was also concluded that the construction industry in Sweden has become more international after the 2008 financial crisis. In order for this strategy to work in the case study project and not create in-house problems, it was a precondition that the tasks offshored did not affect the employee's work at the home company.

¹ Offshore company, high manager 1

Namely that the resources in-house will continue to have work in the future and that they will not lose competences.

“If this business market is heading towards that we will buy external services, the Swedish market will change and it will further require that we need to take away these bulk products and become more specialist.”²

It was suggested that if you are going to start with offshoring it is preferable to begin in a small scale and if problems occur the home company can then cope with the issue themselves. When the collaboration has developed and working procedures are implemented the projects can become larger and more complicated. It is preferred to use an offshore element in a large project were a specific part can be transferred completely to an external firm. One interviewee from the consultancy company stressed that they in first case turned to its own offices abroad before they started a collaboration with an external company. In the beginning it should however be simple tasks that are offshored with clear descriptions, after some time this can be developed to include larger quantities or more complex assignments. The importance of clear defined descriptions of what to offshore was stressed by all interviewees.

“Everybody agrees on that you can buy services from India and China and get a very high quality but it requires that that you have packaged the tasks extremely clear. It is not possible to do as in our [the Swedish] culture when you take on a partner and it just runs smoothly. That’s not possible in this case and you can receive anything.”³

An offshore project is assumed to require more coordination. The involved parties need to be aware of what this type of collaboration means and what will be demanded, but most important is to be aware of that it will not be easy. If a lot of effort is put into the project in the beginning it can be a good way of working. Especially for certain types of projects where routines are developed and you learn from each other. Moreover, the start-up phase of a project was stressed to be crucial in order to generate a relationship and understanding between the partners in an offshore project.

“They got to know who is working here, how we work, what is important, meet the client and everything. To get this soft knowledge which is really complicated to write down and explain. It is a huge difference if you interact and live with these people for a while.”⁴

It was suggested that even though there is a steep learning curve when entering this type of project, from both the home and host teams, it is a huge experience that can be helpful in the rest of your career. When learning other standards than the ones existing in your own nation you get a broader perspective, which can be brought into future projects. It was also pointed out during several interviews that it would be an advantage if the offshore company had the same software.

There should be the right mix of employees. It was stressed during the interviews that a project should consists of the right mix of employees; young creative persons that have a lot of time to put into the project, together with senior employees with both good and bad experiences that enjoy working with young staff. Those involved in a

²Consultancy company, high manager 1

³Consultancy company, high manager 1

⁴Consultancy company, high manager 2

project should have the right competences as well as the right approach. An interviewee formulated a recipe for a successful combination of employees:

”The combination of new ideas and strengths together with constructive experience, that is the best you can have. It works at all levels, at the top management but also at some of the technical levels. That is the right recipe to get up speed on a project.”⁵

Moreover, you also need to complement each other as companies when engaging in an offshore project, both in regards to experience, expertise and local knowledge. It was stated that offshoring works when cultures integrate and complement each other. Important aspects of offshore projects are the existence of trust and transparency, which are created by finding the right partner to build a tight long-term relationship with. It was pointed out that it might have bad impact on the organisation to change partners too often and to work in short projects with different companies in every project. When choosing an external company some relevant aspects to take into considerations were identified during the interviews. The first criteria that should be fulfilled is that the company have lower labour cost, otherwise it is not even worth to consider. The location of the external company was not perceived as an important aspect but it is preferable if it is located quite close to the home country. This due to the ability to take a one or two hour flight is easier than travelling around the globe to handle issues that might occur.

Even if all the interviewees agreed to that there is a future for an offshore strategy it was some scepticism and uncertainty among several. One interviewee explained it as if it takes one hour to do a certain task in Sweden the same task would take two hours for the offshore company to do. It could therefore be questioned if the costs will be even in the end and the profit for hiring cheaper labour would be absent. One identified challenge for the future is however the need of qualified and good project managers with local knowledge that can lead offshore projects. Another challenge is how to continue to become better and better with more specialist competences and at the same time being able to raise the price on the service.

4.1.1 Sustainability

It was said during the interviews that throughout the whole project it had been clear that environmental questions were important. This has influenced the entire design and all the technical solutions are sustainable. The construction phase has to be done with such a small impact on the environment as possible, and the construction was designed so it was possible to disassemble it and restore the area to its origin.

“It was clear from the start that we needed to think about the environment and be sensitive”⁶

Another aspect that was raised were the environmental aspects of travelling that is required in an offshore project. The employees are trying to minimize travelling by using technology-mediated communication, but this is a contradiction to the expressed need of more face to face interaction and it is therefore a challenge to balance this. However, when travelling occurs it is done with airline companies that have an environmental profile and take responsibility for their pollution level. Another view

⁵ Client, middle manager

⁶Offshore company, low manager

of this challenge was the economical sustainability that sometimes was questioned due to the expenses of travelling.

“Many people think that it is costly to travel but a mistake is much more expensive than a travel.”⁷

This suggested that when trying to reduce travelling and face to face meetings it is a higher risk that mistakes occur, and it is in a long-term economical perspective better to meet in order to avoid mistakes.

When discussing the future potential with offshoring as a strategy it was mentioned by some of the interviewees that this needs to be put in the perspective of exploiting foreign labour. This is when using resources from undeveloped or developing countries and was explained as:

“... I have a lot of reservation and criticism for that kind of working for a very simple reason. In these places we need to think about if the human rights are respected and if the people are getting the best out of them or if it is just the company that provides the service getting the benefit out of it.”⁸

It was therefore suggested that offshoring should occur between countries and cultures that are meeting and complement each other, namely they can help each other. Human rights and overexploitation are important to take into consideration and not to only look at the price tag.

4.2 Facilitators and barriers

In this chapter data regarding communication, culture, trust as well as strengths and weaknesses from the interviews are presented. In some cases a certain aspect can be seen both as a facilitator and a barrier depending on how the matter is approached.

4.2.1 Communication

Communications tools most commonly used in the project are meetings, video conferences, e-mails and telephone calls. The experiences of these different tools were in overall good. Once a month a meeting week with represents from the geographically spread out teams have taken place in Stockholm. The meetings have been face to face and employees with management positions from the offshore team have together with the client and the consultancy company been present at the meetings. Meetings were scheduled during the whole week in Stockholm and in between the meeting week's, video conferences were scheduled. During the meeting weeks in Stockholm there was a close collaboration between the different actors. At the meetings questions from the offshore teams could be raised, misunderstandings sorted out and new conditions discussed face to face. The managers could later when arriving to their home country pass the information to the rest of the team. Meetings where scheduled in a definite and clear way. If a non-Swedish speaking person was present the meetings were held in English, otherwise they were held in Swedish. If the discussion got tense or a topic needed to be clarified there could arise a side-discussion in Swedish and later the conclusion of it was explained to the English-speaking persons. Most of the interviewees expressed that this had worked quite well,

⁷Offshore company, high manager

⁸Offshore company, middle manager 3

but it was not seen as a long-term way of approaching problems. Due to that there only could be a limited amount of travelling and meeting face to face video conferences were used. If a problem could not be solved through ICT, the employees travelled to the other team so that there could be face to face interaction. Video conferences were scheduled and occurred in between the face to face meetings. The general view about video conferences was that when it worked, it was fine. The challenge was to get it to work. The video conferences were said to not be as good as a personal meeting but a good option.

E-mail is the most used communication channel, this due to that the employees in the project are spread out geographically. E-mails are perceived as the easiest way to share information. Telephone calls are used if the issue is urgent or something needs to be clarified or confirmed. Telephone contact was described as direct and on-going, this because the language differences made people focus on the task or issue directly and not to small talk. E-mails were often preferred over telephone calls since e-mails gave a written proof of what had been discussed and decided.

“If you need an urgent answer you pick up the phone, but the problem with telephone calls is that there is no record of the telephone call. That is why we prefer e-mail, and then you got a trail back.”⁹

Telephone calls were said to give a more personal contact but were used when an issue was urgent and needed to be solved directly otherwise e-mail was used. Many interviewees expressed that it was good to follow up an e-mail with a telephone call to make sure that the receiver interpreted the information given correctly but this was not commonly done. It was also described that after deciding something through a telephone call the decision was summarized and sent as an e-mail.

In order to coordinate the project a Project Execution Plan was written which described how different aspects of the project should be handled. The PEP, Project Execution Plan, included a communication plan which defined how the communication in the project should function. Furthermore, lines of communications and decisions were illustrated. The aim of these lines was to in a clear and easy way show how information and information of decisions should be transferred in the project organisation. These are important to implement in order for the information to travel in specific lines and the work to proceed in the best possible way.

“There would be a problem if everyone talks to everyone. It is better to channel it up to one person that talks to the rest of the organisation. At least you can keep track of what has been said to whom. And not that one person says something to one person and then nobody else knows about it in the organisation.”¹⁰

The knowledge of the communication plan differed among the interviewees but all concluded that it would be profitable if it was properly implemented and used more in the project. The reason why the communication plan was not implemented was said to be that the employees did not have time or energy to familiarize with it, this due to the large amount of information that was received every day. Many of the interviewees thought that if the communication plan was used more several issues could have been solved and the communication would be easier and better.

⁹Offshore company, middle manager 1

¹⁰Offshore company, middle manager 2

4.2.2 Culture and organisation

Most of the interviewees found that the national cultural differences were small but it was noticed that there was a difference in how the work was executed and presented. The most frequently mentioned difference was that the offshore company in the UK had a more hierarchical organisational structure than the Swedish. The Swedish organisational structure was seen as flat and the employees were used to take own initiatives whereas the employees in the UK were perceived as more controlled from the top. Small differences such as dress code were also noticed, the Swedish dress code was described as relaxed when the offshore company's was more formal. The offshore company worked in a strict and controlled way and wanted to have clear directives and written contracts before starting to work which Swedish companies not always need. Several interviewees explained that this was because of that Sweden is a high trust country and even an oral agreement is a contract in contrast to many other countries where the written words are more important.

“It doesn't seem to be a strict way of doing things as it is here, it's more relaxed and things are changing continuously. It seems to be the Swedish way.”¹¹

Even though euro codes were implemented at both the companies different standards are used in each country and since the client is Swedish the result will be presented within the required Swedish standards. To implement Swedish procedures in the offshore company was a challenge in the beginning since working procedures and standards are different to the ones that are normally used. The way work is done is influenced by culture and when trying to cooperate clashes sometimes occur.

“We have functional roads in both UK and Sweden but the way we get to the end result is different from country to country.”¹²

When guidelines and technicalities were explained to the offshore teams it was clear that some things were different but much was similar. It was expressed during the interviews that when working towards the same goal with different working procedures and approaches questions arise about how the work is done even though the end result is essentially the same.

“It opens their [the consultancy company] eyes on how things are done in other countries, they can maybe learn better processes and we can learn different processes as well... we can say we did it differently and it was better and we can do this here.”¹³

This indicates that the companies can gain experiences and knowledge from each other and that the employees can enhance their skills. Most of the interviewees felt that working with the other team gave valuable experience of how work procedures function in other countries and how to cooperate with people that have different cultural backgrounds. Many interviewees expressed that values of a company were important to consider before starting cooperating. This because the own company's reputation would be affected if the partner was not a serious company. It was further said that it was preferred to work with people from companies that had similar values,

¹¹Offshore company, middle manager 1

¹²Offshore company, high manager

¹³Offshore company, middle manager 1

e.i. work ethics, environmental concerns and human ethics. This would ease the collaboration and shorten the start phase.

4.2.3 Language

Many interviewees found that the language had been an obstacle that slowed down the working procedure. The importance of respecting unwritten rules and reading between the lines was emphasised.

“We are all talking English more or less but then you have the unwritten things, it is not just the language there is also how you interpret and decipher the language that is important.”¹⁴

When employees express themselves these unwritten rules have to be taken into consideration otherwise the message can be interpreted wrong. An email can be seen as rude by the receiver when not meant to be because people interpret things differently. During the project incidents with misinterpreted e-mails had occurred. It was stated during one interview that the important thing is not to choose the right words but to decipher what is actually written.¹⁵ It was stated that the companies had underestimated problems that could occur due to language and cultural differences, that both teams speak the same language does not mean that they share a culture. However, it was also said that it was easy to think that there was a cultural difference because people spoke different native languages but that it was not always the case. Even though culture clashes did cause problems in the day-to-day work many interviewees felt that the difference in way of working in many cases was a good thing since both companies could learn from each other. Many of the employees felt that working with the project had evolved their English skills.

4.2.4 Trust

Due to all changes in the project trust has been affected. New directives and information were sent out and were not always coordinated, this caused doubt among the employees of what information was correct and which directives to follow. Many interviewees felt that some information they received had to be taken with a grain of salt and that they had to use their own common sense to determine if the information was usable. On the other hand it was also stated that because of a very high information flow it was not possible to question everything and therefore the information sent out had to be accepted and trusted.

“There are always two sides of a story so sometimes you have to verify it.”¹⁶

If there were any unclarities the employees contacted each other to discuss and confirm the information. To see that the information sent was correctly understood, the interviewees expected an answer from the receiver. By that answer they could tell if the person had interpreted the information as they meant it and in some cases they verified it by telephoning the person. It was described as an interactive process.

¹⁴Consultancy company, middle manager 1

¹⁵ Consultancy company, middle manager 1

¹⁶Consultancy company, low manager 1

“Of course I trust, if I don’t understand I question. If they contradict what they told me before I question otherwise I don’t.”¹⁷

Since the employees in many cases did not meet and only communicated through ICT trust between them was not built upon personal relationships but rather through task processes. The designs were in many cases dependent on information from many different sources and the engineers had to design the construction upon that information and take responsibility for it. This creates a situation where trust is very important and a judgment must be made if the information can be used, this to ensure good quality of the end result. Overall the employees felt that they could trust the information that was sent to them but in some cases they had to make a personal judgement if the information was applicable.

4.2.5 Strengths

The meeting week once a month gave the teams a chance to meet face to face for discussions and a possibility to get to know each other, this was described as a major strength in the project. The meeting weeks were said to be a great help for the work to proceed successfully. It was stated that in cases where a problem had not been solved during a long e-mail conversation, the solution was found after just a few minutes discussion with the involved people when meeting face to face. The meetings gave the employees a chance to get a face of the people involved in the project and a possibility to show their skills.

“Once you get to know who people are it is much easier to talk with them and you can prove yourself that you know what you are doing.”¹⁸

It was stated that once you had a face of a person it was much easier to take contact and ask questions when obstacles occurred in the day-to-day work. During the meetings the offshoring company could show their competence and gain trust. After the teams got to know each other the collaboration and exchange of help and questions was said to be much better. Team-building activities were said to be a good way to get to know people and to establish a more personal relationship. Employees with management positions from the dispersed and local teams were present during the team building activities. In this way trust could be built between the employees upon familiarity and likeness to the other team members.

“When we start to feel that things are getting tense we try to get together and sort things out, try to make it a bit easier. The team building things help and make people more relaxed and get a step back and say ok how can we fix this.”¹⁹

A major strength described by the interviewees was that people felt that they could speak their mind and were not hesitant in giving their opinion on things. The teams were ready to help each other and together solve problems that could come up. The offshore functional managers collaborated with an assistant functional manager in Sweden that helped out with questions and if language issues occurred. The assistant functional manager could in some cases act as a middle person when the language hindered communication. It was also expressed that the Swedes knowledge of English

¹⁷Offshore company, middle manager 3

¹⁸Offshore company, middle manager 1

¹⁹Offshore company, middle manager 1

was among the most important strengths in the project. This was said to make the communication possible and the project work to continue.

4.2.6 Weaknesses

During the interviews weaknesses to have a good and effective communication were described, the barriers were almost all linked to that the teams were not collocated.

The most frequently mentioned weakness was that the information given had not been consistent and was continuously changing. The employees got information from various sources which could be changed later on in the project since the decisions had not been coordinated and there was a lack of decision of what needed to be done. These changes caused frustration since many hours of work had been put into the design and a new start or rework was required because the conditions had changed.

“We can get an e-mail from the client with a directive and then later in the afternoon we get an e-mail from the project management team that this is not how it should be done.”²⁰

This could be explained by the fact that decisions and information were not coordinated high up in the project organisation and therefore caused that information sent out was not complying. Another factor to this was that the offshoring company did in many cases not have direct contact with the client since they were located at a different site. The designers were several steps away from the client and at the end of the communication line. Information about changes that were decided should therefore be given from the Swedish partner that had contact with the client in between the meeting weeks. In some cases this information was not given straight away. This caused that the employees offshore did not feel that they knew what was going on and what changes had been decided to be done. It was suggested that this situation occurred because of too many links in the chain of communication.

One of the main barriers was described to be the language difference. Only a certain amount of text was translated by professionals, this was for example legal text and contracts. For e-mails and meeting protocols the employees used Google Translate when they were not written in English. This could give the employee an idea of what was written in the documents and assignments but in many cases the translation gave a deceptive picture of the meaning and caused misunderstandings. Many of the employees felt that they could not entirely express themselves as they wanted when speaking English and that their work took longer time. The employees had in some cases trouble expressing themselves in English and could not contribute with their knowledge during the meetings. This affected the project negatively since their expertise is important for the project and the design.

“Sometimes many of them say nothing, not because they do not know they just do not know how.”²¹

It was explained during one interview that the contract includes documents where function requirements are specified. It also includes what is being purchased and the requirements of the purchase²². The documents had to be written in Swedish and it

²⁰ Consultancy company, low manager 2

²¹ Consultancy company, low manager 1

²² Consultancy company, middle manager 2

was said to be quite complicated to write the document. It was therefore necessary that it was written by the Swedish team, they have the local knowledge and language skills. In this way technical expert and functional managers that do not speak Swedish were left outside and could not contribute to the reports. This is a barrier since the skills of the employees in the offshore company were not taken care of. If the time schedule is tight there is no time to translate text, directions and even e-mail and the offshore team cannot contribute to the task and keep in timeframe. This is a major weakness since expertise is cut off from the task. It was noted that the difference in language was as a barrier in both directions. Translation of documents can in many cases be quite difficult since the translator needs to have a technical knowledge of the area to make an accurate translation. A lot of effort is put into the translation, this cost both time and money. The translation needs to be reviewed by someone that can verify that the meaning is correct. In order for the project to proceed efficiently some interviewees expressed that it would be preferable if documents could be delivered in English instead of Swedish. It was suggested that it would be good to work in English during all parts of the project, including towards the client. It was also questioned how much information that is missed and lost in the translations.

Difference in way of working has been seen as a challenge from both sides. It has been perceived by some interviewees that there is a resistance towards implementing new working procedures and different solutions, this might be explained by that it has been a lack of understanding for how things are done in each country. The British designers had some trouble in the beginning to adapt to the Swedish standards and norms, and needed a lot of guidance and time to learn. This since every country has its own procedures and way of working and the requirements from the local client are different from country to country. The offshore engineers started from a disadvantage without any local knowledge and a learning-phase was necessary. The Swedish team had to be very clear on what was needed to be done, how it should be done and what requirements were set out from the client. Every scope of work had to be well defined. A great deal of explanation of how standards and norms look and work had to be put in at the start phase.

“It takes a while for them to get into how we work with standards and our work procedures. There are a lot of things that we do just because we have always done like that and there are not written down anywhere. It is therefore not obvious.”²³

Technology has in some cases slowed down and hindered the communication, the video conference systems has at some offices in the UK been problematic to use since firewalls have stopped the system from connecting. When problems with technology occur or if it is difficult to use, the communication are suffering. It was stressed that the personal communication has mostly worked fine but technical communication have in some cases been an obstacle. All the interviewees experienced a challenge to handle the large amount of e-mails that they received every day. It was further recognized that even if there were a lot of e-mails going back and forth a lack of decisions and results was present. It was even stated that it is better to make a wrong decision than no decision at all. Many of the interviewees pointed out that it was easy that misunderstandings occurred during e-mail contact. The fact that the Swedish team were expressing themselves in a language that they were not used to was recognized as an addition to the development of misunderstandings. How people with

²³Consultancy company, middle manager 2

different cultures write and interpret e-mails was also seen as a contribution to misunderstandings. This has led to that telephone calls are being used more often since the telephone is seen as faster way of to take decisions and fewer misunderstandings occur.

“E-mails are good, but not always good enough. For different reasons people think that they need to answer directly and they might send an e-mail without thinking it trough. That generates further an answer and when you have many people on CC you end up with a cacophony with different interpretations of what you have written.”²⁴

Due to the large size of the project and that there are many people involved it is difficult to coordinate and make sure that decisions and standards are being implemented. Another difficulty is to have a discussion in an effective way. During the meetings there are in some cases many participants and it is then hard to have a good discussion. People do not dare to speak their minds and can become an audience at the meetings rather than participant. The meetings need to be organised in a good way and have the right people present to be effective. Not being able to met face to face when an issue arises is seen as a challenge, it can be hard to read and interpret someone when having a discussion and not being able to see each other. It can also be that people that work together never have met and need to cooperate strictly trough ICT. To repair trust after a conflict can be hard, but if it occurred the interviewees said that they tried to keep in mind that it was work related and not personal. If they met face to face they sorted out the disagreement then and if not they tried to act professionally. It was stated that communication issues would be a challenge even if the project was entirely designed in the home country due to the size and complexity of the project.

4.3 Improvements

Different aspects of how the communication in the project could be improved were discussed during the interviews. The most suggested improvement was regarding more face to face interactions.

Transfer of an employee from the offshoring company to the home country's office could help to break down the language barrier and transfer information between the companies. This would also help to emphasise specific issues to be done in order for the work abroad to continue, e.g. be able to keep an eye of what has been decided and make sure that work is proceeding. It was furthermore suggested that a Swedish speaking person from the home company placed at the offshore company's office would be an improvement for understanding standards and norms. This would help to overcome the language difficulties as well as the communication in general. Several of the interviewees stressed that people should be transferred to both locations and not only in one direction. The need of more interchange from the other company was also emphasised.

²⁴Consultancy company, middle manager 1

“A person from [the consultancy company] was here for a week and sat with us and went through drawings and things like that. Him being here for a week answered questions we have had for a year.”²⁵

The recognition that it is important to work close together in offshore projects when the employees are geographically dispersed was a general view during the interviews and the need of face to face interaction was put forward. When having a viewpoint of each other’s situation, understanding and trust was built between the teams.

”Even though there exists very good technical tools which makes us work easier, better and faster there is nothing that replaces physical meetings”²⁶

However, this requires that the participants are well prepared when they meet and the aim of a meeting should not be to have a discussion about a certain issue, but rather to come to a solution, conclusion or decision. It was also stressed that there should be the right sort of meetings with the right people that have relevant competences, this to save both time and money.

Another aspect regarding more face to face interaction is the use of workshops in the project. The use of workshops in the project led to good results quickly and many questions could be answered. It requires that the teams work close together and that all the employees with necessary competences are present and has spared time to be there for the required period.

“[It is] really efficient and very exciting to be there since you notice that the work is proceeding. You also learn a lot about other technical areas. This is the right way to work.”²⁷

It is on the other hand important that workshops are not used too early in a project since it requires that the project has reached a higher level with a certain amount of information available. Workshops and other intensive meetings helped the project to move forward. Namely, to work more intense with a small part of the project and finish it before continuing with something else.

Another suggestion for improving the project was to encourage more communication between different disciplines and particularly communication horizontally in the project. More work and collaboration between the technical areas would be preferred since it in the end is a complete solution and design that is going to be delivered, it is all connected. More communication between the technical areas was also emphasised to lead to higher quality of the end result.

Different views about how long time a certain design will require creates frustration. It was therefore expressed that the offshore company should be present at these meetings with the client as often as possible, especially when deciding changes. This would ease the calculation of the required time and cost and also minimize the frustration that the offshore team are left out and not included in the discussion. If it is not possible for the offshore company to be present, the information should be passed down.

²⁵Offshore company, middle manager 1

²⁶Client, middle manager

²⁷Client, middle manager

One of the keys to success in this type of project is to be aware of what it means to work in an offshore project. It should not be any surprise that there are language and culture differences. In order to be aware of the other teams perspective, both from a cultural perspective but also how to interpret and decipher the language it was suggested that these matters should be taught to the involved employees. This was seen as a potential facilitator for the communication and a way to minimize the risks for errors and disagreements. In an offshore project it is also important to have respect towards the home country and their standards and working procedures. Since the client in this project is a national authority the end result must meet certain requirements and be presented in a precise way, this means that the offshore company needs to have an understanding for how the work is done in the home country and that it in some cases cannot be questionable.

The general view from the interviews regarding documents, which the project is based on, was that it lacked a severe amount of information and this had been an evolving challenge that has affected the whole project. It was therefore stressed that it is important to make sure that the prophase of the project is completed before the project starts and there should be clear guidelines of what to do and how to do it.

It was recognized by all the interviewees that the PEP should be used more in the project. The issue about the limited use of the PEP was mainly because of the continuous large amount of information that the employees received and it was therefore difficult to make people willing to take in more information. There were however no direct suggestions of how to communicate the information in the PEP in a successful way. However, a summary of the PEP, e.g. a leaf letter, have been given to all the employees to make sure that they are aware of the most necessary parts of the project. Due to the large size of the project it is easy that someone gets left out when decisions are passed through the organisation, especially when people are geographical dispersed. During the interviews it was emphasised that decisions needed to be passed forward to everyone and the employees located abroad felt that information did not reached them. The need of more and clearer decisions was suggested as an improvement from several interviewees.

The communication in the project is in general perceived as good and is seen as honest and open. However in some cases it have been experienced that the employees approach when facing problems are unsatisfying. Instead of blaming someone or look away hoping someone else will fix it, it is better to identify the problem, involve everybody and come up with a solution. This has only occurred a few times though.

An improvement suggested by several interviewees was to use telephones instead of emails since you then can identify a person's voice tone and interpret the issue differently than when it is written. A telephone call should also be used more to confirm that the receiver have understand the message sent and thereby avoid errors.

In order to facilitate the communication, each specialist should have a clear representative at the other company at the same level and within the same area of expertise. The challenge can be that they do not properly communicate with their superiors at each company and thereby the top management of the organisation can be uninformed about specific issues or areas.

5 Analysis

The empirical findings correspond to the literature in many aspects but some differences and gaps have been identified. This chapter is divided into two sections, one for each research question, which describe these similarities and differences.

5.1 Offshored engineering as a competitive advantage

The presented literature discusses several different approaches when implementing an offshore element. The history and development of offshoring together with previous research within the field shows that a best practice have not yet been identified. In the history review by Hätönen and Eriksson (2009) three eras are described; the big bang, the bandwagon and the barrier less organisation. When analysing the consultancy company in regards to these different stages and how companies in general tend to develop their offshore strategy, it indicates that the studied company primarily suites in the bandwagon category. This due to that the characteristics in the studied project include an international strategic approach that aims to cut costs and improve the capability in order to create a competitive advantage, see Table 3 in Section 3.1.

The literature describes two main approaches with offshoring; either the use of own resources located abroad or engaging in a collaboration with an external foreign company. Both these were identified by the consultancy company and the aim is to use both approaches, although with focus on using their own capacity before seeking external resources. The offshore strategy that the consultancy company has adapted in this infrastructure project has overall been perceived as successful due to its mix of a cost incentive together with the right resources. The search of competent resources abroad due to limited or not exciting resources in Sweden was recognized by the consultancy company as one of the main incentive to continue with offshoring. This corresponds to the theories presented in the literature. The importance of identifying the company's core business was however not mentioned during the interviews. The consultancy company strategy is to become more specialized in specific areas while offshoring bulk design to countries with lower wages. The concern regarding hollowing out and thereby causing in-house problems is perceived as a risk when implementing offshoring, this has been recognized in the literature and previous research. It is however not seen as a concern yet in the consultancy company since they avoid to offshore their in-house competences.

During the interviews it was said that the consultancy company did not aim to focus on collaboration with one single company. This is a contradiction to the literature which shows that there is an advantage to establish a long-term relationship with one company. This can further be put in the perspective of the large amount of time and effort that has been put into the studied project, namely to translate relevant documents and to make the offshore team aware of the Swedish standards and working procedures. Cost incentive is furthermore criticized in the literature to be too short-term and not profitable in the long-term perspective, which results in that the competitive advantage is not as high as expected. This was recognized by some of the interviewees that questioned if the project was as cost efficient as it was motivated to be and this correspond to previous research concluding that offshoring is often not cost efficient.

When choosing company to start an offshore collaboration with, the empirical findings contradict the literature in some cases. The literature stresses that the location of the company is important, this is mainly concerning the alikeness of the nations' business environment. When the incentive is to lower project costs by seeking cheaper labour wages it needs to be put in the perspective of unpredictable costs, e.i. it is an uncertainty to collaborate with a company that has a foreign business environment. In this project the consultancy company has chosen to work together with a company that among others is located in the UK and Poland, which are both developed European nations. This suggests that the risk of unfamiliar environments have been reduced to an acceptable level. The empirical findings show that the consultancy company aims to collaborate with companies no matter their geographical location. In this project nearby countries with a similar business environment have been chosen, which has been concluded in earlier research that companies tend to do.

The distance to the offshore country is not seen as a limitation due to the available ICT and that it is easy to travel. Furthermore, face to face interaction can only occur in a limited amount in an offshore project. This is due to the time and costs that travelling requires. Travel occurred when meetings were scheduled and when issues could not be solved through ICT. In regards to the environmental impact related to air travelling it was stated during the interviews that this is something that the companies are aware of. Another challenge is the differences between countries' level of working with environmental aspects in project. In the studied project it was clear from the beginning that the design should be environmental friendly and that certain requirements needed to be fulfilled, this was a criteria from the client. It was stated during the interviews that the difference in regulations and standards between countries is a huge challenge. It can further be questioned if the Swedish regulations are completely understood and implemented in the right way by an external company.

The literature states that many organisations recognize global virtual teams as a competitive advantage. It was confirmed during the interviews that the consultancy company found working with global teams to be a future strategy and that they gained advantaged against their competitors. The studied project was perceived as a learning experience by the interviewees in regards to learning new methods to solve design problems. The learning experience was also said to be personally developing and enhanced communication and collaboration skills of the employees. It also gave the employees an understanding of other cultures. As concluded by Jensen (2009) the learning outcome from an offshore project is an indicator of how well the company's offshoring strategy is developing.

When implementing an offshore element in a project the findings correspond to the literature that it is preferable to start in a small scale with a small project and when developed suitable work processes it can be implemented in a larger scale. Offshoring is further perceived as an advantageous strategy when a specific part of a project can be completely designed by an external partner. The challenge of finding the right people to manage these offshore projects was recognized both in the literature and the findings as one of the future concerns with offshoring. The general view of the future of offshoring is that it is here to stay and is a strategy that a company can adopt in order to keep its market shares.

5.2 Communication challenges

Different layers of culture form norms and behaviours of a person. These norms and behaviours differ from culture to culture and steer how a person acts and handles certain situations. This gives people different reference points, what is seen as normal by someone can therefore be interpreted as strange by others. It was stressed during the interviews that these unwritten rules were important to respect since messages could be interpreted wrongly when communicating between cultures. Corporate culture is formed by the employees and is defined as norms, beliefs and values that are shared in the organisation. These shape approaches to tasks and working procedure. To make the collaboration successful the team in Sweden had to put a lot of effort into explaining how work was executed and which norms should be followed. A lot of procedures were said to be done because it had always been like that, this shows that it is deeply embedded in the culture and hard to describe to someone that is unfamiliar with the culture. It is therefore important that the management group is very clear and gives defined guidelines of how work should be executed and what is expected to be delivered. If this is done, new solutions can be achieved that are coherent with the set regulations criteria's in the country. When people with different cultural backgrounds that are used to work in different ways are cooperating in a project, challenges can appear. The empirical findings from the case study showed that both companies had underestimated the challenges that could occur due to different approaches. During the project there has been an interchange between the teams of how procedures are done. In globally spread out teams people with different cultural backgrounds work and have different qualifications. It was emphasised during the interviews that even though there had been challenges the team members could gain knowledge from each other and learn new processes. This gives the company a competitive advantage since solutions might be more creative and a greater knowledge pool can be used. In this way better results and higher quality of the work may be achieved. The literature states that the qualifications of the offshore team members are crucial in order for the task to be fulfilled successfully. Examples of skills that are valuable are technical skills, expertise in an area and communication and people skills.

Advantages and facilitators working with global virtual teams are great but the barriers are many. The literature puts forward barriers related to two different categories; people and technology, see Table 4 in Section 3.3.2. The main barriers from the first category that occurred in the project were the difference in language and working procedures. The difference in language slowed down the work and caused misunderstandings in some cases. Since the offshore team did not speak Swedish they could not fully adopt the reference frame of the Swedish culture. It is however important to notice that even though the teams did not speak the same language it did not mean that the values differed between the teams. Barriers with ICT emphasised in the theoretical framework were hardware and software incompatibility but also how and when to use it. When technology did not work in the project, frustration and delays occurred. There were some challenges to get the videoconferences system to be compatible between the countries but when these problems were sorted out the interviewees expressed that communicating through video conferences worked well. When the majority of the information is sent and communication is done through e-mails there is a higher risk that mistakes and misunderstandings occur, this due to that people do not get the chance to meet and discuss the tasks. It is more difficult to interpret the other person since there is no voice tone or body language to read.

Because of the large information flow the employees did not always have time to reflect and discover mistakes in the information received. It has been stressed both in the literature and during the interviews that meeting face to face is essential for the collaboration to work well.

In the project the meeting structure has been described as well-defined and good. The findings from the case study show that there is a resistance to use telephone calls, while it in some situations is more preferable to use than e-mail. This could be explained by that not native speaker of English were not comfortable talking in English but also by the fact that Sweden is a high-trust country and Britain is a medium-trust country (Delhey and Newton, 2005). This means that Swedes trust other people more easily than Britons. This can lead to a trust asymmetry which can cause problems and misunderstandings when collaborating with each other. Interviewees from the consultancy company described that the designers from the offshore team needed more guidance and asked a lot of questions about the tasks. This could be explained by the fact that the offshore team did not have the local knowledge about how standards work and what was expected to be delivered. They had to ask many questions to get as much information as possible. The offshore team in the UK wanted to have as much as possible in writing so that there existed a written proof of conversations and preferred therefore e-mail over telephone.

In Section 3.3.2 the importance of face to face meetings in the initial stage of the project is stressed and members get a chance to get to know each other and build trust. When meeting trust can be built and it was said during the interviews that by just having a face of a person helped to enhance the communication. During the meeting week once a month the employees met for discussion, to get information and work out solutions face to face. Employees involved in the project with different positions and tasks within the project were present at the meetings. In this way the spread out teams got information and directions that came straight from the origin source. The information had not gone through a long communication line where there is a risk that the information gets distorted. Conflicts and misunderstandings were sorted out during the meetings weeks and tasks that could not be solved through ICT communications were worked out quickly. Even though technology today is advanced and it is possible to collaborate on complex projects at different locations, it is vital not to underestimate the human meeting

If face to face exchange is not possible trust is built upon task processed and takes the form of swift trust. In the project employees with management positions from the spread out teams have been present at the meeting weeks and had therefore a chance to build interpersonal trust. Many designers have not had any personal contact with the dispread team members and trust is built upon task processes. This trust is easier to harm than trust built upon personal relations. When having a face of a person it was said to be easier to sort out conflicts and repair trust, not meeting in person makes it harder having a discussion and if trust is harmed it is more difficult repairing it. Trust can be repaired through apologies, forgiveness, explanations and structural changes. Trust has in general been high between the team members even though the offshore members felt that they had to prove their skills in the start phase before trust was granted.

Information has not been consistent during the project and directives have come from various sources. This has led to that the team members felt they had to verify the information and use their own knowledge to determine if the information was usable. The literature describes a few relevant actions that can strengthen trust in dispread

virtual teams. Some of these were mentioned during the interviews to improve the communication and collaboration. The interviewees did not identify the aspects of making the work visible and to display the team members' competences. The importance of providing feedback was furthermore not mentioned. These actions are however important in order to bring together an offshore team and should therefore be considered.

6 Discussion

In order for a company to stay competitive and to keep market shares transformation might be necessary. The main question is if a company should adapt an offshoring element or seek other solutions in order to increase their competitiveness and gain market shares. The presented literature as well as the findings suggests that offshoring will become a common strategy in the future. It could furthermore be implemented in a company in order to gain market shares. If the company chooses to implement offshoring as a strategy there is a need to evaluate and consider several important aspects. Questions regarding what to offshore, when to offshore, in what type of projects as well as the capabilities and location of the offshoring company are especially important to take into consideration. When the decision of strategy is taken the following question is how to manage and execute the offshore projects. The consultancy company studied in this master thesis have faced several challenges within the case study project.

The strategy that has been adopted by the consultancy company consists of a mix between a cost incentive and a competent resources seeking approach. It indicates that this is a successful combination for engineering consultancies within the construction industry, this is due to the company's variety of expertise areas, complexity of tasks and large size of projects. When adapting a cost incentive and offshoring bulk design to countries with lower wages there is a need for specified and clear descriptions of the design. The location in this case is however not important while it is the opposite when adapting a competence resource approach, where a relatively close location is advantageous. The awareness of how to work within offshore projects and the ability to cooperate over national borders is vital for offshore projects to be successful. In this case the consultancy company has learned along the way that it can be questioned if this will affect the success rate of the project. The country that the offshore company is located in influences the business climate as well as the culture and it is crucial to choose a partner that has similar values. It can therefore be suggested that in order to facilitate the collaboration and minimize the risk of misunderstandings, it is important to consider aspects such as corporate culture, education level, political system and business environment. Capability and competence of the employees working in an offshore project are the keys to success. This is regardless of where the offshore company is located and it is important that the employees have the right attitude as well as the right expertise and experiences.

It can be stated that offshoring is most preferable to implement in large projects where an explicit part can be completely transferred to an external company. It is further on appropriate to start with offshoring on a small scale. After getting experience and developing working procedures, it is suitable to extend the size and complexity of the offshoring projects. The studied offshoring project is one of the largest infrastructure projects in Sweden and the consultancy company had limited experience of how to work with offshoring when the project started. It can therefore be questionable if it was suitable to use offshoring to such a large part of the studied project. It may have been better to consider recommendations from previous research in the field suggesting to start on a smaller scale. However, this was not the case and the consultancy company have learned much and have today the knowledge and tools of how to precede working with offshore projects.

An important concern that was stressed both in the literature and during the interviews was the risk of hollowing out. The consultancy company aims to use offshoring

within areas that are not their main competences and instead use offshoring to simpler parts of a project and bulk design. This approach suggests that the risk of the company's own resources to lose work have been reduced. This is also related to the importance of keeping the core competences in-house, which is stressed in the literature. It can however be discussed how it may be possible to keep increasing the competence within the company in order to keep the price and income high. It is a question of how far this behaviour is able to proceed, meaning how specialized the engineers in Sweden can become in order to keep their work when the rest is offshored and if this development is sustainable. Today, offshored engineering within the Swedish construction industry is only in the start phase and it is still too early to determine if hollowing out is a possible risk in the future. Companies that choose to implement an offshore strategy should however take hollowing out into consideration and be cautious in their decisions of what and how much of a project to offshore.

Furthermore, there is a resistance towards using foreign labour within construction designs. The industry is in general perceived as conservative and slow in adapting new procedures. The empirical findings from the studied project show that the design is of high quality. There is always a risk of losing projects to competitors regardless of whether the competitor is a Swedish or foreign company. A higher competition should be a trigger and motivation to keep improving the company's competences. Exploitation of foreign labour with lower wages is a concern that should be taken into account in each offshore project and an evaluation of the foreign company should be executed. The Swedish labour market has developed into a secure, trustworthy and regulated environment, but offshoring often occurs toward undeveloped or developing countries where the working climate has other conditions. Due to this uncertainty and the risk of getting a bad reputation by exploiting foreign labour, the choice of country and offshore company is vital, but the risk is difficult to avoid completely.

The difference in language has over all been an obstacle in the project even though all the team members have put a lot of effort for it to succeed. It is however clear that some knowledge is lost due to the language difference. This is especially noticeable when meetings are held in Swedish and the offshore team is either not present or do not understand what is discussed. The opposite perspective is also a major concern. Namely, when non-native English-speakers feel that they are not able to express themselves fully in English and their contribution is not as significant as it would be if the meeting was held in Swedish. These issues are important to attend since the strategy to offshore is to strengthen the company's competence and if knowledge is not taken care of, the strategy loses its advantage. It was suggested during the interviews that if most of the documents were in English the work would be more efficient. In this way all members from the spread out team could contribute to the documents and their knowledge and expertise would be made use of. It is however questionable if this is a sustainable solution since the project is located in Sweden and documents written in English could cause problems in later stages of the project. There is a risk that misunderstandings would occur in the execution phase due to the fact that English is not the native language of the people that would read and use the documents. Another reason to not have all documents in English is the fact that the client is Swedish and it is their demands that should be considered. It can furthermore be questioned how much information is missed and lost in the translation.

In order for the project to be successful more management in the project is needed than when a project is entirely designed in the home country. Work processes, standards and norms have to be explained and defined so that each team member

knows how to work and what the result is expected to be. The high management has to make sure that the right employee receives the right information and that there is knowledge among the employees about who takes which decisions. If this is done the work will proceed more quickly and fewer misunderstandings will occur. It is therefore vital that the communication and decision lines are clear and followed when information is communicated and decisions taken. The empirical findings show that it would be preferable if there were more and clearer lines of communications. This does however contradict another suggestion regarding a wish for more open communication between the disciplines. Moreover, the findings states that the communication would work better if the PEP was completely implemented in the organisation. If the PEP is not used it is waste of both time and resources to write and conduct it.

The consultancy company has the ambition to collaborate with the most suitable external company for each project and not to establish a long-term relationship with a specific company. It can be questionable if this is sustainable in regards to the learning outcome that each project leads to and the fact that it will not be taken care of in the following projects. In the studied project a lot of effort was put into translation and explanation of standards. It seems to be a waste not to use the knowledge that has been gained by the offshore employees in future projects. This needs to be put into the perspective with the risk of becoming too dependent on one specific company and it might be preferred to work closer with various companies. The literature states that it is not efficient to manage an offshore project as a single collaboration but rather adapt a long-term approach towards the project and the external company.

7 Conclusion and recommendations

The purpose of this master thesis was to study how offshoring can be used in a Swedish technical engineering consultancy company as a competitive advantage. The purpose was furthermore to present communication challenges that occurred in a studied offshore project and which actions could improve the communication. Conclusions from the case study are together with recommendations on communication improvements presented below.

The findings show that both the offshore company and the consultancy company are unsatisfied with how the communication has worked in the project. Much effort, time and money has been spent on tasks that later on have been changed or removed. This is not a sustainable way of working and a directive should not be passed down in the organisation before it is confirmed and absolute. It can be concluded that the need of coherent management is essential for an offshore project to succeed. The need of clear directives and explanation of standards and norms was stressed during the interviews. One precondition for an offshore project to succeed is local knowledge. When engaging in an offshoring project it should be clear from the beginning how work procedures function and what standards and regulations have to be followed.

It can be concluded that a major improvement for the communication would be to implement the PEP, Project Execution Plan, in the organisation, and that all team members comply the communication and decision lines. In order to implement the PEP in projects it is important that it is written from the beginning of the project and that it is communicated to the team. It can also be concluded that if the PEP is not implemented and used in the project organisation, it is a huge waste of both time and resources to write the PEP at all. The most significant and surprising finding from the case study was that a week long visit to the offshore company's office by an employee from the consultancy company answered questions that the offshore team had had for over a year. This finding corresponds with previous research both in regards to that the transfer of an employee is a major facilitator but also the importance of face to face interaction. It can therefore be concluded that it would benefit an offshore project if the employees traveled more. However, it is the right employees that should travel and not only employees with management positions. It can be concluded that the meeting weeks are major facilitators for the communication and it is important that the right employees are present. The authors recommend that the employees meet face to face in the start phase or at least one time during the project, this to establish a personal relationship.

In the studied project it can be suggested that trust was not a barrier between the home and offshore teams. Trust is the base of a good relationship and is one of the keys for a project to succeed. The offshore and home companies should share responsibility and risks in order to enhance the collaboration, but also to ease the management throughout the project. This would further minimize the risk of an "us vs. them" situation and instead lead to that the home and the offshore teams work together as one team with the same goal.

In a long-term perspective regarding offshored engineering it can be concluded that this way of working is a trend which is becoming a more commonly implemented strategy in the Swedish construction industry. Due to the lack of competent resources in Sweden and increased competitiveness with pricing pressure, it may be suitable to continue offshoring parts of projects in order to keep and increase market shares. The study shows that it is successful to combine a cost incentive with competent resource

seeking, this approach should focus on finding the right competence to the right task. The risk of hollowing out and harm the company's core competence is however an issue that must be taken into consideration, which also is stressed in previous research (Jensen, 2009).

When choosing an external partner several important aspects have been enlightened and discussed in this thesis. A decision that leads to collaboration with an unsuitable company can give the consultancy company a bad reputation. A question that should be taken into consideration is if the cost savings are worth this risk. It can moreover be concluded that the location to offshore is preferred to be quite close to the home market, with a similar business environment as the home country.

Recommendations to the consultancy company

Both in a short and long-term perspective several actions can be made in order to improve the communication in an offshore project. The following recommendations, to the consultancy company in the study, are a further step towards establishing a better communication and thereby succeed with an offshore project.

Establish a long-term collaboration with an offshore company.

In order to succeed in an offshore project the companies involved should adapt a long-term collaboration. This since the employees in an offshore company learn standards and work processes during a project and it would be inefficient to collaborate with a new company in each project. It would rather be preferable to collaborate with one company in several projects, in order to take advantage of learning outcomes from earlier projects. It is although vital to not become too dependent on a specific company.

Implementation of the Project Execution Plan.

In the studied project a PEP, Project Execution Plan, was written but the awareness of its content among the employees differed. It can therefore be concluded that effort should be put on implementing the PEP properly in the project organisation. The authors recommend the consultancy company to establish guidelines and recommendations of how language and cultural differences should be handled. This would ease and minimize the risk of errors in the project due to communication challenges caused by language and culture differences, as well as how the communication in the project organisation should be done.

Transfer employees in both directions.

To transfer an employee from one team to another was describes as a major improvement for the communication, information flow and collaboration. To relocate an employee from the local team to the offshore team's office, even for a few weeks occasionally, would give the offshore team a chance to gain knowledge about local standards and norms. Questions and concerns could be sorted out and discussed at once which in other cases could create delays and mistakes. An employee from the offshored team placed at the local office could communicate what was happening at the site to the offshored team. The employee could also raise the offshored teams concerns and take their interest into account. The transferred employees could work as links between the teams since they would be able to see situations from both sides point of view

Use all information and communication tools.

In order to avoid misunderstandings it is important to verify information received and to use all the different ICT tools. It can be recommended to use telephone calls more, instead of e-mailing back and forth numerous times. If e-mails are preferred by an employee the solution could be to summarize the task or decision with a telephone call, to make sure that the information is perceived correctly.

Ability to use information and communication tools.

If ICT is properly implemented in the organization and work sufficiently, the main concern is the employees' ability to use ICT. The employees involved in an offshore project should have the capability to use these tools, the knowledge of who needs the information, and the personality as well as the willingness to share information. It can therefore be concluded that by creating a work environment that motivate and enhance the employees' ability to communicate is a further step to success.

Use workshops to increase interaction between the technical divisions and reach solutions faster.

It can be concluded that workshops are a suitable way of working to increase horizontal communication between different technical disciplines and actors in the project organisation. The employees work close together and are able to come up with solutions that are applicable with all disciplines. Working face to face and being able to take inputs from different actors in the project makes the work coherent and effective.

Establish personal relationships between the team members.

Team building activities could be seen as time and cost consuming but they are a good way for the employees to establish personal relationships. The employees can tie contacts during the activities, which could be useful later in the project. If team building activities are arranged in the beginning of a project the involved employees can get a face of other team members that they will cooperate with. In this way the initial contact between the team members will be easier and the start phase shorter.

7.1 Limitations and further studies

Since this master thesis is executed within a limited time frame this section will describe the major limitations of this study, together with suggestions of further studies.

First, an extension of the time frame would have been preferred in order to study the case project during a longer time and to get a chance to conduct more interviews. It would also be an improvement if interviews were held with the designers involved in the project and not only with employees at management positions. It can therefore be suggested that further studies should focus on a project during a longer period of time, in order to establish a complete picture. The studied project is on-going and not ended when this thesis is written. It could therefore be argued that a second round of interviews should be held when the project is completed, this to take into account the employees opinions and thoughts on the overall collaboration and the end result of the project. If this is done findings and conclusions from all the project's phases can be drawn. It is furthermore important to consider that the case project is one of the first projects that include such a large offshoring element at the studied consultancy company, which is directly linked to that there were no standardised working processes. Another limitation to this study was that no interviews were conducted with the employees located in Poland. Further studies should therefore consider the Polish teams perspective of the communication in the project, which would establish a more general and complete result.

The findings are based on a study of one collaboration between two specific companies designing a large infrastructure project. Due to this, the findings cannot be directly related and implemented to the entire construction industry in Sweden. Future studies could therefore investigate several offshore projects in other companies and in regards to other parts of the construction industry.

Offshored engineering is becoming a trend within the construction industry and Swedish consultancy companies. Therefore, it might be profitable to investigate what other industries that have worked with offshoring longer have experienced and learned.

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Appendices

Appendix 1: Interview questions – Strategies with offshoring

- What is your function and what are your work tasks in the [case study] project?
- When did you start working with the [case study] project?
- How do you think the project continues? In regards to time frame, economy and working procedure.
- Could you please describe the company's overall offshoring strategy, both in a short-term and long-term perspective?
- Could you please describe the company's strategy with offshoring in the infrastructure project?
- Has the strategy changed since the collaboration with the offshore company started? If that is the case, how and why?
- What was the goal from the beginning for this project, what were the expectations? Have they been fulfilled? Changed?
- What were the main challenges in the collaboration? How have these been solved?
- Which learning experiences/expertise have you gained from the collaboration with the offshoring company?
- Have you earlier worked in projects that have offshoring elements? If so what are your experiences from it?
- If you would compare working with an in-house project and an offshoring project, what would the main differences be?
- How does the process look like when an offshore collaboration is initiated? What criteria are considered when choosing partner?
- What qualifications do you think should be fulfilled by the external company before you start an offshore collaboration? What qualifications/conditions do you find important?

- What do you think is important to take into consideration when choosing a partner to start an offshoring collaboration with?
- How will your company use offshoring in the long-term perspective? To what extent and in which type of projects? What do the employees think about this approach?
- What incentives are there to continue with offshoring? What arguments are there to not work with offshoring?
- What criteria do you find most crucial to succeed with an offshoring project?
- Are there any plans to start similar collaborations?
- Do you think there is a future in this way of working (offshoring)? Do you think it should be implemented more in the organisation?

Appendix 2: Interview questions – Communication

- What is your function and what are your work tasks in the [case study] project?
- When did you start working with the [case study] project?
- How do you think the project continues? In regards to time frame, economy and working procedure.
- Have you earlier worked in projects that have offshoring elements? If so what are your experiences from it?
- If you would compare working with an in-house project and an offshoring project, what would the main differences be?
- What was the goal from the beginning for this project, what were the expectations? Have they been fulfilled? Changed?
- Can you please describe the communication in the project? What kind of communication tools has been used for the work to proceed? How have these worked? Was there something missing?
- Can you give examples of what has worked well and what has worked poorly seen from a communication perspective? Can you give examples of specific incidents/cases?
- Does it exist a communication plan? If so, what is included in it and how has it been used in the project?
- How do you know that the information you give has been fully understood by the receiver? For example do you look for any specific signals?
- The information you receive, do you think it is trustworthy?
- Have you experienced any cultural differences? Have these affected the work?
- Have the language difference affected the communication and the work? Do you feel that there is a language barrier?

- What could improve the communication? Do you have any suggestions on how you can work in advance to avoid communication challenges?
- What qualifications do you think should be fulfilled by the external company before you start an offshore collaboration? What qualifications/conditions do you find important?
- What criteria do you find most crucial to succeed with an offshoring project?
- Do you think there is a future in this way of working (offshoring)?

