ORGANIZATIONAL CAPABILITIES FOR MANAGING
THE OFFSHORING OF PRODUCT DEVELOPMENT

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Abstract

Large multinationals must continually innovate to produce products and services that meet the needs of a global market. In order to distribute work across multiple sites, they use techniques such as offshoring and outsourcing. This requires them to address organizational and cultural aspects to coordinate distributed product development activities. While these techniques have received great interest in business as well as research in recent years, as the latest trend is to send increasingly complex functions such as research, development and engineering (RD&E) overseas. When offshoring involves high value functions, the transitions occur rapidly, and the associated risks and costs of failing increase. In addition to the hidden costs of offshoring and outsourcing, there is a risk of losing core competences over time or spill-overs of critical knowledge to competitors in the new market. Despite the criticality of succeeding with their offshoring efforts, little is known considering of how companies handle the process of distributing work globally, and the capabilities they develop to manage offshoring efficiently. The objective of this thesis is to explore the routines and capabilities that organizations’ need to develop to make offshoring an integral part of the management global RD&E.

Two in-depth case studies are used to develop firm specific theories which can inform both the theory and practice of managing offshoring. Case A provides insight into a client-supplier relationship between the Swedish site of a multinational and its Indian service provider. The current challenges identified through the case study are paired with a retrospective analysis of the evolution of the decade-long relationship, to show how the cross-cultural interface has influenced the evolution of the relationship. With the assistance of a literature review, the findings are explained through the theoretical lenses of national culture, organizational culture and contextual factors. Case B provides insight into offshoring management in terms of a product management transfer from a Swedish site to a research centre in China of the same multinational. Besides the insights into the transfer of responsibility for a complex product overseas, the case provides the base of an organizational capabilities framework for managing all stages in the offshoring process (decision, transfer, operations and governance stage). Four key capabilities were found to support the management of offshoring, namely; technological skills, process & tools, relationship management and knowledge management.
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Appended Papers

Paper A
Edoff P., Norström C., Boivie Y. (2009), Managing Offshore Development - an Intercultural Perspective. (A preliminary version was presented at 16th IPDM Conference, Twente)

Paper B

Paper C

Paper D

Additional publications

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1 Introduction

The globalization of business and the brevity of product life cycles and competition have increased the pressure on companies to combine efficiency with innovation when developing their products and services. Collaboration has become a viable solution to sustain efficiency in the product development process, and acknowledges that most companies of today cannot keep all the knowledge they need within the firm boundaries (Fine and Whitney, 1996). Not only are companies increasingly opening up through collaborations with key stakeholders such as customers (von Hippel, 2005), suppliers (Primo and Amundson, 2002; Boutellier, Gassmann et al., 2008) and universities (Marques, Alves et al., 2005; Sherwood and J.G., 2008), but are also forming alliances with competitors.

Eppinger and Chitkara (2006) describe how globalization has had a big impact on the practice of product development across a wide range of industries, where the emerging new paradigm involve skilled teams of engineers distributed around the globe to develop products in collaboration. They define Global Product Development (GPD) as a “single, coordinated product development operation that includes distributed development in more than one country utilizing a fully digital and connected, collaborative product development process” (pg. 23). GPD emerged as a best practice in product development as co-located cross-functional teams were accepted as a highly effective way of facilitating close collaboration among engineering, marketing, manufacturing and supply-chain functions. The ability to execute concurrently a wide range of activities resulted in better product designs, lower cost production and shorter time to market. Today, GPD is to a greater extent a distributed and networked process supported by a fully digital system. The benefits are multiple; greater engineering efficiency through the use of low cost resources, easier access to international technical expertise, adapting products for the global market and gaining a flexible PD resource allocation by exploiting external resources.

There are also differences in how rapidly different industries, and regions (India and China in particular and Asia in general), are adopting GPD. The modularity of software systems facilitates easy division of labour, and because software is digital it can be easily transported by satellite transmission without incurring any significant transportation and communication costs (2008). The software development process is simplified, moreover, by there being no tooling or manufacturing phase in the product development.

By involving suppliers early in product development, and in a more extensive manner, productivity and product quality can be enhanced (Clark, 1989). According to
Goldbrunner et al (2006), organizations benefit when they configure their supplier network for cost and manage them for value. This research focuses on Offshore Outsourcing (offshoring, offshore development centres), one of the means by which companies reduce costs, taking advantage of the suppliers’ economy of scale and lower wages (Bengtsson, 2009). A company’s decision to outsource can also be based on strategic motives, for example, to gain access to the local market (Goldbrunner, Doz et al., 2006; Mao, Lee et al., 2008), or to gain access to new technology, competence and innovation (Bengtsson, 2009). Since companies distribute their tasks in response to changing labour costs and availability of skilled personnel, the number of instances in which engineers need to communicate and collaborate with other departments within the company as well as with vendors offshore is increasing. This means that the willingness and ability to collaborate across internal and external boundaries needs to be established on all levels of an organization. Given that the natures of the activities that are sent offshore are changing, it is reasonable to assume that the nature of the interface will also change. Crossing geographical barriers is not only a matter of distance, but involves coping with cultural and contextual differences as well. Much research has been performed into intercultural aspects in business (Trompenaars and Hampden-Turner, 1997; Hofstede and G.J., 2005; Adler and Gundersen, 2008), but current research has only to a limited extent addressed the cultural aspects of efficient outsourcing in product development (Avison and Banks, 2008) Our research has indicated that instead of locating activities at a couple of centres globally, companies are increasingly shifting sites more rapidly as well as using several centres simultaneously in the product development process. Besides the exposure to further different national and organizational cultures, this also put greater pressure on the management of knowledge.

While the maintenance and support of mature products builds on existing knowledge and can be clearly specified, offshoring more advanced tasks demands a higher degree of understanding and interaction between the sites involved. Recent research shows that the path adopted by most companies’ in their choice of offshoring projects evolves from simple, more specific tasks, to more complex and value-added activities (Lewin and Peeters, 2006); (Lewin, Massini et al., 2009). However, there are several issues which determine what functions are sent offshore, as well as the choice of location. Apart from the operational difficulties with offshoring, such as the necessity to codify work and acquire domain experience, there other more strategic issues that affect organizational practices. Power shifts in the relation and the risk of the misappropriation of intellectual property at transfer are some issues that limit the willingness to offshore certain functions. (Aron and Singh, 2005). This can be seen in the reluctance to offshore more advanced projects, involving product development and R&D (Howells, 1999).
When offshoring increasingly involves research and product development, there are other factors that come into play. The quest for innovation is a natural driver of business today, but the organization and support structure of such efforts is still a debated topic in both theory and practice. While incremental innovation deals with efficiency (cost and lead time reduction), radical and discontinuous innovation are associated with uncertainty and ambiguity. The problem is that the structure and tools used to support incremental innovation may be an obstacle for other types of innovation—representing an unavoidable managerial trade-off between efficiency and flexibility (Magnusson, 2009). Since large firms traditionally have more complex decision-making processes and administrative procedures, established firms tend to lose their competitive edge to more agile newcomers when faced with technological discontinuities in their field (Utterback, 1996).

While the objectives of starting offshore operations are thoroughly covered in the literature (Quélin and Duhamel, 2003; Lewin and Peeters, 2006; Howells, 2008; Bengtsson, 2009; Lewin, Massini et al., 2009), studies of the existence and outline of the strategies to guide the implementations of such decisions remain few. (Aron and Singh, 2005) claim that companies focus on choosing countries, cities, vendors and negotiating prices, rather than evaluating which processes are suitable for outsourcing.

It is clear that geographical distance adds a layer of complexity to distributed development, and that there is reluctance to offshore more advanced tasks due to the problems with codifying work, but it is not known how companies are coping with these issues when offshoring is a fact, rather than a choice to be made. Eppinger and Chitkara (2006) call for frameworks that can help managers decide how to implement GPD as a corporate practice, contributing to the existing academic discussion on defining GPD and why it should be implemented since “the implications of not getting it right may have significant impact on their businesses”.

The aim of this research is to explore the process and dynamics of the management of offshore development of complex products. The underlying problem in both theory and practice is to define under what conditions offshoring becomes an effective approach to achieving organizational objectives. More specifically, what capabilities and routines should organizations develop in order to make offshoring an integral part of the management of global RD&E?

To explore this aim, the two in depth case studies included in this research are used to answer questions related to managing a cross-cultural interface between sites, managing transfers when distributing RD&E work globally as well as exploring what capabilities and routines companies use as part of their offshoring efforts.
Case A provides insight into the management of a client supplier relationship between a multinational's site in Sweden and its Indian service provider. Current challenges identified are paired with a retrospective analysis of the 10 years of the relation, to show how the cross-cultural interface has influenced the evolution of the relation. With references from the literature, the findings are explained through a theoretical lens of national culture, organizational culture and contextual factors. Case B provides insight into offshoring management in terms of a product management transfer from a Swedish site to a research centre in China. Besides insights into the transfer of responsibility for a complex product overseas, the case provides the base of an organizational capabilities framework for managing all stages in the offshoring process (decision, transfer and governance stage). Four key capabilities were found to support the management of offshoring, namely; technological skills, process & tools, relationship management and knowledge management.
1.1 Outline of thesis

Research focus – This chapter includes a definition of the problem which is the subject of research, clarifying the research objective, research questions and delimitations of the research conducted.

Frame of References – This chapter consists of a review of the pertinent literature, systemizing the different perspectives that are relevant if offshoring is to be considered as a process and an activity which requires its own specific capabilities for successful performance. After defining offshoring, describing the offshoring process and context, the organizational capabilities needed for efficient offshoring and management of culture are described.

Research methodology – This chapter explain how the research was planned, providing an overview of the context of the problem studied and the scientific view that shaped this research, the selection of cases and the engaged scholarship approach used for developing new knowledge in collaboration with the companies concerned. After a description of the two cases, the different data collection methods and the methods of analyzing the data are described. Finally, the different techniques of ensuring the quality of the research and the limitations of the methods are explained.

Empirical studies – This chapter describes the results from the two in-depth case studies which were conducted. Case A provides insight into a client-supplier relation which has involved a wide range of outsourcing tasks during the course of 10 years. Case B involves transfer of a flagship product from the Swedish headquarters to their newly established R&D site in China. The challenges in managing the transfer of critical products as well as the organizational design of the sites to align with the current responsibilities are described.

Discussion – To answer the research questions stated in the introduction, this chapter has three sections. The first section explains the peculiarities of the phenomena which frame the working practices used in each context, the intercultural interaction between the sites involved. Then, the specific settings which a knowledge transfer represents are explained. The final section describes the general themes which represent the overarching context of offshore site management, as well as an initial attempt to differentiate the different sets of capabilities to be developed by organizations to be able to effectively execute an offshoring strategy throughout the stages in the offshoring process.

Conclusion – The conclusion describes the contributions of this research, defining practical and academic contributions as well as suggesting areas of possible improvements.
2 Research focus

This chapter clarifies a problem statement for the research, the research objective, research questions and delimitations of the research conducted.

2.1 Problem statement

In Swedish industry today, the problem is no longer whether or not to go offshore, but rather to select the right projects and keep the business coherent regardless of the actual distribution of the work. When the globalization of product development projects is a natural part of the company’s normal activities, the focus is on gaining efficiency in these distributed organizations. Difficulties in managing offshoring in practice can include evaluating total cost, managing the risks of offshoring, ensuring the commitment of the employees and coordinating the globally distributed development. Several studies have shown that the learning and implementation of offshoring involves experimental learning (Manning, Lewin et al., 2008), or “learning by doing”, working in a bottom-up manner, in the absence of corporate strategies and diffusion of practice (Lewin and Peeters, 2006). Since these studies are based on large databases, while specifying the issues relevant for industry today, they do not provide the context in which it is relevant or describe how the companies deal with offshoring relations, such as the cultural fit.

Manning, Massini et al. (2008) call for studies which explore what organizational capabilities companies develop to exploit science and engineering talent globally. They describe a number of neglected areas: recruiting, developing and retaining talent; coordinating globally dispersed innovation activities; and collaborating with external partners. With the exception of ICT, the focus of the literature has been technical capabilities of offshoring, neglecting e.g. the impact of organizational culture, structure and practices (Manning, Massini et al., 2008). As organizations transform into flexible global organizations (Lewin, Massini et al., 2009), companies need to take advantage of differences in geographical concentrations of talent and labour costs. To keep a competitive edge, companies are not only establishing centres of excellence in different countries (Cohen et al, 2009), but transferring projects back and forth across the globe. Despite the advantage of being able transferring these functions more rapidly, there is a risk of losing internal knowledge that the organization might need in the longer run (Mol, 2005). The organizational interface which is created when tasks are moved across the globe deserves an in depth exploration. The competence build-up which takes place in project transfers represents one such area. Firm-specific theories of actual outsourcing and offshoring practice are needed to enable Swedish organizations to effectively improve their global development practices.
Offshoring and outsourcing can be seen as one expression of a larger trend – the globalization of business. There is a vast amount of literature examining the policy issues and the implications for industry which are involved (With respect to offshoring see: (Doh, 2005). Other studies focus on global product development (Eppinger & Chitkara, 2006), virtual teams (Gassmann and Zedtwitz, 2003) as well as cultural aspects of business (Adler & Gunderson, 2008). The transformation we see in industry today, resulting in the movement of more advanced functions across the globe, has several other implications on the situations organizations need address, and the knowledge they must acquire to be able to do so. The underlying problem, for both research and practice, is to determine under what conditions offshoring becomes an effective approach to achieving organizational objectives. As a progression of offshoring strategies can be seen, and more advanced tasks are sent offshore the cost of failing also increases. The aim of this research is to explore the process and dynamics of managing offshore development of complex products. The underlying problem in both theory and practice is to define under what conditions offshoring becomes an effective approach to achieving organizational objectives.

Research objective: What capabilities and routines should organizations develop in order to make offshoring an integral part of the management of global RD&E?

By developing firm-specific theories of the offshoring and outsourcing of Research, Development & Engineering (RD&E) in Swedish organizations, this research enables more effective translation of an organizational strategy for outsourcing or offshoring work into implementable practice. These theories are developed by capturing the current state of these practices using multiple case studies. Through continued engagement in the case study sites the findings were used to create an organizational capabilities framework for distributing RD&E. In depth case studies are carried out to describe the challenges that they experience in their offshoring/outourcing projects, to determine what specific challenges exist in this context, and how these challenges are approached. As a complement to the limited literature on organizational capabilities for offshoring, especially concerning the cross-cultural interface and product transfers, this research will combine empirical investigation with a literature review to begin filling the gaps in both research and practice on how to manage globally distributed development. To understand the complexity of offshoring, the technical perspective will be combined with the social and contextual aspects of this issue. The organizational interfaces between sites are studied at different stages of the offshoring process (from strategy to decision-making, transfer and operations). The studies include the exploration of communication and cultural aspects of the organizations.
2.2 Research questions

Three questions are used to frame the research and collectively define the research objective. The cultural setting in which the offshoring relation is situated is one of the neglected areas within the offshoring/outourcing research. The first question addresses the interplay of different layers of culture as companies collaborate with offshore partners, in this case a company transferring work from a Swedish site to an Indian partner. A theoretical taxonomy is compared with the specific context of the case to provide insight into the implications of cross-cultural interfacing in offshoring relations.

RQ1: What is the role of culture in the management of offshore relations?

As bricks in a game plan, companies are transferring projects involving the development of core products back and forth across the globe. The second question intends to contribute to the offshoring literature, by turning the focus away from the offshoring decision, to specify the strategies and practices applied to the transfer stage of an offshoring process, starting with the decision to send a project offshore, through the transfer period to establishing efficient operations in the new site. These strategies and practices may include documentation, ways of working and product management practices.

RQ2: How do companies manage the transfer of work when distributing R&D globally?

When the selection of projects for offshoring is redirected from simple tasks such as call centres and maintenance to complex R&D and engineering, it is more important to have the capabilities to transfer projects and build up competence in a secure and efficient way. This leads us to the third research question, which is intends to provide a more holistic view of offshoring:

RQ3: What capabilities and routines do the companies studied use as part of their offshoring efforts?

The third research question is intended to obtain insight into arrangements involving offshoring and outsourcing of organizations. In the cases studied, a dyadic perspective is applied to explore the context on both sides of a relation. Strategies, contracts, transfer models and collaboration tools are examples of the explicit aspects of offshoring practices, but this research will also explore tacit and informal areas which can provide insight into the organizational capabilities framework.

Intra-firm as well as inter-firm learning concerning offshoring practices, establishing policies and frameworks, are different types of activities studied to provide further understanding of this complex management challenge. The ultimate purpose of offshoring, as an alternative to closing the doors and managing everything in-house, at
home base, is to provide extra benefits for the company. The questions were designed to reflect the fact that there are no cookie cutter approaches to distributing work, i.e. there are no universal success factors. Each instance of offshoring provides a learning opportunity to further improve the way in which the organization can manage globally distributed projects.

The objective of the research was to perform an in-depth investigation into issues concerning the management of offshoring by means of specific strategies, processes, and policies during different stages in the offshoring process (decisions- transfer-operations). By following the cases over several years the learning mechanisms which the organization used to develop the capabilities needed to efficiently manage offshoring are identified. As we are clarifying the policies and practices used, we will then be able to generalize the findings for a more general model in a later stage.

2.3 Delimitations
From a research standpoint, this research shed light on the management of offshoring within a specific context, the management of the offshoring research, development and engineering projects in big multinational companies. Conceptually, offshoring is the transfer of certain responsibilities, from headquarters in the home country, to an offshore site within or outside the organizational boundaries.

We have limited our studies to the interaction between the Swedish site in one company and their Indian and Chinese counterparts only in respect to the offshoring of research, development and engineering projects. Their products is associated with complex software systems which have a product lifecycle often extending 10 years, hence demanding interface of a wide range of expertise to develop and maintain over time. The size and complexity of products is one part of the contextual information to consider when reading this thesis, considering that results will be specific to the context in which they are produced, but can be used at a starting point for making more general studies of the subject.

The reason for choosing these regions is the high rate of expansion of their markets, and from a geographical standpoint we respond to Gassman & Han’s (2004) call for the identification of best practices in overcoming difficulties encountered in entering these markets. The research presented here is concerned with those aspects of offshoring of RD&E that occurs once a firm has made the decision to offshore these activities – hence issues related to decision-making and location choice have not been included in the empirical studies. These decisions are stated, however, as contextual information.
3 Frame of references

The purpose of this chapter is to present a review of the existing literature concerning offshoring, by systemizing the different aspects to be considered when managing offshoring in different contexts. It reflects the overall approach of this research, that offshoring, or globally distributed development, can be seen both as a process and as an activity which requires specific capabilities to be successful. The theoretical overview begins by defining offshoring, describing the offshoring process and context, followed by the highlighting of some specific areas related to the management of offshoring, and the theoretical overview concludes with a discussion of organizational capabilities in the context of offshoring.

![Image of the world with interconnected points representing the movement of functions, responsibilities, and personnel.](image)

**Figure 1** The figure illustrates the perspectives taken in this chapter, the movement of functions, responsibilities, and personnel across the globe

3.1 Related literature

From a management or governance point of view, there are sections of the management literature relating to offshoring to be considered. Similar issues have been discussed in the international business (IB) field and, in supply chain management literature, particularly in relation to the outsourcing context. Specifically, the literature discusses different types of collaboration, such as alliances and, joint ventures and more recently the increasing interest in networks and open innovation (Chesbrough, 2003). The headquarter subsidiary relationships literature considers the choice and application of control and coordination mechanisms for the governance of subsidiaries and improvement of the overall performance of the firm distinguishing formal (centralization, formalization, planning, output and behavioural control) and informal (lateral relations, informal communication, and socialization) coordination mechanisms (Moitra, 2008).
In parallel with globalization of business, researchers have looked into the increasingly virtual aspects of governance of distributed operations, coining concepts such as extended or virtual enterprises (Browne and Zhang, 1999; Bitici, Martinez et al., 2004), and virtual teams (Gassmann and Zedtwitz, 2003). A vast amount of management literature related to offshoring can be considered, but this research applies only to the areas which are relevant to the specific context studied – the process and management of sending research, development and engineering functions overseas. An associated field of research is the actual branch/business area in which the companies operate – complex product development. The management of product development (PD) or New Product Development (NPD), is a growing field in which, in recent years, the implications of the globalization of business, for example, how to manage globally distributed teams (Oshri, van Fenema et al., 2008), especially by the use of ICT tools (Manning et al, 2008) has been discussed. Researchers in software engineering and management information systems (MIS) has been at the forefront in exploring the intersections of disciplines that can offer guidelines to managers dealing with the dramatic increase in globally distributed work in their field of business (e.g. Heeks, 2001). The goal of this research also is to build complementary and interconnected approaches to offshoring, from a wider range of theoretical fields. Niederman (2005) compares management information systems (MIS) research with the International business (IB) field in his 2005 article on knowledge transfer and IT workforce outsourcing, demonstrating potential mutual benefits to both. He conclude that IB literature provide a broad set of variables that influence offshoring location decisions, while MIS provides understanding of the nature of the work, differences in the infrastructures of different countries etc.

Even though much research has been conducted into the topics outsourcing, offshore outsourcing and offshoring, it is argued that the many researchers involved have a limited common body of knowledge, due to their different functional backgrounds (e.g. operations management, software engineering, marketing, psychology, innovation management, supply chain management). This made the task of reviewing the literature more difficult. Despite this this chapter provides a survey of the literature, irrespective of its origin in product development, management or software engineering journals. The concluding section addresses in more detail, relevant issues such as organizational capabilities, culture and knowledge management.

3.2 Defining offshoring and outsourcing
The literature offers different definitions of the terms offshoring and outsourcing, especially when it comes to distinguishing offshoring (to captive centres) from offshore outsourcing. Many researchers use the word offshoring for both offshore outsourcing and captive centres overseas, despite their contexts, in terms of contractual agreements,
organizational culture etc. being different. This can be somewhat problematic since researchers do not always specify if their unit of analysis is offshore outsourcing or offshoring, and then design their study in a way that does not highlight the specific characteristics of the context. Brown (2005) states that “Offshore outsourcing, or offshoring, refers to the procurement of goods or services by a business or organization from an outside foreign supplier, typically to gain the benefits of labour arbitrage” (Brown, 2005, p vii). Bardhan (2006) discusses the different concepts by comparing foreign outsourcing with intra-firm offshoring, i.e. the transfer of projects abroad to foreign affiliates and subsidiaries, intending to import the output. In the end, they choose to use the term offshoring for both procedures. We consider offshore outsourcing as a specific situation within the offshoring procedures of multinational organizations. While the contexts are similar in terms of geographical distribution of work, culture, and higher coordination costs, offshore outsourcing potentially adds another layer of complexity since it involves an inter-organizational collaboration rather than an intra-organizational collaboration. The Lewin et al (2009) definitions are used in the remainder of this thesis:

**Offshoring refers to the process of sourcing and coordinating tasks and business functions across national borders. Offshoring may include both in-house (captive, or International in-sourcing) and, increasingly, outsourced activities that are performed by an external provider – that is, from outside the boundaries of the firm. The outsourcing activity in turn can be located either domestically (onshore) or abroad (offshore). Further, offshoring refers to sourcing rather than sales activities, and it supports global or domestic rather than local operations**

From a definitional point of view, the second concern is that offshoring in general, is referred to as a process (Quelin and Duhamel, 2003; Fifarek, Veloso et al., 2008; Manning, Lewin et al., 2008; Lewin, Massini et al., 2009), without specifying when this process ends or what its results are. The question remains, when does offshoring turn into globally distributed development or the management of a global firm in general? (E.g. international business literature). Offshoring as a process can be seen in two perspectives, a) as a bridge in implementing a global PD strategy, transforming a company from a domestic to a global firm, and b), as a mechanism to achieve economy of scale and to access strategic markets. It could also be a combination of the two. While the actual transfer process might be the same in both of these situations, the context can certainly differ from a managerial point of view. Compare a company which is transferring a function overseas for the first time, with a global firm which has handled a series of transfers and consider it to be a part of the normal business – the capabilities and practices used in managing offshoring efficiently will probably differ. Our view of offshoring as a process includes both these settings: a) transforming operations from domestic to global or b) transforming operations from being carried out at one site to being carried out in multiple sites (in parallel or sequential). In the following chapters, the
Eppinger and Chitkara (2006) distinguishes four modes of global product development operations (as illustrated in Figure 2): Centralized (including different project teams in multiple countries where the development resources are within the company), local outsourcing (on-site contractors for specialized skills or temporary capacity increase), captive offshoring (fully owned centre in other country) and global outsourcing (GPD without the commitment to establish a captive centre). Global outsourcing typically starts off by using external staff on a time and material basis, while intending the providers to take over larger projects and ownership of whole processes over time. Captive offshore centres are seen as a part of a longer-term strategy for different reasons; the work entails intellectual property that provide valuable differentiation, the skills or expertise relates to core competence or the centre is used to acquire an understanding of the local market and develop products to suit its needs. In recent years there was a rapid expansion of the Asian markets, as multinationals use offshoring contracts to establish a presence in Asia. According to the offshoring research network study of 2004, 69 % of the implementations were located in India, Asian countries in total accounting for 87% of the offshoring implementations sample (Lewin and Peeters, 2006).

![Figure 2 Different type of modes for global product development operations (modified from Eppinger and Chitkara, 2006)](image)

**3.3 The offshoring process**

The word offshoring implies that an action is performed, e.g. the sending of something offshore. Offshoring can also be the result of that action e.g. the management of globally distributed development. A process lens is adopted here to systemize the literature related
to offshoring. The offshoring process itself can be framed in terms of the decision to send functions (components, products, or services) overseas, progressing to planning and executing a transfer and iterating through the governance associated with operations, as shown in Figure 3. To some extent, the offshoring process can be seen as a description of the disturbances offshoring causes the ordinary organizational routines involved in PD.

![Figure 3 The offshoring process](image)

From the review of the literature relating to offshoring and globally distributed development, it became clear that the vast majority of such papers focus on the offshoring decision and, the objectives companies sending functions offshore. Since there is such a great volume of literature on this topic, it was relevant to look at the latter stages of the transfer of functions offshore; e.g. the transfer process itself, and the operation of globally distributed development once the transfer is completed. In terms of managerial implications, the decision process has probably been given much attention because it is during this phase that the strategy is established and decisions regarding costs are made. However, an informed decision by management alone does not ensure a successful offshore operation, and as the criticality of functions sent offshore is increasing it becomes even more important that it be implemented correctly to fulfill the objectives of top management. Although the decision stage is not the main interest of this research, an overview of the literature on offshoring objectives, core competencies and location selection forms an introduction to the offshoring process in this chapter, since the decision reached, creates in many ways the foundation of the offshoring operations in the latter stages.

3.3.1 Making the decision to offshore
The main objectives of offshoring as stated in the literature are to reduce costs and gain access to qualified personnel, but other aspects are also considered, such as activity time, flexibility and scale of operations, as seen in Table 1.

Whether a formal offshoring, or global footprint, strategy actually exists when a company is planning its global distribution of work, there is a strategic choice to be made. Contractor et al (2010) found two salient changes in strategy, slicing the value chain of the firm into ever smaller pieces and willingness to offshore and outsource functions related to the core competencies of the firm.
“In the largest sense, global strategy amounts to (1) the optimal disaggregation or slicing of the firm’s value chain into as many constituent pieces as organizationally and economically feasible, followed by (2) decisions as how each slice should be allocated geographically (‘offshoring’) and organizationally (‘outsourcing’). “ (Contractor, Kumar et al., 2010, pg. 1417)

Table 1 Firms objective for offshoring decisions

<table>
<thead>
<tr>
<th>Type</th>
<th>Factors</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective of offshoring decision</td>
<td>Reducing costs, especially labor costs</td>
<td>(Quélin and Duhamel, 2003; Lewin and Peeters, 2006; Howells, 2008; Bengtsson, 2009; Lewin, Massini et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Gaining access to qualified personnel</td>
<td>(Quélin and Duhamel, 2003; Lewin and Peeters, 2006; Lewin, Massini et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Gaining flexibility</td>
<td>(Quélin and Duhamel, 2003)</td>
</tr>
<tr>
<td></td>
<td>Scale of operation</td>
<td>(Venkatraman, 2004)</td>
</tr>
<tr>
<td></td>
<td>To increase speed to market</td>
<td>(Lewin, Massini et al., 2009)</td>
</tr>
<tr>
<td></td>
<td>Decrease activity time</td>
<td>(Howells, 2008)</td>
</tr>
<tr>
<td></td>
<td>Due to competitive pressure, to improve service levels</td>
<td>(Lewin and Peeters, 2006)</td>
</tr>
<tr>
<td></td>
<td>To share costs for development of technology and innovation</td>
<td>(Quinn, 2000; Gassmann, 2006; Bengtsson, 2009)</td>
</tr>
</tbody>
</table>

Current research indicate that the trajectory adopted by most companies’ in their choice of offshoring projects evolves from simple, more specific tasks, to more complex and value-added activities (Lewin and Peeters, 2006). An increasing volume of product development activities are going offshore (Lewin, Massini et al., 2009), and offshoring of research is expected to grow (Lewin and Peeters, 2006). The decision process is not only reliant on historical relations, but as Levina & Su (2008) note, is impacted by key stakeholders in the organization such as the middle managers who actively shape the outsourcing strategy. Part of ensuring effective offshoring is ensuring that key stakeholders are engaged, and that the strategic decision to offshore is supported by an implementable strategy.

Kedia and Mukherjee (2009) have constructed a framework to explain offshoring decisions by combining three sets of interrelated advantages;

- Disintegration advantages, involving an increased focus on core areas and leaner more modular organization forms that promote increased flexibility.
- Location specific resourcing advantages, advantages coupled with location involving country-specific and human capital advantages, as well as labor, knowledge and time arbitrage.
• Externalization advantages, related to relationship capital-based advantages as well as co-specialization and organizational learning

Location choice
One of the decisions to be made in planning an offshoring is location selection, in terms of country and city. According to Cohen et al (2009) location decisions are determined by the IP management, the maturation of subsidiaries and corporate inertia (centres of excellence). Farrel (2006) presented the need to go beyond offshoring hot spots, and to perform “smarter offshoring”, by naming six key factors companies should assemble information on before making an offshoring location decision;

• Cost - the cost of labor, infrastructure, real estate and corporate taxes
• Availability of skills – skill pool, size of offshore sector and vendor landscape
• Environment – government support, business environment, living environment, accessibility
• Market potential – attractiveness of local market, access to nearby markets
• Risk profile – disruptive events, security, regulatory risk, macroeconomic risk and intellectual property risk
• Quality of infrastructure

The selection of an offshore location is not only determined by geographical distribution and labour cost, but also the total environment. Metters (2008) study of national culture and the offshoring of services from the US to Barbados and Dominican Republic reached the general conclusion that the national & regional cultures of each area must be assessed individually. The location choice is also dependent on the nature of the function or process to be outsourced. Manning et al (2008) conclude that by increased experience in dealing with offshoring challenges such as wage inflation and employee turnover, companies become more confident in sourcing talents abroad in higher end offshoring activities. Regardless of experience, there still exists a home bias for more important R&D projects (Cohen, Di Minin et al., 2009).

There are several issues beyond choice of location which determine which functions are sent offshore. Apart from the operational risks with offshoring, such as the lack of experience to codify work and domain experience, there are further strategic issues that affect organizational practice. Power shifts in the relation and the risk of misappropriation of intellectual property at transfer tend to limit willingness to offshore certain functions. (Aron and Singh, 2005). This can be seen in the reluctance to offshore more advanced projects, involving product development and R&D (Howells, 1999) In their study of 850 information systems offshoring projects, Hahn et al (2009) found that firm-specific
experience and the core risk gap between home country and host country led to an increased tolerance of riskier locations. Their findings show that firms are able to learn from their own and their peers’ experiences, processing the learning in a way that enables them to explore more challenging and difficult environments. In early phases of global IS offshoring, the imperative to follow the broader competitive environment irrespectively of prior experience is quite noticeable. They noted that while the literature has focused on the risks of offshoring, firms pay more attention to the risks of not offshoring, adopting an aggressive rather than defensive strategy in relation to competitiveness. To remain competitive, it may be necessary to identify products and functions which can be sent offshore.

**Deciding what functions or processes to offshore**

Researchers investigating the offshoring decisions of companies, in particular, which activities to send offshore use the distinction between core and non-core activities. This distinction originates from theoretical concept *core competences*, which Prahalad and Hamel (1990) define as competences which are difficult to imitate, provide potential access to a wide range of markets, and make a significant contribution to benefits of the end product as perceived by the customers. They argue that clarifying the core competences of the organization, provides knowledge on how to support the competitive advantage given by these. Distinguishing core from non-core activities has turned out to be a difficult task. With the increase in the offshoring of product development and R&D, Contractor (2010) questions whether those activities should always be defined as core activities, and concludes that the architectural core activities are still typically conducted closer to home. Quinn (2000) and Contractor (2010) distinguish true core activities from essential activities and non-core activities, which can be more easily outsourced.

Another prerequisite to obtain the benefits of disaggregation is to first learn about and analyze the organizations own operations and processes in depth (Contractor, Kumar et al., 2010). The rethinking of the strategy of R&D distribution consists of three steps; determining how the process can be modularized into separable bits, which portions of the work can be standardized, routinized and codified, and which activities can be safely externalized or offshored. Codification of knowledge increases the likelihood of outsourcing and offshoring being successful. The activities in the second step include the specification of interfaces and coordination mechanisms among the activities. The question is how far companies should go in disaggregation of the value chain - divided too finely, it may become suboptimal. Contractor (2010) observes that the interface and coordination costs of sequential activities increase with organizational and geographical distance and that each relocation adds search costs the degree of disaggregation and dispersion are not independents but interrelated, and at some point the increased
management and coordination costs exceed the benefits. One way of simplifying 
disaggregation decisions is to compare the task dependencies of the offshoring 
alternatives. Kumar et al. (2008) review the classical taxonomy of task interdependence 
and extend it to include integration interdependence to account for dependencies 
between sub-tasks that are executing in parallel. Furthermore, the extended taxonomy 
introduces the dimension of stickiness, which modifies each of the interdependencies to 
account for the costs of information transfer. They posit that assessing stickiness and the 
interdependence between tasks is the starting point for designing guidelines for 
partitioning, design, and coordination of offshore globally distributed work.

Lewin et al (2009) argues that accessing talent is linked with firms involved in product 
development-centred innovation, whereas labour cost savings are associated with 
companies seeking to replace high cost workers with lower cost workers. At the same 
time the dynamics of the supply of engineering and science talent is changing, since fewer 
and fewer young people in the western countries are selecting advanced degrees in these 
areas as a career choice (Lewin, Massini et al., 2009).

Finally, it must be decided how many partners to involve, the design of the global 
enterprise and including partners. Levina & Su (2008) consider global sourcing 
capabilities to be a prerequisite when choosing a multiple provider strategy. The 
engagement of many suppliers is identified as advantageous when global supply markets 
develops rapidly, even when relationship-specific investments are critical. This multiple 
provider strategy must include a carefully designed sourcing process. Their theoretical 
synthesis includes two types of capabilities in the client’s global sourcing process; 
bottom-up capabilities (discovery of new suppliers, making relationship specific 
investments) and top-down capabilities (increasing commitment to best suppliers, 
reducing coordination costs across suppliers. The offshoring network survey (Lewin, 
Massini et al., 2009) indicates that captive operations are much more likely to be involved 
in PD projects than outsourced operations.

To conclude, the decision stage includes evaluating what functions can be separated and 
distributed, by distinguishing core from non-core activities and interdependencies and the 
making of an informed decision about the offshore destination.

3.3.2 Transfers
The transfer stage itself has not received the same amount of attention in the literature as 
the decision or operation & governance stages. It involves transmitting and receiving 
knowledge, establishing roles, responsibilities and managing interfaces between the 
various stakeholders. Recent research shows that more complex functions are sent 
offshore at an increasing rate (Lewin and Peeters, 2006), consequently the criticality of
succeeding with transfers is also increasing. The dynamics of a transfer depends on the nature of the relationship (e.g. offshoring or offshore outsourcing), the maturity of the receiving organization (e.g. if it is a new or established centre), and if the organization have same or different level of expertise with respect to the function (Leonardi and Bailey, 2008). If the collaboration between the sending and receiving organizations is new, it requires common processes and work practices to be established. At some point in time, the organizations (both sending and receiving) return to dealing with everyday operations, and recover from the disruption that the transfer created. In the operations stage, attention is turned inwards in the organization, focusing on the execution of the project and managing the relationship as a whole.

The different facets of product transfer management involve several theoretical concepts and have been the subject to a number of research projects. Ultimately, a transfer project is a process of determining what roles, knowledge and physical objects are to be transmitted to enable the receiving organization to attain responsibility for the product or function. This section will include a brief overview of the concept of different types of knowledge, knowledge creation and transfer, knowledge management and examples of research on transfers in the context of offshoring.

*Knowledge transfer and knowledge management*

Niederman (2005) discusses the effects of different perspectives of knowledge on management. Knowledge can be viewed as a state of mind, an object, a process, the having of access to information, a capability to influence action or even as a result of processed data/information. If viewed as an object, the transfer process requires the applier to recognize the need for that knowledge, to identify in what area it resides, to find a way to describe the knowledge to enable its storage, be able to screen out irrelevant but similar units of knowledge and finally to apply the knowledge to solve a problem. Establishing the formal knowledge transfer process is critical both during the transfer phase, and during post-transfer operations. In the case of complex product systems, there must be a commonality of knowledge between the home organization and the offshoring organization. This commonality in turn promotes knowledge integration (Grant, 1996).

Hansen et al. (1999) define knowledge transfer as a process through which one organization (or unit) identifies and acquires specific knowledge that resides in another organization (or unit), and reapplies this knowledge in other contexts. Gborra and Andreu (2001) specifies the knowledge transfer process by distinguishing three loops—a routinization learning loop whereby external resources are transformed by learned work practices; a capability learning loop where work practices are transformed into organizational capabilities; and a strategic loop where the mission of the firm and the
Dayasindhu (2002) describe the knowledge creation spiral moving from individual to organizational and inter-organizational dimensions in four steps, focusing on the transformation between tacit and explicit knowledge:

1. Socialization, knowledge transmitted individual to individual by observation, imitation and practice.
2. Externalization, where the tacit knowledge is translated into explicit knowledge which can be spread within and across organizations.
3. Combination, where different units of explicit knowledge are combined into a new entity.
4. Internalization is the process where individuals in the organization or industry improve their own tacit knowledge base by applying a new body of explicit knowledge.

Culture and social systems are considered to be important factors influencing the transfer of knowledge. Nonaka (1994) identifies four different information gap factors: linguistic, institutional, cultural and political. He argues that while new knowledge is developed by individuals, organizations play a critical role in articulating and amplifying that knowledge. Knowledge management is a field of literature which is described as a prerequisite for global competitiveness, especially since products are becoming increasingly knowledge intensive. Dayasindhu (2002) defines knowledge management as “creating, acquiring, interpreting, retaining and transferring knowledge to improve performance by purposefully modifying behaviour based on new knowledge” (p. 552). Knowledge can either be explicit or tacit, while explicit knowledge can be articulated (e.g. text, tables and diagrams), tacit knowledge cannot.

Oshri et al (2008) discuss the assumption made in knowledge management literature that the type of knowledge involved in a transaction defines the type of knowledge management approach to capturing, storing and reapplying it which is required. In this context, the literature distinguishes a personalization knowledge approach (through own and other memory) and a codification approach (knowledge centrally available e.g. in database). A central concept in these discussions is ‘transactive memory’, which is the combination of individual memory systems and the communications between individuals memory systems. The memory process in transactive memory has three steps: encoding, storing and retrieving knowledge. The Oshri et al (2008) study of globally distributed teams shows that onsite and offshore teams involved in offshoring usually includes the codification of knowledge prior to transfer. The transactive memory system was assisted by creating memory systems that constantly update codified and personalized directories, enabling directory sharing regardless of the physical location of the teams involved, and offering multiple channels to effectively retrieve information when needed. This involved
developing standards, guidelines and templates for a systematic encoding of knowledge to be transferred between teams and sites. The methods mentioned supported encoding, storing and retrieval of knowledge into collective expertise.

Knowledge transfers in the offshoring context

Youngdahl and Ramaswamy (2008) note that identifying the extent to which a process involves embedded knowledge is an important step in making informed decision about offshoring. They identify the ability to transfer best practices across locations, sharing organizational culture, and the blending of local practices with head office mandates in managing human resources as being the key to offshoring success.

In their study of the role of transformational technologies on task-based offshoring, Leonardi and Bailey (2008) found that the transfer of technical knowledge specific to the task was necessary when there was an expertise differential between the home site and the offshore site, which resulted in the enactment of new work practices and new work arrangements to ensure success. They note that this was often overlooked in the need to transfer firm-specific work practices needs, and specifications. Offshoring complex product systems require the receiving organization to be capable of performing both the knowledge work needed to develop the product, and to providing the associated services such as the handling of customer requests and maintenance requests. Florida & Kenney (2000) argue that organizations have capabilities and resources to transfer and to some degree replicate key capabilities in a new environment and further to adjust those environments in the light of their functional requirements. Although their study of Japanese automotive transplants in the USA demonstrated an ability to replicate organizational forms and practices in a new environment, they observe differences in the extent to which it reflected the actual worker behaviour. It is also important to note that transfer projects provide an opportunity to review current work practices. There may be other ways of working more suitable in the organizational (Youngdahl and Ramaswamy, 2008) and national context (Metters, 2008) of the receiving organization when taking over responsibility. Similarly, a transfer is a kind of organizational review by means of which routines and cultural aspects which add value can be distinguished from those which do not.

The management of transfers also results in additional costs, especially if sufficient knowledge cannot be transferred within the transfer period. Costs of knowledge transfer are related to the embeddedness of the knowledge (Nicholson and Sahay, 2004), the underlying cost structures of the firm itself (Balconi, 2002), and the possible presence of incomplete and asymmetric information (Lin et al., 2005). Since relationships between sender and receiver form the base of knowledge creation and transfer, trust must be established between the parties. Levin and Cross (2004) note that the receipt of useful
knowledge was mediated by competence-based trust (belief in the ability of trustee) and benevolence-based trust (willingness to share knowledge). Bstieler (2006) examined trust formation in new product development teams, and found that communication and fairness contribute to trust, while conflicts and perceived egoism had a negative effect. Niederman (2005) reflects upon how mastering the lessons of offshoring may differentiate firm and nations that innovate and grow, from those that stagnate and decline. Transfer of knowledge represents an important mechanism for effective management in the growing globalization of commerce.

3.3.3 Operations
In the definition section above, two views on the offshoring process were proposed; as a bridge to transforming a company from a domestic to a global firm, or as a mechanism to obtain economy of scale and to access strategic markets. Irrespective of the reason for companies adopting offshoring as a strategy, researchers has emphasized that implementing offshoring practices in a company has its own learning curve. The learning and implementation of offshoring is characterized by experimental learning (Jensen, 2009), working in a bottom-up manner, with an absence of corporate strategies and diffusion of best practices within the organization (Lewin and Peeters, 2006). This complexity is reflected in the company’s strategies as “learning by doing” (Cha, Pingry et al., 2008); overcoming internal resistance, managing remote teams, cultural fit, attrition and to specify work process (Lewin and Peeters, 2006). The offshoring research network study (Lewin and Peeters, 2006) contains some key findings concerning the adoption of offshoring by 90 companies:

- Bottom up, absence of corporate strategies and diffusion of practice
- Sequential, learning by doing from specific and experimental to complex business processes
- Complex, difficulty of overcoming internal resistance, managing remote teams, cultural fit, turnover and specify process
- Profitable, the actual cost savings exceed to grow in scale and scope
- Implementations increasing in scale, scope, complexity of processes and diversity of locations

They also report a number of risks when adopting offshoring (more than 40 % of respondents citing risk as important): poor service quality, lack of cultural fit, loss of control, lack of client acceptance, lack of data security, weakening employee morale and employee turnover in offshore center (perceived by companies with experience only). Oshri et al (2009) especially mentions the lack of understanding of the counterpart and communication norms as a risk in offshore outsourcing. They address several issues
concerning client’s internal management, such as lack of top management commitment, inadequate user involvement, lack of offshore project management know-how, poor management of end user expectations and failure to consider all costs. Lack of ownership of the product caused one of the Indian teams studied to lack motivation, since there was no perception of being a part of the global team. Vivek et al (2009) describe how relational governance changes the trajectories of offshoring projects. They found that while starting off with a transaction-cost philosophy in which safeguarding is emphasized, the collaborations evolved towards a development of specific core competences (resource based philosophy), and in time the establishment of a relational governance under which trust facilitates learning and limits opportunism. At the transactional level the provider is expected to focus on a specific process, develop enough skills to fulfill the contract and the training programme may provide only sufficient information to permit execution of the specific task sent offshore.

Lewin and Peeters (2006) describe the evolution of offshoring implementations into a progressively standardized industrial practice, suppliers of these business services multiplying and offering a broader range of activities. They anticipate the commoditization of entire suites of organizational processes, including the transfer of hitherto unique and tacit organizational capabilities to external providers. In their review of the new porous web-based network structures that large multinationals will relate to, they distinguish a number of new organizational capabilities needed such as configuring, reconfiguring and managing remote locations as well as mixing and remixing various intermediary service providers. They view offshoring not so much about eliminating cost as experimenting with radically new ways of doing business, e.g. performing activities that have been deemed unfeasible in high cost countries. The creation of new form of R&D organization, e.g. collocated research groups (Howells, 2008) and an increasing flexibility of workforce, with differentiated core and periphery workforce is foreseen (Howells, 1999).

There are few studies describing how to execute a complete offshoring project from decision and transfer, to governing the distributed development. Manning (2008) describes several capabilities companies need to develop to remain competitive in the use of offshoring; from recruiting and development to retaining talent over time, coordinating globally dispersed innovation activities and collaborating with external partners. When it comes to success factors, supplier competence, communication and trust are the concepts which are considered necessary in making offshoring work (as seen in Table 2) Asian countries are frequent location of offshoring contracts, and in their review of cross-cultural effects on international outsourcing. Ramigwong & Sajeev (2007) discussed the risk of “the mum effect “. This code of silence has been found in certain outsourced
projects, in which offshore stakeholders avoid informing their client that a project is failing and, decide instead to remain silent and allow the failure to continue.

Table 2 Outsourcing success factors in the literature

<table>
<thead>
<tr>
<th>Type</th>
<th>Factors</th>
<th>References</th>
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<tbody>
<tr>
<td>Successful outsourcing</td>
<td>Supplier competence in technology and quality control</td>
<td>(Primo and Amundson, 2002; Boutellier, Gassmann et al., 2008)</td>
</tr>
<tr>
<td></td>
<td>Interface management and communication</td>
<td>(Primo and Amundson, 2002; Van Looy, Martens et al., 2005; Boutellier, Gassmann et al., 2008)</td>
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<tr>
<td></td>
<td>Amount of direct interaction with supplier</td>
<td>(Primo and Amundson, 2002)</td>
</tr>
<tr>
<td></td>
<td>Legislation and contracts</td>
<td>(Mao, Lee et al., 2008)</td>
</tr>
<tr>
<td></td>
<td>Nature of supplier involvement</td>
<td>(Clark, 1989; Primo and Amundson, 2002)</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
<td>(Doney, Cannon et al., 1998; Van Echtelt, Wynstra et al., 2006; Mao, Lee et al., 2008; Sherwood and Covin, 2008)</td>
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<tr>
<td></td>
<td>Maturity of collaboration</td>
<td>(Sherwood and Covin, 2008)</td>
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</table>

Heeks et al (2001) emphasize the need for synchronization between developer and client in Global Software Outsourcing (GSO) relationships. The limits in synching with different stakeholders usually originate from three overlapping issues; tacit knowledge, informal information and culture. The formalized requirements specification, although necessary, is insufficient as there are often a number of underlying tacit assumptions which are not transferred. Examples can be knowledge on the nature of the customer, design and programming choices and working practices. Another problem is that GSO requires constant divergence between formal guidelines and improvisation, which in turn require informal communication. Video conferences and emails are inadequate, travel and direct meetings are necessary to fully synchronize the information dimension.

Finally, the costs of offshoring and their implications for industrial nations and their economies must be considered. Cha et al. (2008) define a knowledge supply chain as a sequence of related, knowledge-based processes that includes both low-level production processes and higher-level coordination processes which together produce a product or service. Using a learning model that captures unit cost against knowledge, they highlight the difficulty of reversing the offshoring decision, and identify scenarios such as learning-by-doing, formal knowledge transfers, and disruptions in the knowledge supply chain, which reduce the economic return from offshoring. Other researchers are more concerned with implications on the macro level. Doh (2005) exemplifies with the
increased wages in Ireland which caused many firms to move operations elsewhere when the level approached European, and the implications of a steady increase of wages in India. “Offshoring raises concerns about a new kind of dependency. Offshoring, when unrelated to domestic demand, may exacerbate reliance by developing countries on the capital and resources of industrialized nations. If so, developing countries become vulnerable to the vagaries of MNCs who may choose to shift production from developed to developing countries, or from one developing country to another” (p. 697). He suggests global corporate responsibility as an example of how international actors should agree to agreements and codes of conducts to maintain a certain standard both in domestic and global operations.

Jensen (2009) claims that the offshoring of advanced services should not be considered to entail the risk of the hollowing out of offshoring firms, but rather as an opportunity for strategic business development and organizational change. As partnerships evolve and firms gain experience the learning effects in both home and host firms increase over time, and the objectives of the collaboration change. Experience starts a sequence of changes at systemic level as the organization adapt to better exploit the advantages of offshoring.

A method of viewing offshoring as a process, as seen in Figure 3, has been used in this section as a way to synthesize and systemize recent literature concerning offshoring. While the decision stage is thoroughly covered in the literature, the transfer and governance stage has been described by combining related fields of literature, such as knowledge transfer. The main conclusions from this section are:

- Companies make the decision to use offshoring not only as a means of reducing costs, but also to gain access to qualified personnel, gain flexibility and scale of operations, shorten time to market, access to new markets and share costs of technology development.
- The decision to offshore embraces consideration of what functions are suitable to offshore (e.g. core or non-core), to what location these functions are to be sent and, whether a captive center or offshore service provider (external supplier) is to be used.
- The industry has sent increasingly advanced functions overseas, and at an increasing pace.
- The transfer stage involves transmitting and receiving knowledge, establishing roles, responsibilities and trust between the stakeholders involved.
- Several factors are identified which determine the dynamics of a transfer; nature of collaboration, the knowledge differential between the sites, the amount of
embedded knowledge involved, national cultures and the trust created between the stakeholders.

- Recent research shows that operating in a globally distributed manner and governing offshoring is an experimental learning process for many companies, with no established corporate strategies, even though offshoring is rapidly evolving into standardized industrial practice.

- Risks with offshoring include poor service quality, lack of cultural fit, loss of control, lack of client acceptance, lack of data security, weakening employee morale and disproportionate employee turnover in offshore centers, but also represent an opportunity for organizational change.

### 3.4 Exploring organizational capabilities in the context of offshoring

One part of ensuring effective offshoring is to ensure that key stakeholders are engaged, and that the strategic decision to offshore is supported by an implementable strategy. Translating that decision into action requires the organization to develop a unique set of capabilities not only to transfer the required explicit and tacit knowledge to the new site, but also to sustain them during day-to-day operations. Capabilities exist at multiple levels in the organization and can be understood in terms of activities, routines and capabilities (Grant 1996). This chapter will give some insight into what organizational capabilities are, and how they can be understood in the context of offshoring.

#### 3.4.1 Organizational capabilities and dynamic capabilities

An organizational capability is the organization’s ability to perform a wide range of actions, as described by Dosi et al (2000), pg 1-2):

“we identify the term ‘organizational capabilities’ with the know-how that enables organizations to perform these sorts of activities”…“Capabilities fill the gap between intention and outcome, and they fill it in such a way that the outcome bears a definite resemblance to what was intended.”

Compared to considering technology as a highly codifiable public resource, and considering the processes of capital accumulation and allocation on the sectoral level, the capabilities-based view “sees aggregate economic progress largely as the consequence of a multiplicity of actions at the firm level” (Dosi, 2000, p. 18). Dosi et al (2000) distinguish routines from capabilities, saying that while routines can be found in contexts in which their purpose is unknown, a capability involves intentionality and deliberate action. Routines can be considered the building blocks of capabilities. Routines, on the other hand, have the purpose of coordinating the skills of the organization, turning the collective base of skills into useful effect.
A related concept which has generated the interest of researchers in recent years is ‘dynamic capabilities’. “A dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness” (Zollo and Winter, 2002, p 340). Operational and dynamic capabilities are differentiated by their context. While operational capabilities are required to maintain the organization and earn a living in the present, dynamic capabilities are associated with the concept of change, i.e. adapting, integrating and reconfiguring (Kay, 2010). As dynamic capabilities refer to changing rather than maintaining an organization, the concept can be considered highly relevant in different stages of the offshoring process, as the offshoring process causes a disruption in normal organizational practice, e.g. before the organization has reached a steady state of operating in a globally distributed manner.

Dynamic capabilities constitute the firm’s capacities to integrate, build, and reconfigure internal and external resources/competences to address and shape the organization in response to rapidly changing business environments (Teece et al 1997 in Katkalo et al 2010). They may be rooted in change routines, but more commonly part of creative managerial and entrepreneurial actions, in which they reflect the speed with which and degree to which a firm can align and realign its resources and competences to match the business environment (Katkalo, Pitelis et al., 2010). Although dynamic capabilities has been conceptually associated with competitive advantage, recent papers consider dynamic capabilities to be necessary but not sufficient in securing competitive advantage, depending on the organization mix of products and resource configurations (Kay, 2010).

3.4.2 Studies of capabilities in the offshoring context
A few studies discuss the importance of capabilities in the context of offshoring, specifically in terms of technological capabilities (Ethiraj, Kale et al., 2005; Song & Shin, 2008), process-related capabilities (Ethiraj, Kale et al., 2005); (Gold, Malhotra et al., 2001), and the possibility of enhancing the portfolio of capabilities within the value chain (Holcomb, 2007).

Ethiraj et al (2005) studied empirically the importance of capabilities in the software service industry, and distinguished two types of capabilities: client-specific capabilities and project management capabilities. The client specific capabilities are facilitated by repeated interactions with the client, resulting in decreasing project execution costs and an increasing contribution to the project. Project management capabilities; on the other hand, is acquired through the investments made in infrastructure and systems to improve the company’s development process. The transfer they studied, from the client site to a team based in India, was supported by repeated interactions with the client, which resulted not only in a greater understanding of information infrastructure, but also
clarified the relation of the software to the client’s business environment. Specific to the software industry, they point out three capabilities as particularly important; a) software design capabilities, b) effort estimation and management capabilities (estimating resources), and c) schedule estimation and management capabilities (complete within the planned schedule). While the client specific capabilities are only relevant in that particular context, the project management capabilities are relevant across clients, industry domains, and development platforms. The results showed that projects for new clients received approximately 2% lower contribution to projects. Project management capabilities were generally predictive of higher project contribution. Finally they suggest that firms should explore the possibility of creating deliberate and institutionalized mechanisms to build client specific capabilities rather than leaving it to tacit approaches, learning by doing.

Song & Shin (2008) discussed the paradox of technological capabilities when it comes to knowledge sourcing within different centres within multinational companies. Their discussion concerns how a firm’s willingness to outsource and obtain knowledge depends on their relative competence in the home and host countries. When a host country has stronger technological capabilities than the home country, the multinationals headquarter tend to outsource more actively from the host country. The technological capabilities combined with absorptive capacity of an overseas lab increase its readiness to seek knowledge from the host country for innovative activities. Gold et al (2001) use organizational capabilities as a theoretical perspective in investigating effective knowledge management. They suggest that knowledge infrastructure should consist of technology, structure and culture. The technological dimension includes business intelligence, collaboration, distributed learning, knowledge discovery, knowledge mapping, opportunity generation and security. Organizational structure have a dual nature: rationalizing individual functions and units, but commonly inhibiting collaboration and knowledge sharing across the firm. Reward and incentive systems should be structured to motivate and reward employees to generate and share new knowledge. The culture of the organization is central to efficient knowledge management, promoting interaction and dialogue across the firm, with the support of corporate vision and corporate values. Gold et al (2001) also mentions four broad dimensions of process capabilities; the acquisition process, the conversion of existing knowledge into something useful, application processes, and protection processes.

Holcomb & Hitt (2007) argues that strategic outsourcing not only allow firms to reduce costs, but also improve their portfolio of capabilities, and their value creation potential, especially since firms produce new combinations using capabilities provided by the new markets entered. Strategic outsourcing enables firms to align competing priorities, focus management on growth and innovation opportunities, and allocate available resources to
best effect. They extend the focus on cost reduction by governance mechanisms to include the value that is created when firms more effectively exploit the specialized capabilities obtained from outsourcing relationships. The Sako (2006) review of official statistics of UK business services shows that the productivity of business service providers is enhanced through more standardization, further consolidation of business processes, increased specialization through outsourcing and offshoring and by moving up the value chain to offer customized solutions. When suppliers in vertically disintegrated markets develop new capabilities, they are tempted to engage in an invasive strategy, going upstream and downstream, in direct competition with the client company (Sako, 2006).

3.4.3 Context and dimensions of culture in the offshoring context
One principle advanced in this research is that an offshoring project should be evaluated within its specific context. A clear indicator studying offshoring is the word itself, that the focus is on transferring a function overseas, which means crossing boundaries and distances not only geographically but also in terms of culture. This chapter will systemize the differences between crossing geographical, national, legal and organizational boundaries.

Ronen & Shenkar (1985) point out that that national boundaries delineate the legal, political, and social environments within which organizations and workers operate but nationality alone does not fully capture cultural values. As companies have suppliers globally, the learning and development of knowledge can become problematic because of cultural differences (Bosch-Sijtsema and Postma, 2009). Globalization entails both diversification and standardization, but while the same products are available worldwide, management practices still differ across cultures (Newman and Nollen, 1996). There have been several attempts to conceptualize and measure cultural differences among nations and relate them to management practices, the most well-known survey results include Hofstede (2005) and Trompenaars (1997). Trompenaars (1997, pg. 3) states that “as markets globalize, the need for standardisation in organisational design, systems and procedures increases. Yet managers are also under pressure to adapt their organization to the local characteristics of the market, the legislation, the fiscal regime, the socio-political system and the cultural system. This balance between consistency and adaptation is essential for corporate success”.

As culture is a word with many associations, it is important to distinguish the specific intention and meaning of the concept. Triandis (1989) argue that “Culture is to society what memory is to the person. It specifies designs for living that have proven effective in the past, ways of dealing with social situations, and ways to think about the self and social behavior that have been reinforced in the past.” (1989, pg. 511) Culture is defined by language, technology,
economic, political, and educational systems, religious patterns, social structures and so forth (Triandis, 1989). Schein (1992) defines culture as a “pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered to be valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to these problems.” (p 12) Culture can be described on different levels, from concrete manifestations to deeper values and assumptions which are taken for granted. Visible organizational structures and processes can be called artefacts of culture. Culture includes such visible phenomena’s language, technology, clothing and rituals. Even if visible, they are not easy to interpret, as these symbols can be ambiguous and interpreted subjectively. Espoused values include strategies, goals and philosophies. They are conscious manifestations of culture which can match the underlying values to a variable extent. The basic underlying assumptions illustrate the unconscious beliefs that are taken for granted, perceptions, thoughts and feelings. (Schein, 1992) Management practices can differ on an individual level, on an organizational level within a culture, as well as internationally. The concept of organization culture is explained in the following.

“the idea of culture focuses attention on the expressive, nonrational qualities of the experience of organization. It legitimates attention to the subjective, interpretive aspects of organizational life.” (Smircich, 1983, pg. 355).

Researchers distinguish between organization culture and organization climate, through the preferred choice of methods and topic. According to Denison (1996, pg, 624), “Culture refers to the deep structure of organizations, which is rooted in the values, beliefs, and assumptions held by organizational members”, “Climate, in contrast, portrays organizational environments as being rooted in the organization’s value system”. Western clients often underestimate the impact of culture, believing that distance, borders and place no longer matters in a globalized world. While a North American company had a culture of objectivity and accountability, their Indian counterpart system was based on a rather personalized and subjective management culture. One bridging mechanism mentioned by Heeks et al (2001) is the use of “straddlers”, with one foot in the client’s world and one in the developer’s world. With sufficient work experience in the clients’ country, these straddlers can function as a buffer between the Indian developers and the senior client managers. They also address the important dimension of synching, time. Since these relationships reside in a context of continuous change, their congruence must be actively sustained.

While culture is widely researched, its influence on offshore outsourcing is not widely acknowledged (Nicholson and Sahay, 2001). One attempt at exploring this issue is a case study on globalization of software outsourcing by Nicholson & Sahay (2001), addressing
collaboration between Britain and India. Indian companies are nowadays veterans in the software outsourcing business, and are able to use their experience as well as references from multinational companies (Ali Babar, Verner et al., 2007). Panda & Gupta (2004) revealed in their study that while there were some common cultural preferences in India, one could also find some location-specific cultural preferences, which they associated with the degree of infrastructural development in these locations. They argue that “cultural change is context sensitive and depends on the historical and cultural legacy inherited by a location” (p. 27). Similarly, Singh (1990) argues that the general descriptions and average national cultural scores are less valid in culturally plural countries such as India and China, which are particularly diverse and have distinct sub-cultures. He prefers to identify distinct segments and determine their sub-cultural identity, such as industrial organizations.

Nakata and Sivakumar (1996) studied the relationship between national culture and new product development (NPD), and found that a high degree of individualism favours NPD at the initiation stage, as it benefits from drive and personal vision. On the other hand, a high degree of collectivism favours NPD during the implementation stage, benefitting from cooperation and unified purpose. The same pattern was apparent with respect to power distance, a low degree of power distance favouring the initial stages in NPD by encouraging the contribution of diverse ideas without regard to hierarchal position.

This section has discussed the need for companies to develop specific organizational capabilities to manage offshoring. Although research addressing organizational capabilities in the context of offshoring is limited, this literature review provides some insight into organizational capabilities, dynamic capabilities and cultural context, which can be used as a framework in considering the empirical data in relation to the literature on organizational capabilities. To summarize;

- Organizational capabilities can be described as the knowhow organizations need to perform certain activities, which links intention to outcome. Capabilities can be found on different levels in an organization; as activities, routines and capabilities
- Routines are used to coordinate the skills of an organization, and can be considered the building blocks of capabilities.
- Dynamic capabilities are associated with adaption to rapidly changing internal and external environment, while operational capabilities are required to maintain the organization and earn a living in the present. Dynamic capabilities involves adapting, integrating and reconfiguring to meet changing needs
- A few studies discuss the importance of capabilities in the context of offshoring, specifically in terms of technological capabilities, process-related capabilities,
relationship-specific capabilities, as well as the possibility to enhance the portfolio of capabilities within the value chain.

- As companies have suppliers worldwide, learning and the development of knowledge can become problematic because of cultural differences. National boundaries delineate the legal, political, and social environments within which organizations and workers operate. Location specific cultural variations are also found.

- Organizational culture refers to a deeper structure within organizations, in which values, beliefs, and assumptions are shared among its members and shape their actions.
4 Research methodology

This chapter will explain how the research was designed, beginning with an overview of the context of the problem studied and the scientific view that shaped the research, the selection of cases and the engaged scholarship approach to developing new knowledge together with the companies involved. After a description of the two cases studied, the different data collection methods used is described, as well as the methods of analysing the data. At the end of the chapter, the different techniques of ensuring the quality of the research and the limitations of the methods are explained.

The research was planned to suit the problem studied, on the basis of three notions.

1. Offshoring can be seen as involving both a process of transferring work overseas and a steady state, a distributed PD organization. The offshoring process begins with the decision to distribute functions, from the transfer of knowledge and responsibilities overseas, to the governance of the product portfolio across a number of globally distributed sites.

2. Organizations working with PD in a distributed manner have at any point in time a number of sites globally. The sites have certain responsibilities with respect to projects in the overall product portfolio.
3. The management of offshoring thus includes both the management of the offshoring process, and the coordination of sites and their respective responsibilities.

The question to be answered is where researchers can find data to help explain the dynamics of managing offshore development. From a governance perspective, much different process documentation can be used as a basis for the analysis of artefacts of offshoring, e.g. strategy and process documentation, policies, KPI, transfer project plans, organizational charts etc. These tangible results of the management of offshoring do not give the full picture. Intangible aspects of managing offshoring include the knowledge and capabilities which different levels of employees possess, the motivation and incentives that guide their actions, the interplay of different cultures and contexts of different sites etc. Since it is the latter intangible aspects, which are at the focus of this research, in-depth case studies was chosen as a methodology for attaining knowledge concerning the dynamics of offshoring. By including a number of respondents on different hierarchal levels, with different occupations, and from different parts of the organizations (projects) we gained insight into the different views of offshoring within the organizations, corresponding to the case study characteristic of striving towards a holistic understanding of the phenomena under research. The key challenges and decisive factors in managing offshoring within their organizations were determined in discussions with the respondents. The context of the phenomena together with the scientific view is used to frame the research and its design, as seen in Figure 4.

4.1 Scientific view and approach

The scientific view of a researcher is defined by how the researcher views the world and the relation between empirical studies and the reality. Positivistic researchers look for presuppose causal laws explaining empirical, observed events, while with a hermeneutic approach, a researcher interprets why and how people act in a certain way in a specific situation. On the scale between seeing the world as an objective reality and viewing it as a socially constructed and relative phenomenon, this research can be placed somewhere in the middle – adopting a realist approach. One of the reasons for adopting this approach is to counterbalance the large scale positivistic survey research that is common within offshoring studies. Management of offshoring means bridging national and organizational boundaries, transferring knowledge and building commitment. The complexity of the subject requires a combination of in-depth studies within the context and larger-scale validation studies to identify all the relevant facets of the phenomenon.

The existence of a mind-independent reality is a central philosophical thesis of realism. The views of how empirical research can shed light on this reality, however, differ. This thesis is based on a stream of realism called critical realism. Critical realism is based on
three basic notions; a) scientific theory refers to reality as the structures and mechanisms of the world, rather than the empirical events as such. b) These underlying structures and mechanisms are only under certain circumstances related to observable empirical events, and c) even though the scientific knowledge of the reality never can be seen as certain; creative construction, modelling and critical testing of theories helps us acquire such knowledge. According to realists, our grasp of organizational reality is fragmented, and research can contribute by progressively providing a better understanding of the same. Consequently, scientific theories offer provisional descriptions and accounts of phenomena, which are always open to revision. However, it is still necessary to assess competing theories in relation to the comparative explanatory power of the underlying mechanisms and structures of a phenomenon (Tsang and Kwan, 1999); (Reed, 2005).

“Whether or not these potential generative causal powers are realized within a particular temporal and spatial location is dependent on a range of structural, historical and operational contingencies that interact in a highly complex and dynamic manner.” (Reed, 2005, pg. 1637)

The distinction between the real and the empirical world is important, since the empirical domain is not the deepest level of reality. This is what distinguishes critical realism from empirical realism or a positivistic view of knowledge. “Critical realism will be regarded as a meta-theoretical paradigm focused on explanations of the underlying ‘generative mechanisms or structures’ that shape corporate agency and the social relations that it reproduces and transforms.” (In italics, Reed, 2005) Reed (2005) describes how the objective of critical realism is to explain, but not predict social behaviour, in terms of the causal mechanisms that constrain and enable different types of human collective action. This also involves the need to identify and account for the complex interactions of contradictory and conflicting powers and influences operating at different levels of analysis. All knowledge results from a diffusion process which places knowledge in a spatial location, historical and social setting, although anchored in an independently existing world (Reed, 2005). Compared to a positivistic approach, this means that when analysing data we are not only looking for general themes across the sample, but also trying to reveal contradictions and trace them to organization affiliation or past events.

In this research, this translates into seeing naturally occurring data as analysable texts rather than as the absolute and only truth. The collected data (especially from interviews) gives insight into company practices within offshoring and how these practices have evolved, but there are aspects of these issues which are not detected by the researcher due to the limited knowledge, lack of openness or forgetfulness of respondents as well as inadequate documentation. Offshoring is a phenomenon affected by a wide range of forces on different levels, such as macroeconomics, top management incentives or the motivation and actions of a single employee. The underlying mechanisms and structures
An interactive approach – engaged scholarship

Offshoring is an important topic in many companies today, everything from policy issues and nationalism, to managing offshoring in a cost efficient way being under discussion. Documentation and statistics only provide the official and abstract level of the dynamics of managing offshoring. To really understand the context, we need perspectives from all the organizations involved in the operations, as well as from different hierarchal levels within the organizations. Due to the sensitive nature of offshoring strategies as seen by employees, a long term engagement with the case study companies was established. This choice of close cooperation with the companies led to an openness in both directions concerning the progress of the collaboration and upcoming issues, and exclusive access both to respondents and internal documentation. The research did not interfere with working procedures, the close cooperation with the companies enabling continuous feedback and iterative data collection cycles, following the projects longitudinally. This accessibility ensured easy access to both the articulated, formalized practices and the “actual” views and practices which determine how the management of offshoring is performed.

This research was planned in accordance with the engaged scholarship model. This stresses the importance of obtaining the perspectives of key stakeholders (e.g. researchers and practitioners) in acquiring knowledge about complex problems (Van de Ven, 2007). The depth and insights of the knowledge are enhanced if these stakeholders are from diverse backgrounds. The complexity of the subject studied demanded iterative cycles of data collection, comparison with existing knowledge and conceptual theory-building, which was favoured by the long term engagement of the companies. A participative approach was taken throughout the research process; problem formulation, theory building, research design and problem solving. Problem solving refers here to the process of writing a narrative or making a presentation of research findings, to obtain the confirmation by the respondents of the findings in addition to disseminating the knowledge obtained. By completing the cycle for each data collection, the study becomes a continuous learning process for both the researchers and the company contact persons, and the conceptual models of their world are improved by each cycle. In the end, the understanding of the companies, originally limited to what the respondents can contribute, is augmented by the subsequent processing of this by the researchers. The
aggregated picture of the respondent’s descriptions is communicated back to the respondents and the industrial reference group, as a feedback loop, for verification of the researchers’ interpretations and to document their reflections on the overall picture.

![Research Process Diagram]

**Figure 5 The research process**

4.1.2 Industrial reference group
An industrial reference group, consisting of representatives of the university and different business units of the two companies was created. The industrial reference group meetings were used to define the context of the companies and to develop the problem statement, for presentation by the researchers of the summaries and analysis of their studies and confirmation by the companies that these correspond to their view of the organization. It also contributed to case sampling (stratified sampling). For the research, it was necessary to find cases for study with sufficient interaction with an offshore site, specific project characteristics, and specific stages of the offshoring process and general accessibility. The first round of interviews dealt with the overall project portfolio and an orientation to permit an in-depth investigation. The discussions during these meetings, of three to four hours duration, elicited the nuanced perspectives and insights of the companies’ representatives, providing guidance in planning the research and ensuring its empirical basis through the right selection of respondents, able to present all the facets of the problem. Each reference meeting involved a workshop element, such as asking for the company’s main pain points in the management of globally distributed development, this being used to frame the research project as well as to provide guidelines in ensuring relevance and correct choice of words when creating interview protocols and questionnaires.

4.2 The research design

4.2.1 Qualitative research
The objective of this research was to determine the dynamics of the management of the offshoring of complex products, to discover its underlying mechanisms and structures.
The company documentation was not sufficient to permit this. As the area is incompletely understood, an exploratory approach, the collection of qualitative data, was used. Qualitative research is based on its inductive approach, words rather than numbers being used to describe specific situations or people. It is especially suited to the obtaining of an understanding of the meaning of participants’ experiences, the particular context in which they operate, unanticipated phenomena or an understanding of the actions which constitute a process (Maxwell, 2005). These factors, of an exploratory nature, made a qualitative approach suitable for the initial phase of the research project.

4.2.2 Case study research

“A case study is a unit of analysis in case research. It is possible to use different cases from the same firm to study different issues, or to research the same issue in a variety of contexts in the same firm. Case research is the method that uses case studies as its basis.” (Voss p. 164 in Karlsson, 2009)

A case study design based on qualitative data was suitable since the focus of research was to investigate offshoring as a current phenomenon in its natural context (Yin, 2009). This research began with an in-depth case study of the outsourcing context, and evolved into a multiple case study, adding a case of offshore transfer management. In-depth case studies are suitable for exploration purposes, while multi-site cases and multiple case studies are more appropriate for theory building and theory testing (Voss in Karlsson, 2009). While single cases may permit greater depth of research, multiple case studies are less subject to observer bias. While the offshoring topic is not new, the research on sending more advanced functions overseas remains limited and the case studies provide a suitable opportunity to explore the dynamics of this context, and thereby evaluate and extend the existing theories that have been developed in other contexts (e.g. the large scale database surveys performed by Lewin, Massini et al, 2009).

Another way of distinguishing the cases methodologies is by separating them into retrospective and longitudinal cases. Retrospective cases allow collection of data on historical events, but do not provide reliable information on how the process evolved in practice, as respondents may forget or misinterpret their memory of events. Longitudinal field study is defined by Åhlström & Karlsson (2009) as in-depth studies of change processes inside organizations. They are a specific type of case study which involves studying a phenomenon over time (not a single data point), in real-time. Organizations suitable for this type of research have a change process which is transparently observable, and the data should be collected from a position in the organization in which the members are most likely to be knowledgeable regarding the process being studied (Åhlström & Karlsson, 2009). The problem with longitudinal research is that it is time consuming and the final result is unknown from the beginning. Consistent with our view on offshoring as both a steady state and process, both a retrospective and a longitudinal
case form the basis of this research. Case A is a retrospective case study in the
outsourcing context, exploring the relationship between Eurosoft and its Indian supplier.
Case B reflects the initial rounds of fieldwork concerning the relationship between two
Eurosoft sites during a transfer project. The project has been followed during 8 months.

Choice of cases
One should remember that sampling does not solely involve people, but also settings,
events and processes. These parameters should be considered in relation to the research
questions, to make sure that the selection is representative and time-efficient in providing
the answers required (Maxwell, 2005). The sampling of cases for this research can be
described on three levels; choice of companies, choice of cases (matching research
objective), and more specifically choice of projects (matching access to actual data in the
companies). An initial survey was used to map the different projects to enable a sampling
of cases according to specific factors. The intention was to sample projects within the
organizations which represent different types (e.g. outsourcing or offshoring), different
stages in the organizational process of developing organizational capabilities needed for
offshoring (projects in different time periods, as well as the use of “lessons learned” and
similar tools). Even though the focus lies on the organizational level, insight into the
organizational practices is obtained from the product development projects, and in this
case, the specific relations between and management of different products through the
interaction of different sites. Consequently, the cases were chosen in respect to their
maturity and type. The partner organization provided insight into the offshore
outsourcing perspective, through a long term relation with an Indian vendor (Case A),
and the offshoring perspective through an offshore R&D centre in China which is co-
owned with another company (Case B). While the focus lies on managing the interface
between sites, during the different stages in the offshoring process, the data which is
relevant can be found in the specific projects which have an interface between sites in
their daily work, or in the specific time periods during a transfer project when a new
interface is created.

Figure 6 Case study focus

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4.2.3 The cases in the research – Eurosoft and its Indian service provider

Eurosoft is a European Global Fortune 500 company, which develops software-intensive systems and operates Business to Business. Even though their products are complex and require significant effort and budget for development, Eurosoft operates on a strict budget, focusing on achieving the lowest possible costs in developing and implementing state-of-the-art technologies. One of its strategies permitting delivery at low cost, while retaining labour flexibility has been to outsource a large part of its development to low cost countries. Eurosoft has several development sites globally, which outsource projects to an Indian service provider (ISP). Case A focuses on one of its sites in Sweden and its relations with an Indian supplier (ISP). Case B focuses on the relations between the Swedish site and a newly established site in China, which was in the process of assuming complete ownership of one of the Eurosoft flagship products. The R&D centre in China has 200 people working with projects related to the functions previously developed in Sweden, and since it started working with software related areas three years ago has grown from 150 to 450 employees. The objectives are to expand the R&D research pool, to free up resources for new development, and lower cost.

ISP is a consultancy company with consultants in 50 countries. The company provides IT services, business solutions and outsourcing to global businesses. ISP has been executing many projects requested by Eurosoft since the business relation began in 2000. The supplier performs both maintenance and product development in an Offshore Development Centre (ODC) in India. There are around 500 persons employed at the ODC working directly for Eurosoft. The projects range from direct customer support, product maintenance to product development in cooperation with Eurosoft engineers.

4.3 Data collection and analyzing techniques

Yin (2009) lists six sources of data for case studies: documents, archival records, interviews, direct observation, participant-observation, and physical artefacts. This research made use of several data collection techniques; surveys, interviews, and analysis of archival data to construct a robust understanding of outsourcing and offshoring in practice. This section will give an overview of the different methods used for collecting and analysing the empirical data.

4.3.1 Interviews

One of the most important sources of information within case studies is interviews (Yin, 2009; Voss in Karlsson, 2009). The primary source of the data collected in this research is based on interviews with key stakeholders within the projects, in general management, project management and at the team level. Different hierarchical levels of the organization were selected to provide a nuanced and detailed description of current practices within
offshoring and outsourcing, as a foundation for future research. A key informant was interviewed as a starting point in each case, to give a general background to the organization and the projects studied, as well as discuss suitable respondents. From our initial ideas concerning the roles and projects to be included in the study, the informant provided a list of names and informed them about the research project. The list from the key informant was used to select the persons for the first round of interviews, the respondents then nominating additional people who could inform the study as it progressed (“snowballing”). Asking the opinions of company representatives was used as a strategy to provide insight into e.g. the three types of stories told within a company in relation to a phenomenon (e.g. the motivation of sending organization, the emotional response to offshoring and the impact on project progress). The new interviews were conducted up to the point at which theoretical saturation was achieved, where no new insights emerged from the analysis of a further respondent.

Yin (2009) distinguishes three types of interviews; in-depth interviews, focused interviews and surveys. Another way of differentiating interview types is the role of the interviewer as well as the reliance on interview protocol; structured, semi-structured or open interview. All interviews performed in this research were focused interviews, with a semi-structured character. The objective in choosing focused interviews was to address certain topics with all the respondents, in order to be able to compare their perspectives in relation to their roles and affiliation. The interviews were carried out with a research protocol as a starting point, but the respondents were allowed to talk freely, and depending on their answers, the interviewer asked for more detailed descriptions or clarifications on certain topics of interest. The semi-structured approach was chosen in the sense that open-ended questions allowed the respondents to reflect openly, providing the researcher with the opportunity to recognize new areas not originally anticipated. The element of surprise is important when analysing a case study (Siggelkow, 2007). While communication and culture were one of the themes of the interview protocol for Case A, the extent to which it influenced the evolution of the relationship was a surprise. The open-ended questions enabled the case study to raise issues that were not anticipated. All participants were informed on the confidentiality of their participation, general information on the study, and how they would get information about the results. For case A, all interviews were performed on site (in Sweden and in India), and were recorded and transcribed. For case study B, the interviews were performed by telephone, simultaneously taking extensive notes. Half of the phone interviews were performed with two researchers, taking turn to ask questions and take notes.
4.3.2 Documentation
According to Yin (2009), documentary information is likely to be relevant to every case study topic. Relevant documentation can include e.g. letters, emails, and minutes of meetings, administrative documents and progress reports. Company documentation was used for multiple purposes in these studies. The documentation provided, served mainly as a basis for improving the researcher’s knowledge of the organizational structures, formalized processes and understanding of the context of the specific projects investigated. In addition to providing the researchers with contextual information, case B gave a unique opportunity not only to talk to the key informant continuously, but also to get access to project documentation that was produced in real-time. Establishing a relation with the transfer project manager was crucial to getting access not only to these materials, but also to observing how the different concerns that were expressed were formed into strategies and solutions over time.

4.3.3 Direct observation
Data collection by observation can take different forms, from formal to casual activities. It can be useful in providing additional information about and understanding of, either the context or the phenomenon being studied (Yin, 2009). Examples of situations in which observation was used in this research were company workshops, meetings, management days as well as informal meetings such as dinners and activities during company site visits. The observations were not performed according to a certain process with a formal research protocol, but rather as informative sessions to obtain a deeper insight into the company context and practices. This triangulation of methods (interviews, business documents and observation), gave insight into different versions of the same events and ways of working. Visiting the different sites gave the researchers the opportunity to see the work in practice and the respondents the possibility of meeting us in person, building confidence by reporting the results back and thereby ensuring that the respondents got some satisfaction out of giving us a slot of their time.

4.3.4 Literature review
“Contributing to knowledge requires that there is an existing field of knowledge to contribute to” (Karlsson, 2009).

This research contributes to an existing body of knowledge which although already voluminous, remains incomplete. Since the topic is at the intersection of many bodies of knowledge, more than a systematic database search is required to add to the existing knowledge. The same phenomena is described in different disciplines, using different concepts or pertinent to the particular discipline. Instead, repeated cycles of searches in databases were used as an approach to assemble the knowledge, “snowballing” knowledge for each new article by reviewing lists of references and thereby finding
intersections between bodies of knowledge. The review of the literature was intended to identify areas related to any of the factors involved in the research project, hence contributing to an understanding of how to address issues such as: Innovation Management, PD management, Intercultural communication, project management, organizational capabilities etc. Literature reviews help establish the authority and legitimacy of the research, clarifying the contribution as well as constraining the research to a reasonable scope (Karlsson, 2009) By combining the capabilities mentioned in the literature with the experiences from a case, the likelihood of generating novel theory is increased (Eisenhardt, 1989).

Table 3 Overview of the empirical work connected to the appended papers

<table>
<thead>
<tr>
<th>Paper</th>
<th>Topic</th>
<th>Type</th>
<th>Data Collection</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Culture</td>
<td>Interview study</td>
<td>Interviews, archival data, observation</td>
<td>Content analysis, Categorization</td>
</tr>
<tr>
<td>B</td>
<td>Evolution of relation</td>
<td>Case study</td>
<td>Interviews, business review data</td>
<td>Narratives</td>
</tr>
<tr>
<td>C</td>
<td>Transfer management</td>
<td>Case study</td>
<td>Interviews, Policy documents, Project documentation</td>
<td>Open coding, Clustering, Comparative analysis</td>
</tr>
<tr>
<td>D</td>
<td>Organizational capabilities</td>
<td>Case study</td>
<td>Interviews, Policy documents, Project documentation</td>
<td>Open coding, Clustering, Comparative analysis</td>
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</tbody>
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Table 3 shows the evolution of the research design through the different cases and papers. This began by addressing culture and thereafter considering it in the context of the evolution of practices within an organization. The Transfer management case study captures an on-going transfer project and provides an overview of the transfer management system in place, the learning process and how it is systemized into policies and processes used by the entire organization.

4.3.5 Techniques for analyzing data
The interviews were analysed after they were converted from audio to text (in case A by transcribing audio tapes, in Case B by means of extensive notes taken during the interviews). After reading the texts, open coding was used to create labels with names that reflect the meaning of associated text (Kwortnik Jr, 2003). The labels were written in the margins in each document, each label referring to a highlighted part of the text. In the first round of coding, the label names resembled (or copied) the words used by the respondents. For the second reading, for which a common list of labels was created for all the printed interviews, the labels were named by the researcher to incorporate the meanings of several respondents’ quotes (by what Merriam,(1994), calls clustering). The coding process became increasingly abstract and theoretical as the themes and patterns which emerged in the data were labelled, in an iterative process called constant
comparative analysis (Kwortnik, 2003). While new labels were set to define second reading labels that referred to the same types of data, the old codes were retained to keep the subtle distinctions these concepts were initially chosen to represent. The abstract categories, consisting of the individual concepts, were then interpreted to define central categories, which assemble the material, and shape it as an explanatory whole (see Figure 7). Besides identifying the general themes of responses to our questions, the iterative interpretation process also highlighted deviations from common themes. This was to record different views of phenomena to obtain comprehensive knowledge of the topic. The element of surprise is important in qualitative research (Siggelkow, 2007), as it can highlight gaps in existing theory. Case A provided an example of the extent to which culture influenced the collaboration between sites.

![Figure 7 Process of data analysis](image)

Since an explorative approach was chosen, the open coding of data was a way of differentiating the study from the theoretical concepts existing in the literature, at least to begin with. However, coding interview data always carries the risk of misinterpretation of meaning. Although it is impossible to completely eliminate bias, using several researchers and triangulating with different types of data can minimize the impact of bias. The results of the data analysis were discussed by a group of researchers, and the respondents were provided with a summary of their conclusions to ensure that there were no major misunderstandings. The approach to data analysis was similar in both cases, but in case B, a program for qualitative data analysis was used (NVivo 9). The coding process followed the same pattern, but the different sections of the text could be easily coded into increasingly abstract hierarchies through the construction of “nodes”, as seen in Figure 8. All central categories could be compared by the sending and receiving organizations, making make sure that the results of the analysis were not completely reliant on organizational background or hierarchal position. The different tools for generating node tree maps, the visualization of the results according to quantity of references to each node
etc. to some extent minimize the impact of researcher bias on interpretations of what respondents considered most important. A limitation with using NVivo could be the risk of detachment from the original setting of a quote but this risk was reduced by marking out larger sections of the text.

Case B also differed in approach to include business review documentation in the analysis. Due to the process character of the study, to support the organization of the large volume of data, it was sorted in Excel database (sorted by time and collection point), as well as a qualitative data analysis program (NVivo). Case B also differed in approach by including an analysis of the documentation. Due to the process character of the topic studied, to permit the organization of the large volume of data, it was sorted in an Excel database (sorted by time and collection point) as well as by a qualitative data analysis program (NVivo). The China transfer project constituted a starting point for the planning of the longitudinal research. A broader picture was obtained by working with the companies, learning, through engaged scholarship, their current processes and mapping these.

Figure 8 Screenshot from NVivo 9, used in Case B
In some ways, documentation of the different gates in the projects and checklists to which the researchers were given access constitutes a formal or ideal description of the project. The results of many interviews were contradicted by the documentation, and the continuous inflow of documentation and updates during the execution of the project enabled us to see how documentation was used as a governance and communication tool. That being said, the main unit of analysis were the texts from the interviews, this being considered more consistent with the actual outcome of the project.

From a theory-development point of view, the end result from the studies is analytical rather than statistical generalization. Yin (2009) describes the process of analytical generalization, in which theory previously developed is used as a template with which to compare the empirical results of the case study. (If two or more cases give the same results, replication can be claimed, more convincingly if the same and not a rival theory were supported)

4.4 Quality of research

In the end, research is the performance of systematic studies to generate theories which increase our knowledge of the world. The methodology presented in the chapter above is intended to provide transparency into the research that builds the foundation of the thesis. Merriam (1994) presents six ways of ensuring internal validity, i.e. that the research conducted relates to actual practices, internal validity:

1) **Triangulation.** This is here, a means of collecting data from a wide range of individuals and contexts, using different methods. Triangulation can be used as a strategy to reduce the risk of unwarranted assumptions and systematic biases affecting the results, due to the choice of a particular, unsuitable method; improving, at the same time, the generality of the explanations as the study develops (Maxwell, 2005). In practice, information obtained from triangulation may not converge, but be inconsistent or contradictory; giving instead a range of views that does not converge into a single proposition about the problem being investigated. The results produced by alternative sources and methods may differ because of bias in data sources, or it may be that they tap into different sources of knowledge, or because of different dimensions of the phenomenon (Van de Ven, 2007). This is our motivation for triangulating by e.g. comparing the content of business review documentation with the views of respondents on different hierarchical levels.
2) **Member checking.** The respondents are given descriptions and interpretations prepared by the researchers to obtain their confirmation. In both study cases, member checking was used in various ways, e.g. by providing respondents with the opportunity to read through notes from interviews and meetings, from workshops with key informants and the end results presented.

3) **Observation during a longer time frame, or repeated observations of the same phenomena.** In accordance with our research plan, based on engaged scholarship, we have been continuously engaged with the companies, involving key informants in the research design and have continued checking the progress of the projects and business units over time.

4) **Horizontal review and evaluation.** This consists of consultations with colleagues as the research progresses, to obtain their comments on the results. The results from individual studies were constantly discussed within the research group, and for cross-disciplinary papers, additional researchers from related areas were consulted.

5) **Participatory approach.** The participants in the studies were involved in all stages of the research. Again, engaged scholarship (Van de Ven, 2007) shaped the planning of this research by the participation of key informants in problem formulation, theory development, and problem solving in all stages of the studies.

6) **Clarifying the particularities which the researcher brings to the table.** The explicit expression of viewpoints, underlying assumptions and theoretical perspectives at the beginning of the research.

**Reliability** is another concept common in positivist science which relates to the extent to which the results of research can be repeated. This concept is problematic within human sciences, since human (and organizational) behaviour is not static, but constantly changing (Merriam, 1994). Qualitative research however, is not intended to isolate laws for human behaviour, but rather to try to describe and explain the world on the basis of how the people who are involved interpret it. Since people and organizations constantly evolve in relation to offshoring as a topic, a repeated study of based on the same companies could be expected to give another result. Another analysis based on our raw data should not. Transparency in describing the methods used for data collection and data analysis in every step of the process is therefore essential in establishing the trustworthiness of the results presented.
**External validity** is the extent to which the result of a study is applicable in other situations than that in which the study has been performed. E.g. generalizability. A prerequisite to generalizability is that the internal validity is fulfilled. Generalizability is not necessarily a desired outcome when choosing case methodology. Cross-analysis of several situations increases the generalizability of case studies from a traditional point of view. Merriam, 1994) explains three strategies to achieve external validity in case research:

- Provide those interested in transferring the results of research with sufficient information, in the form of a comprehensive description of the results, to permit evaluation of the findings.
- Determine how typical the case is (formal categories), in comparison with other cases in the same category, so that readers can relate it with their own situation.
- Perform a cross case analysis within the same case or between different cases.
5 Empirical studies

This chapter describes the results from the two in-depth case studies which were conducted. Case A provides insight into a client-supplier relation which has involved a wide range of outsourcing tasks during the course of 10 years. Case B involves transfer of a flagship product from the Swedish headquarters to their newly established R&D site in China. The challenges in managing the transfer of critical products as well as the organizational design of the sites to align with the current responsibilities are described.

5.1 Case A – offshore outsourcing collaboration between Sweden and India

5.1.1 Problem statement

The purpose of the Case study A was to obtain insight into a client-supplier relation which has involved a wide range of outsourcing tasks during the course of 10 years. While best practices within supplier management is a thoroughly researched subject, this research was intended to be an in-depth study of the management of offshore outsourcing, with the supplier moving up the value chain. This exploratory case study was used as a basis for planning future research into issues revealed in the case which were not sufficiently explained in current literature. A literature review was performed in several rounds, beginning as a general overview of offshoring literature, and continuing as a specific search of the literature relating to the empirical findings concerning culture. The case is described in paper A (Edoff et al, 2008), and paper B (Edoff & Norström, 2009). Paper A used the case study as a foundation in developing an intercultural framework which defines the different layers of culture that can influence an offshoring relation. Paper B describes how the relationship between Eurosoft and ISP has evolved during the past ten years, the present initiatives taken to strengthen the relationship and the challenges the relationship faces. An overview of case study companies is presented in Table 4.

The goal of the empirical study was twofold, firstly, to obtain a snapshot of the present issues the respondents emphasized and secondly, to elaborate on the challenges they saw ahead concerning the evolvement of their collaboration and the management of these types of relationships in general. Even though the respondents were questioned about the influence of cultural issues both directly and indirectly, the extent to which they would influence the results of the study was not revealed until the data was analyzed. The element of surprise is important when analyzing a case study (Siggelkow, 2007), as well as in cultural analysis (Schein, 1992) and the cultural aspects thus became the focus of analysis in this study:

RQ1: What is the role of culture in the management of offshore relations?
Table 4 Case study characteristics and company details

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Case study characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headquarter location</td>
<td>Eurosoft Sweden, ISP India</td>
</tr>
<tr>
<td>Nature of products</td>
<td>Software intensive systems</td>
</tr>
<tr>
<td>Nature of projects</td>
<td>Maintenance &amp; Support</td>
</tr>
<tr>
<td></td>
<td>Product Development (partial and complete products)</td>
</tr>
<tr>
<td>Openness/Security level</td>
<td>ISP has limited access to database on a “need to know basis”, due to Eurosoft Sweden company regulations &amp; policies</td>
</tr>
<tr>
<td>Offshoring experience of managers</td>
<td>Eurosoft Sweden began offshoring with ISP 10 years ago</td>
</tr>
<tr>
<td></td>
<td>ISP operates Offshore Development Centre’s for global companies</td>
</tr>
<tr>
<td>Knowledge Management System</td>
<td>Eurosoft Sweden CMMI level 3, ISP CMMI level 5</td>
</tr>
<tr>
<td>Attrition</td>
<td>Eurosoft Sweden low attrition in general, managerial shifts occurred</td>
</tr>
<tr>
<td></td>
<td>ISP 14.6% in general, 4.8% in the ODC</td>
</tr>
<tr>
<td>Collaboration mode</td>
<td>Client – Supplier</td>
</tr>
</tbody>
</table>

The empirical findings described in this chapter are based on data gathered through interviews, participatory observation and business documents, as seen in Table 5.

Table 5 Empirical data collected for Case A

<table>
<thead>
<tr>
<th>Data collection</th>
<th>Eurosoft Sweden</th>
<th>ISP</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview</td>
<td>4 Development managers</td>
<td>1 Client General Manager</td>
<td>3 months data collection in spring 2008</td>
</tr>
<tr>
<td></td>
<td>2 Partnership managers</td>
<td>1 Client ODC manager</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Manager for Support</td>
<td>6 Program Managers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Product manager</td>
<td>7 Project managers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Team member</td>
<td>15 Team members</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 HR manager</td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>Meetings, Management days</td>
<td>Management days</td>
<td>2008-2009</td>
</tr>
<tr>
<td></td>
<td>8 Managers</td>
<td>22 Project or Program Managers</td>
<td>2 days, autumn 2008</td>
</tr>
<tr>
<td>Business review documentation</td>
<td>Steering committee reports &amp; Management guidelines</td>
<td>Business review report HR strategy and Personnel training program report</td>
<td>Written 2007-2009</td>
</tr>
</tbody>
</table>
5.1.2 Empirical findings

The evolution of a client/offshore supplier relationship

The decision by Eurosoft to outsource some of its activities was based on two different factors; reduction of costs and limitation of its responsibility to retain employees under the strict laws of employment of labour in Sweden. Eurosoft Sweden (SC) was required by top management to be able to reduce costs by 30% at any time so that hiring a consultancy in a low cost country such as India made much sense. ISP on the other hand, has provided clients with offshore development centres for many years, and developed skills in adjusting to the dynamic nature of these collaborations. As the Eurosoft-ISP collaboration has developed, both parties communicated a wish to move closer to a partnership in handling this and have invested in learning more about the partner and visiting the different offices for support. By their nature, the projects have varying degree of openness and involvement in the Eurosoft Sweden overall strategies. For projects involving product development (and also for those for which ISP takes over maintenance after the development) there is a rotation of Indians going on site in Sweden for learning and/or resource support during the development stage. At the time the study was conducted, their collaboration was described as their being “in a partnership preparation mode”. The Eurosoft Sweden managers’ perception is very much dependent on their view of the endurance of the relation. At every meeting, the Eurosoft operational development managers indicate that they are “pleased, but not satisfied” by the progress made. This highlights how personal perception and understanding of a potential partner may influence strategic decisions to the same extent as key performance indicators. Another concept emphasized by the SC operational development manager is “ordering competence”, which is used to discuss the sending organization’s ability to coordinate with the supplier in terms of handing over assignments, appreciating the time required to complete tasks, deciding what knowledge needs to be transferred etc. Their concern is that if too much product responsibility is outsourced, there will presently be no Eurosoft managers remaining with the requisite technical competence and experience in handling the product to be confident of their ability to ensure the efficient performance of the supplier.

In essence, the case study focused on those areas in which the collaboration remained unsatisfactory, 10 years into the relation. ISP respondents described a constant battle to get more projects, to understand their clients’ ways of working and to raise their level of competence over time. Eurosoft Sweden respondents, on the other hand, described a struggle to ensure offshore centre efficiency and to develop a sense of product ownership and proactiveness among its employees.
This type of collaboration, in which there is competition for resources and product management responsibilities, is a continuous balancing act, between understanding of the partner and pushing the collaboration to a higher level. A push and pull between adapting to a situation and shaping the work processes and goals in a proactive way. Key themes in the results included: development of collaboration, enabling innovation, motivation, and managing the interface between sites.

**Development of collaboration & inter-organizational learning.** The companies have different ideas about the changes needed to reach the next level of collaboration. ISP asks for more insight into the overall Eurosoft Sweden project strategy, more access to information systems and more development-oriented tasks. Eurosoft Sweden asks for more proactive results, more creative feedback from the tasks and decreased attrition at the site. In general, Eurosoft Sweden believed that ISP could learn more from Eurosoft than Eurosoft could learn from ISP. Eurosoft Sweden partnership manager explained:

“No, want to see more. Some working methods they perform well. We see the relation as we are the best, they are not pushing on, and ISP is influenced by Eurosoft way of working. Keeps isolated, by concurrence aspect. Simulate testing ISP are good at.”

A team member at ISP appreciated the potential learning opportunities within the collaboration; “Process at Eurosoft Sweden is far superior, ISP is lucky to learn from it”.

**Quest for innovation, enabling creativity and proactive behaviour of supplier.** Eurosoft Sweden managers describe their company climate as creative, the long experience of the employees being combined with individual freedom to test ideas. ISP uses centralized tools and processes to collect and select ideas. While their system is sophisticated and enables knowledge sharing, it is a rather formal process with many steps between idea and implementation. A Eurosoft Sweden manager would like to see a “hunger” from ISP in their ways of working. “Just because they are used as a vendor right now, that does not mean that they will get all the projects in the future”.

**Securing motivation, limiting attrition** – Both organizations describe the motivation of ISP employees as being dependent on the complexity of interface and responsibilities involved in the outsourced projects, and the likelihood of a successful career within ISP. ISP employees emphasize the importance of continuous learning on all levels in the organization; “Satisfied as long as I am learning” (ISP team member), “Whenever I have expected opportunities I have received them, people are given good opportunities at ISP” (ISP Program manager).

**Managing the interface** – Even though Indian engineers in general have good English communication skills, communication is pointed out as a critical prerequisite for the
collaboration; “In the previous ISP location there were a lot of traffic, we are not used to the dialect and mostly the speed of talking. How do we manage it if we cannot communicate?” (Eurosoft Sweden manager). The role of openness and hierarchy is highlighted by several respondents. “In Sweden the boss can face criticism from employees without problem” says an ISP Program manager. A Eurosoft Sweden line manager explains how inadequacy of communication affects the project planning, “the Indians say yes to everything, on the individual level the problems get clear. They have trouble letting us know in time, in India you do as you are told.”

The companies demonstrated different perceptions of whether or not to adjust work practices in accordance with cultural variations. While cultural sensitivity is more or less common within the supplier, being a consultancy with clients all over the world, Eurosoft Sweden has a wider range of knowledge of dealing with distributed development in general, and in India in particular. Case study results indicate that managers from Eurosoft Sweden can be divided in two groups: (1) managers addressing the cultural differences and trying to work around them (by introducing new report systems and increasing interaction and feedback to improve the efficiency of the relation) and (2) managers who find cultural differences difficult and use the same working methods as usual, claiming that any inefficiency is due to the relative inexperience of young ISP engineers working offshore.

The importance of context and intercultural awareness
The themes used in the study to describe different dimensions of the relationship and a theoretical separation of the different levels of culture were used to analyse the results; Organizational culture, national culture and context are three different levels of culture on which areas of misunderstanding and frustration exist even 10 years into the collaboration.

![Figure 9 Focus of case study A](image)

**Context – regional and religious differences.** The Swedish client was troubled by the relatively high attrition at ISP, and the reduction of this became one of the biggest challenges for ISP managers. A national difference is of importance in this connection –
in Sweden the IT industry is relatively matured and Eurosoft Sweden has long experience as one of the leaders in its global market. In India on the other hand, the whole IT-industry is in a state of growth. The employees are comparatively young and new to the business, uncertainty about their future affecting their behaviour and motivation. Their wish to increase their competence and thereby to advance in their careers does not correspond to the clients wish to keep their knowledge within the offshore development centre. There is a gap in motivation between ISP and Eurosoft Sweden when it comes to developing expertise versus broad knowledge; “As a Indian young person, you are supposed to learn everything, and then go deep. This explains the career movement” (ISP team member). The motivation to advance and go abroad can be seen as a result of the rapid growth of the Indian software industry, as well as family and peer pressure. The companies have countered this trend by implementing job rotation to Sweden, reward system and career advancement within ISP.

National culture. In India, the respect for seniority (as well as power distance and ascribed status) can be seen in hierarchal differences but foremost in the way individuals relate to the formal structure and titles. ISP employees show great respect for their managers and the clients, which influences their behaviour when their managers or the clients are present. The case study indicates that the risk of losing face influences the behaviour of ISP employees in several ways. Openly discussing ideas and giving feedback to their manager, or taking action without first addressing the hierarchal levels is avoided. The employees are expected to play by the rules to get ahead in an organization, and career tracks vary with culture. This is one of the reasons why Indian employees are often afraid to admit their failings, which is frustrating for the client and deadlines may fail due to optimistic time planning. An Eurosoft Sweden section manager describes their reluctance to ask for help: “to lose face, it is a big step for them to ask for help. They work by themselves, when they run into trouble they do it hard. The manager down there is pointing out directions, the centre of attention.”

Organizational culture. ISP employees are bound by several systems of routines which make them rather inflexible in terms of thought but even if such a system is adaptable to a client’s project. The amount number of processes and regulations can be reduced, but any individual inclination toward flexibility is harder to achieve Eurosoft Sweden would prefer ISP to act more proactively, showing that they are becoming sufficiently mature to execute new and more advanced projects. The Indian engineers may work proactively, but they are required to settle decisions at team level, as well as according to their own company process, in accordance with ISP procedures, in addition to matching their client’s process. Organizational differences can also be seen in attitudes towards communication, which an ISP team member exemplifies in the way the Indian employees
will use a chain of emails to get ahead: “Attitudes, Indians more aggressive”. The organizational culture is also reflected in the mere architectural layout, as another ISP team member commented: “Personal space differs, here we work in cubicles”.

### Table 6 Artifacts and espoused values demonstrated at Eurosoft Sweden and ISP

<table>
<thead>
<tr>
<th></th>
<th>Eurosoft Sweden</th>
<th>ISP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational</td>
<td>Centralized structure</td>
<td>Centralized structure</td>
</tr>
<tr>
<td>culture</td>
<td>Individual process of working (communicating in personal meetings)</td>
<td>Centralized process of working (Instant messaging and email)</td>
</tr>
<tr>
<td></td>
<td>Fragmented use of knowledge management system</td>
<td>Centralized knowledge management system</td>
</tr>
<tr>
<td></td>
<td>Openness for criticism and discussions, opportunities to skip hierarchal levels</td>
<td>Fear of causing loss of face</td>
</tr>
<tr>
<td></td>
<td>with suggestions</td>
<td>Centralized decision-making</td>
</tr>
<tr>
<td></td>
<td>Individual freedom to test ideas</td>
<td>Reward systems on performance</td>
</tr>
<tr>
<td></td>
<td>Individual performance give status</td>
<td>Centralized and structured idea &amp; implementation process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ascribed status</td>
</tr>
</tbody>
</table>

#### 5.1.3 Conclusions

10 years into the relation between Eurosoft Sweden and ISP, it is clear that it is not lack of quality of output or technical competence which causes most of the problems and frustration within the relation, but rather deficiencies in communication, openness and the ability to understand each other. One would imagine that the most important causes of inefficiency could be identified and removed during 10 years, but it is apparent that the cultural factors demand more consideration and internal commitment, to eliminate or reduce their negative effects on project work within the collaboration. Structures, routines and distance management are in place, but a lack of understanding of each other’s perspective hampers communication and efficiency in the collaboration.

National culture, organization culture and traditions are intertwined dimensions of cultural variation, and should all be understood to influence the efficiency of offshore outsourcing relations. Traditions of religious and regional character may not be the first thing to consider when entering an outsourcing relation, but in some cases they can play a role in increasing trust and understanding as well as helping in the planning and execution of product development projects. In the same way that contextual factors explain the attrition patterns of ISP in this case study, they can create insight into the religious holidays of India and the one month summer leave which is non-negotiable in both Swedish law and culture. Several respondents in both organizations have described a cycle which guides the young engineers at ISP when it comes to motivation. After they graduate, they want to make a career, go abroad to get status, get married and stay in India to start a family, and so on. The underlying patterns of attrition which relates to
cultural traditions are useful information for career planning not only for the ISP managers, but for the Eurosoft Sweden as well.

This case study gave insights into how and to what extent culture can play a part in client-offshore supplier relationships. Apart from the visible structures and work practices observed in an organization, we also found underlying values and behavioural differences which are inherent in each organization due to its location and national heritage. The cultural factors were divided into two sets in our analysis, one set that can be controlled by the companies involved in the business relation, i.e. those factors related to organizational culture, and one set of factors which the companies can only can relate to, i.e. national culture and regional/religious factors. For more information see paper A.

5.2 Case B – Transfer from Swedish HQ to Chinese offshore site

5.2.1 Problem statement

The execution of an offshoring project requires the transfer of knowledge, technology and personnel overseas. As an organization expands over the globe, the transfer of tasks and responsibilities to new sites becomes a critical challenge to the organization.

In an ideal world the transfer of the responsibility for managing a product means only that two sites with equally competent and experienced employees exchange roles on paper with no noticeable intrusions on the efficiency or quality of product. In reality, this is seldom the case. A significant amount of training may be needed to permit the transfer of responsibility, the import of specialized hardware may be necessary and the motivation and feelings residing at both sending and receiving sites must be considered. The second case in this research involves the transfer of a flagship product from the Swedish headquarters of a company to a newly established R&D site in China. This case provided many examples of the challenges encountered in managing the transfer of critical products and planning the organization of the receiving site to enable it to meet its new responsibilities. This transfer management case is published in paper C, (Edoff & Srinivasan, 2011a) which discusses transfer management practices at Eurosoft, and paper D (Edoff & Srinivasan, 2011b), which develops an offshoring capabilities framework based on the case study findings. The empirical data for Case B is described in Table 7, and was used to answer the research questions:

RQ2: How do companies manage the transfer of work when distributing RD&E globally?

RQ3: What capabilities and routines do the companies studied use as part of their offshoring efforts?
Table 7 Empirical data collected for Case B

<table>
<thead>
<tr>
<th>Data collection</th>
<th>China center (CC)</th>
<th>Sweden Center (SC)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview</td>
<td>General manager China center</td>
<td>Development Unit transfer Coordinator</td>
<td>2 months data collection in fall 2010</td>
</tr>
<tr>
<td>Management advisor</td>
<td>Transfer Project Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Managers</td>
<td>5 Managers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Project manager</td>
<td>Quality manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Project managers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status meetings</td>
<td>Transfer project manager &amp; Quality manager</td>
<td></td>
<td>Every 2 weeks, fall 2010</td>
</tr>
<tr>
<td>Business review</td>
<td>Transfer guidelines, Learning program for transfer, Cross-cultural training documentation, Documentation of lessons learned from 8 previous transfers, Competence matrix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2.2 Empirical findings

Several development units (DU) at different Eurosoft sites in Sweden (SC) are transferring product management to the company R&D center in China (CC). The transfer of the product management of one of the main Eurosoft products, including development, maintenance and customer support, was the subject of a study. The product concerned is a software intensive product, currently their cash cow, which is expected to reach a mature state, entering maintenance phase, soon after the transfer.

Transfer model

As a reaction to the increasing number of transfers last year, internally as well as to outside suppliers, Eurosoft has developed a model to simplify internal communication and planning in relation to transfers. The documentation, (Eurosoft guidelines) with which we were provided, explains that the “model is not a strict and formal ‘instruction’ but rather “a set of guidelines to help transfer project management in executing a transfer project”, and to establish a common nomenclature and definitions for the gates and phases in their transfer projects. The model consists of three phases (planning, execution and support periods), which are governed through five gates (see Figure 10). In essence, this transfer model is an adaption of the general gate model which is used for company development projects. The process begins with a pre-study (G0), followed by a feasibility study (G1), execution (G2), and an optional execution review (G3). The responsibility is then handed over by the sending to the receiving organization (G4), which “initiates the support period, and eventually concludes the transfer project.(G5)., A wide range of documents should be prepared before the execution phase for revision at G2:
• Project Specification (scope, project goals, project organization, steering group, communications plan, reporting, change control, risk analysis, dependencies on other projects)
• Assignment Specification
• Purchase Order (when transferring to subsidiary or outsourcing partner)
• Business Case
• Competence Requirements Analysis
• Detailed Plan for the rest of the transfer (time, resources, activities, development and test equipment)
• Security Audit
• Checklists for the following gate assessments
• Handover checklist
• Exit criteria

![Figure 10 Eurosoft transfer Gate model](image)

In recent years Eurosoft has executed transfer projects of an increasingly critical character, e.g. transferring the entire product responsibility for a flagship product rather than merely product components. The aggressive schedules adopted for transfers and the resultant reduction in actual transfer times resulted in an adjustment of the general transfer model, to achieve “competence boost” at a faster pace. This competence boost approach had previously been used for a transfer between sites within Sweden, and was adopted for the China transfer. The main difference between the new model, when compared with the general transfer model, is the focus on on-the-job training facilitated by mentors from the sending organization. The mentors are responsible for documenting the product information and process information, courses and assessments (reviews of the trainees’ self-assessment according to checklists). The Eurosoft leadership team had reached the conclusion that learning by doing was the fastest way to achieve a fast learning curve for their products. The receiving organization personnel were sent to the sending organization site at G2 to be directly involved in the development projects running to start practice on the real product directly.
The principle was that they should work on a task at a level slightly in advance of their current capabilities. In this transfer project there were several areas in which no current development projects were running and therefore no actual work available to provide training. Their consequent lack of experience from advanced projects was a source of concern to the receiving organization employees, since they did not feel sufficiently competent to assume responsibility without training in these areas. In some cases, this need for training was satisfied by constructing teaching cases based on historical bugs, but in the end it was not possible to provide the receiving organization with training in all areas of the product. As a result, the transfer team focused on the areas in which there was a high probability of issues developing when the product entered the maintenance stage. As not all the engineers in the receiving organization could attend on-site training, peer to peer knowledge transfer, as the trainees returned to the China centre, was relied upon. The trainees’ knowledge is assessed by monitoring contributions to development projects (entering the acting-as-if-responsible stage) and the number of trouble reports processed.

The results from our interviews with 15 managers from sending and receiving organizations resulted in a categorization of five major themes, as mentioned by all of the respondents; communication, competence, planning, transfer approach and (primary) challenges. The results are summarized below.

**Planning & transfer approach**

The main issue concerning planning mentioned by the respondents concerning planning was the definition of transfer project scope. The scope of the project was not clearly specified at the beginning of the project (before the Swedish organization went for summer holidays), and it kept changing even after gate two. One of the Swedish managers explained:

“The transfer project turned up in April. Started very ad hoc, then we got the information that there would be a transfer project, and got the assignment to complete a design specification. From the beginning there were not so much details, demands on details. Maybe it would have been better if the project had done the specification roughly themselves, during the feasibility phase. Now it was all on the execution phase. And it was all done on management level. …/… The project could have led these issues more actively instead of just giving us the assignment of specification.”

One of the reasons for the changing scope was that interdependencies within the system and resources involved were discovered as the transfer project progressed, One Swedish manager made an analogy to the car industry explaining:

"We will transfer this specific e.g. car x60 model and then when you start, you realize that we have the same engine in other products, so we shouldn’t transfer that. After a while you find out the scope is
not logical, used by several systems. It can also be legal restrictions, things happen. :/ : Certain people want to keep certain things. From a product standpoint it makes sense. Have to be careful with scope, not make it complicated, transfer complete products. Because it makes interface to Sweden easy. “

When asked about the competence boost model, several respondents considered it to be like a standard Eurosoft transfer. They also considered that it was communicated too late to have a real impact in practice. There were not too many complaints about the model itself, but adhering to it was described as a challenge. One of the reasons was the limited availability of mentors:

“Well, when you have this type of model such as the competence boost, give mentors and give feedback all the time, it demands 100% of their time, these are involved in other development work. That it should be dedicated people.”

Five respondents from CC and one manager from SC considered the transfer project to be similar to the other transfers they had experienced while working in the organization. Three respondents from SC and two managers from CC considered it to be different from other transfers for several reasons: by being a transfer-driven by the sending organization, by being a big and structured project, by stressing project and node management rather than product knowledge build-up, by creating a complex interface with two DU’s, by performing training in practice, and because of the gap created by the summer holiday period. There were different perspectives on the amount of learning from previous transfer projects which were incorporated in this project, ranging from no experience (2 SC/2 CC), learning from colleagues (4 SC/2 CC) or from own experiences (4 SC/5 CC).

Communication

Effective communication was one of the major themes that emerged from the data analysis, as an enabler for governance, for learning, information-sharing and establishing common working practices. The different categories within the communication node, from culture to network-building, are described below.

Culture – With respect to communication, the cultural dimension was referred to by a majority of the respondents (5 SC/5 CC). They discussed how culture influenced communication by the use of either open or closed questions to get an honest answer in different cultures, the culture of questioning things, meeting culture, unwillingness to share bad news, ways of working and ability to cooperate in teamwork. A much appreciated cross-cultural training session was organized at both sites at the beginning of the transfer. One of the Swedish expats working as a manager at CC discusses the influence of culture:
“China is a confucianist culture, they don’t challenge, compared to our part of the West is used to doing. There is thing from the level above, and Sweden, if it collides - this is probably bullshit. There is no direct communication on these issues, more indirect. They put emphasis on expert here and transmitting organization has to be aware. We have had cross-cultural workshop both here in China and for transmitting organization. Not expect them to be like Swedes, but to be able to communicate.”

Language skills – The level of English language skills was mentioned as a difficulty in the daily communication between sites. Some Swedish respondents described a reluctance to speak English, resulting in reluctance to calling China. On the Chinese side, the low level of skill is more of a problem. A CC manager described their efforts:

“Trying to educate in English, the pronunciation. Sometimes they have poor writing, which cause misunderstandings, in the requirement specifications.”

Network building – As they are dealing with complex products with many interdependencies, interfaces between many different roles are demanded. Respondents from both sites emphasized the need for a good personal network:

“If you ask right question, you get to know the guys. Not just a contact list, somehow you need to know the guy, on-the-job training was a very good experience. My experience from working with American, we work on same project, very easy because I know the people I can ask, I know who to ask”, says an CC manager.

Interfaces between actors – This transfer project was unusual because it involved several sending units and the interfaces between the different actors more difficult to oversee. It also required the receiving managers to have good communication skills and be good coordinators. A Eurosoft SC manager explains:

“It affects the work. No homogenous sending organization. Many units instead of homogenous tares is up. Different opinions on what should be done. It also means we have a steering group in another way. Usually the steering group is people within the unit, now we have to lift it up a level. One level “upstairs” in one sense. The different parts have different background and different agendas.”

Information sharing and security access – Several respondents referred to the need for information sharing, transparency, in order to make the transfer successful. Information sharing is heavily dependent on trust in the receiving organization, this originally being incomplete for several reasons. An Eurosoft SC manager explains:

“It has been a problem. There was a big reluctance to share information. Fear that jobs would be lost [to China]. Our biggest competitor, X, if there were any connections to them. My perspective has always been to do this transfer as efficiently as possible”
**Competence**

The areas which the respondents stated as being important for qualification for product responsibility were (in order of instances mentioned): Domain competence, Project and product management, Process & methods, Language skills, Specific technical expertise, Network. The respondents were also questioned about the types of competence that they believed were important to assess/measure during the transfer project, again in order of instances mentioned: technical competence, ways of working, communication skills, attitude/culture and network building. The technical aspects of competence were overrepresented in the replies (6 SC/6 CC). As an Eurosoft SC manager explains,

“Product knowledge, processes, methods tools and knowledge. This is the foundation making product development/maintenance and is the fundamentals for the competence gap analysis.”

While technical competence and ways of working, in terms of processes and work practices, are necessary to make every day work efficient, several respondents emphasized that the softer aspects of competence are needed for success both with the transfer and after. When mapping competences to the transfer model, we found that knowledge transfer planning is highly focused on the technical and process aspects, but that the softer aspects of competence needed for product responsibility was neglected. There is a sense of focusing on the aspects of competence that can be measured, as a CC manager discusses:

“It’s the soft skills, EQ where the biggest challenge lie. Not work on specific challenges. If it could be measured it would be good, we have difficulties to measure the technical competence so…”

Cross-cultural training and the site interface mapping of the roles/expertise that the teams needed to interact with during and after transfer were procedures intended to ensure a smooth transfer. Some CC managers also described their own initiatives to foster good communication and presentation skills within their team by introducing specific tasks, but these efforts were not a part of a centralized or general initiative. The respondents also discussed several aspects of the ideal state versus current practice of measuring the competence build-up within transfers. As explained earlier, the assessment in this transfer was performed in two steps, by the adept and by the mentor. They formed their judgments on the basis of the general check lists on team level as well as the competence plan developed for each employee. This self-assessment was mentioned by several respondents as a rather subjective assessment, without considering it a major problem. This type of assessment depends on having access to the right information, as a Eurosoft SC manager pointed out:

“The idea with mentor and adept I like. The task to judge the competence is difficult because of the language problems. It’s hard to just sit down and discuss.”
Different priorities in the sending and receiving organizations

It was also necessary to know what the respondents considered to be lacking in the receiving and sending organizations. The key gaps in sending and receiving organization are described in the Table 8 below.

<table>
<thead>
<tr>
<th>Key capability gaps in receiving organization (CC)</th>
<th>Process &amp; Product knowledge (4)</th>
<th>Lack of experience (3)</th>
<th>Leadership (2)</th>
<th>Communication skills (2)</th>
<th>Network building (2)</th>
<th>Project management (1)</th>
<th>Teamwork and knowledge sharing (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key capability gaps in sending organization (SC)</td>
<td>Motivation to complete transfer</td>
<td>- Prioritization and availability (3)</td>
<td>- Tacit and non-documented knowledge (2)</td>
<td>- Limited competence in new activities (1)</td>
<td>No gaps (3)</td>
<td>Motivation to complete transfer</td>
<td>- Prioritization and availability (4)</td>
</tr>
</tbody>
</table>

We were told that the motivational aspects of the sending organization’s commitment were increasing when SC managers interacted face to face with CC employees. Meeting in person and working together was described as transforming a perception of a threat into an appreciation of a collegial relationship. Several respondents from both organizations also noted that the sending organization was pleasantly surprised by the fast pace at which the CC engineers learned technical aspects of the product.

It was an intentional choice to ask all respondents the same questions and we anticipated that the differences in the respondents’ answers, would depend on the organization to which they belonged. In general, both organizations identified similar capability gaps, differing only in detail and order of significance. With respect to the question about capability gaps in the sending organization, we cross-checked for differences depending on the organizational origin. Eurosoft SC respondents addressed different reasons for lacking motivation and availability, while CC respondents had fewer issues to address, but in comparison with Eurosoft SC respondents, focused on the availability of mentors for coding and transmitting knowledge. While the answers concerning the capability gaps in the sending organization revolved around motivation and the ability to codify knowledge that was needed to complete the transfer, in the receiving organization the gaps were
more closely related to the knowledge level in terms of technical and management skills. Again, with respect to gaps in the receiving organization, we cross-checked for differences dependent on organizational background. Eurosoft respondents SC were more focused on soft skills and leadership skills, while CC respondents, to a greater extent, emphasized inadequacy in technical aspects, experience and network building.

*Primary challenges going forward*

The last field of interest in the study of the Eurosoft transfer consisted of the primary challenges foreseen by the respondents. Nine areas were identified, in order of importance as follows:

1. Project management, receiving organization to take over product management (8)
2. Sending organization commitment (6)
3. Time differences, few overlapping working hours (4)
4. Lack of communication skills (4)
5. Cultural differences (4)
6. Lack of real work to learn from (4)
7. Transfer ways of working (processes) (3)
8. Complete transfer (2)
9. Import of hardware in time (1)

The biggest challenge reflects that CC is a young organization, both in terms of the organization as such and of its employees. The respondent’s concern lies in the fact that when the transfer project ends, they will be solely responsible for the entire product, with a type of responsibility of which the organization has no previous experience. The availability of SC employees as transferees of sufficient knowledge is a challenge both in terms of commitment/motivation and in terms of the number of common working hours during which to communicate. In general, both sending and receiving organizations emphasized the same issues. Comparing the results according to the organizational affiliation, Eurosoft respondents focussed more on challenges concerning completing transfer with a good result and communication skills, while CC respondents focussed more on getting access to real work to learn from and cultural differences.

Apart from the sending organization commitment and finding common working hours, the primary challenge is to make sure that the receiving organization has the product and project management skills to take over the responsibility after a rapid transfer. The empirical results from Case B can be summarized according to what type of capability their activities and routines translate into, as seen in Table 9. Eurosoft is a very product-oriented organization and importance is given to making sure that the required technical knowledge and skills are acquired, as planned for the transfer project. Each role within
the project team has been specified in terms of the necessary knowledge of product, processes and skills. Corresponding to these lists, a competence plan was developed for each employee in the receiving organization. The mentors are responsible for making sure that their adepts have sufficient work to train on within existing projects, or for the development of training tasks. Some subprojects have less current tasks on which the CC engineers can work, causing frustration in both sending and receiving organization, and stress concerning the ability to make sure that the engineers have sufficient knowledge and experience to work autonomously after the transfer project is completed. In addition to this concern, the mentors are responsible for several adepts at a time, with their time often given priority in favour of their assignments in current development tasks outside the scope of the transfer project.

Table 9 Type of Capabilities demonstrated in Case B

<table>
<thead>
<tr>
<th>Type of capability</th>
<th>Eurosoft routines and artifacts</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TECHNOLOGY</strong></td>
<td>Competence plans, checklists, competence boost model (mentoring), team KPI</td>
<td>The technical competence has been built up continuously through peer-to-peer training and practicing on assignments within existing projects. Competence build-up according to plan, except for system.</td>
</tr>
<tr>
<td><strong>PROCESS &amp; TOOLS</strong></td>
<td>Competence plans, checklists, competence boost model (mentoring), Process champions, documentation, meetings</td>
<td>The Chinese organization is keen to learn the Swedish organization’s ways of working, by attending meetings and mentoring. Problems arose when it was realized that many processes were tacit and intuitive for the experienced Swedish engineers, who did not have documentation of their work with them.</td>
</tr>
<tr>
<td><strong>MANAGING RELATIONSHIP</strong></td>
<td>Transfer project manager at both sites, operative and general steering group, defining corresponding roles and responsibilities in sending &amp; receiving organization, cross-cultural training</td>
<td>Cross cultural training at beginning of transfer highlighted many problems previously experienced in training by the mentors, language difficulties and cultural inclinations hindered the learning process. Motivation from sending organization was initially limited due to lack of trust in the receiving organization, fear of losing status and reluctance to hand over product.</td>
</tr>
<tr>
<td><strong>KNOWLEDGE MANAGEMENT</strong></td>
<td>Lessons learned database, knowledge from using competence boost model by other BU, Quality manager for creating checklists &amp; competence tracking</td>
<td>A review of previous transfers to China &amp; lessons learned were performed, but the knowledge was communicated too late for managers to address it in their planning. The competence boost model was introduced too late to impact the transfer from a knowledge standpoint. Information sharing within the relation.</td>
</tr>
</tbody>
</table>
5.2.3 Conclusions

One of the subjects discussed during the interviews was the type and amount of planning Eurosoft perform before the beginning of a transfer. Both organizations indicated that planning, especially early finalizing of the scope is very important, but interdependencies within and between products make it difficult to adhere to a target. The respondents appreciate the idea of having a model to guide transfer projects, but only if it is introduced at the beginning. Regardless of their generally positive attitude toward using the competence boost model, the challenge is to adhere to it as the development project team encounters problems and the mentors are no longer available. The transfer project planning, assessment etc. are predominantly focused on technical issues, and to some extent processes (working practices), while a majority of the respondents report soft issues as being equally important for success.

In a transfer project as critical as this, with two sending DUs and a product management focus, communication and interface management is seen as a critical factor for success. However, communication is not just about the communication modes used or its extent, but includes issues related to culture, network building, language skills, information sharing and the ability to coordinate all the actors involved. The challenges faced by the organizations are dependent on their role in the project, e.g. transmitting or absorbing knowledge. The ability to transmit knowledge is not only related to the amount of codified knowledge or the availability of resources, but is also related to the sense of commitment of the sending organization. The type of capabilities important in the management of product management transfer, as highlighted by the respondents, can be sorted into four general themes:

- Technological capabilities of sending and receiving organization
- Capabilities related to process and tools, matching sending and receiving organizations
- Managing the relationship over time, establishing an efficient interface between sites
- Maintaining knowledge over time, to make sure that the transfer does not result in a knowledge and capability loss in maintaining and developing the product
6 Discussion

The Frame of References chapter defined the different stages in the offshoring process (see Figure 3), and presented a capabilities view of offshoring and the current gaps in the literature. Throughout this thesis, it is argued that offshoring is a phenomenon which cannot be excluded or extracted from its context. The context can involve many different aspects such as the nature of the industry, its product, the cultural setting of the sites interacting as well as their respective experiences. To answer the research questions stated in the introduction, this chapter has three sections. The first section is aimed at explaining the peculiarities of the phenomena which frame the working practices used in each context, the intercultural interaction between the sites involved. In the second section, the specific settings of a knowledge transfer are explained within the context of the case studied during this research. The final section describes the general themes which constitute the overarching context of the management of offshoring, and presents an initial attempt at differentiating the different sets of capabilities organizations need to develop to effectively execute an offshoring strategy throughout the stages of an offshoring process.

6.1 Managing the intercultural interface in offshoring

At the beginning of this thesis, the first question posed was: What is the role of culture when managing offshore relations?

At the core of the offshoring phenomenon is the crossing of legal, national, organizational and even religious boundaries. The analysis of Case A gave a systematic view of the different layers of culture which showed the interplay of context, organizational culture and national culture during the operations stage of offshoring. While the transfer stage is the time when cross-cultural training might be included and cultural variations detected, the operations stage as exemplified in this case study, might be on-going for a decade as a result of a series of smaller transfers. Culture is a concept describing the underlying values and manifestations of the interface, which is a central requirement when operating in a globally distributed manner. In Case study A, the supplier being in India and the client in Sweden, cultural differences were found to affect the relation on many different levels.

The differences were related to the importance of status at the workplace, the avoidance of situations leading to loss of face (Trompenaar, 1997), and the alternatives, an individual, as opposed to a team orientation (Trompenaar, 1997, Hofstede, 2005). The theoretical framework shows that these differences are related to different layers of the culture concept; National culture (Trompenaar, 1997, Hofstede, 2005; Nakata & Sivakumar, 1996), organizational culture (Schein, 1992, Denison, 1996), and contextual
attributes of the destination, e.g. regional differences in the society, religion, and the attributes of the industry (Triandis, 1989; Panda & Gupta, 2004).

In our analysis, the cultural factors have been divided into two sets. The companies involved in the business relation can control one of these sets of factors but can only relate to the other. Some factors which are fundamentally rooted in each society can be described as cultural values. Understanding these factors is the first step towards understanding the culture concerned and accepting them is a part of the business relation. The underlying assumptions of a culture in an organization according to Schein (1992) and the nationally rooted cultural values emphasized by Hofstede (2005) and Trompenaars (2007) are included in this category. The underlying values are factors that cannot be expected to change within an offshore outsourcing relation, but they are important to relate to. Eurosoft made efforts to spread knowledge of each other’s cultures by initiating cross-cultural workshops, planning site visits and on-the-job training and by adjusting some governance mechanisms (such as specifying work packages in more detail and changing reward systems).

Individuality versus team orientation, i.e. whether a person regards himself more as an individual than as a member of a group is one of the important factors that are influenced by the ambient culture (Trompenaars 1997, Hofstede, 2005). Our research supports the results of Nakata and Sivakumar (1996), since Eurosoft Swedish centre, in a more individualistic environment, is perceived as being superior in executing NPD at the initiation stage, benefiting from drive and personal vision. On the other hand, ISP, influenced to a higher degree by collectivism has continuously improved its performance in process and knowledge management during implementation and maintenance of the products. An overview of the national differences specific to India and Sweden can be found in paper A. While national differences are difficult to adjust, some differences in organizational culture can be modified in terms of the interface setup. These cultural factors affect the organizational way of working and personal reactions to the working environment. These aspects are important to understand from its cultural context, but it is also essential to adapt certain processes to achieve an efficient product development interface. Organizational structures and processes are examples of the visible and manageable aspects of organizational culture (artefacts and espoused values according to Schein, 1992). Eurosoft and ISP have initiated a number of efforts over the years to deepen the relationship with respect to governance and trust. The internal efforts included lectures on intercultural communication, the development of “order competence” specific to India in general and ISP in particular; attrition management and training including job rotation between the sites.
The discussions about order competence indicated that having a competent offshore supplier is not sufficient when offshoring – both sending and receiving organizations need to develop capabilities to handle distributed development efficiently. External collaboration efforts have also included an industrial software engineering graduate program which provided “top talents” among ISP employees with scholarships to come to Sweden for education in the product, company and culture during two semesters (described in Paper B). The different activities and processes introduced to increase the communication and understanding between the companies are slowly showing results both in a decreasing internal attrition rate and increasing motivation among the employees. The use of “straddlers”, Indian-born managers, increases understanding between the companies and helps transfer tacit knowledge and informal information (Heeks et al, 2001). Both companies understand the positive effects of transferring employees between the sites, as a way of increasing both technical and intercultural competence. Site visits present an opportunity to widen horizons and increase awareness of the differences between the organizations which can be bridged through common work practices. The relationships then built contribute to increased operational efficiency. In addition, the intercultural introduction courses, and management days have increased the intercultural understanding of managers in both companies, and some of the frustrations and misunderstandings which hindered the engagement and evolvement of the relation have been resolved. Understanding and accepting that some cultural differences are not negotiable within a business relation is essential, they will have influence.

The case study has shown that the impact of cultural differences has certain negative effects on the relation. Cultural differences influence the common understanding between teammates due to diversity in people’s assumptions, behaviour, expectations about leadership practices, team norms, attitudes towards hierarchy, sense of time, and communication styles (Moe et al., 2008). Specific to the offshore outsourcing context, we observed cultural differences related to creative and proactive inclinations of the employees, motivation, attrition patterns as well as communication patterns in general (e.g. similar to the mum effect described by Ramingswong & Sajeev, 2007). These differences were evident on all the different layers of culture, but it is only possible to influence the organizational culture during the course of an offshore outsourcing relation, in terms of organizational structure, organizational routines and work practices such as reward systems.

Although the differences in terms of national culture between Sweden and China were not specifically analysed for Case B, the respondents confirmed that cultural factors had a big impact on their work in terms of communication practices, planning of the work,
attrition, motivation and type of proactive behaviour towards work. The cross-cultural workshop arranged by Eurosoft in Sweden and China was much appreciated by the respondents, especially since it shed some light on why some of the communication between the sites has been unsatisfactory.

While culture is an interesting lens to reflect on the interface between two offshore sites, it can be seen as one of many aspects concerning relationship management in general. The framework of different layers of culture can be applied to create understanding of peculiarities and to help develop suitable working practices for the specific relations established between two sites. However, for interaction on an individual level there could be more differences than similarities within a culture.

6.2 Managing knowledge during transition stages
The second question posed in the Research Focus chapter was: How do companies manage the transfer of work when distributing RD&E globally?

Transition is the middle stage in the offshoring process. Initiated by a decision to transfer a function overseas to reduce costs or in accordance with a global footprint strategy, a transfer can require the transfer of people, knowledge and actual material/hardware. While it is of critical importance to get the transition right, Case B shows that it is not intended to interfere with general operations and PD management, to occur at a fast pace and with low cost. While it is of critical important to perform the transition correctly, Case B shows that the transition should be made quickly and at low cost without interfering with current operations and PD management.

Researchers have emphasized the need to consider core competencies when sending functions offshore (Contractor et al, 2010; Quinn, 1999). The case study respondents emphasized the criticality of the success of this transfer project. If insufficient core competencies in product management are transferred, not only will the customers complain about poor product support, but the income needed for developing the next generation of products will be insufficient resulting in a downward spiral. Fortunately, this transfer does not require the layoff of personnel so their competence will remain within the company, but the CC team members will have limited access to these employees after the transfer project has ended.

In their study of the role of transformational technologies in task-based offshoring, Leonardi and Bailey (2008) found that the transfer of technical knowledge specific to the task was necessary when there was an expertise differential between the home site and the offshore site, this requiring the development of new work practices and new work arrangements to ensure success. Case B demonstrated some specific dynamics relating to
knowledge transfer, commitment to transfer and the learning curve. The knowledge differential between the sites (Leonardi & Bailey) was shown through the large amount of tacit knowledge that the experienced Swedish engineers had developed over the years. A formal knowledge transfer process with mentoring was used to enable the codification of both technical knowledge and ways of working. Chen (2005) found that learning modalities depend on the nature of the project. Our findings concerning the types of knowledge which need to be transferred have highlighted the need for the receiving organization to acquire both domain knowledge and product specific knowledge. In addition to these competencies, since the product transferred is complex and has been developed over many years, it is essential that the receiving organization be aware of the history of the product and its architecture. The transfer model and plan are designed to transfer technical knowledge but the respondents emphasized the need for further types of insights into the project such as the mindset required for product management responsibility (proactive mindset), and a holistic perspective and knowledge of the product including its architecture.

A prerequisite for the successful transfer of knowledge of a product to an offshore site is for both organizations to be completely committed to the transfer. The sometimes incomplete commitment of a sending organization was described as the result of a combination of a history of layoffs as a result of global footprint strategies, personal attachment to the product and disbelief in the ability of the receiving organization to take over and further develop the product. This case study has shown that it is a critical issue for several reasons. Case B showed that at Eurosoft a transfer project never has first priority which is challenging when the receiving PD project team encounters problems and the resources of the sending organization are not available. Levin & Cross (2004), distinguished two types of trust, competence-based trust and benevolence-based trust. While a competence-based trust was built up through interaction and site visits over time, a benevolence-based trust was more difficult for Eurosoft to handle. This aspect of the management of a transfer project involves both the fear of losing a job, and a “this product is my baby”, attitude, neither of which should be neglected when managing transfer projects.

The learning loops articulated by Ciborra and Andreu (2001), can be seen on several levels in the case study. The routinization learning loop can be seen in the training period, through teaching cases, working on the product etc. The capability learning loop kicks in as soon as the receiving organization begins its second round of training in which they pass knowledge on to their colleagues, in the “acting as if” stage, and hopefully, the capabilities are developed until handover is completed. The strategic loop can be seen e.g. in the training provided by Eurosoft in parallel with the transfer project, in which
engineers from the Chinese centre are additionally trained on new PD projects and potential new technologies, making them a valuable resource pool for future needs. One of the key questions that project managers focused on in the project, was whether the team members had received sufficient knowledge before the transfer project ended, so that over time, the transfer risks becoming an example of the erosion of core competence. Since the transfer is offshore but within the company, the dependencies are not as great a problem as Gupta et al (2009) claim, but if there is an increased amount of attrition at the Chinese centre soon after completion of the transfer, they will have problems in transferring knowledge as successfully themselves (in the second round).

Younghdal and Ramaswamy (2008) identified the sharing of best practices and organizational culture across locations as being essential for offshoring success, and the case study showed several attempts to perform such sharing. The lessons-learned database was reviewed by the transfer project manager, trying to incorporate some of the lessons learned, and the managers with Swedish and British origins at the Chinese site are bridging and implementing practices from both national and organizational cultures. On-site training and visits in both directions are a key strategy implemented by the company to transfer embedded knowledge as well as bridge the gap between different cultures by experiencing what it is like to work in the other organization. While some of the respondents stated that “transfers is a little bit business as usual”, our analysis of lessons learned, and discussions with business managers and respondents showed that there were repeated cycles of learning and forgetting concerning the management of transfer projects. They stated that the lack of routines mainly depends on the sending side only experiencing a single transfer while the receiving organization has seen a series of transfers. Also, the knowledge collected and entered into a database is seldom implemented since the posts do not have action points associated with them and the individuals handling the transfers are continuously replaced.

Case B sheds some light on some aspects seldom addressed in the literature; firstly, that transfer is not a linear process, but rather a cycle. Experimental learning guides implementation. NPD process and projects are prioritized before the actual transfer process, without readjusting the transfer project time plan it can potentially result in knowledge-loss over time. Even when globally distributed development is “business as usual”, it is not given sufficient priority for successful performance, the implications of this, and the costs it may inflict later being disregarded (Eppinger & Chitkara, 2006). Technical skills, working processes, and to some extent intercultural communication, were addressed in the Eurosoft transfer model and planning, system knowledge, communication and interface management being approached in a more intuitive manner.
These aspects were encountered during the execution of the project and resolved during later stages of the transfer.

6.3 Building organizational capabilities for sustainable offshoring

This section refer to the third question posed in the Research Focus chapter: What capabilities and routines do the companies studied use as part of their offshoring efforts?

Companies use experimental learning to gain experience in offshoring. As the use by industries of different offshoring strategies increases the offshoring process may become more of a cycle. It is not unusual today, that a transfer becomes a starting point for a series of transfers to the same site, as a result of a global footprint strategy, or changes scope when dependencies are revealed during the progress of the project. Even though offshoring remains a relatively minor aspect of the overall management of PD by industries it represents a transformation in the way companies operate and will continue to run their businesses. Today, having the capability to efficiently manage offshoring gives an organization a competitive advantage, but as it is already becoming an industrial standard, having offshoring capabilities will become a prerequisite for global operations rather than a differentiator. The general findings from these two cases is that the acquisition of the knowledge of how to offshore and the capabilities to execute an offshoring project efficiently is not given priority by management, particularly in competition with other PD projects during the actual transfer period. There is no systematic approach to the building of organizational capabilities, reliance is placed instead on the expertise of individuals and the lessons learned from their experience. Where is this knowledge built? The transfer project managers have important experiences to share, but permanent steering group members and the receiving organizations represent a more stable workforce when it comes to managing a series of transfers. There are certain aspects which determine the strategy and outcome of an offshoring project in all phases of its execution. Three aspects will be discussed in this section: The technical and process aspects of product development, the relationship between sites and the management of knowledge.

6.3.1 Product development – Technology and process characteristics

Management practices and processes have different characteristics corresponding to the type of function which is managed. This thesis focuses on the management of PD and R&D work, development processes usually structured by a series of gates, constituting natural starting points at which separating into parts and transferring a project. If R&D represents a first attempt to develop new technologies or determine which to implement in the product portfolio, NPD represents the implementation of the strategy chosen (from idea to market) and maintenance is the final stage in the process. For complex
products with a long life cycle, as are the cases used in this research, the maintenance can continue for decades after the market launch. Support functions such as call centers have been one of the first functions chosen for offshoring, while R&D and NPD has been performed closer to home, and to some extent still is. Some specific product and process characteristics which have implications throughout the stages of offshoring should be considered:

**Product architecture:** the structure of a product and its portfolio. Depending on the size of the product family, and how interrelated the technologies on which it is based, separating it into parts may be difficult. Modularity is one characteristic of industrial products. Moitra (2008) explains how the modularity of software systems simplifies the division of labor. The software development process, however, differs from other PD processes since there is no tooling or manufacturing phase in the product development.

Eppinger and Chitkara (2006) distinguish two types of modularity which are of assistance in implementing global product development; process modularity, by which work is separated into packages and product modularity, a product architecture with clearly identified interfaces between modules. Although Eurosoft prefer to send work packages offshore which represent architectural modularity of their products, Case A showed that the execution of their change of policy, from sending smaller work packages toward sending product responsibility, was a slow process, still changing scope after 10 years. Case B on the other hand, represents an illustration of the process of handing over product responsibility once the decision to offshore has been taken, and the difficulties to secure that the receiving organization not only has sufficient knowledge of the different modules, but can translate this knowledge it into a holistic overview of the product, the product architecture.

**Dependencies:** One way of simplifying disaggregation is to clarify the task dependencies of the offshoring alternatives. Kumar et al. (2009) review the classical taxonomy of task interdependence and extend it to include integration interdependence to account for dependencies between sub-tasks being executed in parallel, as well as an assessment of information stickiness. Interdependencies determine the amount of interaction needed between the sites, not only while planning and performing the transfer of a function, but also after the transfer is completed.

**Complexity and importance of product:** the main discussion concerning the type of function to be sent offshore relates to whether it involves a core competence, function or product of the company (Contractor et al, 2010; Quinn, 1999). While the core distinction can explain why some functions are sent offshore and some not, wherever this function is placed it entails a more careful IP management and security standard. A complex product
is typically harder to send offshore since it requires specific expertise. Knowledge of the history of the development of the product (embedded knowledge) may be important. Each of these factors makes it more difficult to transfer overseas, consistent with the challenges encountered in case B. As a general principle, Eurosoft keeps the development of future product systems and competence regarding the architectural core close to headquarters while sending maintenance and peripheral projects offshore.

**Processes and tools:** Ethiraj (2005) highlights the need for project management capabilities, acquired through the investments made in infrastructure and systems to improve the company’s development process. Specific to the software industry, it points out three capabilities as particularly important: 1) software design capabilities, 2) effort estimation and management capabilities (estimating resources), and 3) schedule estimation and management capabilities (complete within the planned schedule). Project management was named as one of the key challenges in Case B during the transfer project. Since the product is highly complex, this competence is as important as the technological capability, and requires a holistic overview of all the modules of the system.

With regard to all the factors mentioned above, receiving personnel must have product knowledge, through technical documentation and access to sending personnel expertise with relevant knowledge of the product. Considering that many offshoring projects are not intended to be completely independent of the original site, the relationship management is important in ensuring that access to this kind of information is remains available to the receiver at all times.

### 6.3.2 Relationship management

To a large extent, managing offshoring involves the management of the relationship between two sites (or even organizations). It includes establishing a common language and common work processes, defining corresponding roles, communication and reporting routines. Throughout all the stages in the offshoring process, the establishment of trust and commitment between the corresponding organization and roles is a prerequisite for efficiency. Vivek et al (2009) describe the evolution of an offshoring project as beginning with a transaction cost philosophy in which safeguarding is emphasized, continuing with the development of specific core competences (a resource-based philosophy), and in time obtaining a relational governance corresponding to the results of Case A. From a transactional level at which the receiver was expected to focus on a specific process and develop enough skills to fulfill the contract and the training programs may provide just enough information to be permit execution of the process. ISP now has full responsibility for some products with full security access into the parts they are developing. The experience of collaboration with a specific partner or within a specific culture, has led to improved performance in executing projects, this being
consistent with the findings of Ethiraj et al (2005) concerning the development of client-specific capabilities.

Several respondents in the transfer management team have addressed the issue of transferring inefficiency versus adaptation of ways of working. The question of adaptation is twofold; Eurosoft wants to avoid transferring ways of working which already relate to inefficiency in the sending organization, but there is also a notion that there might be other ways of working better suited to the organizational (Youngdhal and Ramaswamy 2008, Edoff 2008) and national culture (Metters, 2008) of the Chinese organization. In this aspect, a transfer is at the same time a kind of organizational review, distinguishing routines and culture which add value, from those which do not. Several respondents from both Chinese and Swedish organization noted teamwork as one example. While the Swedish engineers are used to working in teams, self-organizing and sharing information between teams, the Chinese engineers are not naturally inclined to work with teamwork in the same way “don’t care about others, matching what others do” (Eurosoft China manager). It corresponds to the findings of Florida & Kenney (2000) that even though key practices can be replicated in a new environment, the extent to which they affect actual worker behaviour may differ.

6.3.3 Knowledge management
Gupta et al (2009) pointed out the risk of erosion of core competence over time when managing offshore outsourcing relationships and Case B respondents considered that knowledge erosion was one of the main concerns during the transfer. The reason is that even though there were no layoffs due to the transfers, the engineers at the Swedish site would be occupied with NPD projects, regardless of the delay created in the transfer project, it was not considered sustainable for the Chinese site to attain significant time in support after the acting-as-if stage. For this reason, the transfer stage is critical if the necessary information is to be kept within the organizational boundaries and structures and a communication interface are to be built to ensure the continued future growth of knowledge at both sites.

We have identified a wide range of activities, routines and capabilities (Grant, 1996) which Eurosoft is using to succeed in its offshoring efforts. From a learning point of view, Eurosoft uses a formal transfer process, as suggested by Cha et al (2008) and Grant (1996), designated the competence boost. It uses mentoring, as a tool for transferring technical knowledge and processes, through the guidance of competence plans on the individual level and checklists on the organizational level. Mentoring is also a means of transferring sticky knowledge and clarifying the interdependencies of tasks and roles, as described by Kumar et al (2009), which lay a foundation for the future interface and coordination between the sites. The knowledge transfer process described by Ciborra &
Andreu (2001) resembles the Eurosoft transfer process in which peer-to-peer collaboration and project practice create a routinization learning loop. The routinization loop is followed by a capability learning loop during the “acting as if responsible” stage, and then a strategic loop in which the new site sets a goal for the future through lessons learned and the adaptation of its practices to the new organizational setting. The extensive work performed by Eurosoft within the scope of the competence boost is intended to ensure that the knowledge gained will be codified and that there will be no loss of knowledge otherwise due to gaps in neither training nor a productivity drop causing financial loss as the operations stage begins.

Technology, process and relationship management were the key capabilities incorporated in the views of offshoring management expressed by Case B respondents. With respect to strategic considerations, the risk of eroding core competence over time, as functions are transferred back and forth across the globe is a key challenge facing companies such as Eurosoft. This is particularly so when product management responsibility is sent to sites in India and China where the rates of attrition among their employees are significantly higher. The four key types of capabilities found in Case B are compared in Table 10 with capabilities described in the existing literature. They can provide guidance by pointing out four issues which need to be considered in all stages of the offshoring process, regardless of whether the centre overseas is a captive or an outsourcing partner.

Since the management of offshoring is a relatively distributed task, residing on many levels, and potentially at several sites, the experience of those engaged plays a critical role in the success of offshoring efforts. The amount of experience is reflected in the volume of strategies, policies and routines which is produced at Eurosoft. Researchers report that offshoring decisions do not only depend on historical relations, but that middle management plays a critical role in determining and implementing top management strategies and building relations with different stakeholders (Levina & Su, 2008). The notion that companies change their offshoring objectives and strategies over time has been discussed by several researchers, highlighting how experience (Jensen, 2009; Lewin & Peeters, 2006), and relational governance (Vivek et al, 2009) change the trajectories of offshoring projects. Since experience is highlighted as such a crucial factor in managing offshoring and since it is experience rather than strategies and policies which guide the governance in practice, it is somewhat surprising that more attention has not been given to discussing different levels of experience that may influence the performance of functions sent offshore. In larger companies, a pilot project may be used to determine the potential payoffs of offshoring a certain function to a certain country. In the end, where does the knowledge reside - with an individual manager, the business unit, or the organization as such? The question is, should knowledge be obtained, ad hoc, by learning
by doing, or is there a more structured way of building knowledge and acquiring the capabilities for performing the management of offshoring efficiently?

Table 10 Capabilities for offshoring, comparing Case B with literature

<table>
<thead>
<tr>
<th>Type of capability</th>
<th>Eurosoft routines and artifacts</th>
<th>Examples from literature</th>
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<tbody>
<tr>
<td>TECHNOLOGY</td>
<td>Competence plans, checklists, competence boost model (mentoring), team KPI</td>
<td>Knowledge differential between sites (Leonardi &amp; Bailey, 2008); Supplier competence in technology and quality control (Boutellier et al, 2008; Primo &amp; Amundson, 2002); Dividing core competence between sites (Vivek et al, 2009), Sourcing coupled with the relative technological capability between sites (Song &amp; Shin, 2008)</td>
</tr>
<tr>
<td>PROCESS &amp; TOOLS</td>
<td>Competence plans, checklists, competence boost model (mentoring), Process champions, documentation, meetings</td>
<td>Identifying firm-specific work practices, needs, and specifications (Leonardi &amp; Bailey, 2008); task interdependence and coordination (Kumar et al, 2009); Commoditization of organizational processes (Lewin &amp; Peeters, 2006), through learning by doing (Cha et al, 2008); transfer and replicate capabilities across sites (Florida &amp; Kenney, 2000), project management capabilities (Ethiraj et al, 2005)</td>
</tr>
<tr>
<td>MANAGING RELATIONSHIP</td>
<td>Transfer project manager at both sites, operative and general steering group, defining corresponding roles and responsibilities in sending &amp; receiving organizations, cross-cultural training</td>
<td>Overcoming internal resistance, cultural fit, managing remote teams and attrition (Lewin &amp; Peeters, 2006); Evaluating national and regional culture (Metters, 2008), Sharing organizational culture (Youngdahl &amp; Ramaswamy, 2008); developing trust (Levin and Cross, 2004); establishing relational governance, (Vivek et al, 2009) as a combination of top management strategy, historical relations and middle management execution (Levina &amp; Shu, 2008), client specific capabilities (Ethiraj et al, 2005)</td>
</tr>
<tr>
<td>KNOWLEDGE MANAGEMENT</td>
<td>Lessons-learned database, learning’s from using competence boost model by other BU, Quality manager for creating checklists</td>
<td>Identifying embedded knowledge, transfer best practices across locations (Youngdahl &amp; Ramaswamy, 2008); integrate, build, and reconfigure internal and external resources/competences to address and shape rapidly changing business environments Teece, 2000; Transactive memory, personalized and shared databases (Oshri et al, 2008)</td>
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7 Conclusion

The conclusion chapter describes the contributions of this research, defining practical and academic contributions as well as quality of research and future work.

7.1 Fulfillment of objectives

Offshoring can be understood both as a process, and as a complex phenomenon that represents a paradigm shift in the way organizations do work today. The research presented in this thesis benefit both researchers and practitioners interested in offshoring. The use of an engaged scholarship type of research role, and our roots of a critical realist view on building knowledge, have shaped this research as a collaborative process between the researchers and the organizations involved. The two in-depth case studies identify and account for the complex interactions of often contradictory and conflicting powers within offshoring. The research uses descriptive narratives to discuss the tight net of influences operating at different levels in the organizations studied. The overall objective with this research was to identify some of the capabilities and routines organizations’ should develop in order to make offshoring an integral part of managing global RD&E. The organizational capabilities framework presented in the last chapter represents an attempt to synthesize the diverse experiences studied in Eurosoft and ISP, in correspondence to the literature review, concerning four capabilities: Technology, process and tools, managing relationship and knowledge management. Throughout this research journey, we have argued for the following ideas:

a. Offshoring involves a process that can be understood in terms of the decision to distribute work, executing the transfer, and regular operations and governance. Organizations have to manage all the stages of the process to obtain the benefits of offshoring.

b. The literature on offshoring has predominantly focused on the decision stage of offshoring, not specifying to what extent this knowledge can be used at other stages of the offshoring process.

c. The transfer stage represents a critical aspect of offshoring management, since it is during transitions the companies can make sure that their knowledge base is not eroded as a (strategic) decision is taken to geographically disperse its functions and core competences needed to manage them. The case studies showed that even though a strategic decision was taken and specified into a formal transfer process, the continuous change of scope as well as re-prioritization of resources in favor of development projects (running in parallel), the transfer project becomes a “side activity” highly dependent on the willingness and ambition of individuals on both sites to succeed.

d. As high value functions like RD&E are sent offshore, a transfer is not only a relocation of resources, but also involve a distribution of capabilities. The
capabilities need to be established in the new site both in terms of technical knowledge, roles established and corresponding communication interface between sites.

e. The governance and operations stage has its own specific challenges, as the organization shall settle in with the new functions into normal routine, but also because a transfer project might as easily be the starting point of a series of transfer projects – creating a continuous flow of knowledge to be transmitted around the globe.

f. The process by which these companies govern their offshoring projects can be seen in the transfer models and checklists that they employ. Even with the increasing emphasis on including softer aspects, such as culture, during all stages of the process, there is still a challenge to transfer best practices across (and between) the organizations.

Since offshoring is becoming industry practice also for critical technologies which are related to core competencies, it is a little bit worrying that the development of these capabilities are not prioritized, e.g. by always prioritizing development projects before transfer projects. This is not only problematic because of the risk of losing competence in the technical and process areas, but it can also create an unstable foundation when it comes to creating and maintaining the relationship between sites. The stream of high value functions demands a new dynamic between sites; from a service environment towards partnership. Status, fear of losing a job or attrition can put a strain on the relationship in both offshore outsourcing relations (as in case A), as well as between captive centres (as seen in case B). While technological skills and related processes are traditionally closely related to the core competences in this industry, relationship and knowledge management become more critical capabilities to develop as the distribution of work increases. Managing cross-cultural interface and the codification of tacit knowledge represent two such areas, as highlighted in the case studies.

7.2 Quality of research

The engaged approach taken towards the participating organizations in this research, represent both strengths and weaknesses when it comes to quality of research. Since offshoring is still a debated strategy and a sensitive topic due to layoffs in the industry today, there is a certain lead time to develop the trust needed to get different parts of the organization involved in a research project which intends to reveal all the facets of offshoring in practice. The relationship and the commitment established enabled us to get access to a large amount of confidential information and interviews with personnel at all levels in the organizations. The depth of the studies, and the multiple perspectives provided by the diverse sources of information generated useful insights into the complexity of the area studied and the different types of stories that existed within the
organizations. However, there was a challenge to perform the same amount of systematic analysis on all sources of information, and in-depth studies limit the possibility of making generalizable statements. This research represents the first stages in the doctoral studies journey, and there are great opportunities to extend the research both into more clearly defined process studies of projects longitudinally, and comparative studies between several companies that can help construct a more general model to be applied within or across different industries. Following a transfer project from decision, transfer, to operations and then adding a data point one year later could potentially show what implications existing practices and governance mechanisms create more clearly.

7.3 Contributions
The practical relevance of this research was providing rich descriptions of how the case study companies operate offshoring of RD&E, involving both internal and external partners, and identifying key areas to consider when running offshore operations. Guidance can be found both in reading the case descriptions, which highlighted aspects or challenges to consider when planning for, and executing the different tasks related to all stages in the offshoring process. Papers A & B (Case A) provided insights into different techniques for developing and governing a relationship between client and supplier, and relating to different levels of culture as governance and communication interfaces are designed. Paper C & D (Case B) provided insights on the design of a product management transfer, the four key areas of capabilities to account for when planning and executing a transfer project to offshore site. The contributions of each appended paper are summarized in Table 11.

The academic relevance of this work was providing a synthesized review of current literature by creating a framework regarding the organizational capabilities leveraged in the offshoring process. Existing literature is complemented by in depth investigations on how knowledge and product management responsibilities are transferred overseas, as well as how to manage the interface between sites. By combining literature on organizational capabilities with empirical and theoretical work within offshoring context, an organizational capabilities framework for effective offshoring was proposed. The gaps in theory when it comes to distinguishing offshoring from offshore outsourcing, accounting for all stages of the offshoring process, as well suggesting ways of integrating related bodies of knowledge has been described. Relationship management in general and cultural dimensions in particular, represents areas which has its own specific implications when it comes to the offshoring context. Since this research included both sites in the relationships studied, it provides a description on both sending and receiving organization of these dyadic business relations. Offshoring is perceived differently from the sending sites in mainly western countries which see at as a threat and the blooming offshoring
destinations such as Asian counties which have experienced extremely rapid growth in handling these functions. The selected parts of the literature on knowledge transfer and knowledge management, combined with the challenges in case A & B, indicated several relevant areas which can be incorporated and tested for in the offshoring context (Explained in Paper C). Managing knowledge is clearly a gap in practice, but also a rather neglected area in current research on offshoring.

For both research and practice, this research has highlighted the importance of both sending and receiving organizations to engage in the process of sending functions overseas, but also the need for them both to develop specific capabilities in order to manage distributed development efficiently. Sending and receiving site share the responsibility of committing to a transfer and securing that resources needed are available, otherwise offshoring represents a risky strategy to secure global competitiveness.

Table 11 Overview of appended papers contribution

<table>
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<tr>
<th>Paper</th>
<th>Contributions</th>
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<tr>
<td>A</td>
<td>Intercultural differences was found to have implications on the relationship between Swedish site and Indian offshore supplier when it comes to communication, trust and evolution of tasks sent offshore. The cultural factors adhered to differences in national culture, organizational culture and contextual differences (regional, religious, industry-specific differences). A theoretical framework based on Hofstede and Trompenaar was used to map the differences adhering to national differences when it comes to managing an offshoring relation between Sweden and India.</td>
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<tr>
<td>B</td>
<td>During the course of a decade long relationship between client and offshore supplier, the tasks sent offshore transformed from small specific tasks, to more complex tasks and entire product responsibility, as an result of building the relationship. Several mechanisms was used to strengthen the relationship between client and supplier: Cross-cultural seminars, Site visits from both organizations, on the job training, top talent program in collaboration with a university as well as regular steering committee and management days.</td>
</tr>
<tr>
<td>C</td>
<td>Provided a rich description on the management practices and transfer model guiding the transfer of a flagship product from a Swedish site to an R&amp;D center in china. Described the transfer process at Eurosoft in terms of transfer model and training program, as well as key issues the company faced during the transfer, such as changing scope, lack of commitment to resources, knowledge build-up, communication and interface management.</td>
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<tr>
<td>D</td>
<td>Identifying a wide range of activities, routines and capabilities used by the case study company when performing a product management transfer between Sweden and China, including: formal transfer process, mentoring, on-the-job training, competence checklists, regular site visits of management team and cross-cultural training workshops. Based on the current practice and challenges in the case study an organizational capabilities framework were constructed, which distinguished four key capabilities for efficient offshoring: technology, process and tools, relationship management and knowledge management.</td>
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7.4 Future work

Future research should more clearly indicate the context of each offshoring setup included in their empirical work, in order for both researchers and practitioners to be able to identify the implications for their own situation. Examples of details relevant when evaluating offshoring relationships include technical differential between sites, length of relationship, and experience in handling globally distributed development, nationality and business context, all of which were accounted for in the cases in this research. An organizational capabilities perspective was applied in the research to discuss the management of offshoring. It highlights that experience alone is not sufficient to explain successful implementations of an offshoring strategy, but that experience and routines has to be coupled with an intentionality and commitment to strategy throughout the offshoring process. The continuation of this research project will discuss learning and capability development more in depth, both theoretically and in terms of empirical context:

- Validate findings through engagement with another company managing offshoring of complex software intensive products, enabling comparative case study analysis of product management transfers as well as managing the interface between sites in offshoring.
- Engage in process designed studies to follow the capability development longitudinally
- Explore how the learning’s from managing offshoring is, or may be, transferred from individual to project, business unit, and organizational level.
- Provide cross-industry comparisons when it comes to ‘best practices’ with respect to developing capabilities for offshoring

There is, however, a challenge to define best practices when it comes to offshoring. These companies can be considered a good starting point since they have worked with offshoring for a long time, but as seen in the cases experience in individuals do not necessarily translate into organizational capabilities. The extent and pace of which offshoring is used within a company does not necessarily translate into performing offshoring in an economically sustainable way. There is still much work to be done to map how offshoring can become a sustainable practice for all sites involved, and spread the research findings into guidance for the industry.
References


