Seppo Hautala

From Offshoring to Reshoring

Generating a Reshoring Plan

Helsinki Metropolia University of Applied Sciences

Master's Degree

Industrial Management

Master's Thesis

26 April 2013

PREFACE

The studies in the Master's program in Industrial Management have been a very broadening and interesting experience for my professional career. Even though this has been a tough journey at times, it has also been a rewarding one.

I thank my employer and my colleagues for their flexibility and support and for giving me this special learning opportunity. I also want to thank those colleagues who offered their precious time and effort when helping me complete my Master's Thesis.

My special thanks go to Marjatta Huhta, Thomas Rohweder and Zinaida Grabovskaia for their dedication to this program and their tremendous support for us.

I also want to thank my dear wife Niina and my children Perttu and Sanni for their great support and patience during the long days when I was not there for them. Without their understanding and support this journey would not have been possible.

Vantaa, 26th April, 2013

Seppo Hautala

Author Title Number of Pages Date	Seppo Hautala From Offshoring to Reshoring Generating a Reshoring Plan 75 pages + 3 appendices 26 April 2013
Degree	Master's degree
Degree Programme	Industrial Management
Instructor	Marjatta Huhta, DSc (Tech), Principal Lecturer

The purpose of this study was to generate a reshoring plan for the case company which is planning to bring back the production of a certain SW product from an offshore location. The main aim was to generate a reshoring plan which helps the company to recognize and manage risks that are related to the reshoring and service transition. The study was carried out for a global telecom product and service provider.

The study is a case study exploring one reshoring case and its background including an analysis of the past offshoring experiences. Data from the case company was collected by qualitative interviews with the company experts representing three competence areas: technical support, strategic resourcing and R&D. Based on the synthesis of existing knowledge and the interview data, the target was to create a reshoring plan that would help avoid the pitfalls that have been experienced during the offshore production.

The findings of this study show that there were several problem areas concerning offshore production, which eventually led to the decision to reshore the production back to its original place. By recognizing the main problem areas which were related to competence level, quality, productivity and total cost and by taking them into account in the reshoring plan the company is better able to ensure that these problems can be prevented in future. Based on the results of this study, it would be advisable for the company to pay special attention to service transition planning and transition governance when doing the reshoring. Moreover, managing the main problem areas identified in this study should be integrated as part of those processes.

| Keywords | Reshoring, backshoring, offshoring, outsourcing |

Työn tekijä	Seppo Hautala
Työn nimi	From Offshoring to Reshoring
	Generating a Reshoring Plan
Sivumäärä	75 sivua + 3 liitettä
Päivämäärä	26.4.2013
Tutkinto	Ylempi AMK -tutkinto
Koulutusohjelma	Tuotantotalous
Työn ohjaaja	Marjatta Huhta, TkT

Tämän opinnäytetyön tarkoitus oli luoda yritykselle suunnitelma jonka avulla voidaan varmistaa tietyn ohjelmistotuotteen töiden tuominen takaisin onnistuneesti Suomeen ns. offshore maasta. Tarkoitus oli luoda suunnitelma, joka auttaa yritystä tunnistamaan ja hallitsemaan tuotannon siirtämiseen liittyviä riskejä. Työ tehtiin globaalille tietoliikenneverkkoja ja –palveluita tuottavalle yritykselle.

Työssä tutkittiin töiden takaisin tuomiseen johtaneen päätöksen taustoja yhden ohjelmistotuotteen osalta ja analysoitiin ns. offshore tuotannon kokemuksia. Tutkimusaineisto kerättiin yrityksestä haastattelemalla asiantuntijoita olennaisilta osa-alueilta. Haastateltavat henkilöt edustivat teknistä tuotetukea, yrityksen strategista resursointia ja tuotekehitystä. Olemassa olevan tutkimustiedon ja haastatteluissa saadun yrityskohtaisen tiedon perusteella tavoitteena oli luoda töiden takaisin siirtoon suunnitelma, jolla voidaan välttää offshore tuotannon aikana koetut ongelmat.

Tämän tutkimuksen tulosten perusteella löydettiin useita tärkeitä offshore tuotantoon liittyviä tekijöitä jotka ovat vaikuttaneet päätökseen tuoda tuotantoa takaisin sinne, missä se alun perin sijaitsi. Työssä analysoitiin tärkeimmät tunnistetut ongelma-alueet, jotka liittyivät paikallisorganisaation osaamisen kertymiseen, tuotteiden laatuun, tuottavuuteen ja työn kokonaiskustannusten huomioimiseen. Huomioimalla nämä tekijät töiden takaisin tuonnin suunnittelussa yritys voi paremmin varmistaa, että samoilta ongelmilta voidaan jatkossa välttyä. Tämän tutkimuksen tulosten perusteella yrityksen kannattaa kiinnittää erityistä huomiota koko työn siirron ajan jatkuvaan suunnitteluun ja työn siirron jälkeisenä aikana osaamisen, työn laadun, suoritustason ja työn kokonaiskustannusten mittaamiseen ja johtamiseen.

Keywords	Reshoring, backshoring, offshoring, outsourcing

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Acronyms

IS	Information Systems
ITES	IT Enabled Services
KPI	Key Performance Indicator
OEM	Original Equipment Manufacturer
R&D	Research and Development
SW	Software
TCO	Total Cost of Ownership
UMTS	Universal Mobile Telecommunications System

1 Introduction

The phenomenon of offshoring, i.e. transferring production overseas has been a major trend for a long time in many industries especially in mass manufacturing. In services the outsourcing trend has been strong occurring in many areas of services but not a great deal of it happening in the form of offshoring. Outsourcing as a term is referred to as work done by another company whatever the location. A major change in the offshoring trend and its business environment during recent years has been the quickly increasing labour cost in the offshore countries. This naturally undermines the cost benefits that are usually primarily sought by offshoring. The ever increasing costs are making offshoring less attractive when evaluating different sourcing alternatives.

According to a study by the Boston Consulting Group (2011) wages are increasing by 15% to 20% a year in China and India bringing the labour cost level ever closer to the level in the western countries. Also, according to a study by Archstone Consulting 60% of the original equipment manufacturer (OEM) companies use only rudimentary cost models ignoring 20% of the hidden costs. These companies often base their offshoring decisions on either labour cost or on Free-on-Board cost which means the sender is responsible for the loading and transportation costs. (Moser and Beyer 2011: 7) It is critical to understand these hidden costs, which altogether comprise so called total cost of ownership (TCO). Also it is important to define total risk profiling in sourcing that defines the risks of shifting production overseas. And, it is equally important to measure the hidden costs related to sourcing decisions and sourcing strategy. (Moser and Beyer 2011: 5)

The purpose of this Thesis is to explore reshoring as an alternative to the recent major trend of offshoring production overseas. This Thesis aims to recognize the factors that help evaluate whether offshoring is in some cases actually more expensive than is generally assumed, or something that can even cause offshore production to fail e.g. in terms of end product costs, quality and customer satisfaction. The Thesis presents some perspectives that need to be considered when making choices between offshoring and keeping or bringing back the production closer to home in one's own continent.

1.1   Business Problem

In recent years, it has been standard practice to move production overseas, mainly to India and China, in order to achieve cost effective production in the area of industrial and consumer goods as well as SW products. Due to the tough overall global competition it has seemed only reasonable to transfer production work to low cost countries to gain cost advantages. Besides providing a solution to gaining lower production costs, offshoring has been seen as a flexible way to get additional capacity for production when needed. However, choosing cost as the main driver for selecting the place of production has turned out to be much too narrow a viewpoint. The cost advantage itself has suffered from severe erosion while at the same time other significant problems have arisen. For instance, controlling worker conditions and production has proven to be challenging due to the high number of subcontractors involved, causing unexpected quality, availability and logistical problems. (Planetmgpie 2012: 9)

The cost advantages have decreased mainly due to high inflation and increased competition for work force taking place in China and India. A recent study by the Boston Consulting Group states that wages have risen by 15-20% a year in China and India (Moser and Beyer 2011: 3). Furthermore, on IT Enabled Services (ITES) the attrition of work force in these countries is high, even 30-40% yearly, and this as a consequence is causing production delays and extra costs for example due to the need to train new employees. (Kehal et al. 2006: 292)

Quality related challenges have been present ever since offshoring started, and that is sometimes severely deteriorating the benefits expected from offshoring. The lack of sufficient control regarding subcontractors and unapproved changes in materials or processes are apt to increase the amount of low quality or even faulty products. Moreover, in many industries counterfeit products are difficult to control due to poor local legal recourse in these countries. (Moser and Beyer 2011: 3)

Based on the aforementioned types of setbacks occurring in connection with offshoring many companies have started to reconsider and revaluate the advantages of offshoring. Some companies have already started reshoring i.e. moving production back from

overseas closer to the main company to gain better control of the production and to overcome the problems causing unsatisfactory quality in the products.

These risks need to be addressed when making sourcing decisions. The commonly recognized measurable factors and risks are integrated in the model of Total Cost of Ownership created by Reshoring Initiative. The model includes 29 different factors including freight and duty costs, and several risk elements. The tool has been originally developed for comparing alternative manufacturing sources for goods that are sold in the USA. (Moser and Beyer 2011: 9)

Another similar type of model for calculating the related costs is the Total Landed Cost model. The Total Landed Cost model includes a set of end-to-end costs belonging to the supply chain of transforming raw materials and components to a ready-made product. These components include raw materials and component costs, manufacturing costs, transportation and logistics, inventory costs as well as taxes and duties. Total Landed Costs is thus another tool and main decision driver for steering the sourcing strategy. (Janssen et al. 2012: 3)

This Thesis intends to explore the reasoning behind offshoring in general. Moreover, it aims to cover and explain the common main drivers and decision criteria such as cost, quality and productivity for offshoring production. It also reviews commonly occurring problems in offshoring based on current professional literature and research. To evaluate whether reshoring could be seen as a reasonable alternative for organising the production activities of companies the study presents a new reshoring plan and criteria.

This study has been carried out as a single case study from the Telecom industry. As such, it explores why a certain telecom industry SW product was originally offshored. The analysis includes an evaluation of what results were achieved compared to the expected outcomes of offshoring considering cost, quality and other relevant criteria. The study then goes on to explain how and why the production is now considered for reshoring.

1.2   Case Company Background

The case company featured in this Thesis is a global telecom company representing the telecom industry, and it is one of the major players in its field. Currently, the case company is considering reshoring part of the SW production of a particular product.

The offshoring decisions in the case company were originally made after the high growth phase in the telecom industry had started to stabilize in the beginning of the 2000's. As the market growth stabilized the price competition started to accelerate. The industry needed to adapt to the changed market condition and severe cost saving efforts were initiated. This meant that the labour costs as well as the production costs of hardware needed to be cut down. The work was transferred to low cost countries where there seemed to be a lot of well-educated people available with remarkably lower wage level than for example in Finland. The planned cost savings were quite evident, and so a major part of the work was transferred to China and India during the transition period.

During the 2000's the increasing demand of IT and manufacturing workers and high inflation in China and India have caused the labour costs to increase on average by 15-20 % per year. 2015. This has brought the cost of labour closer to the levels of Western countries, and in some places it has been estimated to have reached the level of Western countries already. It has also become clear that the quality of industry products as well as SW products has not been at the same high level that it used to be when the production was still in Western countries. The quality problems have caused increasing labour costs due to corrective actions. Also productivity has not been at the same level as it was in the Western countries. These quality and productivity issues are related to the higher attrition of the workers in the offshoring countries, which leads to gaps in the competence levels compared to the Western work force.

As it has become evident during past years that the same quality and productivity levels are not achievable by offshoring, it has also become clear that comparing pure unit prices in labour cost is not a sufficient measure for comparison between offshoring and making production locally close to the main company. When taking into account the hidden costs and quality issues related to offshore production it has become clear in many cases that overall it would be probably reasonable in terms of economic success and quality to bring production back closer to the main company.

The model of Total Cost of Ownership provides the means to take into account many of the hidden costs related to offshoring thus enabling the comparison between offshoring and reshoring. In this study the available measures related to decision making are explored and the intention is to provide insights on how to evaluate whether reshoring is, in fact, a reasonable alternative.

1.3   Research Question

The main focus of this Thesis is placed on identifying the problems faced in offshoring that can lead to the decision to reshore and make an action plan for corrective actions. The plan is to establish best practice for reshoring so that the problems that revealed during offshore production are prevented after the production is reshored. Additionally, the Thesis casts some light on what the company needs to take into account to make proper preparations and planning, for example, planning for sufficient resources, in order to succeed in the reshoring operation.

The research question is formulated as follows:

Based on the learnings from past offshoring experiences, how to build a reshoring plan that meets the company objectives for succeeding in reshoring?

The scope of the study includes recognizing the factors affecting the decisions related to offshoring and reshoring in the case company as well as exploring the aspects related to the costs, productivity and quality. The study also provides an overview of the processes of offshoring and reshoring and communication.

1.4   Research Design and Structure of This Study

The research was carried out as described in the Figure 1 below. First the available literature was explored to obtain comprehensive knowledge about the topic and to identify the potential problem areas. Based on this knowledge semi structured qualitative interviews were planned and then carried out with company experts of the subject matters. Then, based on the existing knowledge and the information gained in the interviews, an initial reshoring plan was created. The initial reshoring plan was then reviewed by the company experts to get their feedback on the feasibility of the reshoring

plan and to collect their improvement proposals. Finally, the proposed improvements were integrated to the final reshoring plan.
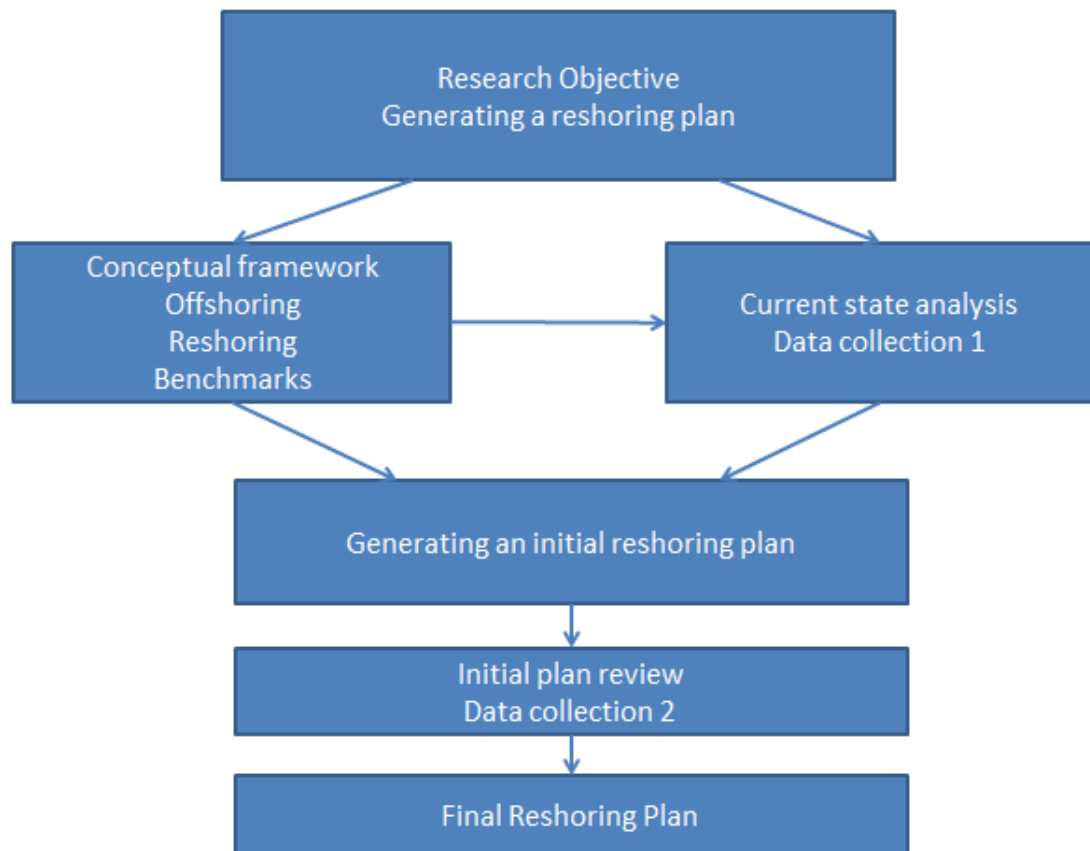
Figure 1. Research design.

Figure 1 illustrates the research design applied in this study. First, the study explores existing literature concerning offshoring and reshoring. Then, based on the available knowledge and research data, the common problems faced in offshoring are reviewed.

The literature review is followed by semi structured qualitative interviews. The purpose of the interviews is to open the topic from the company perspective and to steer further on designing the reshoring plan. The interviews explore the reasoning for the offshoring decision for a certain telecom SW product and the background behind the reshoring decision. In most cases, the common main drivers and decision criteria for offshore production have to do, for example, with lower overall cost, along with competitive quality and productivity. The study also evaluates what the results were compared to the expected outcomes of the offshoring decision, considering cost, quality

and other criteria. This is followed by an evaluation of why the production can now be considered to be transferred back.

As an outcome of the Thesis a reshoring plan and criteria is presented to evaluate whether and when reshoring the production can be considered a viable alternative. The reshoring plan is built based on the available industry best practices and the case company key findings so that relevant evidence related to the decision making process is uncovered. After the reshoring plan has been validated in the interviews with the case company experts, the final reshoring plan is formulated.

The Thesis has 6 sections. Section 1 overviews offshoring and reshoring as industry phenomena and provides a generic view on the topic. An introduction is given to outline the main topic. Also the current state analysis is presented. The current state analysis reviews the status regarding production under consideration for reshoring and explores the problems and challenges that lead to re-evaluating the issue of offshore production. Section 2 describes the definitions for offshoring, outsourcing and reshoring. It also explores the risks related to these processes. The risk review is made on several levels that include operational, structural and organizational dimensions. Section 3 describes the research methods that are used in this study. As this Thesis is a case study, theoretical literature on doing a case study was reviewed and applied. The case study method in this study is based on Yin (2003), the qualitative interview methodology on Kvale (1996) and the application of guidelines on Hancock (2006). Section 4 reviews the findings that were identified based on the analysis of the interviews. This section also touches upon examples of successful offshoring projects. In Section 5 the proposed reshoring plan is presented. Section 6 also discusses the topic by making conclusions based on the findings of the research and giving proposals on how to overcome the risks that the reshoring project may encounter. Section 6 summarizes and discusses the key findings of the Thesis with an emphasis on managerial implications.

2   Existing Knowledge for Offshoring and Reshoring

This section overviews the different aspects of sourcing. The different sourcing options and their proprietary characteristics are explored. The purpose of this section is to gain an understanding about what sourcing options exist and how they differ from each other.

2.1   Overview of Concepts

To be able to understand the factors leading to the decision of reshoring it needs to be understood what the initial reasons for offshoring the processes were. In this chapter the characteristics of offshoring are explored and explained. Also the definitions for offshoring, reshoring and related activities are presented.

The material for the study was selected from the scientific literature and research concerning the topics of offshoring and reshoring. The selection criteria laid down for the key references was that there was real life experience and detailed information available from offshoring or reshoring. The case examples were selected from the material that was originally collected by the Reshoring Initiative in the USA.

Figure 2 below illustrates the different sourcing options. (Kennedy et al. 2006: 60) The work can be done in-house or it can be outsourced to another company. Similarly, the work can be done in the home country or in some cases it can be offshored to overseas.

Figure 2. Sourcing options include moving across firm or geographic boundaries (Kennedy et al. 2006: 60).

Organizations need to constantly look for ways to maintain and enhance their efficiency to keep their business competitive and profitable. The sourcing strategies are in the heart of this evaluation. As sourcing today is a truly global affair, careful planning and preparation regarding the implementation of the sourcing decision is crucial to succeed.

To be able to understand the lifecycle of the sourcing decisions, Beulen et al present a basic outsourcing lifecycle model. (Beulen et al. 2011: 206)
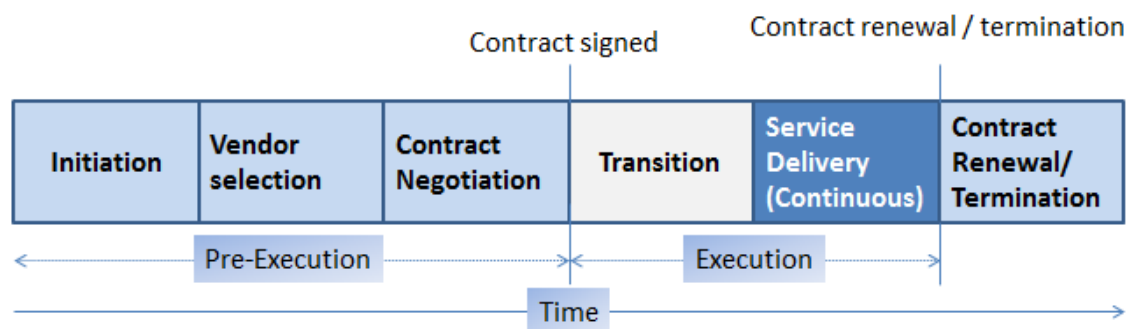
Figure 3. Outsourcing relationship lifecycle (Beulen et al. 2011: 206)

Figure 3 above represents the outsourcing relationship lifecycle along time. The different elements of outsourcing are illustrated as separate sub-phases that belong to the pre-execution, execution and post-execution phases

2.1.1   Insourcing and Outsourcing

When sourcing, the first decision that needs to be made is whether to insource or out-source the production or processes. In insourcing the responsibilities and tasks are carried out in-house within the company while outsourcing means moving the tasks and responsibilities over to another vendor. By one definition outsourcing is "*selectively turning over to a vendor some or all of the IS (Information Systems) functions, ranging from simple data entry to software development and maintenance, data centre operations and full system integration*". (Apte et al. 1997: 289)

According to Kennedy et al. (2009) Outsourcing is *"moving a particular task outside an organization's boundaries".* (Kennedy et al. 2009: 2) In this case the processes are not performed in-house any more but by an outside contractor. In *offshoring* production is either totally or partially transferred to overseas. The transfer is usually primarily done to gain economic advantages for the company. Kennedy et al. (2009) define offshoring as "*moving a function and its associated jobs to another part of the world*". (Kennedy et al. 2009: 3) In *reshoring* offshore production is brought back from overseas to the same continent where it was originally located. Reshoring is also known as backshor-ing or onshoring.

Another closely related way of bringing back production from an offshore location is *nearshoring*. In nearshoring the production that was for example offshored from USA, is brought back from overseas to Canada, Mexico or Central America. (Moser et al. 2011: 4) In general, countries which share a common border can be considered as nearshore countries. This is also known as *nearshore sourcing*. (Kehal et al. 2006: 25)

As the sourcing alternatives are global, the companies also need to consider task by task when to do the tasks themself or and when outsource them. The companies also need to decide whether they outsource or insource the functions totally or selectively so that functions or processes are outsourced only partially.

The definitions originally created by Lacity and Hirschheim (1995) for Total and Selective Sourcing are illustrated and clarified in the table 1 below.

	Terminology	Definition
1	Total Outsourcing	The organization has outsourced at least 80% of their IS budget to third party provider
2	Total Insourcing	Organization has evaluated outsourcing but decided to keep at least 80 % of their IS budget provided by in-house department
3	Selective Sourcing	Organization has decided to use third party vendors for certain IS functions presenting between 20% and 60% of the total IS budget

Table 1.Total and selective sourcing (as cited in Kehal et al. 2006: 21)

Table 1 represents percentages of Information Systems (IS) Budget as a differentiator between total and selective sourcing decisions (as cited in Kehal et al. 2006: 21).

From the table above the different sourcing options between total or selective insourcing are separated based on the level of volume. If the production is fully insourced or outsourced, then it is called total insourcing or total outsourcing. If the production is split between different options, it is called selective sourcing.

2.1.2   Offshoring

There are several ways to do offshoring depending on whether the company wants to keep the work in-house or select an external vendor to provide that production service. Kehal et al (2006) present different offshoring options and their definitions on how off-shoring can be made. O*ffshore-insourcing* or *global-insourcing* means that the company keeps the activities to itself, but they are performed in the subsidiary of the company in a country that's geographically far away. O*ffshore-outsourcing* or *global-outsourcing,* on the other hand, means that the service vendor is an external company that is geographically far away in a different country. (Kehal et al. 2006: 28)

Many companies have taken offshoring as a solution for reducing costs, becoming more efficient and gaining strategic advantage. However, the results have been mixed. The expected financial benefits have not been met, employee resistance has appeared and customers have been dissatisfied with the outcome. The Boston Consulting Group and Gartner predicted in 2005 that 50% of offshoring contracts made between 2001 and 2004 would be failing to meet the expected results (Aron et al. 2005: 136)

To be successful in offshoring the company needs to make a detailed analysis on the risks and whether it is more reasonable to keep the work in-house or to seek for an external partner. One major part of the evaluation is to evaluate which processes would and could be done offshore and especially which are given to a certain carefully select-ed long term external partner. As partner selection is a strategic choice, it also includes a strategic risk. The offshoring partner – if external – should be able to answer to the needs of the buyer company, and the relationship should be on a long term basis. Kennedy et al present their model of the requirements that the selected vendor should be able to fulfil. The model is called "Three C's" with the C's referring to Capabilities, Culture and Commitment. In this model, *Capabilities* defines the technical competenc-es, while *Culture* defines how well the partner fits the buyer company's culture *Commitment* defines the resources that the partner is able to provide for the company. (Kennedy et al. 2009: 123)

2.1.3   Reshoring

It is common that offshoring or outsourcing is expected to bring cost savings through efficiency by taking advantage of the expertise of specialized vendors, and by freeing more company resources to work on strategic work. However, often many of the ex-pected benefits fall short of the expected level, and what's more, new problems caus-ing additional unexpected costs present themselves. A study conducted by Rouse and Corbitt (2003) on a large IT outsourcing project of the Federal Government of Australia revealed many aspects that did not go as planned and ended up causing severe prob-lems. In their key findings, the problems they were able to identify were related to 1) failure of achieving the expected cost savings, 2) following best practices (Seddon 2005) not living up to their promise, 3) the difficulty of reversing largely outsourced functions e.g due to lost competence. (Kehal et al. 2006: 454-457)

Instead of achieving the expected savings up to $AUD 1 billion, equalling 28%, the results seen in Australia were not that good. The actual savings reported were in fact only 12%, and this figure excludes the planning and preparation costs related to e.g. vendor searching and selection. In a wider study done by Rouse (2005) on 1000 large IT organizations, only 7% reported having achieved substantial savings due to IT out-sourcing. (Kehal et al. 2006: 454)

To overcome the challenges related to outsourcing and in some cases to offshoring, reshoring with or without insourcing may be considered as an option. The term reshoring/backshoring/onshoring means bringing back the manufacturing of products to the place where they will be sold or assembled. (Moser 2012) The challenges of reshoring and insourcing are however substantial. One of the key findings in the study by Rouse and Corbitt (2003) was that in practice large scale outsourcing is difficult to reverse.

One of the main problems identified with to reversing the processes back to one's own organization included the difficulty of regaining the competences. Finding suitable and skilled persons would take a great deal of time and effort, and the new workers would require a salary premium due to the company's deteriorated reputation as a reliable and long term employer. Consequently, the costs of delivering the services in-house would be higher than before outsourcing. Actually, according to the study, most of the respondents said that the organizational knowledge that was lost would be impossible to retrieve once it had been lost. As a consequence of the difficulty in retrieving the competences, there was a big risk of business disruption of a long time and in some cases the required changes were not even seen organizationally possible. (Kehal et al. 2006: 456-457)

Yet another problem that was seen was the difficulty of selecting a different vendor when the contract, usually of 3-5 years, came up for renewal. Other vendors were not willing to participate in the competition without extended risk premiums, as all the requirements and related costs were not known. The original vendor was believed to have insider information about the true costs and requirements. And, without any real competition the current vendor was free to charge higher premiums. Based on the fact that the retrieval of the competences was practically impossible, and that there was no or only little choice regarding the service vendor, it was quite evident that the only choice was to continue the contracts with the existing vendor at prices that were at a much higher level than anticipated when the outsourcing was originally planned. (Kehal et al. 2006: 456-457). To identify the potential risks and to be able to prepare for the risks a comprehensive risk analysis is necessary to be made.

2.2 Risk Analysis

A comprehensive risk analysis needs to be done when doing the evaluation and making the decisions related to production and, in particular, whether to do the work by yourself or to offshore. The most common risks can be divided to operational and structural risks.

2.2.1 Operational Risk

Aron et al (2005) identify two possibilities to lower the operational risk i.e. the risk that the processes won't operate smoothly any more after they've been offshored. The first is the ability to codify the work so that anyone who has sufficient knowledge about the industry can perform the described task. The second is related to the ability of measuring the quality of the processes, which basically means that certain suitable ways of measuring the work are developed before offshoring the work is done.

Aron et al (2005) represent a simplified model on how to evaluate operational risk. The model is based on how codifiable the tasks are that are planned to be offshored. If the task is very difficult or impossible to codify, it should not be considered for offshoring and should be done preferably in-house. The extent of codifiability means how well the process can be documented in detail. The codification of the processes can be challenging, if there is a lot of information required that only comes from knowing how the local market functions, deep knowledge about the product and high level of understanding how the client organization works.

Table 2 below illustrates the principle of the risk classification and presents examples of business processes that are typical for each category.

Codifiability of the work	Risk Level	Risk Level
Easy	Moderate risk (opaque process) Insurance underwriting Invoice management Cash flow forecasting	Low risk (transparent process) Transaction processing Telecollection Technical Support
Moderate	High Risk (codifiable process) Equity research Yield analysis, Litigation support	Moderate (codifiable processes) Customer service, Account management
Difficult	Highest Risk (noncodifiable processes) Pricing, working capital management	High Risk (noncodifiable processes) Supply chain coordination, customer data analysis
	Imprecise/subjective **Precision of metrics used to measure process quality**	**Precise/objective**

Table 2. Evaluating operational risk (Aron et al. 2005: 138).

Table 2 shows that the transparent processes are easy to measure, and easy to describe in detail. Thus these processes are relatively easy to outsource outside the company, and the risk of failure is low. *Codifiable* processes are possible to be described in most detail, and they can also be measured. Usually executing these processes requires anyhow a formal and profound knowledge to be able to execute the task. It depends on the process how well the performance can be measured, and if there are no clear measures for process quality there can be high risk for failure. Opaque process means that the process can be codified, but there are no efficient ways to measure the quality of the process. In these cases the risk of failure is moderate. *Noncodifiable* processes are impossible to be described in detail. These can be

processes that undergo a lot of changes and there is constant variation in business events and conditions.

Another key factor related to operational risk is the company's capability to measure the efficiency of the processes. If the efficiency of the internal processes is not known, it is impossible to know what has been gained by offshoring and thus the company cannot know if the provider is executing the process better or worse than their own employees. Often the companies are not measuring their processes or they develop the measurements only when they outsource the processes. It is recommendable that the quality of processes are measured and improved internally for some time before the final decisions of offshoring or outsourcing them. There needs to be measurements like tolerances for errors, requirements for productivity and employee performance which need to be followed up on regularly. (Aron et al. 2005: 138-139)

It is reasonable to expect that at the beginning the service provider does not execute the outsourced processes as efficiently as they were done in-house. The efficiency increases, however, when the service provider moves up on the learning curve, but this may take a long time. Some tasks may require knowledge about local domain that simply cannot be gained in the offshore location. Also, the need for measuring the efficiency needs to be acknowledged. What the company cannot measure, cannot be off-shored in an efficient manner either.

2.2.2   Structural Risk

Structural risk means that the company does not take into account the possible risks related to the behaviour of the service provider. In case the service provider has the main control of the processes it can try to use it for their own advantage. This may lead to situations where the service provider heavily raises the prices for their services or where the quality of the service provided is not at the agreed level and the buyer company has no other options but to accept what is offered. If the company already has lost their own resources and competences it either needs to pay the higher price or start building up again the competence base it may have totally lost. To prevent the power from transferring too much from the buyer to the service provider the buyer company should keep at least the basic level of competences and the key processes in-house. If the cost of switching the existing service provider is high then the risk that the service provider starts to dictate the terms of the agreement increases. For those

processes that are essential for the company's existence, outsourcing may not be advisable at all. The same applies to the processes that include intellectual properties or proprietary processes, as the rivals may try to steal that knowledge.

Structural risks can occur if the service provider stops investing in the capabilities of the employees, which will lead to lower competence levels of the workers. That will eventually show up as a lower than expected quality of the process. The service provider's incentives usually also steer the provider to behave in a way that reduces the buyer's financial benefits from what it was after making the decision to outsource its processes. It is also possible that the service provider puts less effort on the service than was originally agreed. This problem may arise if the monitoring of the process is incomplete or impossible. If the monitoring and supervision is possible for the buyer the risk of failing consequently falls. Without proper means to monitor and measure the work the buyer has no possibility to know how efficiently the service provider is executing the processes compared to when they were executed by the buyer's own employees.

The structural risk can be decreased by splitting the outsourced business between two service providers. Then the buyer has the possibility to transfer the process to the other service provider who already has the needed experience and knowledge. Another important way to protect the buyer's interest is by defining a certain period after contract expiry date when the service needs to be provided with a certain price. This period should be 150% of the time that is needed to build up the competence required for executing the process. (Aron et al. 2005: 140)

Table 3 below illustrates the dependence of risk of failure on the ability of monitoring the process.

Ability to monitor work	Risk level	Risk level
Easy	**HIGH RISK** Equity research. Litigation support. R&D support	**LOW RISK** Transaction processing. Insurance claims processing. Customer service
Difficult	**HIGHEST RISK** Pricing, Product design	**MODERATE RISK** Supply chain coordination. Customer data analysis
	Imprecise/subjective **Precision of metrics used to measure process quality**	**Precise/objective**

Table 3. Evaluating structural risk (Aron et al. 2005: 138).

The Table 3 illustrates how the risk level varies depending on how well the work can be monitored. From the table it is evident that if the monitoring of the process is difficult, the risk of failure in outsourcing is increased.

2.2.3   Organizational Form

Companies need to adapt their organizational structures so that both the operational and structural risks are taken into account when doing offshoring. There are multiple choices to arrange how the work is done, like having captive centres or joint ventures with other companies or outsourcing only limited part of the processes to an external party. Locational choices i.e. onshoring, nearshoring or offshoring can be used to adapt to the operational risks.

When both operational and structural risks are low, then the risk related to offshoring the processes can be considered low as well. If the operational risk gets higher, the processes should not be transferred to overseas, but rather to nearby locations. If the operational and structural risks are moderate, joint ventures or captive centres can be more reasonable options than outsourcing or offshoring. For processes having high

operational or structural risks, outsourcing and offshoring are not reasonable options, but the company should do the work themselves onshore and in-house.

When the company makes the decisions on the organizational structure, it needs to make compromises on the control and quality of the processes. It was found in a two year study (Aron et al. 2005), that an *extended organization* is the most efficient way of offshoring processes. Extended organization means that the buyer and the service provider work closely together at the same premises, so that the work of the service provider can be managed, guided and also monitored efficiently. This way it is better ensured that the desired results and quality level are reached within the expected time limits. In the study it was found that the captive centre produced the best results through the two-year study, but the extended organization was able to continuously improve its results. At the end of the two-year period the extended organization had almost reached the same quality level than the captive centre. As an end result the extended organization was the most cost-efficient way of executing the processes.

Operational risk	Risk level	Risk level	Risk level
High	**Outsource to service provider located nearby (nearshore)** Litigation support	**Outsource to service provider located nearby (nearshore)** Litigation support	**Execute process in house and onshore** Pricing, corporate planning
Moderate	**Offshore and outsource to service provider over time** Insurance claims processing, customer support	**Use extended organization offshore, but monitor closely in real time** Supply chain coordination. bioinformatics	**Set up captive centre offshore** Equity research

Low	Offshore and out-source to service provider Data entry, transaction processing	Use extended organization offshore Telecollection. technical support	Use extended organization offshore, but conduct frequent process audits Customer data analysis. market research analysis
	Low	**Moderate**	**High**
	Structural risk		

Table 4. Choosing the right location and organizational form (Aron et al. 2005: 141).

Table 4 illustrates the practical guidelines what locational and organizational choices the company should make based on the identified operational and structural risks. In the table examples of processes suitable for each category are presented. (Aron et al. 2005) It can be seen from this matrix for example that tasks that are considered having high operational risk and high structural risk should be executed in-house and onshore. On the other hand, tasks that are considered to have low operational risk and low structural risk should be executed can be outsourced and offshored.

2.3   Planning the Transition Phase

In this section the elements related to the planning of outsourcing are explored. First the business reasons and target setting behind sourcing decision are explored. Then the aspects related to transition e.g. risk analysis, location selection and the scope of the work to be transferred are presented.

2.3.1   Goal Setting

There needs to be clear business goals and targets outlining what is wanted when considering the sourcing alternatives for the processes for the service transition to succeed. Kennedy et al (2009) present in their book three different approaches and goals to sourcing, a model originally created by Cohen and Young of the Gartner Group. These approaches aim at *efficiency, enhancement or transformation* in the relationships with the service vendor (Figure 4). These different approaches also represent different level of complexity of the relationships between the buyer and the service pro-

vider, transformation being the most complicated and challenging form of relationship. (Kennedy et al. 2009: 90-96)
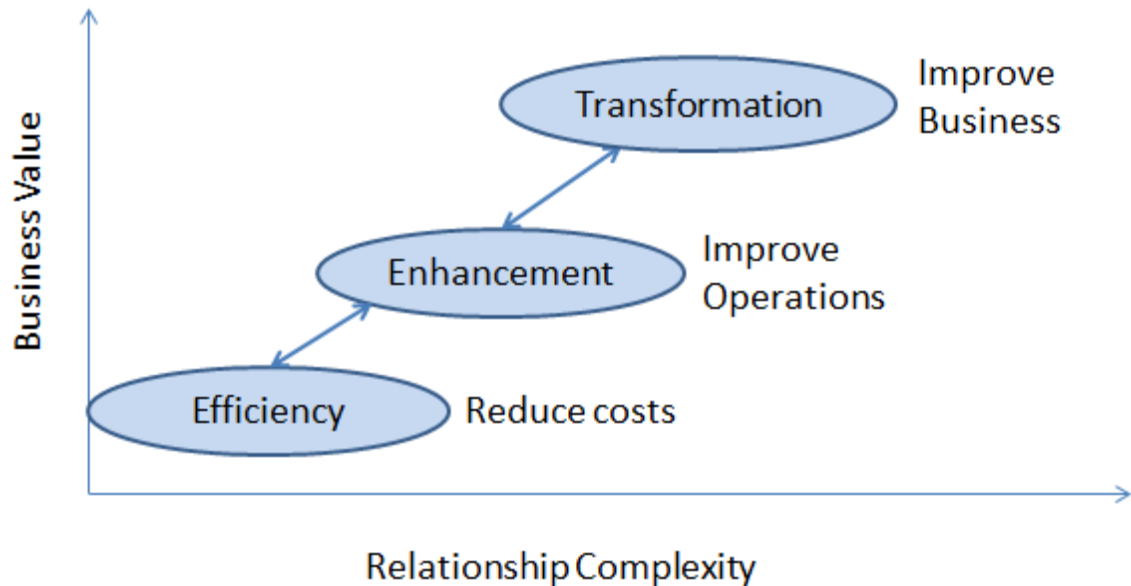
Figure 4. Different approaches to sourcing. (Kennedy et al. 2009: 60)

Efficiency as a primary goal is suitable for processes which are well standardized, defined in detail and predictable. Usually these are not the company's core processes, but still essentially important for the company. Examples of such processes are billing processes, check handling and IT support. The goal of efficiency oriented sourcing is to keep quality, availability and consistency on the same or better level that it has been earlier. The benefit is sought from lower labour costs. The alternatives are to offshore and outsource to another vendor or to do the job internally in an offshore location.

By *enhancement* the primary goal is to enhance how current business processes are executed. The principle is to seek for enhancements by selecting better technology platforms, redesigning current processes, or introducing other improvements to make current processes perform better. The primary focus is not on cost, but process improvement for better outcomes with higher quality and increased availability. A good example of processes fitting to this class is HR processes, which nowadays are quite often outsourced. When trying to enhance the current processes, the relationship between the buyer and the service provider becomes critical. Both parties need to work in close relationship and openly and freely share ideas and thoughts about enhancement possibilities. To succeed the service provider needs to have a clear and thorough un-

derstanding about the processes and about the desired outcomes. It is essential to remember also that the requirements and expectations will change over time and both parties need to have the same level of understanding as processes evolve. A close relationship also creates an environment for innovativeness where both parties can influence the process together which in turn will facilitate gaining mutual benefit.

In contractual perspective the focus needs to be on operational outcomes and improvements. The contract also needs to be formulated so that it is current even when the processes and environment changes. The required improvements need to be included but also the requirement for continuous improvement on top of those that were initially specified.

The third approach on sourcing is *transformation*. This is when the processes need to be totally renewed or new business capabilities are needed. The aim is to reach a rapid, sustainable and remarkable step in enterprise level performance. The idea is to dramatically improve to the competitiveness of the company by creating new business area opportunities with new value and revenue. The aim of this approach is to change the basis of how the organization works. A business transformation sourcing project assumes in the beginning that the specific services cannot be defined in a precise way in the beginning. Instead, the goal is usually set as a relative improvement for example in the productivity within a specified timeframe. In this setup, the baseline needs to be specified and then agreed and understood how the progress is measured.

Transformational sourcing can drive dramatic improvements in the company's business. On the other hand, a failure can steer the whole company into serious problems. Transformational outsourcing represents the most complex form of relationships with the service buyer and the service provider. One good example of this is that contracts need to be continuously renewed and renegotiated. The same applies to governance, which can be very complex. Moreover, the nature of the relationship is long-term, getting close to a form of joint venture where gains and equity are shared between the parties.

2.3.2   Service Transition Phase

Kennedy et al (2009) present the phases that need to be addressed before and during the outsourcing/offshoring process in their book. Before going ahead with the actual

transition of the processes, eight phases need to be covered. These phases are de-scribed below.

The Equaterra Process Decomposition Compass (Figure 5) model helps in *identifying the tasks* that can be outsourced or offshored. In the model there are two parameters defining whether the process can be outsourced or offshored. The first parameter anal-yses whether the task is routine and repetitive and thus efficiency focused. The second one evaluates whether the task requires local physical presence. Based on the nature of the task and the mapping in this model the sourcing mechanism can be determined. Some tasks require local presence and thus cannot be offshored. If the task requires specialized knowledge and needs local presence one option is to seek for a business partner. If the task requires specialized knowledge but local presence is not mandatory, then a centre of expertize can be considered. Offshoring can be considered in pro-cesses that do not need local presence and are highly efficiency driven.
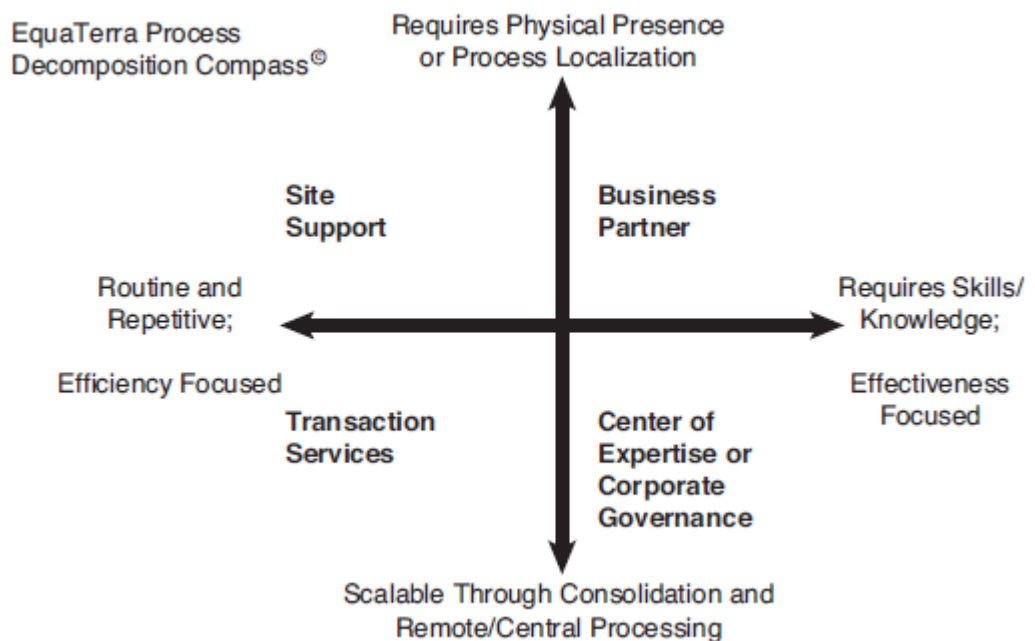
Figure 5. Determining different sourcing options (Kennedy et al. 2009: 105).

Figure 5 illustrates determining different sourcing options using EquaTerra process decomposition model. It represents two primary parameters that need to be considered to identify activities that have high potential for offshoring or outsourcing. First parame-ter on the horizontal axel defines whether the activity is routine and repetitive and be-

cause of that nature *efficiency* focused activities or if they require specialized knowledge and skills and thus are *effectiveness* focused. Second parameter on the vertical axis considers whether the activities from various parts of the organization can be co-located or if they need local processing or requires local presence which would prevent co-location.

Depending on the nature of the task and its mapping on the two dimensions the optimum sourcing mechanism can be determined. For example, if the task is efficiency focused and requires physical presence, *site support* can be considered. If the task requires local presence, and requires specialized knowledge and skills, a *business partner* can be considered. Scalable processes which include routine tasks and are efficiency focused can be outsourced as a *transaction service*, while tasks that require special knowledge but do not require physical presence, can be organized to a *centre of expertise*.

The "outsourceability" presented by Kennedy et al (2009) is illustrated in the Figure 6 below. The activities that locate in the "comfort zone" are the best candidates for offshoring. :
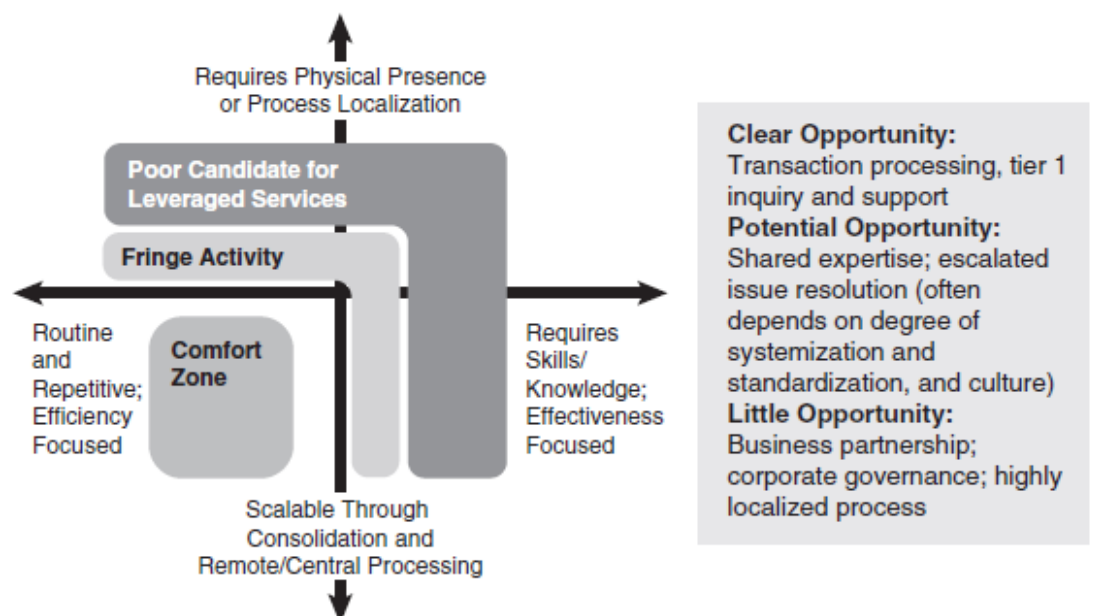
Figure 6. EquaTerra compass (Kennedy et al. 2009: 106).

Figure 6 illustrates the reasoning behind offshoring decisions.

In *mapping of the processes* phase all the activities related to the process are described in detail. This phase creates an overall picture about the related activities and reveals the linkages to other tasks and processes, possible bottlenecks and reporting points. In the mapping phase the components related to the process are identified and described. Logic defines the purpose of the whole process and what the process goals are. Handoffs define the entities that are involved in the process, and how the activities between these entities are transferred. Milestones define what and how the progress is measured. Time presents the time that is needed to perform the activities related to the process. It also defines the lag time between the actions. Cost defines how much it costs to perform each activity. Valued added defines the value of each activity for what it adds to the process. Relationships define how different activities are related to each other and what their interdependence is.

The definitions in the mapping have three levels. Macro level defines only the major actions in the process. Functional level has more details of the activities involved and also information about the value addition of the activities. Task level provides extensive details about how the activities are carried out. The task level description includes all the information a person would need to execute the process. That information can be database structures, technical reports and other technically detailed information.

When a company is planning the outsourcing of its processes, also the IT systems and their compatibility need to be checked by *decoding the relevant technology and infrastructure.* It is not uncommon that there are issues in software compatibility and information security. The enterprise level software needs to be addressed and comparison done against the vendor environment. Also, the capability of own enterprise software needs to be explored to see how it relates to management and governance of outsourcing.

Already in the planning phase it needs to be ensured that both the service buyer and the service vendor have common interests in the outsourcing effort. In practice this means that the progress is being observed continuously, and that both parties are engaged to the common goal by aligned incentives. There are five risk categories that need to be addressed:

Geographic and location risks in the offshoring countries need to be carefully considered in advance. Changes in regulation, exchange rates, cultural differences and political conflicts can bring up unexpected problems in the business environment.

Migration risks can realize when the process is relocated to the new vendor. A common understanding and plans need to be perfectly up to date and communicated to all stakeholders. Also, the vendor may lack the required experience to be able to carry out the process. One possibility is to run the processes in parallel and make the necessary testing until it is verified that everything works as expected. Only then the final cutover covering all the infrastructure and knowledge aspects can be executed.

It is risky to start running the processes in a new location which assesses a *business operations risk.* The service in terms of time, cost and quality can vary from previous level, and customers can notice the difference. In help desk functions the Indian accent may force to move functions back, as has happened to e.g. Lehman Brothers in USA and to Shop Direct in UK in the early 2000's (Kennedy et al. 2009).

There are c*ustomer, employee, and capabilities* risk for company's public image and brand when production is transferred to overseas. If the customer's perception about the service is worse than expected, the brand can be diluted. There may also be employee concern about jobs, and there the communication needs to be open. A change management strategy must be in place so that the people get the correct understanding why work is being transferred. There also needs to be capabilities to take care of the relationships between the service provider and the company to ensure that the processes are executed timely and with acceptable quality.

If the service provider gets full ownership of the process, there is a *risk of holdup* which means that the provider starts to renegotiate the rules of the agreement. If the internal capabilities and competences are ramped down, the risk of holdup increases. The risk can be decreased by setting the long term rules for the relationship as early as possible taking into account the unknown future circumstances as far as possible. The performance of the provider needs to be monitored and performance incentives need to be tied to measurable results.

If the company decides to do offshoring, it needs to *select the location*. If the company decides to outsource, it needs to *select the partner*. If the company wants to offshore and outsource, it would need to do both.

To be successful in partner selection, the assessment needs to be carefully done. In their book, Kennedy et al. represent their "Three Cs" model to cover essential vendor selection criteria. (Kennedy et al. 2009: 123)

Capabilities, the first C, presents the technical, domain and geographical competence setting
Culture includes the values, vision and how these comply with the buyer company's own organization
Commitment represents what resources the service provider brings in the relationship

All of these three factors are important as the company needs to know that sufficient competence level is available. Cultural conflicts need to be solved so that the service provider can act as an integral part of the organization. Commitment, in turn, means that the relationship is sustainable.

For the actual partner selection a list needs to be created from the list of all candidates of potential service providers having the required competences for service delivery. The final candidates are then evaluated based on their technological and industry capabilities and pricing. During the contract negotiation the service level agreement is developed and the incentives tied to the results are formed.

The decision about the s*electing geography* is based on several factors related to for example the educational and cultural background of the country. Country specific regulations on taxation and legal issues need to be carefully addressed. The political factors can cause unexpected instability in the country.

There are some tools available for evaluating country specific attractiveness. One of them is A. T. Kearney's Global Services Location Index, which analyses and ranks the 50 most preferred locations for service delivery. The ranking is based on corporate input, current remote services activities in the country and the government initiatives that support offshoring to the country. The evaluation is done against 39 different measurements on financial attractiveness, work force availability and skills and business environment.

In the *migrating operations* phase the tasks including the related technology, knowledge and capabilities are handed over to external partner or offshore. To secure a smooth transition phase, a common guideline and toolkit are commonly used to ensure that all necessary aspects are taken care of.

Kennedy et al present a toolkit illustrated in Figure 7 below used by Genpact Corporation which is a leading global business process management company. In the toolkit five separate phases are tracked. These phases need to meet the acceptance and decision criteria before the process can move to the next phase. In these "tollgates" of each phase all the related teams meet and decide about whether or not to proceed to the next phase. If all phases are accepted, the process can be finally offshored.
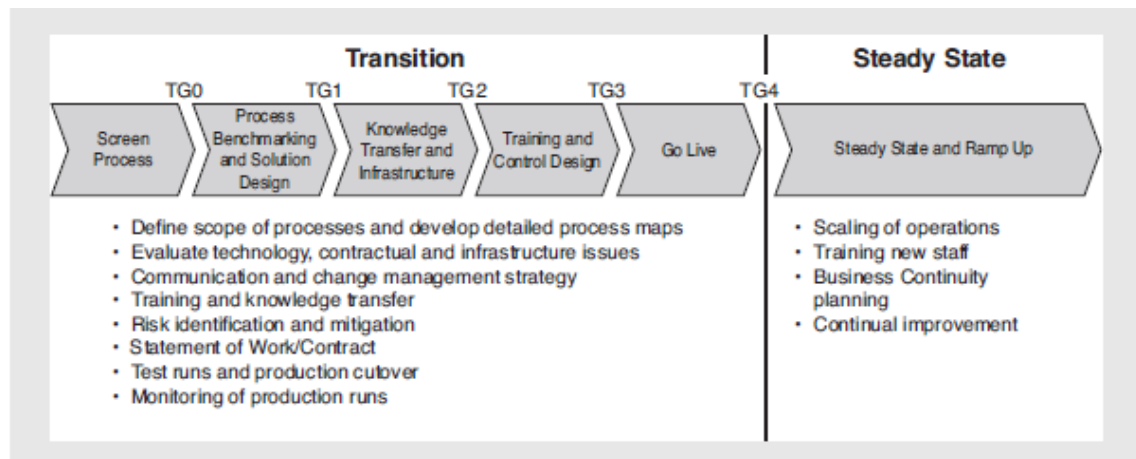
Figure 7. Example of a toolkit for offshoring (Kennedy et al. 2009: 129).

It is important to notice that even if a process is moved to an outsourcing partner or offshored, there are obviously still linkages to other processes that continue to be handled by own organization. This means that maintaining *integration of operations* is still needed after the process is handed over to the partner. Neglecting the continual integration can lead to inefficiency and increased handover costs between the organizations and processes. Also, the transferred process may produce results and information for example about customer behaviour that is needed later by the outsourcing organization. Getting that data can be difficult and expensive, so collecting that data needs to be planned carefully and agreed about in the contracting phase especially in case of multiple vendors.

This section has summarized the eight-step roadmap for successful offshoring as presented by Kennedy et al (2009). When thinking about reshoring, similar phases are also needed to be planned when the company is considering bringing production back.

2.3.3   Managing Service Transition

The theoretical framework of transition performance by Beulen et al. (2011) is illustrat-ed in Figure 8. It is based on the literature research by Beulen et al. and their 25 inter-views within global offshore IT outsourcing engagement along with their professional experience on the outsourcing topic.
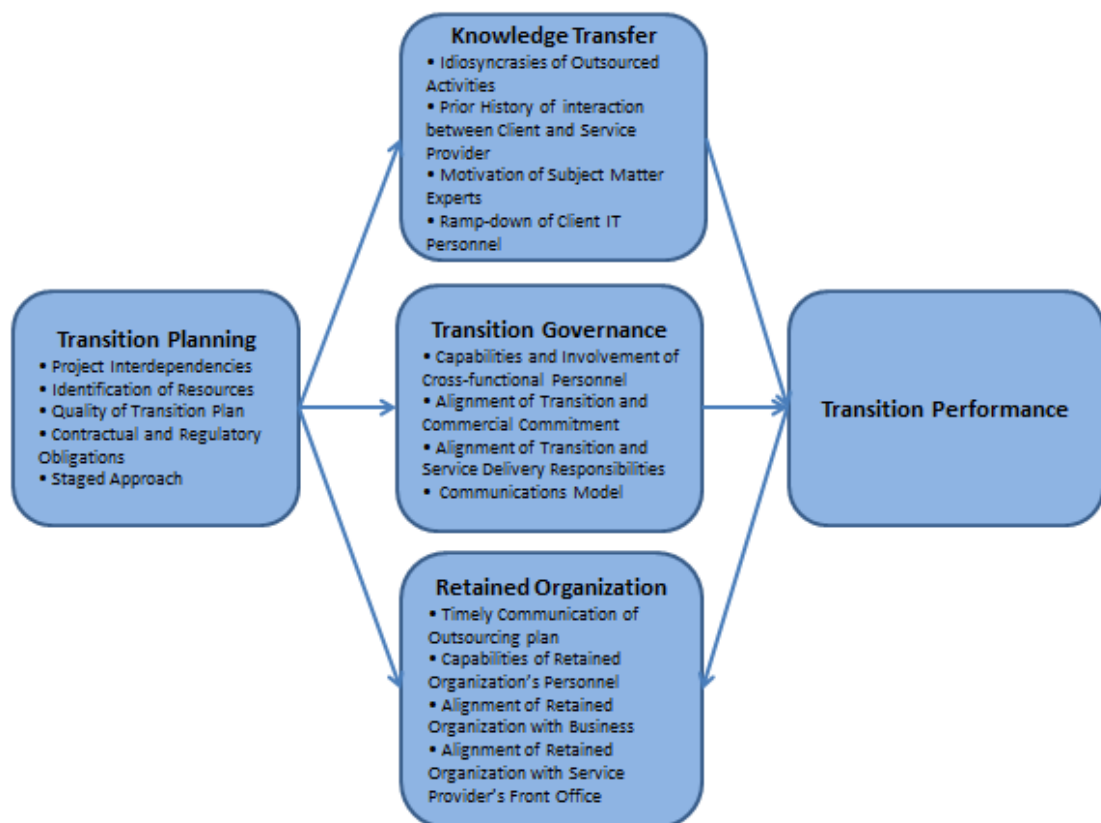
Figure 8. Theoretical framework service transition performance (Beulen et al. 2011: 220).

In Figure 8 above the theoretical framework from the model of service transition per-formance by Beulen et al. (2011) is presented. Their special focus is on four factors, namely *transition planning, knowledge transfer, transition governance, and retained organization.*

Transition planning is done jointly with consultation between the service provider and the client. There are four identified sub-factors: *Project interdependencies* need to be

under consideration otherwise they can have negative impact on the transition. *Identification of resources* means that the capable persons on both the client and the service provider need to be identified before the transition. *Quality of the transition plan* ensures that the smooth transition. The plan includes roles and responsibilities of both parties. *Contractual and regulatory obligations* mean that the possible conflicts with other contracts or obligations that could impact the transition are identified.

In *knowledge transfer* phase the service provider personnel come to the client premises for intensive knowledge transfer sessions. There are four identified sub-factors: *Idiosyncrasies of outsourced activities* relates to the company or product specific processes in the company that differ from industry wide standards. Though the service provider personnel are experts in their area they lack the company specific information about systems and related processes. *Prior history of interaction between client and service provider* relates to any prior experience between the client and the service provider, and influences to the motivation and behavior during competence transfer planning and execution *Motivation of subject matter experts* is crucial for the knowledge transfer success. Their motivation is effected by the feeling of job insecurity or loss of control. However, close collaboration with the subject matter experts is necessary for knowledge transfer sessions to be productive. *Ramp-down of client IT personnel* means reduction of the strength of the client organization. This potentially leads to loss of knowledge to be transferred to the service provider, if done uncontrolled.

Transition governance mechanics such as contracts are essential in alleviating exchange hazards, for example in inter-organizational relationships. Beulen et al (2011) represent four sub factors within transition governance: *Involvement of cross-functional personnel.* In the first few weeks of an outsourcing relationship the cross-functional teams from both sides have a critical role in establishing a holistic perspective for the joint effort. Their responsibilities concern the design, development, maintenance and technical aspects. By a*lignment of transition responsibility and commercial commitment* it is meant that the transition is a one-time effort where the transition manager needs a budgeted number of man-days to be able to implement the transition. The tension within the budgeted time period may create the challenges, and thus influence the transition. *Alignment of transition responsibility and service delivery responsibility* in turn means that when the transition is complete, the engagement moves into the service delivery phase. There needs to be strong cooperation between the transition manager who is responsible for the transition and the service delivery manager who is responsi-

ble for the service delivery. It is essential that the service delivery manager is informed and aligned about the transition responsibilities and the service delivery responsibilities throughout the service transition period.

Establishing and ensuring transition stability requires a capable *retained organization* in the client firm. This phase has four identified sub-factors: *Timely communication of outsourcing plan* means that appropriate and timely communication for the personnel. *Capabilities of the retained organization's personnel* means that the retained organization needs to have the capabilities to handle the processes in post-outsourcing phase. This requires training and occasionally new recruitments. *Alignment of the retained organization with business* requires that the processes are aligned with the retained organization.

In their research, Beulen et al. found that knowledge transfer and transition governance are more critical parts in outsourcing than transition planning and retained organization for transition performance. According to Beulen et al. knowledge transfer and transition governance had a more critical role because of two reasons: the critical challenges that were faced in the scope of these two factors had a higher potential for disrupting transition, and both of these two factors required a significant joint effort from both client and service provider. This made the implementation of knowledge transfer and transition governance challenging for transition. (Beulen et al. 2011: 222)

Figure 9 below present the Black Book Model of Successful Outsourcing as a six phase process. (Brown et al. 2005: 25-26)
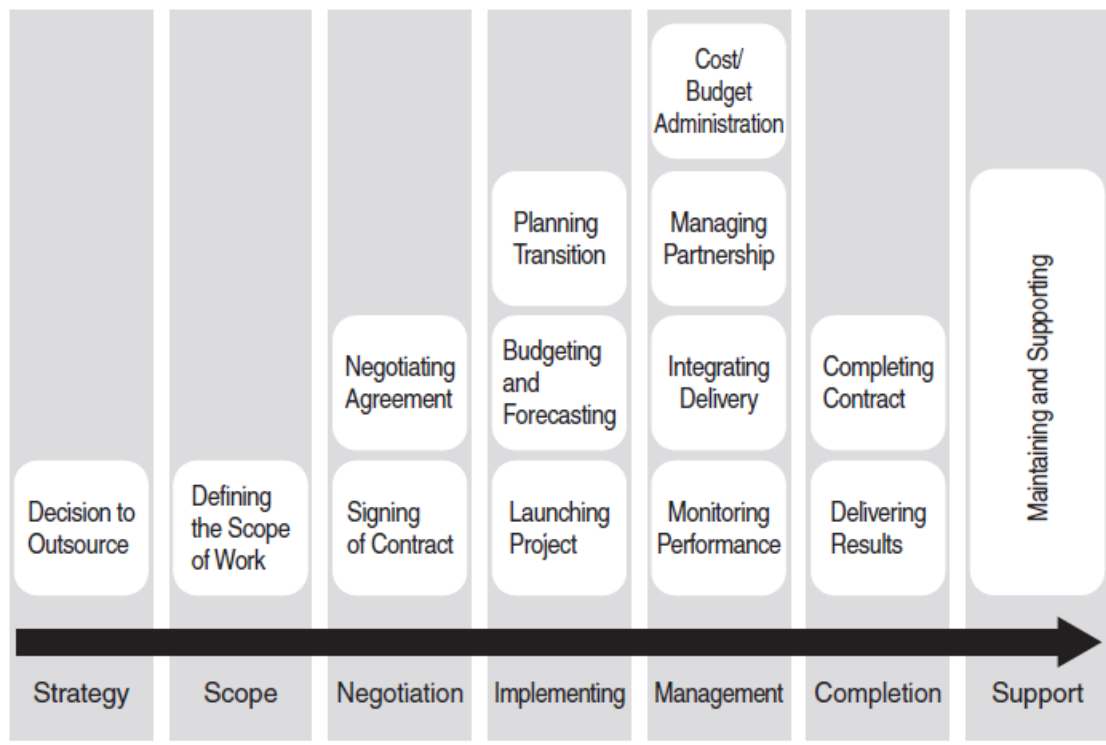
Figure 9. Black Book Model of Successful Outsourcing (Brown et al. 2005: 26).

In the *strategy phase* the objects and the scope of outsourcing are defined. This phase also includes determination whether the outsourcing is feasible at all before making the decision. In the *scope phase* the baselines are established and the service level requirements are specified. The relationships between functions to be outsourced and those to be kept in-house are clarified to have proper interfaces. Also, potential vendors are evaluated and, finally, this phase ends to the selection of the service provider. In *negotiation phase* the negotiations proceed with the selected vendor until the singing of the contract. *Implementation phase* is when the transition from the client to the service provider happens. In *Management phase* includes the relationship management with the service provider, and negotiation and implementation of any changes seen necessary. In *completion or termination phase* the decision of negotiation a new contract with the service provider or termination of the contract with current vendor is done. At this phase there is also a possibility to bring the work back inside the own organization.

2.4   Conceptual Framework for This Study

It can be concluded from the existing literature that succeeding in offshoring is a challenging task. As the Boston Consulting Group and Gartner predicted in 2005, even 50% of offshoring contracts would be failing to meet the expected results (Aron et al. 2005) This indicates that the expectations of offshoring overall have been unrealistic and the complicacy of outsourcing to an offshore location has been underestimated. As revealed by Rouse (2005) on his research of 1000 large IT organizations, only 7% reported having achieved substantial savings due to IT outsourcing. (Kehal et al. 2006: 455) That is quite alarming, as one of the most common reasons to start offshore operation is to achieve cost savings.

To succeed in the sourcing there needs to be made a comprehensive risk analysis to understand the risks related to offshore production. As identified by Aron et al (2005) the risk level needs to be assessed both on operational and on structural level. The risk assessment needs to be done for each task that is under consideration for offshoring. Another risk lies in the partner selection, where e.g. the required competences of the partner need to be carefully verified. What comes to reshoring, the risk in returning the work back to own country may be challenging, if the lost resources are difficult to get back. Also, if the contract with the partner is terminated there is a risk of business disruption if the organization in the how country is not in place.

When the offshoring or reshoring decision is done, special attention needs to be paid on the comprehensive planning. In their model of different approaches to sourcing Kennedy et al (2009) presented how the complexity of the relationship increases depending on how much value is sought for the client company. If the target is to achieve only cost savings by outsourcing simple tasks to the partner, the relationship is not that complex, while if the client wants to transform the business process, then also the complexity of the relationship greatly increases.

In the service transition phase it is essential to measure the results. As mentioned in the structural risks, without proper means to monitor and measure the work the buyer has no possibility to know how efficiently the service provider is executing the processes compared to when they were executed by the buyer's own employees.

Based on the literature above it seems that functional reshoring in the case company needs all the elements except *retained organization* suggested by Beulen et al (2011) in their *theoretical framework service transition performance*. Retained organization is not needed because during the reshoring the work is being transferred from an off-shore partner to another local partner and the organization in the case company remains the same.

Other elements *transition planning, knowledge transfer, transition governance and transition performance* are needed, because the all are critical parts in service transition to a new partner. In the transition planning phase the roles and responsibilities of both parties are defined, which has an effect during the whole service transition project. Knowledge transfer phase is critical because even though the service provider personnel are experts in their area they lack the to some extent company specific information about systems and related processes. Transition governance is needed to ensure the alignment of the responsibilities and to verify the progress of the service transition. These factors altogether make the transition performance, which is measured, for example, by relevant performance and cost measures.

On top of these elements, certain parts namely *making the reshoring decision*, defining the *scope of the work* and *contract negotiation and signing* have been adopted from *Black Book Model of Successful Outsourcing* by Brown et al (2005) as critical parts of the reshoring plan. The reshoring decision includes setting the strategic direction of the organization and assessing the company's own core competences. In the decision phase also the list of capable service provider candidates is developed, and an implementation and governance teams are nominated.

3   Method and Material

This section describes the Case Study research strategy and describes the methodology used in this Thesis. The case study part in this Thesis is based on the methodology by Yin (2003) and Eisenhart (1989). For the qualitative interviews the main reference is Kvale (1996).

The main reason for selecting the case study method as the main research method for this study was the fact that reshoring is occurring now for the first time in the case company and there is no possibility of having iterative rounds for redoing or retuning the reshoring process. Thus the target was to collect and analyse qualitative information from the case company concerning the planning and execution phases. This was done by qualitative interviews that concentrated on finding the relevant factors related to decision making and to the evaluation of the results in the process. Similarly, the target of the interviews was to gain deeper understanding of the planning and execution of the reshoring process.

In his book Yin (2003) describes the relevant situations where different research approaches are applicable. Table 5 illustrates the comparison between Case Study research approach and other research strategies.

Strategy	Form of Research Question	Requires Control Of Behavioral Events	Focuses on Contemporary Events
Experiment	how, why?	Yes	Yes
Survey	who, what, where, how much, how many?	No	Yes

Archival analysis	who, what, where, how much, how many?	No	Yes/No
History	how, why?	No	No
Case study	how, why?	No	Yes

Table 5. Relevant situations for different research strategies (Yin 2003: 5).

The Thesis asks "how" and "why" questions on the reshoring topic. According to Yin (2003) the case study approach is preferred when these "how" and "why" questions are posed, when the researcher has little control over the events and when the focus is on a contemporary phenomenon in a real life context. This type of study is also called explanatory case study.

Case study research can be either a single- or multiple-case study. This Thesis is a single case study where the reshoring case in the case company is in the main focus. In comparison, in a multiple-case study where the term comparative case method is also used, multiple cases are in focus and they are compared in the research.

The interviewees can be divided in three groups. In the first group there were two managers who shared their views and experiences on offshoring. They represented SW maintenance and technical support. The second group represented strategic resourcing and they were responsible for the global resourcing strategy in the case company. The third group represented research and development.

3.1   Case Study Approach

The case study research strategy is the preferred strategy when "how" or "why" questions are posed or when the researcher has little control over the events that are related to the research case and when the focus is on contemporary phenomenon within real life context. (Yin 2003: 1). Another view is that a case study is an intensive analysis and a description of a single unit or system that is bounded by space and time. The topics of the case studies concern individuals, events or groups. Case study research

identifies a topic or questions of interest and defines appropriate units to represent that topic, and defines what is known about the topic based on the information collected from multiple sources. (Hancock et al. 2006: 10-11).

One definition (quote from Schramm 1971) for a case study as presented in Yin's book (2003) is the following: "*The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result*". (Yin 2003: 12)

Based on the definition above, the decision to reshore and the reasoning behind it is the major focus of this case study research.

There exist five main components for research design (Yin 2003: 21): The *study questions* are the first component and define the questions "who", "what", "where", "how" and "why" and provide the most important clues about the most relevant research strategy. For the case study research the questions "how" and "why" are the most relevant. Study *propositions* are the second component and direct the attention to the actual subject that is under study. The propositions tell from where the relevant information and evidence needs to be searched from. *Unit of analysis* is the third component and is related to defining what the actual case is. The unit can be an individual, and event or an entity. The unit can also be a decision, a program, implementation process or an organizational change. Depending on whether there are subunit(s) in the same case study, the study can be *holistic* or *embedded*. In an embedded study there are one or more subunits within the case like a big program that includes a number of funded projects, which would be the embedded units of an embedded case study. In turn, if a case study investigates only the global nature of a program, then a holistic case study approach would be used.(Yin 2003: 42-43) *The logic linking the data to the propositions* and criteria for interpreting the findings is the fourth component and describes the steps in systematic data analysis. On example of such a system is to seek for a pattern as a time-series pattern. *The criteria for interpreting a study's findings* is the fifth component and illustrates how well the data matches the expected pattern.

3.2   Data Collection

The data in this Thesis is collected by *qualitative interviews* within the case company and from case example documents from external companies. The interviews were carried out as semi structured explorative qualitative interviews.

The interviews were made following these seven *methodological stages* starting from the original research idea and continuing towards the final conclusion: 1) thematizing and conceptualizing the topic and research question 2) designing the study to address the research question, 3) conducting the interviews, 4) transcribing the interviews, 5) analyzing the interviews, 6) verification, 7) reporting the results. These stages are presented below in more detail. (Kvale 2003: 88)

In *thematizing* phase the purpose of the research is formulated before the interviews are started. The "why" and "what" questions of the research need to be clarified before the "how" question which is about deciding the method. The interviews can be explorative and hypothesis testing. An explorative interview has little structure and it is open. In an explorative interview the interviewer introduces the topic to be discussed to the interviewee. Interviews that are testing hypothesis are more structured instead, and the same question pattern can be used for e.g. finding differences in the group under investigation. (Kvale 2003: 95)

At the *designing* stage the study design is planned taking into consideration all the seven stages of the research. In this phase the intended knowledge is gathered and the moral implications are explored and taken into account. The interdependence of all of the different stages of the interviews needs to be kept in mind when making the interview design. There are some important factors affecting the interviews that should be kept in mind to succeed. (Kvale 2003: 100): In the *overview* stage the overall picture of the subject needs to be formed before the interviews start.
Another factor is *interdependence.* Due to strong interconnectedness between the different stages in the interview, the decisions about the methods in one stage affect to the other stages. Third factor affecting on the interviews is to *keep the endpoint in sight.* It should be clear in the beginning of the study and also along the study what the scope and the purpose of the study is and what is the expected outcome. By p*ush forward* factor is meant that it is recommended to do the work belonging to the later stages already in the earlier stages as much as possible. The last factor related to interviews is *getting wiser*. The interviewer learns during the interviews and gets new in-

sights to the topic. This helps to get a more information and a deeper understanding from topics discussed in the interviews.

The *interviews* are conducted based on the interview guideline. An interview guide includes the topics to be discussed in a sequential order. In *transcribing* phase the interview material is transferred from speech to a written format for analysis purposes. Transcription is an interpretative process of translating the oral conversation to written text and making it accessible for further analysis. Based on the purpose and topic of the research, the *analysis* method is decided.

There are five main approaches to the analysis of interviews: categorization of meaning, condensation of meaning, structuring of meaning through narratives, interpretation of meaning and ad hoc methods for generating meaning. (Kvale, 2003: 192-204) In *Verifying* stage the generalizability, reliability and validity of the data gathered in the interviews is verified. Reliability defines how consistent the data is, and validity means whether the interview study investigates what was intended to be investigated. The findings of the study and applied method are *reported* according to scientific criteria, and it takes into account the ethical aspects of the investigations.

3.3 Interview Details

The interviews were the primary method for collecting data in this study. Six interviews in three different company functions were conducted in order to form a proper understanding about the offshoring and reshoring phenomenon in the case company. The overview of the interviewees and their background is presented in Table 6.

Interviewee	Date	Position	Interview Theme	Method	Started in the company
Group 1: A	3.10.2012	Technical Support Manager	Offshoring experiences	Face to face, field notes	1994
Group 1: B	10.10.2012	Product Support Process Manager	Offshoring Experiences	Face to face, field notes	1998

Group 2: A	10.12.2012	Strategic re-sourcing/ Productivity Manager	Offshoring and reshoring	Face to face, field notes	1994
Group 2: B	9.2.2013	Strategic Re-sourcing/ Head of Business HR	Offshoring and reshoring	Face to face, field notes	1996
Group 3: A	15.3.2013	R&D	Offshoring and reshoring	Face to face, field notes	1995
Group 3: B	15.3.2013	R&D	Offshoring and reshoring	Face to face, field notes	1997

Table 6. Interviewee information

Group 1 represents the Product Support interface towards the customers. These persons are handling direct customer issues related to the product on a daily basis. Person A is the main interface for customer escalations in the case company. He coordinates the urgent topics between Product Support and R&D. Person B is responsible for Product Support processes on a system level scope (i.e. not product specific), which includes for example supervising and developing metrics for Product Support service quality and response times. These interviews were intent on gaining information about the experiences on how offshore work has succeeded in terms of quality and end customer perception.

Group 2 represents strategic resource planning. Person A is responsible for measuring organizational productivity on Business Unit level. The tasks include resource planning based on the metrics of, for example, productivity and other strategic needs. Person B is the head of strategic resourcing. This unit is responsible for global resourcing in the case company. These interviews are targeted at gaining information about what the main factors affecting the sourcing decisions are.

Group 3 represents the Research and Development department. Person A is responsible for the SW testing management as a SW testing line manager. He is also responsible for the reshoring planning in SW testing part. This includes the resource requirements planning and scheduling of the transferring of SW development and SW testing. Person B is a SW testing manager and responsible for ensuring the quality of the SW

testing. These interviews were aimed to gain an understanding on how the offshore work has succeeded in achieving the targets in terms of productivity, quality and timing.

3.4   Reliability and Validity

The *reliability* of the study is connected to the consistency of the research findings. Reliability is a matter that concerns several stages as interviewing, transcribing, and analyzing. Reliability can be increased by using different data sources and data collection tools as well as collecting data at different points of time. Reliability has multiple dimensions such as trustworthiness which means that the results are credible, and authenticity which means that all relevant parties related to the subject are included in the study. Reliability tests if the same conclusions and findings can be reached by using the same procedures if another researcher made the same study for the same case again (Yin 2003: 37).

Construct validity is a test which aims to help in ensuring that the results of the study are valid. The test has three case study tactics to help in establishing correct operational measures for the subjects under study as illustrated in the Table 7 below (Yin 2003: 34):

Test	Case Study Tactic	Phase of Research
Construct Validity	Use multiple sources of evidence	Data collection
Construct Validity	Establish chain of evidence	Data collection
Construct Validity	Have key informants review draft case study report	Composition

Table 7. Construct validity test (Yin 2003: 34).

The first tactic of construct validity is fulfilled by triangulation i.e. using multiple sources of evidence of data and theory. There were at least two interviewees in each group which ensured that the events or facts were supported by more than one source of evidence on certain field of experience. By data triangulation, the potential problems related to *construct validity* test can be addressed because multiple sources of evidence can provide multiple measures of the same phenomenon.(Yin 2003: 99)

The second tactic to increase validity in the construct validity phase is establishing the chain of evidence. It means that there is a path from the original research question leading to the final conclusions. The principle in chain of evidence is that an external observer, that is the reader of the study, is able to follow the derivation of any evidence from initial research question to the case study conclusions. The external observer should be able to trace the steps in either direction i.e. from research question to the final conclusions or vice versa. Figure 10 below illustrates maintaining chain of evidence (Yin 2003: 105-106).

Case Study Report

↕

Case Study Database

↕

Citations to Specific Evidentiary Sources
In the Case Study Database

↕

Case Stury Protocol
(linking questions to protocol topics

↕

Case Study Questions
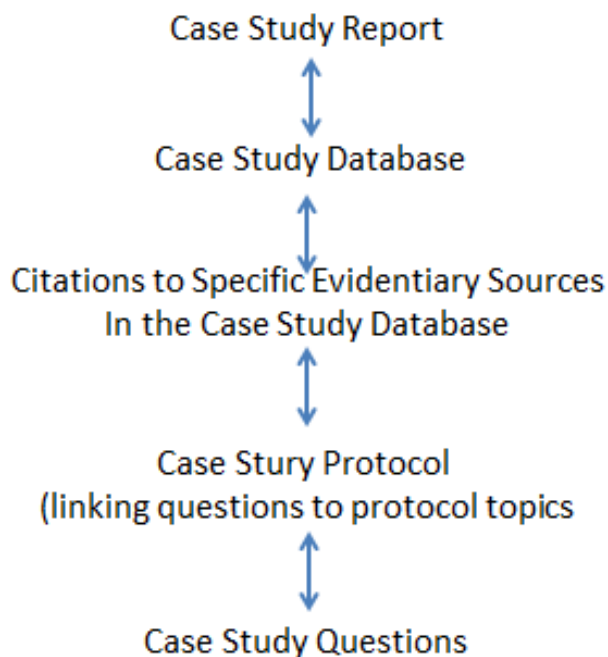
Figure 10. Maintaining a chain of evidence (Yin 2003: 106).

The third procedure to construct a validity test is having key informants review the draft case study report to verify the overall quality of the study. In this third procedure the draft version of the study is reviewed not only by peers of the researcher but also by the participants and the informants in the case. The comments may be so relevant that they actually are wanted to be added to the study. In this phase the informants can even disagree with the conclusions and interpretations, but they should not disagree with the facts of the case. If disagreements appear, then the study is not finished and more evidence needs to be collected. More information can be often found based on the review round, as new ideas reveal. The corrections that are made by the partici-

pants enhances the accuracy of the study and hence increases the construct validity of the study. (Yin 2003: 159)

The validity issue concerns all seven stages of research interviews. At the *thematizing* stage the soundness and theoretical presuppositions and the theoretical back grounding form the validity. At the *designing* stage the validity relies on the adequacy of the design and the methods that are used for the subject and the purpose of the research study. At the *interviewing* stage the validity defines whether the interviewee is able to deliver new and trustworthy information. In the *transcribing* stage the validity is ensured by ensuring that the information is transferred from oral to written format in as close language as possible as it originally was. The validity in the *analyzing* stage is ensured by setting the questions of the interview so that valid information is possible to be gained. In the *validating* stage the validity means that the chosen validation methods are appropriate for the type of the study and that the target group for the interviews is selected so that it knows the topic. In the *reporting* stage the validity defines whether the report is having a valid summarization of the main findings of the study. (Kvale, 1996: 237)

Validity can be divided into *external* and *internal* validity. The internal questions of validity are literally internal to the sample under study, whereas the external questions of validity are applied to a wider population which is not studied. (Gerring 2006: 43) Internal validity is only a concern for causal or explanatory case studies. Internal validity logic is not applicable to exploratory or descriptive studies which are not targeting to make causal claims. (Yin 2003:36)

The validity of this study is based on having interviews from several different functions within the company. External data was used for grounding the understanding common of industry problem factors related to both offshoring and reshoring.

4   Findings

This section represents the key findings based on the interviews in the case company. In the interviews the challenges faced during the offshore production as well as the aspects related to reshoring planning were discussed. The offshore production included the SW production as well as performing the different test phases until the product is considered ready.

4.1   Interviews

The aim of the interviews was to explore the reasons behind the original decisions to offshore, and then to recognize the challenges that have been faced during the offshore production. These challenges need to be deeply understood because they affected heavily the decision to reshore the production.

To ground a comprehensive understanding six interviews with the case company employees were carried out about the offshoring experiences from last 10-15 years. These people represented different areas of expertise from technical support, strategic resourcing and research and development. The variety of the interviewees gave a chance to get a broad picture how the offshoring is seen in the company and what are the reasons why re reshoring is now considered as a realistic option.

The interviewees presented their views on what the challenges in the offshore production have been and they then went on present their proposals about what can be done to ensure success in sourcing decisions related to offshoring or reshoring.

4.1.1   Reasoning Behind Original Offshore Decisions

The interviewees were asked what kinds of aspects were considered when making the offshoring decision and what the relevant factors were that lead to the final offshore decision.

Many of the interviewees emphasized the importance of the need to be close to the customer and the local major market. It was seen also as a credibility factor that the company had a local office serving the main customers, who often require local presence especially from the technical support functions. From the technical support point of view there was also a clear need to be close to the R&D that was offshored already some time earlier. Being close to R&D function ensured efficient communication from R&D towards the customer interface so that the problems and the development needs could be efficiently communicated to R&D. It is notable that local people communicate more efficiently and fluently with local customers and understand better the local needs and conditions. This helps the whole business in providing the customers correct products and services. Interviewee 1:A mentioned:

> There was an increasing need to be close to our R&D partner and also close to our big market in India so we decided to expand our organization in India. And how we started it was that in mid-2005 we provided in-house technical support. Management had decided to have a new team in India and asked me to implement a team of 6-10 headcount in India. (Interviewee 1:A)

During the interviews it became clear that probably the most important driver for starting offshore production was the cost of labor. There was huge price pressure in the whole telecom industry in the early 2000's due to stabilized market growth which forced all industry players to seek cost efficiency in all functions. Furthermore, the developing countries offered remarkable economic benefits like special economy zones for the companies if they established local presence by bringing R&D or production plants to the country. Also the permanent or temporary tax reliefs brought significant savings for the companies. Taking these cost factors into consideration it was remarkably cheaper in terms of labor costs to do the work in offshore countries, even if more resources were hired compared to the amount that there used to be working in Finland. According to interviewee 1:A the situation is changing fast:

> The speed that salaries are increasing in India is 10-fold compared to Finland. Low cost thinking is very soon ruined by because those teams are having quite similar salaries as we have in Finland. You have to have more solid reasons for offshoring than pure cost. Those reasons are for

example being close to customer and being close to R&D. India. (Interviewee 1:A)

According to the resourcing experts in the company there was a need to establish a Global R&D network which works on all time zones. This ensured that there was always expert level R&D support available for urgent issues in practically any time of the day. It was also acknowledged that there was lack of competent and specialized worker capacity in Finland which forced the company to extend R&D work to other countries. At the time of the sourcing evaluation there was a growing need especially for Internet Protocol (IP) competences. The availability of talented and competent work force was recognized as another key factor affecting the offshore decision. There was also an identified need for evolution in the company and within the whole industry by means of seeking new ways on how and where research, development and production work can be done most efficiently. Interviewee 2:B mentioned:

> In the first phase (1998-2000) the industry growth rate was very high, and there were great difficulties in finding resources. There was soon also a need to think strategically where the production is reasonable to be done, and where the needed competence can be found. Certain competences, IP-competences as an example, simply did not exist in Finland. Also, after the UMTS license auctions in Europe the operators were suffering from financial difficulties which caused pressures on prices, and there was an urgent need to reduce costs. India. (Interviewee 2:B)

4.1.2   Challenges Revealed During the Interviews

Now that the situation has changed and the company is seriously considering reshoring the production of one of its SW products, it is very important to have a deep insight to the problems and challenges that have been faced during the offshoring activities within the company during the last 5 to 10 years. The interviewees presented the challenges from their personal perspective.

There were numerous challenges related to offshoring recognized by the interviewees. The offshoring challenges were discussed for example from the resource planning, measuring the performance and overall cost efficiency points of view. They are explained in more detail in the following sections.

In global telecom business there is a clear customer requirement that technical support needs to be available in their own location and time zone for major customers. It means that there needs to be technical support and R&D functions located in different time zones serving the needs of the customers in that time zone. It is also often emphasized that technical support needs to be where R&D is located. Having global presence also helps in work balancing to different parts of organizations that are located around the world. A major challenge presents itself in leading virtual teams, where the management very seldom is in direct contact with the local teams. It is difficult to supervise the work and performance from another country, which weakens the control over work efficiency and work quality. Interviewee 1:A commented his views about the challenges in leading virtual teams:

> First of all, we are talking about remote sites in different time zone and different culture. Due to time zone difference it was a big challenge to organize meetings that would fit to both parties, and of course cultural differences. Finnish culture is very punctual for example to be in meetings, whereas Indian culture punctuality is not so clear. We used to have country specific policies about for example overtime compensation, or when talking about tools, laptops and cell phones were not in use in India, but a desk top PC and desk phone. You need to have mobile tools in technical support but that was not the case in India in the beginning. India. (Interviewee 1:A)

There is a major difference between managing offshore insourcing and managing offshore outsourcing. The management of offshore outsourcing is very complex due to the additional borders between the companies and due to differences in corporate culture and in management practices. When the work is outsourced, the partner company can make the work the way it wants and where it wants, and this decreases the transparency of the work and also the possibilities to monitor how the work is done. In offshore outsourcing the production processes, the efficiency of the work and the way of working are more difficult to measure and control. Also, the company may lose the grip and understanding from the real work and thus starts to lose its own competences as well as the possibility and ability to maintain and develop the work and processes further.

The interviewees saw the cultural differences as a major problem in offshore produc-
tion. Punctuality in working times, meetings and keeping to the agreed schedules can
be significantly can vary significantly from the western expectations, for the worse. The
way of working e.g. when it comes to taking care of one's responsibilities was seen as
causing problems. There are country specific policies on worker tools like PC and cell
phone that have an effect on how the work can be done. Due to these cultural differ-
ences there is a need for extensive communication to form an awareness of country
specific special conditions as well as getting understanding about how work is done in
the offshore country. Many interviewees indicated that communication was not suffi-
cient and the partner did not tell about the problems openly and early enough. These
issues caused unexpected delays in production and too big variation in the production
quality. Due to bad quality of testing the number of faults found by customers in-
creased. It was also noticed that all the agreed processes were not followed. One ex-
ample of that was that the failures in the testing phase were not correctly reported
which caused delays in correcting these faults. According to one interviewee responsi-
bilities were not always clear, which caused that certain tasks were not carried out
thoroughly or in the expected manner. The interviews also revealed that the partner
often gave unrealistic promises about the schedules for the production. This often
caused delays in achieving the milestones when the product should have been ready
for the next phase in R&D or ready for the customer. The outcome of this was the inef-
ficient use of the case company's resources and also potential penalties to be paid for
the customer. Another issue pointed out in the interviews was unrealistic work load
estimations. As the price of labor was agreed already in the initial agreements, it was
revealed that the work hour amount for doing a certain task was multiple compared to
the amount that it should have been based on the work load experiences when the
work was done in-house. This heavily decreased the estimated cost savings, when the
amount of paid hours for the partner increased significantly. Interviewees 3:A and 3:B
expressed their concern about the quality of the testing made by the partner:

> If the partner is given a target to do certain testing task, they will surely
> get it done in the agreed time. The problem is that the results are not reli-
> able. The test cases are executed, but the outcome of the test case is not
> reported promptly. Our company reviews carefully the test plans, and the
> partner is responsible for executing the actual tests. India. (Interviewees
> 3:A and 3:B)

One major factor affecting the offshore production is infrastructure. In India, for example, the daily power outages that keep repeating disturb the work and can cause damage for the work and testing equipment. According to one interviewee the daily commuting is time consuming and unreliable, and can be dangerous. It is also common that during the rainy season water may flood and cause damage to the roads and other infrastructure. It is difficult to prevent or prepare for such events especially if local conditions are not well known.

According to one interviewee measuring the real benefits of offshoring is a very complex task. Even though the wages are lower in the offshore country, productivity is usually also significantly lower there which is compensated by the lower wage. It is even more difficult to estimate or calculate the cost of lower quality of the products which causes increased costs related to testing, fault correction or lost material. A big additional cost is the penalties that the company needs to pay in case the product does not fulfill the agreed standards for service level or if the product is late. The lack of control over the partner may also prevent seeing in real time where the production is actually going and what problems exist. Three of the interviewees pointed out that the expectations from offshoring have been unrealistic. It has been assumed that after the initial cut over phase the partner should have the capability to perform the work in a similar manner as it was done originally in-house. However, the cumulative competence level has not reached the desired level and thus the estimated productivity and quality levels have not been reached either. The improvement in competence level has not reached the target level despite several years of offshore production. A major factor for this is the higher than expected attrition of the work force which causes problems with competence not accumulating in the projected manner.

The product and process quality problems were recognized by three of the interviewees. The quality issues were detected in the initial and later test phases of the products as well as in the final products. The testing results were seen as unreliable and there was a need for double work and additional testing by the company's own R&D resources to verify if the quality of the product is sufficient and at an acceptable level. This effort caused unpredictable extra costs.

To be able to estimate the productivity the company measures productivity per geographical sites. Despite this, as one of the interviewees noted, there is great difficulty to

measure the real benefits of offshoring. There are indirect costs that are difficult to measure or estimate if for example there is a need to do unplanned additional product testing in other R&D sites or if extra warranty or penalty payments realize due to variation in product quality.

Three of the interviewees presented their concern about the unexpectedly high overall cost. The quality problems and excessive delays were causing unplanned extra costs. The cost of non-quality products and costs due to lost material were raised as major factors increasing costs. Three interviewees were concerned about the productivity differences between western and offshore workers. This was indicated for example by major variation in the work load estimation for a certain task. Another factor recognized by the interviewees that significantly effected productivity was the high attrition that prevented the cumulative competence level from growing. One interviewee noted that the cumulative competence level could be lifted higher by decreasing the attrition of the workers by making the company and the jobs more attractive. This could be made for example by offering opportunities for professional and personal development but also with financial benefits. Another factor mentioned by three interviewees was the lack of industry specific knowledge in the offshore location. This caused increase of non-productive work time due to lack of competence as competent work force was not sufficiently available. Interviewee 3:A shared his concern about the lack of control over the partner.:

> Concerning the work estimates the partner may give multiple times bigger work load estimation compared to our own estimate about how much work certain tasks requires. The partner's resources cannot be fully verified by our company, but the resource estimates seem exaggerated. By this the work hour cost can be kept low while the total cost is high. India. (Interviewee 3:A)

According to one interviewee there needs to be a clear strategy for offshoring which takes into account all relevant aspects, not only cost. Those include for example the effects of offshoring on the organizational structure of the company as well as identifying and managing the required competences within the organization. Another interviewee pointed out the importance of critical selection of non-core functions to be offshored. The same person also pointed out the challenge of lifting up the productivity of the high cost work in the value chain, so that the high cost work can be justified against the low cost work. According to the same interviewee in offshore partner selection it is

essential to analyze if the partner is able to deliver the product or not. This includes analyzing the partner competences on the specific industry as well as the partner's capability to provide sufficient resources for the production flexibly.

Interviewee 2:B shared his opinion about the complexity of offshoring and outsourcing:

> The complexity increases when outsourcing is added to the offshoring equation. When the work is offshored and also outsourced, the possibility of success is quite limited, when talking about R&D work, i.e. the core work. Offshoring with outsourcing is better fits to maintenance type of work, which can be called non-core work. India. (Interviewee 2:B)

One interviewee brought forth his concern about the sufficiency of planning in connection with the offshoring. According to the interviewee the transition phase had not been planned well enough, for example, from the competence transfer point of view. Also, there has been insufficient planning and supervision of the production environment transfer to the partner in the transition phase. This has caused unexpected delays in production and caused costly rearrangements and extra work in the case company until the production environment was properly in place. Two of the interviewees indicated that there was also a need for supervising how the partner used the production environment. According to them the partner was not paying attention to repairing the existing environment if the equipment had gone faulty, but the partner started to use another piece of R&D equipment instead. This lead to major inefficiency in R&D environment usage and caused substantial extra costs due to additional laboratory investments.

Two of the interviewees emphasized the negative impact of the wage inflation in the offshore countries. Due to this the cost benefit factor is eroding fast. There is currently an increasing trend of transferring work from low cost countries like China and India to so called ultra-low cost countries like Bangladesh and Vietnam. From the reshoring point of view, if the cost benefits have disappeared due to wage inflation, and if the ultra-cost location cannot be considered as an option for production due to risks related to it, then the reshoring alternative may be the solution to keep the cost of production at a competitive level.

4.1.3   Enhancement Proposals

During the interviews the interviewees were asked to represent their enhancement proposals on how the success of offshoring production could be ensured. On the one hand this information increases the understanding of what aspects need to be investigated before making an offshoring decision. On the other hand this information would help in succeeding when the offshore production is already ongoing. Further, these aspects give additional information about the critical points related to offshoring, thus helping to understand what can be achieved by considering reshoring the production back to mainland. The interviewees presented their proposals on how the challenges of offshore production could be solved and how the offshore production could succeed better.

One interviewee who talked about his experiences of in-house offshoring, pointed out in his enhancement proposals that the case company needs to be kept attractive, so that the workers want to stay within it. This can be done by showing a career path as an opportunity for growth and development. It was also pointed out that there needs to be a companywide policy for a unified baseline for salaries so that there would not be competition among the workers between the different organizations in the company.

To enhance the preparation and planning phase of offshoring or reshoring one interviewee said that there should be active sharing of experiences between organizations about the critical problems that have been faced earlier. Another aspect mentioned by this interviewee to ensure success is to utilize industry best practices of the industry and thus take advantage also from other companies' past experiences. Two interviewees emphasized the comprehensive and detailed planning of allocated resources. The required competences need to be also well known and identified and in place when the transition phase begins. The same two interviewees also pointed out the importance of the R&D environment which has to be ready and audited and tested before the transition can begin. Special attention needs to be paid to the project schedules and resource planning so that they are realistic. The expectations about how fast results can be expected needs to be synchronized with the competence level of the offshore site employees. Overall, there needs to be awareness and understanding of other than cost factors that have a major effect on the success and efficiency of the offshoring operation. Two interviewees mentioned that the reliability and credibility of the partner has to be verified already in the planning phase. Interviewee 3:A shared his opinion about

how the problems experienced during service transition could have been prevented and what actions need to be done in coming service transitions.:

> The company should have sent already in the beginning a representative onsite for each competence area that was offshored. That would have helped to react faster to the problems and make corrective actions. The problem was then that the existing issues were not openly reported to the company, so we could not react to them and as a consequence additional delays and other problems were experienced. In the coming reshoring this is changed. Each competence area has its own responsible person to see that all problems are properly reported. India. (Interviewee 3:A)

When the offshoring has begun, according to one interviewee, there needs to be close follow up on progress. This helps detecting when more competence transfer and training needs to be given. The interviewee also asked to pay attention to careful tracking of the progress, as well as performing audits of project management. This is needed to ensure that the agreed processes are properly followed. The interviewee also emphasized the importance of proactive actions from home base to prevent potential problems. It was also noticed that continuous competence and knowledge sharing is required from the case company to be sure that the information flows between the case company and the partner. According to one interviewee an important way of competence transfer is "showing by doing" so that it is better guaranteed that the partner really understands how the work is supposed to be done. Three interviewees mentioned that the local presence by dedicated persons from the case company is essential for succeeding in outsourcing in any case. Local presence is also a prerequisite for successful introduction phase and for ensuring that there is a common understanding about the agreed processes. Regular audits need to be performed on measuring the performance, competence level and work quality. It was also mentioned by one interviewee that you should not trust words but you need to see the results to be sure that the work is done as it should be done.

One interviewee mentioned that there need to be clear responsibilities for the partner and there need to be responsible persons nominated for each responsibility area. The interviewee also pointed out the need for more efficient communication, which has to be regular and systematic so that if problems arise they can be handled timely. The

same interviewee also brought up the importance of communication concerning sharing the information about internal changes in the case company to partner side.

4.2   Benchmarks and Analysis of American Reshoring Cases

In the manufacturing business, reshoring to the United States has been accelerating as seen in recent decisions made by e.g. Apple, General Electric, Caterpillar and even Chinese Lenovo. There are several common factors for these decisions as presented below in the example of DSM Corporation (Welsh H., 2013):

1. **Cheap and abundant natural gas**. Currently the price of natural gas is only one third ($3,25 per thousand cubic feet) of the price in Europe (10-11$ per thousand cubic feet) and about one fifth of the price in Asia ($15 per thousand cubic feet).

2. **Innovation**. The R&D spending in the U.S. represents 31% of the total global outlay. Having production close to R&D provides synergies for the companies.

3. **Rule of law.** The U.S. offers better protection for intellectual property rights than the Asian countries.

4. **Human capital.** In the year 2000 the wages were almost 22 times higher in the U.S. than in China, but in the year 2015 the difference will be less than 4 times. By the year 2015 it is believed that the labor cost factor is not determining the location of manufacturing operations. This will be largely due to faster gains in productivity and lower worker attrition in the U.S.

5. **De-complexity**. Western companies continuously struggle with the time zone and cultural differences, inadequate infrastructure, business ethics issues, quality, reliability and traceability concerns, and threats to brand equity. These factors make the management of offshore functions difficult and complex to manage.

6. **Public policy and abundance**. In the United States the government and president Barack Obama have set policy initiatives to establish technology centers to strengthen the positive move of production back.

7. **Credit, currency and the coming wave of mergers and acquisitions**. The depreciation of the U.S. dollar against the Chinese renminbi has been continuing on a yearly 4% pace. This tendency has bolstered further U.S. manufacturing and exports. High equity prices are bringing back the confidence for the consumers thus strengthening the consumer demand. As corporations have

sufficient financing available with reasonable borrowing costs the U.S. corporations are expected to have a role as a center in acquisitions and mergers. Royal DSM Corporation, for example, has doubled its U.S. operations in terms of sales, sites and employees.

Another company example from the United States is Oorja Fuel Cells that had severe quality problems with their production overseas. The production was originally transferred offshore because of attractive cost benefits, but it turned out later on that the production quality was not sufficient causing extra rectification and warranty costs. Because of these problems they decided to bring the production back to the U.S. They were able to recover the increased cost by redesigning the products and eventually were able to reduce costs by 55-60%. (Selko A. 2013)

The retail giant Wal-Mart has announced that it will source $50 Billion worth of products in the U.S. within the next 10 years. According to the company, more people are looking for products that are made in the United States. The origin of the products has become more important for the consumers, and they are willing to pay more if the product is made in the U.S. (St John 2013)

4.3   Summary of Findings

Based on the findings of the interviews it is clear that there are a lot of uncertainties and challenges related to offshore production. Many of these setbacks or challenges did not exist when the production was done in-house or by a local partner close to the case company. Most of the challenges described in the previous sections are directly related to the offshoring production so there is a need to analyze if the reshoring of the production would help tackle the problems and what the price of bringing the production back would be. This section discusses the benefits that could be achieved by reshoring.

4.3.1   Competence Level Aspect

One of the most important challenges in offshore production has been lifting the level of industry specific competence. In offshore countries the attrition is significantly higher than in western countries and that has prevented the building up of a sufficient compe-

tence base. The attrition factor has been at about the same level since the offshore production started.

By reshoring the production back it can be expected that the attrition level would decrease and thus help lifting up the competence level which is essential for achieving the required high quality of the production. If the production is brought back, the competence transfer from and within the R&D functions would be simpler and obviously more efficient, as well.

4.3.2   Quality Aspect

The second major challenge identified in the interviews was the lower than expected quality of the products. This problem is directly in relation with the high attrition and insufficient competency level. It was also identified that there have been problems in the testing of the products, and according to the interviews the test results have not been reliable. This is another sign of insufficient competence level, which as a consequence causes additional testing by the case company which, in turn, causes additional costs.

By reshoring the production the quality and reliability of product testing is estimated to be increased which would consequently increase the overall quality of the products and decrease the number of faults found after the product has been delivered to the customer. Also, control of the work is likely to be more easily arranged in a nearby location which in part ensures that the expected high quality level in production is reached. The control of the work need to be done by regular audits, which will be easier to arrange if the production is close to the main R&D sites.

4.3.3   Productivity Aspect

The third challenge related to offshoring is productivity. According to the information from the interviews the work load estimations can be multiple compared to the work load estimations for the same task done within own R&D organization. Again, a major contributor for this is attrition which prevents the competence level from accumulating in the partner side. This in turn tends to keep the productivity on a lower level than it would be if the work was done in-house.

The productivity was estimated to be on sufficient level in relation to the paid price at the time when offshoring was started. However, the wage inflation and the less than expected productivity increase have changed the setup. While the wages have increased at 15-20% yearly pace in the offshore countries, the wages have been stable in western countries increasing yearly by 1-3%. As the productivity in the offshore countries has not increased at the same pace as the wages, the relative benefits from offshoring have been decreasing. Moreover, the productivity in western countries has increased faster than the wage level, which further increases the attractiveness of bringing the work back.

By reshoring the production productivity is expected to return at least at the level where it was before offshoring started. The reshoring is expected to enable more efficient production with decreased need for work force and enable reaching better results in achieving product milestones.

4.3.4   Cost Aspect

The fourth major challenge of offshoring has been the calculation of the total costs of offshoring. The overall cost is difficult to calculate as the costs are indirect. The high attrition causes high extra costs due to non-productive time. Further costs which are even more difficult to calculate are the costs related to low quality. Quality related problems like SW or HW faults can cause significant indirect costs due to extensive fault investigations, and additional testing efforts made by the case company to verify the product quality is in acceptable level. There are also potential extra costs in the form of penalties due to delays or due to critical faults found by the customers.

By reshoring these quality related problems are expected to be decreased, and thus the indirect costs related to offshoring production are expected to be lower with reshoring production. While the wage levels have been growing at a significant pace in offshore countries, the wage inflation in western countries is expected to remain low. Further savings can be expected to be achieved from more efficient usage of R&D laboratory environments.

5 Building a Reshoring Plan

This section concentrates on building up a reshoring plan, where the most relevant aspects are taken into account in the planning and execution phases of work transition. This is to ensure that the targets that are set for reshoring can be achieved. The most relevant aspects concerning the case company were identified by interviewing the case company employees who have relevant experience of the offshoring production and who have been involved in the planning of the coming reshoring of the production. The actual reshoring in the case company is taking place during 2013.

5.1 Initial Reshoring Plan

In the initial reshoring plan the most critical factors that may have an effect on the success of reshoring are considered. In this case study the work will be transferred from an offshore outsourcing partner to another outsourcing partner in the main land. A major part of the work under transition will be made with a new partner company so the initial partner selection is a critical part of the reshoring planning.

The proposed reshoring plan is formulated based on the theoretical framework and on the findings from the interviews. It includes elements from Beulen et al. (2011: 207) and from Brown et.al (2005: 26). The initial reshoring plan in Figure 11 below illustrates the five phases from the initial reshoring decision to the actual production phase and performance monitoring. These phases are *reshoring decision and partner selection and transition planning, contract negotiation and signing, knowledge transfer, transition governance* and *transition performance monitoring.*
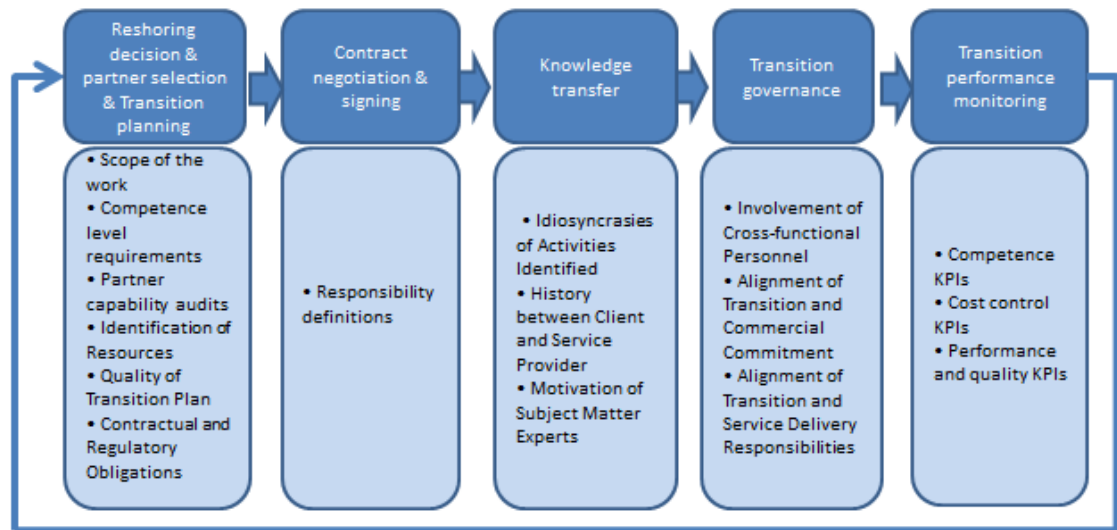
Figure 11. Initial reshoring plan.

The first two phases in the initial reshoring plan apply the elements from *The Black Book Model of Outsourcing* (Brown et al. 2005: 26). The three last phases apply the elements from *theoretical framework of transition performance* (Beulen 2011: 207). The main findings from the interviews i.e. *competence level, quality, productivity (performance)* and *cost control* are integrated to the applicable phases.

To develop the reshoring plan to a more detailed level, this study suggests that the reshoring plan should include a number of essential elements mentioned in the right hand column of the Table 8. :

Phase	Elements to be included in the phase
1. Reshoring decision and partner selection and transition planning	• Scope of the work defined • Competence level requirements agreed • Partner capability audits made concerning resources, competencies, R&D environment • Identification of Resources decided • Quality of Transition Plan secured by reviewing by planning and governance team • Contractual and Regulatory Obligations explored • Business owner making reshoring decision and partner selection

2. Contract negotiation and signing	• Responsibility definitions for both parties documented and agreed • Negotiation strategy about costs, number of resources, KPIs concerning efficiency and quality
3. Knowledge transfer	• Idiosyncrasies of Activities Identified and described in detail • Prior history between Client and Service Provider affecting on the amount of needed of capability and knowledge transfer • Motivation of subject matter expert secured by introducing rewards and incentives • Ramp-down of client personnel defined if necessary
4. Transition governance	• Involve cross-functional personnel to provide holistic perspective on service transition • Alignment of transition responsibility and commercial commitment to balance the amount of service provider resources needed in transition and the price paid for the transition phase work done by the service provider • Alignment of transition responsibility and service delivery responsibility to help prioritizing the service transition phase success
5. Transition performance monitoring	• Define competence KPIs, e.g. on certain technology certificates • Determine cost control KPIs e.g. achieving certain cost targets • Decide on performance and quality KPIs e.g. for certain fault levels in production

Table 8. Reshoring decision and partner selection and transition planning.

In the following the transition phases are described in detail.

In the first phase of *reshoring decision and partner selection and transition planning* the scope of the work i.e. what part of work can be transferred needs to be defined.
The work is typically divided to core and non-core work. Transferring non-core work is less risky than transferring core functions. For the partner selection part, competence

level requirements need to be clearly defined. The client company knows what competencies the partner must have in place or how that competence can be gained. The potential partners need to be evaluated by partner capability audits so that their competence level and capabilities can be properly assessed. At the initial phase the resources need to be defined and identified. To be able to manage complex projects requires that specialized and capable resources are identified and available from both client and service provider side.

A thoroughly prepared transition plan agreed by both client and service provider is a prerequisite for a smooth transition. The transition plan describes the sub-stages within the transition period as well as the roles and responsibilities of both firms, and defines the transition deliverables. Already in the transition planning phase it needs to be considered if there are any potential conflicts with other Contractual and Regulatory Obligations. If such conflicts exist, they need to be cleared out, because detecting any conflicts at later stages can severely impact transition and the entire relationship with the partner.

The second phase of transition concerns contract negotiation and signing. In this phase the responsibilities and roles of both client and service providers are defined. When the roles and responsibilities are agreed by both parties the contract is signed by both parties.

The third phase of transition concerns knowledge transfer. Knowledge transfer represents one of the most critical activities during the service transition period in outsourcing. Idiosyncrasies of activities identified means that the company or product specific processes in the company that differ from industry wide standards are identified and documented. Though the service provider personnel are experts in their area they lack the company specific information about systems and related processes. History between client and service provider relates to any prior experience between the client and the service provider, and influences to the motivation and behavior during competence transfer planning and execution.

Motivation of subject matter experts concerns the motivation of the subject matter experts which is crucial for the knowledge transfer success. Their motivation is effected by the feeling of job insecurity or loss of control. However, close collaboration with the subject matter experts is necessary for knowledge transfer sessions to be efficient and

productive. Ramp-down of client personnel relates to a fact that an outsourcing typically means reduction of the strength of the client organization. This potentially leads to loss of knowledge to be transferred to the service provider, if done uncontrolled.

In the case company there is no need to reduce the current organization, because the change concerns selecting a new outsourcing partner to replace the old one. The organization of the case company needs to do the knowledge transfer to the new partner.

Transition governance is the fourth phase of transition. Governance mechanics such as contracts are essential in preventing exchange hazards, for example in inter-organizational relationships. In the first few weeks of an outsourcing relationship the cross-functional teams from both sides have a critical role in establishing a holistic perspective for the joint effort. Their responsibilities concern the design, development, maintenance and technical aspects. The transition is a one-time effort where the transition manager needs a budgeted number of man-days to be able to implement the transition. The tension within the budgeted time period may create challenges, and thus influence the transition. Transition responsibility and commercial commitment define the price and the resources that the service provider invests to the transition phase.

When the transition is complete, the engagement moves into the service delivery phase. By alignment of transition responsibility and service delivery responsibility it is meant that there needs to be strong cooperation between the transition manager who is responsible for the transition and the service delivery manager who is responsible for the service delivery. It is essential that the service delivery manager is informed and aligned about the transition responsibilities and the service delivery responsibilities throughout the service transition period.

The fifth phase of transition concerns *performance monitoring*. There needs to be proper *Competence KPIs* to measure how the partner competency level accumulates along time. To be successful in reshoring the work to an external partner, it must be ensured and measured that the competencies and capabilities of the partner are developed and maintained at a sufficient level. The *cost control KPIs* measure the cost efficiency of the production by partner. These KPIs need to include the metrics of the cost of the work done by the partner. The KPIs also need to measure the indirect costs caused by the extra work required to manage faults in case the quality has not been good enough. *Performance and quality KPIs* measure the productivity and the produc-

tion quality of the partner. The performance KPIs measure the productivity of the partner, having measures for the ability of delivering the targeted results and keeping to the planned schedules of the projects. The quality KPIs measure e.g. the number of faults found after the product has been delivered to the customer.

5.2 Review of the Initial Reshoring Plan

The interviewees were requested to evaluate the initial reshoring plan and give their comments and recommendations to improve the initial reshoring plan. In this section those comments are reviewed. The interviewees gave their view on initial reshoring plan partially in a face to face meeting (1:A, 1:B) , phone conversation (2:A) and in a net meeting (3:B). There were several improvement ideas proposed for each phase of the reshoring plan during the review.

Overall the study was commented by interviewee 2:A:

> There is a good approach in the study towards the reshoring research subject, and overall nothing specific to criticize. What could be more clarified in the study is to show even in more detail how reshoring differs from other sourcing options. (Interviewee 2:A)

Interviewee 1:B emphasized the importance of identifying and nominating the business owner who is responsible for the reshoring decision and partner selection. This is to ensure that there is a key person who is well aware of requirements which need to be fulfilled before the reshoring decision can be made and who also knows the competence and other requirements towards the partner. This person is also responsible of proper follow up of the actual service transition phase. Interviewee 1:B said also, that the person who defines the scope of the work to be transferred needs to have sufficient level of technological and organizational competence. Having the needed competences would ensure that the relevant interdependencies of the transferred work and other work remaining in the case company are taken into account in the planning phase in a proper manner. These interdependencies include, for example, IT-systems or communication towards other partners.

For the first phase r*eshoring decision and partner selection and transition planning* interviewee 1:A said that in the partner capability audits resources, competencies and

R&D environment are essential parts that need to be included in the audit. Other important factors in the partner selection are that the candidates need to be benchmarked and decide what the final decisive factor is. Also, according to interviewee 1:A the partner company size needs to be large enough to ensure that the partner is financially stable and capable of delivering the agreed service. The partners should also be able to show earlier references of delivering similar projects.

Concerning the first phase r*eshoring decision and partner selection and transition planning* interviewee 1:B commented that the transition planning part should actually go on also through the phases *reshoring decision and partner selection and transition planning, contract negotiation and signing* and *knowledge transfer.* This is because the transition planning needs to adapt to the changes that may occur during the contract negotiation when the responsibilities of each party are agreed. Also, during the knowledge transfer phase, for example, additional competence gaps may be identified which would require additional resources from the case company involve in competence transfer. Interviewee 1:B also said that it is essential to have well prepared IT transfer plan included in the transition plan. Interviewee 1:B commented:

> The initial reshoring plan looks good, but I would suggest one change to be made in the structure. The transition planning should start already when reshoring decision is being considered and it should continue through the contract negotiation and signing phase, because the requirements can change while the contract is being negotiated. The transition planning needs to continue also through the knowledge transfer phase because new unplanned requirements for special competences can reveal which require additional planning from the case company on how much case company's own resources are needed to be used. India. (Interviewee 1:B)

Interviewee 3:B shared his view of the study and the reshoring plan, which supported the idea of having the *transition planning* phase to continue in parallel with the three first phases:

> This is a very enlightening study, as it gives a broad overall picture of the whole reshoring process. This kind of reshoring plan is what we need to have when preparing for such a big effort as reshoring. From the reshor-

ing plan I can see many elements which are relevant and need to be kept in mind. What I suggest to the initial plan is to have the transition planning continuing from the beginning to the later phases until the knowledge transfer is done. Based on my recent experience not much of what we originally planned 6 months ago has remained the same. For example, there have been changes in the R&D environment requirements, schedules and competence requirements to name a few most important factors. India. (Interviewee 3:A)

For the second phase, *contract negotiation and signing,* interviewee 1:B mentioned, that the negotiation strategy should be added. According to the interviewee the negotiation strategy has an effect to the actual outcome of the contract. The negotiation strategy can, for example, emphasize primarily the cost that is paid for the service or what is the amount of resources that are dedicated to deliver the service. There can be also requirements for the level of quality in form of target for maximum amount of faults or efficiency of the service, for example, in form of how well the partner is able to stick to the agreed schedules.

For the fourth phase, *Transition Governance,* interviewee 1:B emphasized that the co-operation and efficient communication between the case company and the service provider are essential elements. It was also mentioned by 1:B that the transition governance should continue also through the last phase performance monitoring so that the possible problems related to performance can be handled in an efficient manner and immediately as they are identified.

For the fifth phase, *transition performance monitoring,* interviewee 1:B added that it should be defined in the reshoring plan, who is responsible for defining the competence KPIs and how further competence development is ensured. According to interviewee 1:B the responsibility of defining cost KPIs, for example budgeted hours vs. actual hours, should also be defined as well as defining what costs are measured and included in these KPIs. Interviewee 1:B also emphasized that it needs to be defined what corrective actions will follow if the targets for the cost and competence KPIs are not reached.

5.3   Final Reshoring Plan

The final reshoring plan was developed based on the collected improvement proposals from the interviewees. The relevant improvement proposals were discussed with the interviewees and based on the analysis of the feedback from the interviewees the reshoring plan was changed from the relevant parts.
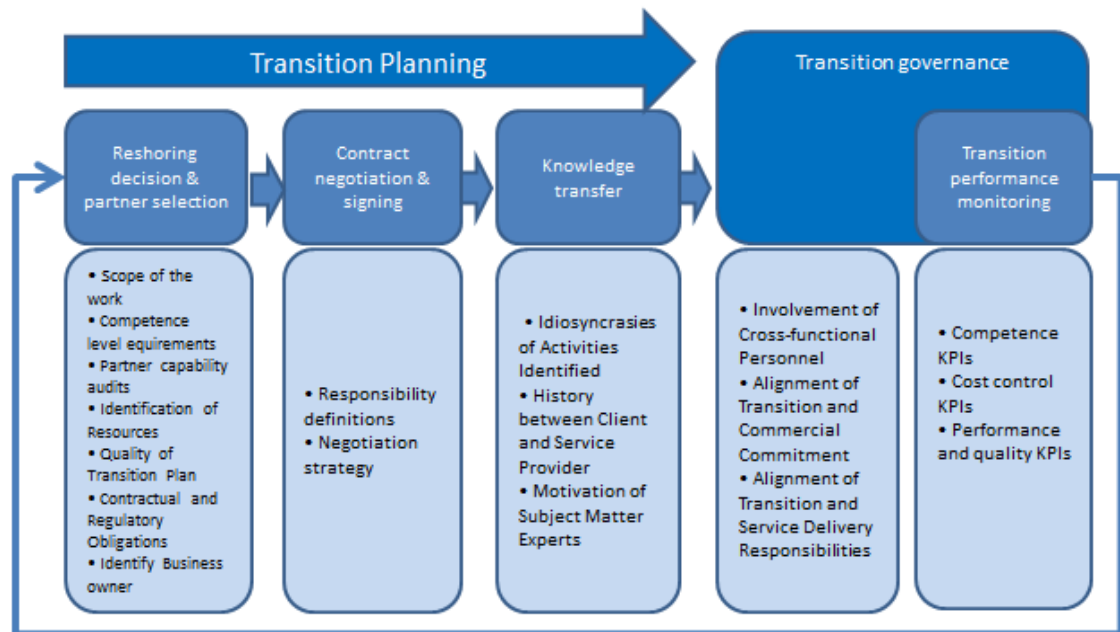

Figure 12. Final plan for reshoring.

Based on the feedback and improvement ideas the transition planning phase is separated and in the final reshoring plan it continues in parallel with phases *Reshoring decision and partner selection, contract negotiation and signing* and *knowledge transfer.* This change is needed to ensure that the required changes to, for example, resourcing, IT-systems or schedules can be managed and taken into account in the planning and execution of the later phases. In the transition planning phase the KPIs to be used in competence development, performance and quality monitoring have to be defined.

Another major change for the final reshoring plan was to include *transition governance* to continue in parallel with the transition *performance monitoring* phase. The reason for the change is to involve management in the follow up of the performance and to ensure that efficient corrective actions can take place immediately if performance is not at a satisfactory level.

One additional change was to include identifying a business owner to the *reshoring decision and partner selection* phase. This change ensures that there is a designated person who is in charge of the reshoring project. Another small change was made to the second phase *contract negotiation and signing*, where the negotiation strategy was added. This change was deemed necessary because the negotiation strategy can differ depending on what factors related to the contract are considered to be the most critical. Such factors can be, for example, the amount of cost, level of production quality or number of dedicated resources.

6   Discussion and Conclusions

The final section of this study summarizes the Thesis and its results. First the research objective and the process of this study are reviewed. Secondly, the reliability and validity of the study are evaluated. Finally, the managerial and practical implications and recommendations for future actions are provided.

6.1   Summary

The research objective of this study was to develop a reshoring plan for the case company to help taking into consideration the different factors related to reshoring and service transition. This target has been approached by exploring the existing knowledge on offshoring and reshoring, and by collecting company internal data by interviewing the key persons in the relevant areas at the case company. Additional information on the topic of reshoring was gained by exploring case examples of external companies that have done reshoring earlier.

To achieve the research objective the following research process was used. For the study, the existing literature on offshoring, outsourcing, reshoring and service transition was explored. After formulating a comprehensive view on the topic, qualitative semi-structured interviews were conducted with six interviewees representing three different groups: Technical Support staff, Strategic Resourcing department and Research and Development persons.

The case study method was applied as the research method for the study. The reason for selecting case study method is that the reshoring is now happening for the first time in the company, and there is no possibility to make iterative rounds for testing the proposed reshoring plan. The main findings related to the challenges identified by the interviewees based on their experiences about offshoring were: 1) competence level of the partner did not reach satisfactory level 2) quality of the work done by the offshore partner was not sufficient 3) lower than expected productivity of the offshore partner and 4) higher than expected total costs of the offshore production.

Based on the literature research and the findings form the interviews an initial reshoring plan was generated. The initial reshoring plan was then reviewed by the interviewees and they were requested to represent their improvement proposals on the initial reshor-

ing plan. The improvement proposals were evaluated and the relevant parts of the proposals were integrated to the final reshoring plan.

6.2   Managerial Implications

In the case company, reshoring is done by transferring the work from an offshore outsourcing partner to a local outsourcing partner, and the managerial implications here are represented from that perspective. To ensure the success of the reshoring operation the company needs to pay special attention to the planning phase when sourcing decisions are made to enable a smooth service transition. It is worthwhile to mention that the key problem areas identified in the findings of this study need to be covered in the reshoring plans so that availability of sufficient and capable resources required for tackling those challenges are ensured well in advance.

For the **competence level aspect**, the case company needs to ensure that sufficient and capable dedicated resources are in place to take care of the knowledge transfer to the new partner in a systematic and planned way. Based on the existing research, knowledge transfer is identified as one of the most critical factors in service transition success along with transition governance. There needs to be selected and designated persons responsible for each relevant competence area in the case company who are responsible for competence transfer to the partner in their own area of expertise. The knowledge transfer actions need to be planned and scheduled and they need to have a proper follow up practice in place.

Concerning **quality aspec**t, based on the interview results, the SW product quality and SW testing quality were seen as having severe problems in the offshore production. The management needs to offer opportunities to develop the required R&D competences of the new partner and to provide the tools and governance for ensuring that the quality of the SW production and SW testing is at a high level and that the SW testing results are reliable. In practice, this means that efficient and reliable SW quality indicators need to be developed and used to measure the SW production quality and the SW testing quality. Also, the case company employees with the required expertise need to be present at the service provider until the quality of the SW production and SW testing are in a satisfactory level.

On the ***productivity aspect***, it is evident that there exists a tight connection with the competence aspect. When the competence level of the service provider constantly increases, productivity will also increase. So, from the management point of view, focusing on developing the competences of the partner also inevitably increases productivity. Another important factor for influencing productivity is to control attrition so that the competences will remain within the organization. To be able to monitor productivity proper performance indicators for measuring productivity are required to be developed and taken into use.

Finally, the ***cost aspect*** requires that the total cost of the production is calculated as well as possible. There are numerous indirect costs related to especially offshore production which need to be taken into account in the comparison of different sourcing alternatives. Based on the existing knowledge, it is typical that the actual total cost of offshore production exceeds the original estimations by 25% or more. In the case company the total cost of offshore production has increased due to quality problems which have required more than expected efforts from the case company in terms of additional testing and extra work on troubleshooting and managing faults found by customers. Also, in the case company the need for competence transfer has been bigger than expected due to high attrition which causes extra costs.

6.3   Practical Implications

The current state analysis in the case company has shown that the expected benefits were not gained through offshoring production and the targets were not achieved. These targets were related to competence level, quality, productivity and total cost of the production. When engaging in the reshoring operation, special attention needs to be paid to transition planning to ensure that each of these areas reach at least the level at which they used to be prior to originally starting the offshoring production.

To enable proper governance for the reshoring project this study suggests that the roles and responsibilities of the persons involved are clearly defined in the beginning of the project. The key person in the reshoring effort is the business owner of the project. The business owner has the control of the project from the beginning until the transition has been successfully completed. The persons designated for planning the transition in their own responsibility area need to be involved in the project already from the start and they need to be able to contribute on the planning continuously during the project.

There should also be regular meetings where the current issues are communicated to the whole project team. Once the transition is complete it is of utmost importance that a pre-nominated governance team is in place in order to for it continue monitoring the project based on the predefined performance, quality and cost measures.

The final reshoring plan presented in this Thesis can be used as a tool and guidance in the present reshoring effort. Based on the experiences in the current reshoring project the reshoring plan can be developed even further. To be able to take full advantage of this study all the elements and phases represented in the final reshoring plan should be thoroughly considered and planned for each upcoming reshoring project.

6.4   Reliability and Validity in this Study

This Thesis intended to create a reshoring plan for the case company. The outcome of this study has shown that this study has succeeded in providing a reshoring plan for the company. In that sense the validity requirement in this study has been met.

The validity of the study has been secured by interviewing case company experts from different areas of expertise in technical support, strategic resourcing and research and development. Because of their background, the interviewees have different perspectives on offshoring and reshoring. The construct validity test has been performed by having the key informants review the draft study report, by evaluating their feedback and, when necessary, adding the relevant information to the study. These corrections made by the participants enhance the accuracy and increase the construct validity of the study. The internal validity is secured by pattern matching by comparing the responses of the interviewees. Validity is improved by adding selected quotes of the interviewees to emphasize some of the key findings in the interviews. From the reliability point of view, similar results and findings could be reached by using the same methods. If the study was carried out in another point of time, the results could vary e.g. because of differences in economic conditions. Also, another person with a different background could emphasize the findings in a different way.

To secure the reliability in this study different data sources have been used. Data has been triangulated so that it includes company internal interviews, benchmarks for reshoring cases and expert interviews for validating the initial proposal. They represent different data collection tools, which increases reliability. The theory of offshoring is

applied to reshoring which strengthens the reliability by applying an established theory from one area to another. Field notes and tape recordings have been used for the interviews to maintain the reliability of data.

While there were several key problem areas identified concerning offshore production, and several enhancement proposals are represented, the study has certain constraints concerning the study's reliability and validity. First, the number of the interviews was limited, thus some problem area may have been left uncovered or has had too little attention. However, the interviewees represented the most relevant and important areas of expertise on offshoring and reshoring activities in the case company. Secondly, the implementation of the reshoring plan could not be tested due to the fact that the reshoring operation in the case company had only reached the starting phase. The testing of the reshoring plan would obviously have resulted in additional improvement proposals for the proposed reshoring plan.

The researcher has worked in the company for eleven years and for fifteen years in the telecom industry overall. Naturally, the long work history in the case company and in the telecom industry has impacted how the researcher has interpreted experiences around, but on the other hand it can be seen as a benefit because the long experience helps to understand the relevant aspects related to the telecom industry.

The study result shows that the offshoring is a complicated and complex way of sourcing, especially when it is combined with outsourcing. The study provides a thorough view on the offshoring and reshoring topics and also presents a proposal for turning a reshoring plan into a success. This study and its result can be used as a tool and guidance on how to plan, prepare and perform the actual reshoring project in an efficient and successful manner.

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Appendix 1.

Baseline Questions of Semi Structured Interview

	Topic(s) of the interview	QUESTIONS *<Your questions to the informant(s)>*	FIELD NOTES *<Your brief accounts of their answers>*
1	**Starting point: describe experiences in view of the topic problem**	*What is your role in the company?* *How have you been involved in the offshoring activities in the company?*	
2	**Current state: Identify strengths/problems**	*Why the work was initially transferred to offshore location?* *How were the targets that were set for the offshoring achieved?* *In which areas of offshoring did the company fail and what are the reasons for the failure?*	
3	**Current state vs target state**	*What are the measures and criteria that are used to support the decision making?* *What things do you think that need to be taken into account when preparing the reshoring planning?*	
3	**Analysis**	*How the reshoring has succeeded so far?* *How the successful reshoring is going to be ensured?*	
4	**Best practice**	*Is there an existing best prac-*	

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		tice for offshoring / reshoring that is followed in the company?	
		How is that utilized?	
		What reshoring reference cases do you have from Finland or from abroad, and how do you utilize them?	
5	**Development needs**	*What improvement needs do you recognize based on your experience of offshoring?*	
		What kinds of improvement proposals do you have to ensure success *a) in offshoring* *b) in reshoring?*	

Appendix 2.

Interview summary data.

Original reasons/reasoning for starting off-shore activities	1:A	1:B	2:A	2:B	3:A	3:B
Business need for being close to biggest customers	X					
Customer requirement, where the product can be made, and where not				X		
Top management strategic decision; what is reasonable to be done in certain location	X	X	X	X		
Lack of work force capacity in Finland, urgent need to expand production	X		X	X		
Lack of certain type of competence in Finland (IP); competence gap				X		
Product support needs to be close to R&D	X					
Local people communicate more efficiently and fluently with local customers thus help developing business	X					
Credibility in front of the local customers by having local presence. Selection of credible partner & being credible in front of customer.	X			X		
Cost savings			X	X	X	X
Core competences were kept in-house, non-core activities were considered suitable to be offshored			X			
Worker productivity was considered to be sufficient (in relation to the paid price)			X			
Price pressures, because customers were suffering after high growth phase stabilized; urgency for cost efficiency				X		
Need for renewal and technological and organizational development, need for evolution				X		
Global network of efficient R&D sites as wanted outcome				X		

Community specific enablers, governmental support for transferring the work (e.g. tax reliefs, special economy zones)				X	X	X

Offshoring Challenges Revealed During Inter-views	1:A	1:B	2:A	2:B	3:A	3:B
Time zone differences in working time	X					
Cultural differences and understanding local conditions and language	X	X	X			
Punctuality different at work in offshore location (compared to Western countries)	X					
Country specific policies related to salary, tools and benefits vary in offshore location	X					
Control of work in offshore location	X				X	X
Need for onsite presence in offshore location	X	X			X	X
Being close to market required	X					
Being close to R&D required	X					
Infrastructure (electricity, commuting) in offshore location is time consuming and unreliable	X					
Work balancing between different sites in different locations requires presence in different time zones	X					
Clarity of strategy. Due to major uncertainties related to offshore activities, it needs to be very clear why offshore work is needed, cost factor is not enough.	X					
High attrition (5% in western countries vs. 20% in low cost countries)	X	X	X	X	X	X
Challenge of making the company attractive to decrease attrition without needing to increase salary levels	X					
Wage inflation 10-20% yearly eroding the cost benefits. Low cost thinking must change.	X			X		
Leading global virtual teams, control of work	X					
Insufficient planning of transition phase causing problems in later production phases	X					
Agreed processes are not followed properly		X			X	X
Communication needs to be efficient and much		X				

more communication is needed to be sure that there is common understanding about what is agreed.					
Communication needs always to go via management level	X				
Responsibility not taken properly	X				
Feedback about existing problems not sufficient, timely and reliable	X				
Offshore partner needs and expects constant input from the case company, which requires continuous attention and ties resources.	X				
Lack of industry specific experience. Competence level not always sufficient.	X	X	X		
Information sharing and competence transfer within the offshore team insufficient	X				
Road maps provided for the offshore partner have not been clear enough, needs to be communicate more frequently and efficiently to the partner	X				
Selecting what information can be shared and what needs to be confidential and kept within the company			X		
Unrealistic expectations about the offshore benefits			X		X	X
Offshore resources were not sufficient					X	X
Unrealistically extensive work amount estimations by offshore partner					X	X
Overall costs of offshore work higher than expected and planned					X	X
Quality of products not at expected level			X		X	X
Unrealistic schedule promises by the partner					X	X
High cost because of extra work for the case company caused by quality and productivity problems. Redundant testing needed to be done by the case company, test results not fully reliable.					X	X
The cumulative experience in the partner not at			X		X	X

desired level.						
Cost of non-productive work time due to lack of competence (related to attrition)				X		
Productivity measures; productivity index per geographical R&D site				X		
Quality deterioration because of incomprehensive testing, resources of case company not sufficient for double testing.					X	X
Losing the control of the work; partner decides where the work is done.				X		
Lifting the productivity of high cost work in the value chain.				X		
Selecting what "work package" can be transferred to external partner / to offshore location. Separation of core / non-core functions.				X		
Calculating the cost of "non-quality" due to faults and lost material				X		
Complexity difference offshore in-house vs offshore outsourcing				X		
Difficulty of measuring the real benefits of outsourcing				X		
Insourcing vs. outsourcing setup is not location oriented question; it is essential if the partner can deliver the job or not				X		

Enhancement proposals	1:A	1:B	2:A	2:B	3:A	3:B
Making the case company attractive for employees so that the salary would not be the primary competitive factor	X					
Showing the employees a clear career path how they can succeed if they stay within the company	X					
Unified companywide base line for salaries and employment policy to prevent salary contest between organizations	X					
Horizontal functions need to make follow up about experiences in offshoring. Sharing experiences with other product lines and organizations.	X					
When transferring work from low cost to ultra-low cost countries, best practices and learning from previous experiences need to be utilized	X					
There is a clear business need to be close to customer, but offshore decision should not be done only based on cost savings.	X					
Close follow up needed on work progress		X				
When new processes taken into use, those need to be followed. Tracking and regular follow up is needed.		X				
Proactive actions needed from the home base to prevent problems in beforehand		X				
Regular audits are needed to ensure that the competence level remains in sufficient level and that the internal processes of SW production and project management are followed as agreed		X				
Competence sharing between the case company and offshore partners needs to be continuously ongoing		X				
Local presence is mandatory in the starting phase		X				

Well prepared introduction phase to guarantee successful competence transfer; showing by doing.		X				
Responsibility areas need to be clearer. If responsibility is unclear, the offshore partner needs to be encouraged to ask for clarification.		X				
To prevent unnecessary confusion, internal and external changes need to be communicated to the, partners too.		X				
Reliability of the partner needs to be confirmed					X	X
Resource planning needs to be realistic and synchronized based on competence levels.					X	X
Comprehensive planning of the R&D environment which is required for enabling SW testing					X	X
Comprehensive planning of resources, competences, R&D environment, schedules					X	X
Continuous follow up is required with onsite presence on the offshore site. (Same applies to external partners in any location). Do not trust in words, prepare being onsite.					X	X
Regular audits need to be performed on: performance, competence level, work quality					X	X

Appendix 3.

Sample of Interview Data

	Topic(s) of the interview	QUESTIONS	FIELD NOTES
1	**Starting point: describe experiences in view of the topic problem**	<u>**First, here are the definitions about offshoring:**</u> ***<u>Offshoring</u> is defined as the movement of a business process done at a company in one country to the same or another company in another, different country.*** ***<u>Offshore outsourcing</u> is the practice of hiring an external organization to perform some business functions in a country other than the one where the products or services are actually developed or manufactured.*** ***- Here we concentrate on Technical Support (TS) support offshore work done in India and China within own company (in addition to Finland).*** ***QUESTIONS:*** ***- Let's talk about offshoring of TS work that is nowadays done in Beijing and Delhi within company's own organization. For starters, what is your current role in the TS?***	(See below) - In charge of Global Technical Support for the product - Coordination of all Technical Support activities and responsibilities - increasing offshoring activities step by step in offshore location

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		- How long the TS processes have been offshored in these countries and how big a portion of the TS work today is done in these countries?	- need to being close to (big!) market - in startup phase 2005-2006 first expatriate in India looking at the market situation - after that starting of own group in India - China group (Beijing) started after successful presence in India - Asia teams taking care of Asian customers
		- How have you been involved in creation of our offshoring processes and decisions in your role, and can you give some examples about it? Reasons, criterion?	- real implementation, participation in recruitments - it's top management strategy to offshore, careful planning - internal lack of capacity in Finland, more staff needed - recruitment of manager & engineers
		How does offshoring impact on your daily work from management point of view?	- remote sites, practical consequences: ➜ different time zone ➜ different culture ➜ Finns are punctual, Asians necessarily not ➜ country specific policies, overtime compensation ➜ tools, laptops vs. desk PCs , Mobile phones not included for normal engineers, big practical differences in managing daily work. TS support work is mobile work!
2	**Identify strengths/problems**	*QUESTIONS:* *- Has the offshoring of TS work been successful from your point of view, have the outcomes/results been on the*	- Expat phase: strong follow up needed, not strong enough in the beginning - close internal team follow up needed - punctuality - target is met nowadays (2010->) , good

			performance.
		- How do you see the <u>benefits</u>, can you name and describe some?	- being close to the market is an advantage - being close to R&D - local people communicate fluently with local customers - credibility in front of the customers - practical issues easier to handle - local team can take into account the local challenges in commuting (takes time!!) and infrastructure - teams exist in Dallas, Beijing, India, work balancing can be done if risks realize. We should not be dependent on one site.
		- Do you see there <u>disad-vantages,</u> can you name and describe some?	- very clear strategy needed – "cheaper" is not enough! - cultural difference, attrition higher than in Finland - pricing of labor, not that cheap! Salaries are increasing 10-20% a year!
		- If you feel it was/was not successful, what were the <u>reasons</u> for that?	- Low cost thinking may mislead! The cost advantages are erasing fast due to high inflation - lack of monitoring of performance - leading virtual team is challenging - local country policies vary, country specific issues in practical daily things
3	**Key concerns**	*QUESTIONS:* *- What were your key con-cerns about the offshoring of TS work that took place?*	- Several colleagues were discussed with about potential challenges. - Very big positive commitment to the change. ➔ 3months stay in India then 3 months in Finland in the setup phase. Offshoring

expected level?

			was seen as opportunity!
		- **Have those concerns been realized and what has been the solution?**	- As difficult to start up as expected - Tools, not specified, should have to been done more specifically in planning phase!
		- **How long did it take to solve the issues that appeared when the BCS TS offshoring started?**	- one - one and half years to get rolling - intense local presence needed from start up team ➜ after start up, slowly reduced stays in India, shorter visits, finally independent team
3	**Analysis**	*QUESTIONS:* - ***In which areas do you think there is space for improve-ment?***	- In India, still engineers can select the market/workplaces - Challenge is to make our job attractive without needing to compete with salaries - employees are at some point pricing their selves out of the market - balancing of work between sites
		- ***In what way?***	- our technology should be seen as vital technology with a long term plan
		- ***How could that be done?***	- to provide an opportunity to a career path to make job more attractive to slow down attrition rate
4	**Best practice**	*QUESTIONS:* - *Do we have some guidelines of how to do offshoring of Technical Support work?*	- Best practice in corporation level for partnering/offshoring for R&D and Prod-uct mgmt. - Frame agreements that all departments will apply
		- *What best practice do you think the company should follow as for to tackle the key concerns?*	- Horizontal organization having base line, that can be utilized - unified salary policies in the company

5	Development needs	QUESTIONS: - How could the company avoid the problems in case of the next offshoring?	- horizontal functions are making follow-up of the actions and practices, analysis of what can be done better. Share these experiences with other functions - when transferring to ultra-low cost countries => best practices to be utilized to ensure successful outcome
		- From company point of view, do you see further offshoring of company processes and operation necessary of beneficial for the company	- Personal opinion: we need to be careful not making unnecessarily much offshoring for cost reasons. - We need to be close to the customer, but cost efficiency should not be the main reason. - how can the sales be increased -> be close to the customer