Effective transfer of tacit knowledge across borders

A case study of DHV in the Netherlands and India

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Summary

The increasing internationalization causes an increasing need for organizations to effective transfer knowledge across borders in order to achieve competitive advantage. DHV-Group plans to expand their Rail & Stations Business Unit to India. Therefore, they need to gain insight in how to transfer knowledge between the Netherlands and India in an effective way with the aim of economic benefit. This research focuses on the transfer of tacit knowledge, because this is often more difficult to transfer than explicit knowledge.

The literature states that four factors are of influence on the effectiveness of knowledge transfer across borders: motivation of the sender and receiver, communication tools which are used, the use of expatriates, and the differences between organization cultures.

A mixed-method approach has been used to research if these factors are also influencing the transfer of tacit knowledge between the Netherlands and India at DHV-Group. A questionnaire was used to collect quantitative data. Forty employees completed the questionnaire, of whom 31 Dutch and nine Indian employees. The results were analyzed with the use of a correlation- and regression analysis. Furthermore, two projects were observed to collect qualitative data: DMIC and KEIP. Eight project members were interviewed about their vision on the knowledge transfer between the Dutch and Indian project members.

The results show that the factors found in the literature review are all of influence on the knowledge transfer. Motivation and differences between organizational cultures were mentioned as most influencing factors. A striking result is that external regulation of the sender negatively influences his intrinsic motivation. This correlation needs further research.
To transfer tacit knowledge, face-to-face contact is necessary. The use of ICT is mainly effective to transfer explicit knowledge, however it could support the transfer of tacit knowledge.
The results also show that DHV-Group does not use the experiences and competence of expatriates optimally. There is no training program how to transfer knowledge and there is little contact with expatriates.
Finally, next to power distance and level of individualism, the difference of long-term orientation seems to be of influence. However, this correlation needs further research.

Next to these four factors, two other factors which influence the effectiveness of cross border knowledge transfer were found in this research. The initial phase of a project seems to be of great influence. This phase is determined by the project leader and therefore the project leader is of great importance. He needs to involve all project members and he needs to create an open atmosphere to share knowledge.
HR is also of great influence on the effectiveness of knowledge transfer by selecting the right people and implementing the HR strategy.

So, DHV-Group is recommended to be clear about their corporate strategy and add transfer of tacit knowledge between the Netherlands and India to their corporate policies; it should invest in an international business plan; it should develop an expatriate program and implement an incentive policy for the transfer of tacit knowledge across borders; HR should focus on the retention of knowledge; an investment in communication tools which facilitate face-to-face contact is needed; the initial phase of a project should focus on teambuilding; and finally, the project leader should adopt a management style which supports knowledge transfer.

Foreword

In September 2010 I started my master thesis. The main objective of this thesis is to investigate which factors are of influence on the effectiveness of the transfer of tacit knowledge across borders and to give recommendations how these factors can be taken into account in order to achieve economic benefit.

I performed this thesis at DHV-Rail & Stations, which is located at Utrecht (the Netherlands). I did an internship at DHV-Rail & Stations for a period of seven months. During this period, two persons supported me with everything I needed help with. I would like to thank Tjip Sietsma for giving me the opportunity to do my research at DHV-Group and for his interest in this topic. He also really supported me with my personal development. Furthermore, I would like to thank Marieke van Loon for all her help and guidance during, and after, this project. Without her, this report was not as structured as it is at this moment. I would also like to thank both Tjip and Marieke for their flexibility regarding my health in the beginning of this project.
Furthermore, I would like to thank all participants of my research and especially Frank Sutmuller, who invested a lot of time in me to share all his knowledge with me about the DMIC and KEIP project. Finally, I would like to thank Hermen Jan van Ree for his correctional reading and Wieger Pasman for his graphic addition.

This master assignment demonstrates that I:

- have knowledge of the most recent developments in the academic field;
- use my knowledge and insights (including methodological skills) to address practical issues in the academic field;
- give a well-balanced assessment of my own work, from the academic stance, from the practical side, and also from the ethical perspective;
- communicate (both orally and in writing) my ideas and insights to a mixed public;
- work independently.

This master thesis is the final part of my study Business Administration.

During my research process I have had the supervision of Mr. Sirp de Boer, Mr. Hans Voordijk, and Mr. Rik van Reekum. I want to thank Sirp de Boer for his guidance during the initial phase of this project. I want to thank Mr. Hans Voordijk and Mr. Rik van Reekum for their patience, insight and support during this process.

I also would like to thank my parents for their support during this research project. Especially the first half of this research was hard for me because of an illness. I would like to thank them for their patience and care before, during and after my surgery.
Finally, I would like to thank all my friends for their support, tips and contribution to this research.

I was really motivated to achieve this master thesis and I am still very enthusiastic about the subject and my results.

I hope you will enjoy reading it.

Utrecht, June 16th, 2011

Willemijn Wesselink

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Abbreviations

BU:	Business Unit
DHV-NL:	DHV- the Netherlands
DMIC:	Delhi-Mumbai Industrial Corridor
GLOBE:	Global Leadership and Organizational Behavior Effectiveness
GEC:	Global Expert Center
HR:	Human Resource
HRM:	Human Resource Management
ICT:	Information and Communication Technology
KEIP:	Kolkata Environmental Improvement Project
MNC:	Multinational Corporation
NIH-syndrome:	Not-Invented-Here-syndrome
OJT:	On-the-Job-Training

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Chapter 1: Introduction – Approach of research to effectiveness of knowledge transfer across borders at DHV

The primary goal of this report is to identify the factors which influence intra-organizational transfer of knowledge across borders at DHV-Group (DHV). With increased globalization of economic activity and a dramatic intensification of cross border business, the need for effective cross border knowledge transfer has become more important than ever before.
The first section of this chapter will outline the motive to this research. The second section will explain the practical and scientific relevance. Finally, the research question and the research strategy are outlined in the last two sections.

1.1 Motive to research – Expansion of DHV to India

DHV is a leading international consultancy and engineering firm, providing services and innovative solutions in Transportation, Water, Building & Industry, Urban and Regional Development, and Environment & Sustainability. DHV offers services, including management consultancy, advice, design and engineering, project management, contract management and asset management. DHV, headquartered in the Netherlands, maintains a network of 75 offices worldwide with a staff of 6.000

DHV is known internationally especially in the fields of Water, Aviation and Intelligent Transport Systems. At this moment DHV has eight home-countries, which will be enlarged to nine with Vietnam. DHV wants to built long term relationships and to understand the local contexts of these countries in order to grow the business. Therefore the corporate management strategy of DHV is to create self-sustaining business units with a local management style. Furthermore, DHV has a multi-domestic strategy and thereby it can be defined as a multinational organization. However, DHV turns slowly into a transnational organization, which increases global competitiveness by combining centralized and decentralized roles and responsibilities. Resources are integrated through strong interdependencies (see appendix A: Description of DHV).

The Holding set a target for DHV-India to achieve a growth of 300 percent in 2015, of which 5 million Euros turnover in the Rail and Stations segment. At this moment DHV-India has a staff of 600 and a turnover of 5 million Euros. DHV-Rail & Stations is a department within the 'Transportation' market and it consists of DHV-Rail and NPC (former part of Dutch Railways). The focus of DHV-Rail is on consulting, designing, and supervising infrastructural modifications in the field of rail. NPC focuses on the development, renovation, furnishing, and management of stations (or station areas) and sites. This combined knowledge makes DHV-Rail & Stations a leading Dutch consulting firm in the rail sector (see appendix A). In order to achieve the goal set by the Holding, DHV-Rail & Stations needs to collaborate increasingly with DHV-India, whereby it will be necessary to transfer knowledge. DHV-Rail & Stations wants to gain insight in how to transfer knowledge between the Netherlands and India in an effective way with the aim of economic benefit.

Other markets of DHV, as Aviation, Intelligent Transport Systems, and Water Treatment, are already collaborating with DHV-India. Based on the experiences of these departments, research can be done to which factors are of influence on the effectiveness of knowledge transfer between DHV-NL and DHV-India. This research will recommend DHV how to improve the effectiveness of knowledge transfer.

To summarize, DHV is intensifying their collaboration with India, which involves issues with the effective transfer of knowledge across borders. This research will examine which factors influence the effective transfer of knowledge between the Netherlands and India at DHV.

1.2 Relevance of research – Scientific objective and practical objective

This section will outline the scientific and practical relevance of this research.

1.2.1 Scientific objective

There is a lot of research done in the field of knowledge transfer: the role of communication tools and the need to keep personal contact are described, as well as the importance of motivating the sender and receiver and the influence of different types of knowledge. Several authors examined the influence of these factors on the transfer of knowledge within an organization which is located in one country (eg. Szulanski, 1996; Szulanski & Jensen, 2006; Nonaka, 1999, Argote & Ingram, 2000; and Goh, 2002). Some others have found factors influencing cross border transfer of knowledge, such as cultural influences (eg. Gupta & Govindarajan, 1991, 1994, 2000; Lam, 1997; Bhagat, Kedia & Harveston, 2002; Javidan, Stahl, Brodbeck & Wilderom, 2005; and Perez, Kedia, Datta & Rasheed, 2008). With few exceptions (e.g. Gupta and Govindarajan, 2000), research has failed to simultaneously examine all of these antecedents. This research will differ from previous researches, because it attempts to simultaneously examine the factors found in earlier research.
Furthermore, almost all research done on the field of intra-organizational transfer of knowledge focuses on explicit knowledge (eg. Szulanski, 1996; Buckley & Carter, 1999; Hansen, 2002; Winkler, Dibbern & Heinz, 2008; Dinur, Hamilton & Inkpen, 2009). Tacit knowledge is very difficult to measure (Mowery, Oxley & Silverman, 1996). However, this research examines the transfer of tacit knowledge. Because previous researches and theories are combined with a new focus, there will be a contribution to the scientific knowledge.

Chapter 2 will discuss the influence of differences between cultures on the transfer of knowledge. Most of the existing research examined 'the West' versus the 'emerging economies', which is a very broad view. This research will focus on the differences between the Netherlands and India. When other countries are chosen, other outcomes are possible. This report will contribute to the international business literature by identifying how intra-organizational knowledge transfer can be improved across borders.

Finally, on the field of transfer of knowledge, almost all research has been done with the use of interviews or is based on theoretical research. Little use has been made of questionnaires. This research will contribute to scientific research by developing a conceptual model and doing research with the use of a questionnaire and project observation in order to measure effective transfer of tacit knowledge.

1.2.2 Practical objective

As stated before, DHV-India has the target to expand their turnover in the Rail and Stations segment, which leads to more collaboration between DHV-India and DHV-NL. The department DHV-Rail & Stations wants to be prepared for problems which might arise when knowledge needs to be transferred between DHV-Rail & Stations and DHV-India. Therefore, they need insight in how to transfer their knowledge between the Netherlands and India in an effective way with the aim of economic benefit. DHV-Rails & Stations can learn from the departments of DHV which already collaborate with DHV-India. When DHV-Rail & Stations takes this research into account when they have to transfer knowledge across borders in the future, the transfer could be more effective.

This report also wants to enlarge the understanding within DHV-Rail & Stations about the transfer of *tacit* knowledge. At this moment DHV-Rail & Stations already uses certain tools to transfer its explicit knowledge (e.g. a management system which contents all information needed to complete a project properly). This research focuses on the transfer of tacit knowledge, which is harder to transfer than explicit knowledge (Nonaka, 1999; Pedersen et al., 2000; Roberts, 2000; Bhagat et al., 2002; Hébert et al., 2005; Perez et al., 2008; Dinur et al., 2009; Fang et al., 2010). So, this report will contribute to

the understanding of the organization to transfer, next to their explicit knowledge, also their tacit knowledge, by giving practical recommendations about how to transfer tacit knowledge.

So, this report is expected to contribute to the organizational learning and knowledge transfer literature by identifying influencing factors on the cross border knowledge transfer.

1.3 Research question

Above, two objectives are outlined: the first is to contribute to existing literature and the second is to provide insight to DHV-Rail & Stations in effective knowledge transfer across borders. This leads to the following objective for this research: identifying factors which influence the effectiveness of transfer of knowledge between the Netherlands and India.

The motive to this research and the objective described above can be rephrased to the research question:

Which factors influence the effectiveness of cross border transfer of tacit knowledge and how can DHV-Rail & Stations take these factors into account with the transfer of tacit knowledge between the Netherlands and India, in order to achieve economic benefit?

1.4 Research strategy – From theory to recommendations

This section explains briefly the research strategy. Chapter 3 will explain the research strategy of this research in more detail.
This research is partly descriptive and partly explanatory. It will analyze the factors which are of influence on the knowledge transfer. Transfer of knowledge is a process, whereby the source transfers its knowledge to the receiver (see figure 1). The aim of this research is not to examine the process, but to examine which factors are of influence on this process (see the blue arrows in figure 1).The dependent variable is the effectiveness of transfer of tacit knowledge across borders and the independent variables are the factors which influence this effectiveness.

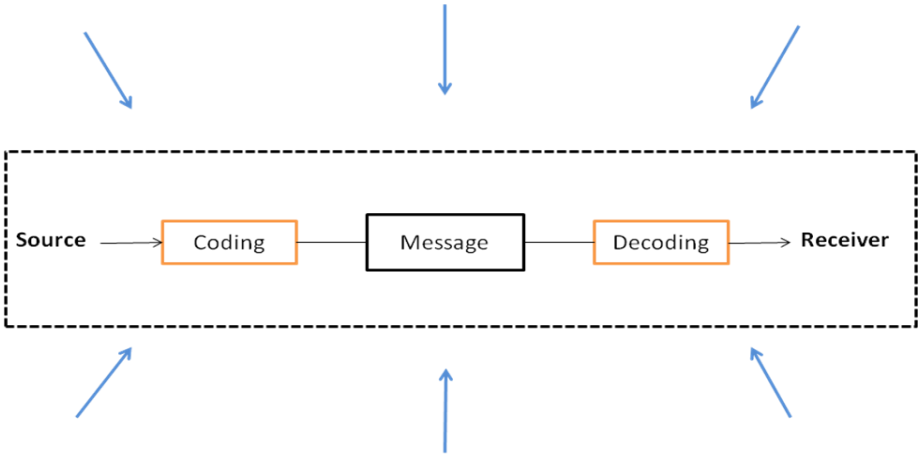


Figure 1: Process of transfer of knowledge

The research is deductive. First it will examine which factors are found in the existing literature. The found factors will be tested at DHV, so a single case study will be used. The conceptual model will be tested by collecting data, using a questionnaire and observation of two projects. The participants will be employees of DHV-NL and DHV-India.
The collected data of the questionnaire will be analyzed by a correlation- and regression analysis. The data collected with the observations will be analyzed qualitatively.

Next, the results will be discussed: the data will be compared with the found literature and/ or new literature, remarkable outcomes will be further examined and new insights will be outlined. Finally, conclusions will be drawn and practical recommendations will be given to DHV-Rail & Stations.

1.5 Chapter overview

This report has been set up as follows. Chapter 2 includes the literature review, which investigates what is already known about the topic of this research. First, a general view in the topic is given. Section 2.2 defines the concepts of the research question. Then the influencing factors on the cross border knowledge transfer is outlined. Finally, the conceptual model will be implemented.
Chapter 3 describes the methodology of this research. First, it defines the independent and dependent variables. Secondly, the research strategy and the participants are outlined. Section 3.4 describes the data collection methods. Finally, the analysis is described.
The data analysis will be done in chapter 4. First the preliminary analyses will be described, followed by the univariate and bivariate analyses. Chapter 5 will draw conclusions of the results and will give an answer on the first part of the research question. Chapter 6 will discuss the conclusions. Finally, chapter 7 will answer the second part of the research question by formulating recommendations for DHV-Rail & Stations. The second part of chapter 7 will give recommendations for further research.

Chapter 2: Theoretical insight in the factors influencing the effectiveness of cross border knowledge transfer

This part of the research will investigate what is already known about the topic of this research. This will be done according to the methodology described by Saunders, Lewis, and Thornhill (2009). Appendix B explains step-by-step how the literature review has been created. This chapter is set up as follows: first, a general view on the topic is given. Secondly, the concepts used in the research question will be defined. This will be done from the view of several authors. In the end the definition will be given which will be used in this report. Third, the factors influencing cross border transfer of knowledge will be outlined. Finally, the conceptual model will be implemented.

2.1 The growing importance of knowledge as a competitive force

With the huge increase in cross border business, the need for effective cross border knowledge transfer is greater than ever and will continue to increase (Javidan, Stahl, Brodbeck & Wilderom, 2005; Pedersen, Petersen & Sharma, 2000; Gupta and Govindarajan, 2000; Buckley and Carter, 1999). Firm advantages arising from traditional sources, such as the unique access to capital, labor, or markets, can be expected to decline. Correspondingly, a company's ability to develop, access, integrate, and deploy knowledge across its worldwide system is likely to become more critical (Almeida, Song & Grant, 2002).
For the MNC, merely possessing or creating knowledge-based assets is not sufficient in itself to ensure its competitiveness. Transferring this knowledge within and across the firm enables it to exploit its knowledge advantage in various locations (Szulanski, 1995; Martin and Salomon, 2003; in Hébert, Very & Beamish, 2005). Without this transfer ability, a MNC cannot replicate its knowledge-based advantage throughout its operations and compete on a multiple-country scale (Madhok 1997; in Hébert et al., 2005; Goh, 2002; Bender and Fish, 2000).

There have always been difficulties when organizations transfer their knowledge within their organization. However, when knowledge has to be transferred across borders, these difficulties will even increase. The differences between the countries cannot only cause serious operational difficulties in cross border collaborative work, but can also lead to asymmetry in knowledge transfer (Lam, 1997).

So, partly due to the growing international business, it is of great importance to organizations to manage their knowledge and to transfer existing skills, knowledge and expertise effectively within the organization, especially across national borders (Bender and Fish, 2000). Organizations need to understand the difficulties of cross border knowledge transfer in order to be able to transfer their knowledge effectively all over the world.

2.2 Concepts of the research question defined

The research question contains certain concepts which need to be explained in more detail. This section will define the following concepts: knowledge, different types of knowledge, cross border transfer of knowledge, and effectiveness.

2.2.1 Knowledge defined

Many authors have defined knowledge. According to Bender and Fish (2000) knowledge originates in the head of an individual and builds on information that is transformed and enriched by personal experience, beliefs and values with decision and action-relevant meaning. It is information interpreted by the individual and applied to the purpose for which it is needed. Knowledge is the mental state of ideas, facts, concepts, data and techniques, recorded in an individual's memory.

Knowledge can also be defined as the application and productive use of information. However, knowledge is more than information, since it involves an awareness or understanding gained through experience, familiarity or learning (Roberts, 2000).
And according to Davenport and Prusak (1998; in Bhagat et al., 2002) knowledge is a fluid mix of framed experience, important values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.

In this research knowledge will be defined as 'a unique set of information, gained through experience and learning, which remains in written documents, as well as in the routines, tasks, processes, practices, norms and values of persons, and thereby of organizations' (Bender and Fish, 2000; Roberts, 2000; Bhagat et al., 2002).

Many authors define knowledge as forthcoming from data and information. Bender and Fish (2000) present this in their knowledge hierarchy (see appendix C). The lowest layer of the pyramid is data. Data can be defined as necessary inputs into information and knowledge. It is a series of observations, measurements, or facts in the form of numbers, words, sounds and/ or images. Data have no meaning, but provide the raw material from which information is produced (Roberts, 2000).
When meaning, understanding, relevance and purpose are added to data, it becomes information (Bender and Fish, 2000). Information can be defined as data that have been arranged into a meaningful pattern. Data may result from the conduct of a survey, information results from the analysis of the data in the form of a report or charts and graphs that give meaning to the data (Roberts, 2000). Information, or knowing what something means, includes facts, axiomatic propositions, and symbols (Dunur et al., 2009).

Knowledge is created, restructured, or changed from related and unrelated pieces of information, to the extent that the information has the right kinds of signals that, in the mind of the receiver, are conducive to the creation of knowledge. It is the receiver who decides whether the communication he or she receives, is truly information or knowledge. Indeed, knowledge is created, organized and transferred by commitment and belief patterns of its sender and receiver, who transmit their culture-specific sets of values and frames of reference (Nonaka, 1999; Bhagat et al., 2002).

According to the knowledge hierarchy of Bender and Fish (2000), knowledge can be enriched towards expertise through experience, training and education. Expertise can then be defined as specialized, deep knowledge and understanding in a certain field, which is far above average. (Bender and Fish, 2000).

Different types of knowledge

As the research question states, this research examines the transfer of *tacit* knowledge. In order to define tacit knowledge, other types of knowledge need to be explained too. Garud and Nayyar (1994; in Bhagat et al., 2002) made a distinction between simple versus complex knowledge and explicit versus tacit knowledge.

Complex knowledge evokes more causal uncertainties, and, therefore, the amount of factual information required to completely and accurately convey such types of knowledge is greater than would be the case with simple types of knowledge. Simple knowledge can be captured with little information and is, therefore, relatively easy to transfer (Bhagat et al, 2002).

The second dimension, explicit versus tacit, concerns how well articulated or implicit the knowledge is. Roberts (2000) defined explicit knowledge as knowledge which can be codified and recorded or transmitted in the form of symbols (e.g. writing or drawings) or embodied in a tangible form (e.g.

machinery or tools). A critical assumption of the theory is that explicit knowledge is of minor importance in the internationalization process of firms (Perdersen et al., 2000).
Tacit knowledge is personal; it is hard to formalize and communicate to others. It is also generally more complex, existing in the mental models and expertise gained over time and through personal insights (Goh, 2002; Roberts, 2000).Tacit knowledge is 'more than we can tell', knowledge which is gained by on the job training or learning (Lam, 1997).

A different type of knowledge needs a different type of transfer. This research will focus on complex, tacit knowledge, which Bender and Fish (2000) show as the top two layers of their model.

2.2.2 Cross border transfer of knowledge defined

Initially, the process by which MNCs create value from knowledge was conceptualized as a linear sequence: knowledge was created in the firm's home base and was then diffused worldwide in the form of new products and processes (Almeida et al., 2002). The literature describes transfer of knowledge as the way individuals and groups communicate and learn from each other, without interacting with the environment (Javidan et al., 2005; Kalling, 2003; Dinur et al., 2009). Knowledge transfer within an organization may be thought of as the process by which an organization makes knowledge about routines to its members available, and is a common phenomenon that can be an effective way for organizations to extend knowledge bases and leverage unique skills in a relatively cost-effective manner (Kalling, 2003).

With the increasing globalization, organizations expand their activities across national borders, and knowledge is internationalizing (Perdersen et al., 2000). Kogut and Zander (1993; in Dinur et al., 2009) described the superior ability to transfer knowledge at the international level as a primary source for MNC competitive advantage and growth. International knowledge transfer enables the transmission of unique solutions from a subunit in one country to another, the coordination of various connected international units, and the collaboration among them.
So, when knowledge acquired in one organization affects an organization in another country (either positively or negatively), cross border transfer of knowledge occurs (Argote, 1999).

2.2.3 Effectiveness defined

Although the benefits of knowledge transfer have been documented in many settings, the effectiveness of knowledge transfer varies considerably among organizations (Argote, 1999; Szulanski, 1996; in Argote, 2000). This is mainly due to four factors, which will be described in section 2.3.

According to Cumming (2003) and Szulanski (2006), the transfer is effective when the knowledge is retained (Glaser et al., 1983; Druckman and Bjork,1991; in Cumming, 2003). However, retention cannot be taken for granted. Moreover, even if retained, the knowledge may not be nurtured and further developed if learning is not considered important, because the slack required to enable people to think and discuss, and for learning groups to emerge, may be sacrificed in the name of efficiency (Stewart, 1996; in Cumming, 2003).
If an organization has effective routines to retain, nurture and develop knowledge, it should be able to specify milestones, budgets, and expectations for the transfer process rather accurately (Szulanski, 1996). Then, knowledge transfer leads to a project which has been completed on time, on budget and with a satisfied receiver.

The retention, nurturing and development of knowledge, is by many authors described as 'absorptive capacity'. It helps to explain the effectiveness of inter-unit learning and knowledge transfer (e.g., Tsai, 2001; Goh, 2000; Mowery, Oxley and Silverman, 1996; Cumming, 2003; Cohen and Levinthal, 1990). Absorptive capacity refers to the ability to recognize the value of new information, assimilate

it, and apply it (Cohen and Levinthal, 1990, p. 128; in Fang, Jiang, Makino & Beamish, 2010). In the absence of such ability, initial difficulties during the integration of received knowledge may become an excuse for discontinuing its use and, when feasible, reverting to the previous status quo (Zaltman et al., 1973; in Szulanski, 1996). So, knowledge transfer has been effective when the transferred knowledge has been assimilated and applied.

In this research, the effectiveness of knowledge transfer will be equated to the absorptive capacity of the receiving organization, i.e. when the receiving organization assimilates and applies the transferred knowledge, the transfer of knowledge is effective.

2.3 Influencing factors on effective cross border knowledge transfer

The factors influencing the effectiveness of international transfer of knowledge can be clustered into four factors: Motivation, Communication tools, Expatriate policy, and Differences between organization cultures. Appendix B describes how these four factors are selected. Each of the factors will be explained in the next subsections.

2.3.1 Motivation of sender and receiver and their relationship quality

The first factor which influences the effectiveness of cross border transfer of knowledge is the motivation of the source, as well as the receiver (Buckley and Carter 1999; Roberts, 2000; Gupta and Govindarajan, 2000; Goh, 2002; Kalling, 2003, Perez et al., 2008). The source needs to be motivated to transfer its knowledge, because he might have access to unique knowledge. A source that has been involved in the creation of knowledge can be expected to know precisely how the knowledge can best be applied to improve operations; or a source that is effectively embedded in its home country is more likely to possess local knowledge that is novel and useful to the receiver (Perez et al., 2008).
The effectiveness of knowledge transfer will be limited if employees are a-motivated to perform (Huselid, 1995). This means that employees are not willing to share their knowledge with other parts of the organization, for example, because of organizational politics, inter-organizational rivalry, and the fear to lose his unique position (Javidan et al., 2005; Gupta and Govindarajan, 2000). Furthermore, the willingness to transfer knowledge is also related to personal motivation, or caused by institutionalised incentives (McGovern 1999; Harris, Doughty & Kirk, 2002).
Motivation to transfer knowledge can be driven by many things: a weak position performance wise, or by a generic will to learn and improve. If this 'natural' motivation is not in place, HRM efforts may create the incentive (Kalling, 2003; Bender and Fish, 2000; Goh, 2002).

Also the receiver needs to be motivated to gain knowledge. This motivation can be reduced by the Not-Invented-Here (NIH)-syndrome (Gupta and Govindarajan, 2000; Buckley and Carter, 1999; Kalling, 2003; Perez et al., 2008). The NIH-syndrome can be described as situations where potential receivers of knowledge lack the incentive to learn, primarily because they do not sense that the sources of knowledge have the proper level of authority, and that their own knowledge base has a stronger authority (Perez et al., 2008; Kalling, 2003). This is a barrier for the receiver to learn and pick up new knowledge. This barrier will decline when receivers see that the transfer of knowledge will add value in the future, and when they understand the purpose and the contents of it (Kalling, 2003; Javidan et al., 2005).

There are at least two drivers of the NIH syndrome: (1) ego-defense mechanisms (Allport, 1937; Sherif and Cantrill, 1947; in Gupta and Govindarajan, 2000) which can lead some employees to block any information that might suggest that others are more competent than they are, and (2) power struggles within organizations (Pfeffer, 1981; in Gupta and Govindarajan, 2000) which can lead some managers to try to downgrade the potential power of peer units by pretending that the knowledge stock possessed by these peer units is not unique and valuable.

The barriers summed up above will reduce when the relationship quality between the source and the receiver increases (Goh, 2002; Roberts, 2000; Perez et al., 2008; Dinur et al., 2009). Relationship quality refers to the extent to which the relationship between the receiver and the source is close, strong, and based on mutual trust (Perez et al., 2008). A good relationship is associated with better comprehension of the transferred knowledge and it enhances comprehension (of as well the content of the knowledge as the foreign language), because trust allows for greater openness and cooperation (Das and Teng, 1998; in Perez et al., 2008; Holden and Kortzfleisch, 2004). Thus, in a situation where the relationship between the foreign source and the receiver is characterized by closeness and trust, a more effective knowledge transfer can be expected.

So, a good relationship between the source and the receiver might lead to a higher motivation of both parties to learn from each other, which leads to a more effective transfer of knowledge.

2.3.2 Communication tools – The importance of the combination of ICT and face-to-face contact

The second influencing factor is the communication tools which are used to transfer knowledge. Allen's (1997; in Roberts, 2000) study demonstrates that with an increased physical distance the probability of communication between employees decreases.
Overall, the literature states that the significance of personal contact should not be underestimated, especially in global business, where an understanding of cultural differences, such as business behavior, attitudes, mindsets and languages can be critical to an organization's success (Bender and Fish, 2000). Technology can never substitute for the rich interactivity, communication, and learning that is inherent in personal dialogue. As argued by Bender and Fish (2000) technology is an enabler, not a driver of knowledge management.

Information and communication technology (ICT) makes it possible to collect, collate, store and disseminate data and it facilitates knowledge transfer through the exchange of data (Roberts, 2000). The general view of authors is that for ICTs to assist knowledge transfer across distance, the individuals involved must succeed in creating a virtual location in which they share a common social and cultural institutional framework. Indeed, Handy (1995; in Roberts, 2000) emphasizes the importance of trust in virtual organizations, noting that the more virtual the organization the more its members need to meet face-to-face. However, even with the best electronic communication, confidence between project members of a worldwide project decays over time. Periodic face-to-face contact is therefore necessary to maintain a satisfactory level of confidence and trust to sustain team working, and relational proximity (Roberts, 2000; Dinur et al., 2009; Kalling, 2003).

Research described by Kalling (2003) found that horizontal communication flows, as phone calls, meetings and personal acquaintances across units, are normally associated with successful transfer (Epple, Argote & Devadas, 1991; Darr, Argote & Epple, 1996; Ingram and Baum, 1997; in Kalling, 2003). Intensive integrative practices, such as cross-functional meetings further increase the chances of successful transfer (Goh, 2002).

In short, the use of communication tools affects the effectiveness of the transfer of knowledge. ICT can be used as a tool to transfer data and thereby knowledge, but face-to-face contact is necessary to transfer tacit knowledge.

2.3.3 Expatriate policy - The use of expatriates

The international transfer of knowledge and expertise affects the area of international Human Resource Management (HRM). Part of the HR policies is the expatriate policies, which influence the effectiveness of cross border knowledge transfer. In order to guarantee a successful transfer of

knowledge and expertise and the creation of a learning organization, attention needs to be paid to the third factor: the Expatriate policies (Bender and Fish, 2000, Hébert et al., 2005; Fang et al., 2010).

Particular consideration will have to be given to the efficient use and application of the knowledge and skills gained abroad, and the retention of employees with international experience and competence. Expatriate managers have long been deemed important in the transfer of knowledge between parent firms and subsidiaries. Expatriates are usually home-country assignees who hold top management positions or key positions in functional departments of a foreign subsidiary (Harzing, 2001; in Fang et al., 2010). They have the required experience, knowledge and socially embedded skills that can be transferred to local managers and personnel, through socialization processes or the implementation of appropriate training programs (Hébert et al., 2005).

Two important factors characterize the distinct role of expatriates as transfer facilitators: the expatriates' capacity in enhancing formal and informal inter-organizational communication channels, and increasing inter-organizational homophily (Gupta and Govindarajan, 2000). Hence, knowledge transfer is more substantial when there are a greater number of expatriates with a wider access to formal and informal communication channels (Fang et al., 2010; Bender and Fish, 2000). Here, the factor Expatriate policy is connected to the factor Communication tools.

Firms should send expatriate managers when this action is likely to improve the competitiveness of the firm. In the presence of significant cultural differences, expatriate managers with host country experience, or at least international experience from prior expatriation, can assist negotiations and facilitate communication between the employees of both firms (Very 2004; in Hébert et al., 2005). Repatriates can also be valuable in preparing expatriates for their overseas assignment, maintaining contact with them and preparing them for their return (Swaak, 1997; in Bender and Fish, 2000).

The use of expatriates in the parent–subsidiary knowledge transfer, however, is not always beneficial for the subsidiaries. Compared to host-country nationals, for example, expatriate managers lack knowledge about a host country's culture and institutions (Black, Mendenhall & Oddou, 1991; Garcia-Pont, Canales & Noboa, 2009; in Fang et al., 2010).

So, with the right use of expatriates the international transfer of knowledge will be more effective.

2.3.4 Differences between organization cultures - Differences in Power Distance and Individualism cause difficulties in cross border knowledge transfer

The different cultures of the organizations which need to transfer knowledge, have great influence on the cross border knowledge transfer (Bhagat et al., 2002; Javidan et al.2005; Perez et al., 2008; Dinur et al., 2009). GLOBE (Global Leadership and Organizational Behavior Effectiveness) defines culture as "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives and are transmitted across age generations" (GLOBE, see Javidan et al., 2005).

When the cultural profile of two organizations is the same, knowledge is transferred without much distortion. When there are differences along two, or more, facets (e.g. high power distance vs. low power distance), knowledge transfer is most difficult (Bhagat et al., 2002), especially when the members of the two groups do not know the differences on cultural values (Javidan et al., 2005; Dinur et al., 2009).

Research has shown that the greater the cultural differences, the more difficulties receivers have in seeing the advantages of adopting knowledge or organizational practices from the source (Javidan et al., 2005; Dinur et al., 2009; Hofstede, 2002). Differences in cognitive structures, values, and

practices, as well as language and communication barriers, all raise the costs involved in knowledge transfer (Holden and Kortzfleisch, 2004). As a result, the parties involved in the knowledge transfer have less motivation to share and apply new knowledge.

So, different organization cultures influence the factors described above. The case study of this research will be about the transfer of knowledge between DHV-NL and DHV-India, therefore the next section will describe the cultural differences between organizations in India and the Netherlands.

Cultural differences between Dutch and Indian organizations

Trompenaars (1993) describes four different organization cultures (see figure 2): the Family, power-oriented; the Eiffel Tower, rule-oriented; the Guided Missile, project-oriented; and the Incubator, fulfillment-oriented.

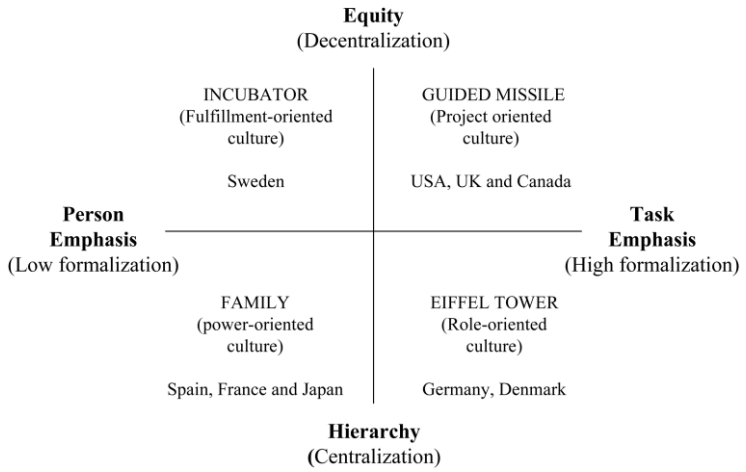


Figure 2: Types of organization cultures (Trompenaars 1993)

Trompenaars (1993) classified the Dutch organization culture as the Eiffel Tower culture (medium hierarchical and task emphasis) and India as the Family culture (high hierarchical and Person emphasis). The Eiffel Tower and Family culture strongly differ in the way employees think, learn and change their organization. These differences can make cooperation between Dutch organizations and Indian organizations very difficult and it affects the effectiveness of the transfer of knowledge (Lam, 1997; Bender and Fish, 2000; Goh, 2002).

The organization culture is influenced by the national culture. Hofstede (2002) classified many national cultures by five major dimensions: Power Distance, Individualism, Uncertainty Avoidance, Masculinity, and Long-term Orientation. Power Distance and Individualism can be compared to Tromenaars' dimensions Hierarchy and Task Emphasis.
According to Winkler et. al. (2008) the difference in level of individualism and the difference in level of power distance are expected to have the most impact on the transfer of knowledge. In collectivist cultures, one communicates only with in-group members, and these may be very few within the organization. In individualist cultures, one communicates with anyone in the organization.
Furthermore, when the distinction of power distance is made, more communication barriers arise (Bhagat et al., 2002). Vertical and horizontal dimensions are needed when explaining cross border knowledge transfer, because communication flows differently when the society is vertical (primarily from the top to the bottom) than when it is horizontal (communication flows both ways-from top to bottom and from bottom to top). Therefore, communication presumably would be most widespread within horizontal collectivist cultures.

According to Hofstede (2002), the Indian culture can be defined as vertical-collectivism. India's caste system is deeply ingrained in differences in social and occupational roles, and although no longer accepted by the government, it is still important among the masses (Bhagat et al., 2002). Vertical collectivist cultures are more sensitive to information and clues coming from authorities and more sensitive to knowledge that includes information on hierarchy.
Transferring knowledge from a vertical collectivist culture firms encounter difficulties mainly because of the fact that while the broad context of collectivism facilitates transfer, the differences owing to horizontalness versus verticalness may impede such transfers (Bhagat et al., 2002).

This contrasts with the Dutch culture, which can be defined as horizontal-individualist culture. This means that the Netherlands is quite adept in articulating and absorbing knowledge that is explicit and independent of context and are most effective in transferring knowledge to other horizontal individualist cultures (Bhagat et al., 2002). Horizontal individualists are self-reliant, but they do not like people who stick out (Triandis, 1995, 1998; in Bhagat et al., 2002). Horizontal individualists are more comfortable in transferring and receiving knowledge that, in addition to being logical and abstractive, also helps in sustaining the sameness of the self with others.

A detailed description of the culture of the Netherlands, India, and the organizations established in these countries can be found in respectively appendix D and appendix E.

In short, Trompenaars defined four different organization cultures by determining the level of power distance and individualism within an organization. The Indian organization culture can be defined as a Family culture, the Dutch organization culture as Eiffel Tower. The organization culture is influenced by the culture of the country. The Indian culture can be described as vertical-collectivistic and the Dutch culture as horizontal-individualistic. These cultural differences can cause difficulties when transferring knowledge across borders.

2.3.5 Conclusions

There are four factors influencing the effectiveness of the transfer of knowledge. The first factor is motivation. The sender, as well as the receiver, has to be motivated to transfer knowledge. The motivation of the receiver can be negatively influenced by the NIH-syndrome. Also, knowledge will be transferred more effectively when the relationship between the sender and the receiver is strong. The second factor is the communication tools which are used to transfer the knowledge. ICT can support the transfer of knowledge by sending explicit knowledge. However, face-to-face contact is necessary to transfer tacit knowledge. The third factor is the organization's Expatriate policy. When an organization uses the knowledge and experiences gained abroad by expatriates, the transfer of knowledge will be more effective. Finally, the last factor influencing the effectiveness of the transfer of cross border knowledge is the differences between organization cultures. A difference in power distance and individualism of organizations, have a negative influence on the effectiveness of the transfer of knowledge.

2.4 Implementing the conceptual model

The literature described above, can be implemented in a conceptual model. As described, there are four factors of influence on the effectiveness of transfer of tacit knowledge. This section will explain the conceptual model.

2.4.1 Conceptual model

According to the literature review, a simple conceptual model can be drawn, see figure 3 below. This model shows the four factors influencing the effectiveness of the transfer of knowledge across borders.

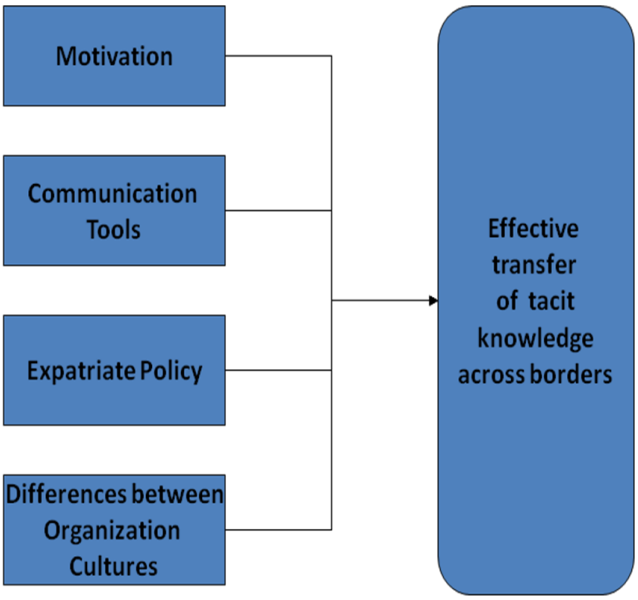


Figure 3: Conceptual model

This model can be extended by adding the sub items of each factor. Figure 4, below, shows this extended conceptual model.
On the left side of the model, the four factors influencing the cross border transfer of tacit knowledge are shown. Out of the literature, each factor can be specified.
First, motivation has been divided into the motivation of the source and the motivation of the receiver. If the relationship between the source and the receiver is good, they are suspected to be more motivated. This influence of the relationship quality on the motivation of the source and receiver is shown by the arrow which goes from Relationship Quality to the box that takes the motivation of the source and receiver together.
As the literature review shows, the NIH-syndrome influences the motivation of the receiver. This influence is shown by the arrow from the NIH-syndrome to the motivation of the receiver.
The communication tools which can be used to transfer knowledge are ICT and face-to-face contact. Therefore, the factor Communication tools is divided into these two boxes.
The influence of the factor Expatriate policy will be measured by looking at how the knowledge and experiences of the expatriates are used. Finally, the influence of the differences between the organization cultures on the effectiveness of cross border knowledge transfer will be measured by looking at the differences between power distances and individualism in the Netherlands and India.

This model will be tested by using a questionnaire and an observation of two projects. Chapter 3 will operationalize the concepts shown in the conceptual model and outline the methodology in more detail. When the data has been gathered and analyzed, it will be known which factors are of influence on the effectiveness of the transfer of knowledge between DHV-NL and DHV-India. Then, recommendations can be given to DHV-Rail & Stations about which factors have to be taken into consideration when DHV-Rail & Stations wants to expand their knowledge abroad.

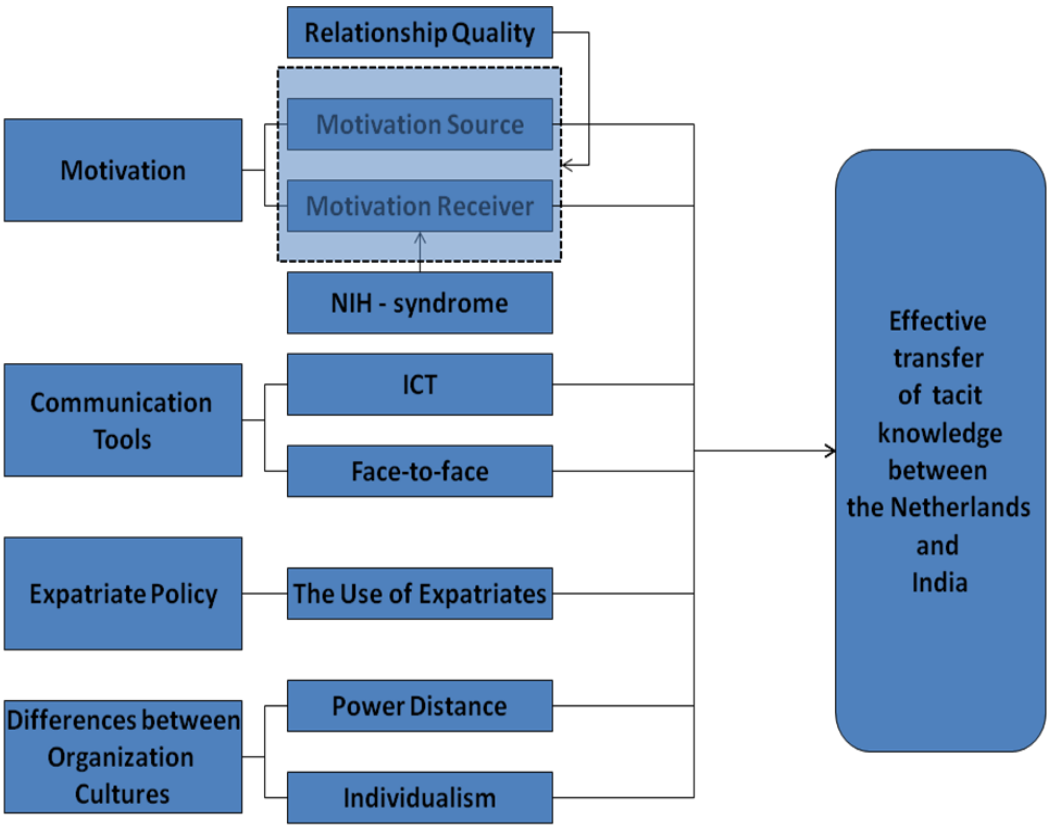


Figure 4: Extended Conceptual model

Chapter 3: Methodology

Chapter 2 explained the theoretical background of this research and implemented the conceptual model. This chapter will outline the research methodology.

In short, this is a deductive research. This research employs a survey strategy and a case study. The data will be gathered by a mixed method approach, because qualitative and quantitative data collection techniques will be used. The interviews are conducted in a short period of time and the questionnaire is taken at one particular point in time. Therefore the research can be defined as cross-sectional.
The first part of this research, the literature study, is descriptive. The descriptive research is a precursor to the explanatory research, because this research will establish causal relationships between the founded factors and the effectiveness of cross border transfer of knowledge. So, the research can be defined as descripto-explanatory (Saunders, Lewis and Thornhill, 2009; p140).

The first section of this chapter will define the research variables. The second section outlines the research strategy, followed by the explanation of the sample selection. The fourth section will outline which data collection methods will be used and finally, section 3.5 will explain how the gathered data will be analyzed.

3.1 Variables defined

This section will define the variables of this research, which will be measured by the questionnaire send out to all employees who is, or was, involved with collaboration between DHV-NL and DHV-India, and by observation of two projects. First, the dependent variable will be defined and secondly the independent variables.

3.1.1 Dependent variable

The dependent variable is the effectiveness of the transfer of tacit knowledge across borders. As stated by the literature review, effectiveness of knowledge transfer will in this research be equated to the absorptive capacity of DHV. This means that knowledge transfer can be called effective when the receiving organization retains, assimilates and applies the received knowledge.

Effective transfer of knowledge: knowledge is retained, assimilated, and applied by the receiving organization (Cohen and Levinthal, 1990, p. 128; in Fang, Jiang, Makino & Beamish, 2010).

3.1.2 Independent variables

The variables of this research are the nine sub-items which restrain employees to transfer tacit knowledge across borders in an effective way. Each variable will be described hereafter:

Motivation: The willingness among employees to successfully transfer knowledge across borders. Motivation can be divided in several items (Nehles, Riemsdijk, Klok & Looise, 2006):

- Motivation of the sender and receiver, which can be caused by (Nehles et al., 2006).
    - Intrinsic motivation: the employee transfers/ receives knowledge out of personal choice, satisfaction, or pleasure and without obvious external incentives (Ratelle, Baldwin, Vallerand, 2005; Spector, 2006)
    - Identified regulation: the employee transfers/ receives knowledge starting from his own beliefs. For example, because it will contribute to his development.
    - External regulation: the employee transfers/ receives knowledge in order to attain a positive end state (e.g., obtaining a reward) or to avoid a negative end state (e.g., avoiding a punishment) (Ratelle, et al., 2005).
    - A-motivation: the employee is not motivated to transfer/ receive knowledge.

- The motivation of the receiver can furthermore be reduced by:
    - Not-Invented-Here syndrome: The receiver of knowledge lacks the incentive to learn, primarily because he does not sense that the source of knowledge has the proper level of authority, and that his own knowledge base has a stronger authority.
- Relationship quality: the extent to which the relationship between the receiver and the source is close, strong, and based on mutual trust (Perez et al., 2008).

Communication tools: Means by which information can be shared across employees.

- ICT: Information and communication technology which makes it able to collect, collate, storage and disseminate data and it facilitate knowledge transfer through the exchange of data (Roberts, 2000).
- Face-to face contact: personal contact between employees by meeting in real life.

Expatriate policy: Guidelines implemented by a management team and Human Resource managers in order to attract, train and maintain employees (Daft, 2006).

- Expatriate policy: guidelines how to use and apply the knowledge and skills gained abroad by home-country assignees who hold key positions in functional departments of a foreign subsidiary (Harzing, 2001; in Fang et al., 2010).

Organization culture: Shared motives, values, beliefs, identities, and interpretations or meanings of significant events within an organization that result from common experiences of employees and the behavior of employees resulting from these values and norms (GLOBE, see Javidan et al., 2005).
The differences in culture will be measured by the next two variables:

- Power Distance: the extent to which the less powerful members of organizations and institutions (like the family) accept and expect that power is distributed unequally (Hofstede, 2002).
- Individualism**:** the degree to which individuals are integrated into groups. When a society is very individualistic, the ties between individuals are loose. When a society is very collectivistic, people are from birth onwards integrated into strong, cohesive in-groups, often extended families, which continue protecting them in exchange for unquestioning loyalty (Hofstede, 2002).

3.2 Research strategy

As stated in chapter 1, this research examines the factors which influence the effectiveness of transfer of tacit knowledge between the Netherlands and India. This has been done by a survey and a single, embedded, case study. The survey strategy was used in order to suggest possible reasons for particular relationships between the variables and to generate findings out of the sample that are representative of the whole population (Saunders et al., 2009-144).
The case study strategy was used in order to verify the results from the survey. Furthermore, the case study has been used to answer the second, explanatory, part of the research question: *how can DHV-NPC take these factors into account with the transfer of knowledge between The Netherlands and India, in order to achieve economic benefit?* The case is DHV and is of interest because DHV is in a unique phase of internationalization. In recent years some of the departments of DHV-NL collaborated with DHV-India. Now, DHV has decided to expand their Indian market, so more departments need to collaborate with DHV-India. DHV-Rail & Stations is in the position where it can learn from other departments with more experiences abroad, and is not yet limited by existing strategies or procedures. It is an embedded case study, because there has been a selection of units which was researched (Saunders et al., 2009-147).

However, using a case-study strategy has some disadvantages. The analysis is more subjective, because the observer has a lot of own interpretations of the context. Therefore, alternative explanations are possible. Furthermore, this case study is hard to replicate, because it is a cross-sectional study. The moment of research was of great influence on the outcomes of the research. Finally, it is hard to generalize from a single situation, because every situation is unique.

3.3 Participants

Two groups of participants were approached to complete the questionnaire:

1. Dutch employees of DHV-NL who cooperate(d) with Indian employees working at DHV-India.
2. Indian employees working at DHV-India who cooperate(d) with Dutch employees working at DHV-NL.

At this moment DHV-NL has 2400 employees, of whom 45 are/ were involved with collaboration with DHV-India. DHV-India has 450 employees of whom 21 are/ were involved with collaboration with DHV-NL. A sample was not needed, because it was possible to collect data from the entire population. However, not all employees who are relevant for this research were known in advance. So, the participants received the question to forward the questionnaire to other employees who fit the requirements and who were not yet part of the research.
The population contained employees from different departments of DHV and of different hierarchical levels. The population excluded employees working with or at the Global Expert Center (GEC) in India. Most work at the GEC is outsourced from the Netherlands to India, whereby mostly explicit knowledge is transferred between GEC and DHV-NL. Therefore employees who are involved in collaboration with GEC are not the focus of this research.

The questionnaire has been sent to 45 Dutch employees, of whom 36 started and 25 completed the questionnaire. However, 6 participants completed almost the entire questionnaire; therefore these results were also used.
21 Indian employees were approached to fill out the questionnaire, of whom 15 started and 9 completed the questionnaire.
So, in total 66 employees are approached and the results of 40 participants are used, which is 60.6 per cent.

Next to the questionnaire, eight employees, involved in two projects (See 3.4.2 Project observation), have been interviewed. Five of the eight key members of the DMIC-project team have been interviewed. Of those five members, four are Dutch and one is Indian. All interviewees have different roles within the project, some are experts and others have a management role in the project.
Three of the twelve key members of the KEIP-project team have been interviewed. Two of the interviewees are Dutch, one is Indian. All interviewees performed a management task within the project.

3.4 Data-collection methods

This research will use the mixed-methods approach, whereby quantitative data are gathered by a questionnaire and qualitative data by project observations.
This approach was chosen for different reasons; the first reason is triangulation, which leads to a more valid and reliable research (Saunders et al., 2009); secondly, by the use of two or more research strategies different aspects of an investigation can be dovetailed. Qualitative results fill in gaps of quantitative results, and vice versa. Finally, the use of qualitative data helps to explain the relationships between quantitative data.

The next subsections explain the research instruments.

3.4.1 Questionnaire

The questionnaire was used in order to obtain quantitative data about the point of view of the employees. Quantitative data is clearer, easier to organize and easier to compare than qualitative data.

In the design and administration of the questionnaire, several measures were taken to moderate measurement error. The questionnaire was formulated only after extensive fieldwork. Before the questionnaire was distributed, several pilot tests were done with four Dutch and one Indian employee. The aim of these pilot tests was to find out how long it takes to complete the questionnaire, if the instructions and questions were clear, if there were questions where the respondent felt uneasy about answering, whether in their opinion there were any major topic omissions, whether the layout was clear and attractive, and any other comments. In between the pilot tests, the questionnaire has been improved. Finally, the cognitive load on the respondents was reduced by customizing each questionnaire with transfer- and company-specific information collected during the first phase of the survey.

The questionnaire consisted almost entirely of a combination of existing and validated questionnaires. The variable motivation has been measured with the questionnaire used by Nehles et al., 2002. They used the Situational Motivation Scale (see appendix F). The Relationship Quality has been measured with the use of items out of the questionnaire of Szulanski (1996; see appendix G). Secondly, for the items to measure the influence of Communication tools used to transfer knowledge, a research of Rubin, Palmgreen & Sypher (1991) has been used (see appendix H). Third, the items to measure the influence of expatriates on the effectiveness of transfer of tacit knowledge have been made with help of the literature review (see appendix I). Finally, the organization cultures are measured with the items, used in the questionnaire of GLOBE (see appendix J).
The dependent variable, the effectiveness of cross border knowledge transfer of tacit knowledge, is measured by the questionnaire of Szulanski (1996; see appendix K).
The respondents were also asked to indicate their personal background, work background and collaboration with the other country.
The data from the questionnaire were analyzed by dividing each factor into several operationalized sub-items (see appendix L).

In order to decrease the risk of non-response, a four-phase administration process was used. In the first phase a short advance-notice e-mail was sent to all members of the sample. Secondly, the digital questionnaire has been distributed. This digital questionnaire included some information about the research and was sent-out one week after the advance-notice. In week one and two after the questionnaire was distributed, reminder e-mails were sent. This e-mail included a copy of the questionnaire, because this would increase the response rate (Babby, 2004-260; Saunders et al., 2009). The participants had four weeks to complete the survey. The time to complete the survey took about 20 minutes. A response rate of 60 percent is achieved, which is considered good (Babby, 2004-261). This means that there is less chance of significant response bias than with a lower rate.
The above explained design of the questions, layout of the questionnaire, a lucid explanation of the purpose of the questionnaire, pilot testing and carefully and executed administration maximized the reliability, validity and response rate of the questionnaire.

3.4.2 Project observation

Two projects have been selected to observe, in order to verify the results of the questionnaire. The first project is Delhi Mumbai Industrial Corridor (DMIC) and the second is Kolkata Environmental Improvement Project (KEIP). Both projects are explained briefly below. These projects differed in some ways; KEIP is larger than DMIC; the project time is longer, the impact on the environment is bigger, there is more money spent to spent on it. Furthermore, KEIP differs in nature of the project

from DMIC; KEIP is a project which executes a plan, where DMIC is a project which develops a plan. In order to make the results of the observation more reliable and valid, the observation of KEIP focused on the planning phase. Below, the two projects will be shortly described.

DMIC

The purpose of the current consultancy assignment is to prepare a Development Plan for the Kushkhera – Bhiwadi - Neemrana Investment Region. This Development Plan sets out a basic framework for approximately 200 square km providing it with a globally competitive investment climate and promoting the economic development of the region through creation of a long-term enabling environment. In parallel with this project the preparation of Techno-Economic Feasibility Studies for the identified Early Bird Projects for implementation through Public Private Partnership will take place.

This project has a key staff of eight persons, of which four persons are Dutch and 4 persons are Indian. The project started in May 2010 and is planned to be completed in March, 2011. It is an ambitious project worth about 60 Billion Euros. Appendix M describes the project in more detail (Inception Report, 2010).

KEIP

Kolkata Environmental Improvement Project (KEIP) is a multi-agency endeavor to arrest environmental degradation and improve the quality of life in Kolkata. Its work is mainly in the outer areas of the city where the sewerage and drainage infrastructure is grossly inadequate and the drainage canals are choked by silt.

KEIP's objectives are to reduce pollution by providing affordable access to basic urban services in slums, revamp and upgrade the sewerage and drainage system, make solid waste management system efficient, restore the city's drainage canals, and improve outdoor recreation facilities in parks and water bodies.

This process has a key staff of twelve persons, of which four are Dutch and eight are Indian. The project started in June 2003 and is planned to be finished in January 2011. Appendix N describes the project in more detail (Inception Report, 2003).

Approach of project observation

Every project process consists of several phases: the announcement, the tender, expression of interest, long list, short list, exploration of assignment, technical reports, implementation of plans, project completion, and the evaluation of the project. As stated before, the two selected projects differ in content. Therefore, only the first phases of the project process of KEIP (until the technical reports) were analyzed.

Data were mainly collected by the use of interviews, which will be explained in the next subsection. Data was also collected by using other available information, such as the roles played by key participants and how these may have changed; organizational structures and communication patterns; mail; minutes of drafts. Finally, experiential data were collected. These are those data on the researcher's perceptions and feelings which are experienced during the process which is researched.

The project observation contributes to the ecological validity of the research, because it involves studying social phenomena in their natural contexts. However, there are also two threats to internal validity. First, the history of the project might influence the way members feel about the process. Secondly, the threat of maturation, which is the natural changes that occur as a result of the normal passage of time.

Interviews

The interviews were done in order to verify the results from the questionnaire and to gain an understanding of how the project processes went, as well as to find out which factors the project members perceive as hindering effective cross border knowledge transfer during the project process.

Because this research is an explanatory study, a semi-structured interview has been used (see appendix O). This, in order to understand the relationships between variables, which were revealed from the descriptive study. Furthermore, a large number of questions needed to be answered and according to Saunders et al., (2009) and Babby (2004) participants rather answer when they are in personal contact with the interviewer. Also, the presence of an interviewer decreases the number of 'do not knows' and 'no answers'. Interviews can lead to a high success quality, answers to a lot of questions and it provides opportunities for extra explanation, extra questions and the observation of non-verbal reactions.
The interviews with the Dutch employees were taken face-to-face; this was not possible with the Indian employees. These interviews were done by telephone. To avoid a lack of trust, there was intensive email contact between the interviewer and interviewee before the actual interview.

However, an interviewer has a great influence on the course of the interview and on how the data is processed. A semi-structured interview could cause observer's error. This kind of error is made by observers as a result of, for example, tiredness. Also observer bias could arise. This cannot be avoided, but it is needed to be aware of it. This bias may occur when the interviewee gives inaccurate responses in order to distort the results of the research. These biases were reduced by recording the interviews. Recording made it possible for the interviewer to review the interviews very carefully, and therefore the biases could be limited. The bias was minimized also by informant verification, which means that after each interview, the observed person verified the detailed interviews.

On the other side, the perception of the interviewee about the interviewer could bias the outcomes. Participant bias could arise. The responses of the participants might be influenced by external factors, such as the obligation to give socially desirable answers. So, the internal and external validity and the reliability could be affected.

In order to increase the internal and external validity and the reliability of the research, the interview data was recorded and brief notes were made during the interviews. Recording the interviews helped the interviewer to listen attentively. The notes helped the interviewer to maintain concentration and focus. On the other hand, by recording the interviews, the participants might feel threatened and give socially desirable answers.

3.5 Analysis

The data were analyzed with the use of deductively based analytical procedures. This section will first outline how the results from the questionnaire were analyzed. Secondly, it will outline how the results from the project observation will be analyzed.

To process the data collected by the questionnaire, the statistical program SPSS was used.
The first step was to test the usefulness of the research instrument, which was done by a reliability and a factor analysis. The reliability was determined by calculating inter correlations of the items of one variable. Then the items within the variables were re-categorized based on an explorative factor analysis. These items were tested on reliability again.
Then, a correlation- and regression analysis has been done with the resulting variables, in order to test the cohesion between the variables of the conceptual model.

The project has been observed by the use of written documents and interviews. The recorded interviews have been transcribed. Afterwards, the transcript was unitized into categories, which are based on the variables which are examined. Then, an overview of which factor(s) is/ are perceived as influencing could be given.

Furthermore, directly after an interview, the results were summarized in order to find key elements or themes. Comments about the interviewee and the setting in which it occurred have been written down. Also, a researcher's diary has been written. These memos were used for the analysis.
Then it was checked if the results from the interviews matched the written documents of the project. Finally, the results from the project observation were used to monitor the results from the questionnaire.

So, the triangulation has been carried out by using results from the written project documentation, the interviews, and the questionnaire.

When the data show the predicted outcomes, it is likely that the theoretically based explanation is appropriate to explain the finding. If, however, some data reveal other outcomes than predicted, an alternative explanation will be sought (Yin, 2003). Inductively, new correlations might emerge by seeking alternative explanations that do not conform to the pattern or relationship being tested. The conceptual model will be adjusted to the results if this is needed.

Chapter 4: Results

This section describes how the results have been processed. First, it will be outlined how the data was screened and cleaned. The second subsection describes the preliminary analyses. Finally, the correlations will be outlined.

4.1 Screening and cleaning data

The frequencies for each of the variables were checked and errors were corrected. There were no variables with a lot of unexpected missing data. However, six respondents did not fully complete the questionnaire. One respondent only completed the first section of the questionnaire. These results were not used. One respondent completed the first three sections of the questionnaire, until section 4: 'the use of expatriates'. This person sent me an email with the explanation that he was not able to answer the questions asked in section 4 and he quitted the questionnaire. The results from the first three sections will be used. Four respondents completed the questionnaire until section 5: 'Cultural differences'. It might be that, in the view of these respondents, the completion of the questionnaire took too long. The results from these respondents were used in the analysis. One respondent filled out the entire questionnaire, however his results from section 6: 'Absorptive Capacity' were quantified as outlier. Therefore, these results from section 6 will not be used.

Before further analyses could be done, some items needed to be reversed (see appendix P).

4.2 Preliminary analyses

This section will outline the reliability and normality of each variable. Appendix P summarizes this subsection.

In the questionnaire different scale's were used. The scale's internal consistency was indicated by the Cronbach's alpha coefficient. Ideally the Cronbach's alpha coefficient of a scale should be above .7 (DeVellis, 2003). However, the scales used in this research are short scales (scales with fewer than ten items), therefore the Cronbach alpha is often pretty low (e.g. .5). In these cases, the mean inter-item correlation is reported. Briggs and Cheek (1986) recommend an optimal range for the inter-item correlation of .2 to .4.

Also the normality has been assessed. A non-significant result (Sig. value of more than .05) indicates normality. If the Sig. value is lower than .05, it suggests violation of the assumption of normality. Next to the significance value, the skewness is reported. The skewness value provides an indication of the symmetry of the distribution. A positive skewness indicates a distribution which is right asymmetric, and a negative skewness indicates a distribution which is left asymmetric.

Appendix P presents an overview of the preliminary analyses and the items per scale which are used in the further analyses. The exceptions are outlined below.

• **Identified Regulation:** According to Nehles et al. (2006) the Identified Regulation Scale has a good internal consistency, with a Cronbach's alpha coefficient reported of .80. In the current study, the identified regulation scale for the *sender* show a Cronbach's alpha coefficient of .35 and a mean inter-item correlation of .155. These values are too low to be reliable. After removing the item: 'Because it is my personal decision', the Cronbach's alpha coefficient became .503 and the mean inter-item correlation .272, which is sufficient according to Briggs and Cheek (1986).

The Cronbach's alpha coefficient for the *receiver* is .62 and the mean inter-item correlation .28, which is sufficient according to Briggs and Cheek (1986). However, because these results need to be compared with the results from the sender, the same item was deleted. Afterwards, the Cronbach's alpha coefficient became .63 and the mean inter-item correlation .358.

• **Relationship quality:** According to Szulanski (1996) the Relationship Quality Scale has a good internal consistency, with a Cronbach's alpha coefficient reported of .71. In the current study, the Cronbach's alpha coefficient is .35 and the mean is .149. In order to increase the alpha coefficient, the items 'Collaboration between DHV-NL and DHV-India is:...' were summed and transferred into one item. Then the Cronbach's alpha coefficient became .42 and the mean .268.

• **Reasons to contact expatriates:** The measurement of the 'Reasons to contact expatriates'-Scale has been made by the researcher herself and has a good internal consistency, with a Cronbach's alpha coefficient reported of .82 for DHV-NL.

The Cronbach alpha was 1.0 for DHV-India, which is striking. In this case, it can be explained by the fact that every respondent answered all the questions with 'never' or 'not applicable'.

• **Power Distance:** The Power Distance Scale has been composed of different items of a questionnaire of GLOBE. The results for DHV-NL has a Cronbach's alpha coefficient of .092 and a mean of .013. Based on the content of the questions, it has been decided to remove 4 of the 7 items. The three items: 'At DHV-NL, a person's influence is based primarily on:', 'At DHV-NL, subordinates are expected to:', and 'At DHV-NL, people in positions of power try to:' were used to analyze the power distance. The Cronbach alpha for DHV-NL became .541 and the inter-item correlation mean .277.

In order to be able to compare the results from DHV-NL with DHV-India, the same items were removed for the measurement of the Power Distance of DHV-India. The Cronbach alpha is .721 for DHV-India.

• **Individualism:** The Individualism Scale has been composed of different items of a questionnaire of GLOBE. For DHV-NL the Cronbach's alpha coefficient was .495 and the mean .133. Based on the content of the questions and on the inter-item correlation values, it has been decided to remove two items: 'At DHV-NL, managers encourage group loyalty even if individual goals suffer' and 'The pay and bonus system at DHV-NL is designed to maximize'. The Cronbach alpha became .615 and the mean .255.

In order to be able to compare the results from DHV-NL with DHV-India, the same items were removed for the measurement of the Individualism of DHV-India.

4.3 Analysis of results

This section will first describe the respondents of the questionnaire and the interviewees. Secondly, some general information will be given about the context of the projects. Third, the correlations between variables which were found with the use of a regression analysis will be shortly outlined. Finally, conclusions of the data will be given.

4.3.1 Description of the respondents

The respondents of the questionnaire are all of different ages. Only two women completed the questionnaire. Of the respondents 30 were born in the Netherlands, nine respondents were born in India. The Business Units (BUs) the respondents work in, differ a lot. The respondents differ in amount of time they collaborate with the other DHV-country. Most respondents (21) collaborate

with 1 – 5 colleagues from abroad. The description of the respondents of the questionnaire are presented in more detail in appendix Q.

The respondents of the interviewees were/ are members of two projects which were observed: the first project is the Delhi – Mumbai Industrial Corridor (DMIC), the second project is the Kolkata Environmental Improvement Project (KEIP). The difference between the project is that DMIC is not on schedule, in contrast to KEIP, which proceeds smoothly. The description of the interviewees is presented in more detail in appendix Q.

4.3.2 Introductory information

The team composition differs per project, because every project needs different expertise. So, most of the time, the project members do not know each other at the beginning of a project. The interviewees state that during a project the knowledge flow goes in both directions, so to the Netherlands as well as to India. The results from the questionnaire show different results: 29 respondents think the knowledge flow goes more often from the Netherlands to India. Ten respondents think it goes fairly equal and one respondent thinks the knowledge flow goes more often from India to the Netherlands. This can be explained by the kind of knowledge which is transferred. According to the interviewees, knowledge which goes to India is explicit and tacit knowledge. Knowledge which is transferred to the Netherlands is more explicit knowledge. The respondents were asked to consider only tacit knowledge.

The two project teams have a different view on the effectiveness of the transfer of knowledge at DHV. KEIP members were moderately positive. A Dutch interviewee stated: *'The transfer of professional knowledge is almost never a problem. The transfer of approach and culture takes much longer and is harder to transfer.'* The Indian interviewee stated: *'It has been really a great experience for us all and it was very effective also.'* The project members of DMIC were very negative about the effectiveness of the knowledge transfer. In their view, the communication was difficult, because counterparts were not found. Also, the different expectations of the Dutch and Indian employees caused misunderstandings, whereby the relationship quality was affected. The difficult process caused a lack of motivation, which in turn affected the process.

The factors influencing the effectiveness of knowledge transfer between DHV-NL and DHV-India will be described in the next subsection.

4.3.3 Correlations between variables

First, a univariate analysis was done. This analysis provides insight in the separate items. Secondly, a bivariate analysis was done. This analysis researches the correlations as expected by the conceptual model, presented on the next page.
The correlations have been obtained and interpreted with the use of the Spearman Rank Order Correlation and the Pearson correlation. A result of -1 or 1 indicates a perfect correlation. A result of zero indicates no correlation between two variables. Cohen (1988, pp. 79-81) suggests interpreting the strength of a correlation as follows:

Small	r = .10 to .29
Medium	r = .30 to .49
Large	r = .50 to 1.0

In this research almost all correlations are small and the level of significance is low. Both are strongly influenced by the size of the sample. In a small sample (as in this research), it is possible to have moderate correlations that do not reach statistical significance at the traditional p <.05 level (Pallant,

2010). Another explanation can be that the respondents answered the questions socially desirable, which is proved by normally distribution. In this research most scales are not normally distributed, which violates the correlations. The correlations could also be violated by linearity, and homoscedasticity. Despite the not very reliable results obtained by the questionnaire, the data will be reliable, because of the use of triangulation.

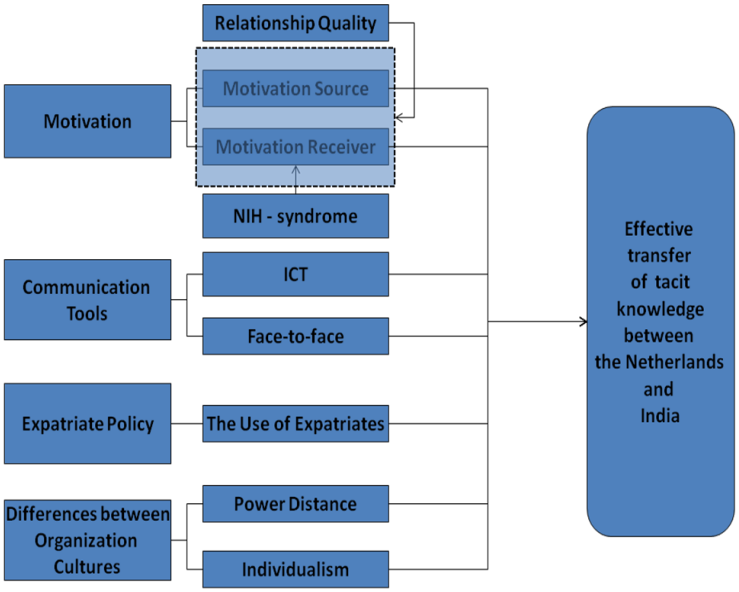


Figure 5: Extended conceptual model

Next to univariate and bivariate analyses, a multivariate analysis is normally done. However, because of the small n, not normally distributed scales and small correlations this sample is not suitable for a multivariate analysis.

In the next subsection, the correlations as presented in the conceptual model, shown in figure 5, will be tested by a univariate and bivariate analysis (see appendix R and S for the overview tables and appendix V for an overview of the results per independent variable). The data from the questionnaire have been compared with the data obtained by the interviews.

Results of effectiveness of knowledge transfer

In the vision of the respondents, the effectiveness of knowledge transfer between DHV-NL and DHV-India is good, with a mean of 3.12, on a scale from one to five. However, the absorptive capacity scale (mean = 3.38), shows that in the view of the respondents the good absorptive capacity is caused by their performances instead of institutionalized processes of DHV. So, according to the respondents, DHV only puts indirectly effort in the effectiveness of the knowledge transfer by hiring the right people. These are people who are proactive, have the right skills and know how to deal with transferred knowledge. The interview data show these results in more detail. According to the interviewees, the absorptive capacity of DHV has some points of improvement.

Also the interviewees state it is mostly the individuals who put effort in the retention of knowledge. When employees come back in their home country after a visit abroad, they often organize a meeting with their colleagues in order to share their experiences. This way of sharing knowledge is organized by the individual employees and not by DHV. However, most interviewees find it hard to find out who to share their knowledge and experiences with and are positive about the idea that DHV facilitates this.

In contrary, it is DHV who makes the contracts which state that project members need to make evaluation reports during and after each project. These evaluations are saved in order to retain the knowledge and to be able to transfer this to members of a next project.

Furthermore, the Dutch interviewees state that in some projects employees with experiences are collaborating with employees with fewer experiences. By linking these persons, knowledge can be shared and retained within DHV-NL. Unfortunately, at DHV-India the retention of knowledge is less good. Within a project, only a few Indian experts are working and the other project members are temporarily hired.
Also the assimilation and application of knowledge is hard, according to the interviewees. The receiver does not always know what to do with the transferred knowledge, or who to share it with. At DHV, there used to be an international knowledge network. It was a network which included all international business coordinators of DHV. These coordinators used to have contact every month about which projects were going on and if they needed some expertise from abroad. The existence of this network was only known by a few employees of DHV. Because of the recession, this network does not exist anymore.

Furthermore, often the transferred knowledge cannot be applied directly. An Indian interviewee stated: *'Within a project it is not just about the technical profession, but also about how to implement the techniques within the context. Therefore it is needed that the knowledge of the Dutch and the Indian employee are combined.*'

Conclusions: According to the questionnaire the effectiveness of knowledge transfer is good at DHV-NL and DHV-India. The employees know how to deal with the transferred knowledge, but they lack an established process of DHV.

The interviews show that DHV also puts effort in the absorptive capacity by developing contracts, an international network and On-the-Job-Training (OJT). In contrast to the questionnaire data, the interviews show that the absorptive capacity of DHV-NL is higher than at DHV-India. At DHV-India knowledge is not retained, because project members are hired temporarily, whereby the knowledge does not stay in the organization.

Influence of motivation on effectiveness of knowledge transfer

The small correlations between the motivation of the sender and receiver and the effectiveness of knowledge transfer do not support the expected positive correlation (see appendix S). The small correlations can be explained by the fact that the results are not normally distributed, which might be caused by a socially desirable way of answering the questions. This makes it difficult to give reliable comments based solely on the use of questionnaire data. However, correlations between the motivation variables were found (see appendices S and T).

• **Motivation of the sender:** The results of the univariate analysis are presented in table 1 below.

The respondents of DHV are mostly intrinsic motivated to transfer knowledge (mean of 3.81 on a scale from 1 – 5). This means that the respondents transfer knowledge out of personal choice, satisfaction, or pleasure and without obvious external incentives. Also the interviews showed a high internal motivation: *'I want to collaborate with foreigners, it gives me energy and I have a passion for the work. I really like it, it's magnificent*'. The intrinsic motivation is named as most important influencing factor on effectiveness of transfer of knowledge by the interviewees of KEIP: *'If the project members are motivated, the other things will automatically fall in place.'*

The data show a positive correlation between intrinsic motivation and identified regulation (see appendix T). So, according to both the questionnaire and the interviews, the identified regulation is also high (mean = 3.66): *'I get a lot in return. It is very informative to see how everything works in another country.'*

	Questionnaire			**Interviews**			
	DHV-NL	DHV-India	DHV	DMIC-NL	DMIC-India	KEIP-NL	KEIP-India
Intrinsic Motivation	3.79	3.89	3.81	high	high	high	high
Identified Regulation	3.65	3.70	3.66	high	high	high	high
External Regulation	2.98	3.03	2.99	medium	low	medium	medium
A-motivation	1.83	2.11	1.86	increasing	low	low	Low

Table 1: Overview of univariate analysis motivation of the sender

Also, a negative correlation between external regulation and intrinsic motivation has been found (see appendix T. With a mean of 2.99, the respondents are least motivated by external incentives. All interviewees, from both projects, stated: *'Knowledge transfer is just something you have to do in a project.'* Project members are also external motivated by the contract of a project. A contract determines if the project members need to make documents in order to save and share the knowledge gained during the project. Some interviewees think that an incentive for knowledge transfer would help to stimulate the transfer of knowledge.

Finally, a negative correlation between the intrinsic motivation and a-motivation has been found (see appendix T). The respondents are not a-motivated to transfer knowledge; this is showed by the mean of 1.89. However, the Dutch interviewees from DMIC showed that during the project they became increasingly a-motivated to transfer knowledge, because it was unclear to whom they needed to transfer knowledge: *'On a certain moment I stopped to look for contact, I was like, it doesn't make any sense because I will not get any reaction…'*; and *'I could really enjoy this project, but I have the feeling they are not motivated, because I do not get any reaction on my initiatives…'.*
The questionnaire show small differences between the motivation of the Dutch and the Indian respondents: the Indian are more external motivated and more a-motivated than the Dutch respondents. This last difference is also mentioned by one interviewee of KEIP. He stated that Indian employees are a-motivated to transfer knowledge, because they have a short-term vision. This perception causes that Indian employees do not want to put a lot of effort in knowledge transfer, because they do not see the benefit of it on a short term.

Conclusions: Both the questionnaire data and the interview data show that the intrinsic motivation and identified regulation to transfer knowledge at DHV-NL and DHV-India is high and the external regulation is smaller. Although the a-motivation of the employees is low, when a project does not proceed smoothly, it will increase.

• **Motivation of the receiver:** Table 2 presents the overview of the data obtained by the univariate analysis, described hereafter.

The respondents are mostly motivated to receive knowledge by identified regulation (mean = 3.83), which means that they receive knowledge, starting from their own beliefs, e.g. because it will contribute to their development. Their intrinsic motivation is also high (mean = 3.78), which is supported by the positive correlation between intrinsic motivation and identified regulation (see appendix U).

	Questionnaire			**Interviews**			
	DHV-NL	DHV-India	DHV	DMIC-NL	DMIC-India	KEIP-NL	KEIP-India
Intrinsic Motivation	3.82	3.64	3.81	decreasing	decreasing	high	high
Identified Regulation	3.92	3.48	3.66	high	high	high	high
External Regulation	2.96	2.89	2.99	medium	medium	medium	medium
A-motivation	1.97	2.19	1.89	increasing	increasing	low	low

Table 2: Overview of univariate analysis motivation of the receiver

As the external motivation to send knowledge, the respondents are external motivated to receive knowledge with a mean of 2.94. These results are supported by the interviewees: *'I want to, and everybody needs to, receive knowledge in order to become better and successfully complete a project.'*

Finally, a negative correlation has been found between the a-motivation and intrinsic motivation to receive knowledge. Therefore, the a-motivation to receive knowledge is low (mean = 1.12). Also, a negative correlation has been found between a-motivation and the effectiveness of knowledge transfer. This correlation is supported by the data obtained by the interviews with the members of DMIC. According to them, a-motivation does exist and is caused by the NIH-syndrome. The NIH-syndrome causes a lack of trust in the received knowledge, whereby it is not (properly) used. The Indian interviewee stated: *'The experts know how to do it in their country, but their way of solving a problem, may not fit into the system of our country.'* Also the Dutch interviewees are skeptic about the work done by their Indian colleagues: *'The Indian colleagues are very good in their professional tasks, but they have difficulties to implement this expertise into practice, therefore we need to check their results.'* The Dutch interviewees also think that the Indian employees are more focused on the contract and the budgets, instead of the achievement of a professional end state. Therefore, the Dutch employees do not trust the quality of the work done by the Indian employees anymore.
At KEIP these issues do not exist.

When the data of the Dutch and the Indian respondents are compared, it was showed that the Dutch respondents score higher on all motivation scales. Especially the identified regulation score differs (Dutch mean = 3.92 vs. Indian mean = 3.48).

Conclusions: The data of both data sets show that the motivation to receive knowledge is high and mostly caused by identified regulation. A negative correlation has been found between the a-motivation and the effectiveness of knowledge transfer. The interviews show that the a-motivation to receive knowledge is influenced by the NIH-syndrome.

• **Relationship Quality:** The expected positive correlation between the relationship quality between the sender and receiver and their motivation to send and receive knowledge is not supported by the results of the bivariate analysis (see appendix S). However, a small positive correlation was found between the intrinsic motivation and the relationship quality and a small negative correlation between the a-motivation and relationship quality. The results of these bivariate analyses are presented in table 3 below.

	Relationship Quality	**Significance**
Motivation sender	.077	.636
Intrinsic Motivation sender	.234	.146
A-motivation sender	-.249	.121
Motivation receiver	.008	.960
Intrinsic Motivation receiver	.160	.323
A-motivation receiver	-.214	.184

Table 3: Correlations between motivation of the sender and receiver and their relationship quality

Appendix S shows a small positive correlation between the relationship quality and effectiveness of knowledge transfer.

The results of the univariate analysis are summarized in table 4 below.

	Questionnaire			**Interviews**			
	DHV-NL	DHV-India	DHV	DMIC-NL	DMIC-India	KEIP-NL	KEIP-India
Relationship Quality	3.09	3.07	3.08	hard and difficult	professional	good	good
Contact sought by me	yes	yes	yes	some-times	yes	yes	some-times
Contact sought by other	yes	yes	Yes	yes	sometimes	some-times	yes

Table 4: Overview of univariate analysis Relationship Quality between the sender and receiver

The relationship quality of the Dutch and Indian respondents is perceived as good (mean = 3.08, on a scale from 1 - 4). However, 27 respondents perceive the collaboration between DHV-NL and DHV-

India as demanding. This is also shown by the interviews. The interviewees of DMIC state that the relationship with India was hard and difficult. This is most clearly defined by the following quotes by the Dutch interviewees: *'My relationship with India? I do not really know if I have a relationship with India…'*, and: *'I do it myself, it is faster, easier and I avoid problems by working on my own.'* Also the Indian interviewee stated that the relationship quality was not that good: *'It is ok. Not very good and not very bad. It is a professional relationship. It is going on fine.'*

The demanding collaboration was caused by the hard communication during the project, the goals were unclear, there were different expectations and the Dutch employees could not find their counterparts. The contrary is shown by the KEIP interviewees, who are really positive about the relationship quality. This is mainly due to the teambuilding in the beginning of the project, which caused a clear division of roles and created a team spirit. The teambuilding induced solidarity, whereby they want to share their knowledge. This correlation cannot be measured with the data from the questionnaire, because the results from the face-to-face scale show almost no variances.
Almost all respondents (32) state that they actively seek collaboration with the other party. The other 4 state that the collaboration is well received, but not actively sought. 34 Respondents state that the other party actively seeks collaboration or receives the collaboration well. Only four respondents state that collaboration occurred only if the other party had no choice. According to the interviews, the contract is of influence on who initiates collaboration. At the DMIC project the communication is leaded and coordinated by DHV-India, because they are in charge. The Dutch interviewees stated that they initiated in the beginning, but when their Indian colleagues did not receive any response, they stopped initiating. According to the Indian interviewee the Indian only initiate contact if the information they need to have are clear and they need to know something from the Dutch experts.
At the KEIP project it is vice-versa: most initiative came from DHV-NL, because it was their role as an advisor to do this.

All interviewees state that if the relationship between the Indian and Dutch employees is good, the transfer of knowledge will be more effective.

Conclusions: The data from both the questionnaire and the interviews showed that the relationship between DHV-NL and DHV-India is demanding. The questionnaire showed that initiative to collaborate is sought actively by both parties; the interviews show that the initiative comes from the party who is in charge of the project.

The interview data showed that there is a correlation between the relationship quality and the face-to-face contact between the Dutch and Indian colleagues. This cannot be supported by the results of the questionnaire.

Finally, all interviewees stated that the relationship quality positively influences the effectiveness of knowledge transfer. This correlation has also been found in the questionnaire data, however this correlation is small.

Influence of communication tools on effectiveness of knowledge transfer

In general, six respondents do not feel good about the communication between DHV-NL and DHV-India. However the majority felt neutral or good about it. According to the interviews the distance between the project members influences the communication. Within DMIC, it was hard for the project members to reach each other and thereby to understand the expectations of the other party. On the other side, within KEIP, all project members were in the same office in India. The distance between the project members was small and the communication was easy.

No statistical correlations were found between the communication tools which are used and the effectiveness of knowledge transfer. Furthermore, there is no statistical correlation between the need to have face-to-face contact and the effectiveness of knowledge transfer (see appendix S). However, when the dataset was divided, a negative correlation was found between the need to have face-to-face contact and the effectiveness of knowledge transfer for the Dutch respondents and a positive correlation was found for the Indian respondents. Table 5 presents these results.

	Effectiveness of knowledge transfer	**Significance**
Need to have face-to-face contact DHV-NL	-.302	.133
Need to have face-to-face contact DHV-India	.540	.167

Table 5: Correlation between the need for face-to-face contact and effectiveness of knowledge transfer

Finally, no statistical correlations were found between the visits abroad and the effectiveness of knowledge transfer. However, the expected correlation was found in the interview data.

• **Communication tools used:** Table 6 below shows the communication tools which are used by the respondents.

Which communication tools *do* you use to contact your foreign colleague?		
Communication Tool	N Respondents using it	Average percentage of contact time using this tool
Written documents	40	50 – 55 %
Telephone	32	15 – 20 %
Face-to-face	18	15 – 20 %
Other	5	30 %

Table 6: Communication tools which are used to transfer knowledge

The data show that written documents and the telephone are the most common communication tools used to transfer knowledge to the other country. However, the contact by phone is for 18 of the 32 respondents just 0 – 20 percent of their contact time. This can be explained by results of the interviews. It has been stated that the project members only use the phone when something urgent needs to be communicated. Next to email, knowledge is saved in reports, which will be sent to all project members. 18 Respondents have face-to-face contact, of whom ten less than ten percent of their contact time. Five respondents use other communication tools, such as videoconferences, the chat and Skype.

• **Communication tools should be used**: Table 7 below presents the data of which communication tools should be used to transfer knowledge.

Almost all respondents think they should use written documents, however, they also think they should use it less often than they are using it now. 26 Respondents state they should spent more time transferring knowledge face-to-face. The interviewees also state that communication by using solely ICT is possible, if it is only technical knowledge which needs to be transferred and the sender is really motivated to transfer knowledge.

Which communication tools *should* you use to contact your foreign colleague?		
Communication Tool	N Respondents using it	Average percentage of contact time using this tool
Written documents	38	35 – 40 %
Telephone	27	20 %
Face-to-face	26	25 – 30 %
Other	8	40 – 50 %

Table 7: Communication tools which should be used to transfer knowledge

Eight respondents want to use other communication tools. These eight people want to spent 40 – 50 percent of their contact time by using videoconference and Skype with the use of a webcam.

The tables show that the respondents state they should use face-to-face contact more often in order to transfer knowledge. Face-to-face contact is considered important (mean = 4.10). They most agree that face-to-face contact is necessary in order to successfully complete a project (mean = 4.18). This is supported by the interviewees of KEIP and DMIC: *'Face-to-face contact within a project is necessary. You are working on a project which will impact a huge area of India, so a dialogue is crucial. You just need to be there.'*

The respondents also think face-to-face contact is necessary to understand each other's way of working and expectations. This is also stated by the interviewees: *'You need to understand the roles and responsibilities of the other project members in order to know what knowledge to transfer to whom.'* At the start of the KEIP project team meetings were held every week, and within the same disciplines even more often. Later in the project these meeting were held once per month. The goal of these meetings was to create a good atmosphere to transfer knowledge. From every meeting minutes of drafts were made, in order to share what happened to those who were not present.

On the other hand, within the DMIC project not a lot of meetings were held. All interviewees think that more meetings would positively influence the quality of the end product. One interviewee from DMIC stated: *'Within this project it is not just about the technical profession, but also about how to implement the techniques within the context. Therefore it is needed that the knowledge of the Dutch employee and the Indian employee are combined.*' Furthermore, the interviewees state that face-to-face contact influences the relationship quality: *'It is easier to contact each other after you met, because the relationship is more personal.'*

• **Visits abroad:** Fifty percent of the respondents were involved in a visit from Dutch colleagues to India. These visits happen for twelve of the respondents twice or more per project. In general (52 %),

these visits take one to two weeks. Two respondents were in India longer than two months. Also within the two observed projects there were exchanges of the Dutch employees. The results show that it is important that DHV-India and DHV-NL have the same expectations about the goal of the visit. Within DMIC two experts visited India in the beginning of the project, even though DHV-India did not support this visit. In their view it would not add value, because the division of roles and content of the project were unclear. However, according to the Dutch project members this visit added value, because it was essential to their imaging of the area, the project and the responsible persons and involved parties. Within the KEIP project experts came over from the Netherlands to India in order to help to start the procedures. Later on in the project the experts came over when problems arose and they could help their Indian colleagues. When Dutch employees visit India, their Indian colleagues get OJT, which means that during their stay, the Dutch and Indian employees will work together as much as possible.
Only eight respondents were involved in a visit from Indian colleagues to the Netherlands. These visits took one week in 64 percent of the cases. Three respondents were involved in a visit of two months.

During the DMIC-project there were no visits from DHV-India to DHV-NL. According to the Dutch interviewees a visit should have added value to the understanding of the techniques used for this project. The Indian interviewee did not see this added value: *'We cannot use the techniques in the same way as the Netherlands do, so it is not necessary to see how it works in the Netherlands.'*

All interviewees of the KEIP-project agree that a visit to both countries positively influences the effectiveness of knowledge transfer and thereby it should add value to the project.

Conclusions: Both of the data sets show that DHV-NL and DHV-India communicate mostly per email, only when it is urgent the telephone is used. About fifty percent of the respondents has face-to-face contact with their foreign colleagues. Both data sets show that the respondents agree that only the use of ICT is not sufficient for an effective transfer of tacit knowledge. Therefore face-to-face contact is needed. The interviews show that there is a positive relation between face-to-face contact and the relationship quality.

Employees at DHV visit the other country. More often Dutch employees visit DHV-India than the other way around. In general these visits take one to two weeks. The interviews showed that during a stay abroad, employees learn by OJT. Although all interviewees state that a visit to both countries positively influences the effectiveness of knowledge transfer, this cannot be proved with the data from the questionnaire.

Influence of the use of expatriates on effectiveness of knowledge transfer

The expected positive correlation between the use of expatriates and the effectiveness of knowledge transfer was partly found in the data set of the Dutch respondents.

At DHV-NL a large correlation exists between the existence of expatriate training programs and the effectiveness of knowledge transfer. There is no correlation at DHV-India. This is possibly caused by the small n of 5. It was not possible to calculate the correlation between the involvement of repatriates with the transmission of employees and the effectiveness of knowledge transfer, because of the small variance in the data.

A small positive correlation was found for DHV-NL between the contact with the expatriates and the effectiveness of knowledge transfer. All respondents of DHV-India filled out 'never' or 'not applicable', therefore the correlation could not be calculated for DHV-India. See appendix S for the values of the correlations.

• **Existence of expatriate training program:** The data of the questionnaire show unclear results about the existence of a training program about how to transfer experiences, knowledge and socially embedded skills of Dutch/ Indian expatriates to Indian/ Dutch managers.

The interviews data show there is no formal program to prepare employees who will visit another country. All interviewees of both projects think a learning process about how DHV-India is organized and how the culture is within the organization, would add value. One interviewee of DMIC stated: *'It should have been useful to know how the structure of DHV-India is, and who you could talk to. I think the project would have proceed a lot easier.'* However, the interviewees also have their doubts about formalizing knowledge transfer by more management control. They do not know if it would work, but a template would be useful.

• **Help of expatriates when employee goes abroad:** The questionnaire data is unclear about the existence of help of expatriates when employees go abroad. Mostly, the employee who is abroad seeks contact if there are problems or need for information.

The interviews show that DHV has no template how to prepare for a trip abroad. The preparation is done individually by deepening into the project content and reading about the cultures. Furthermore, the team leader helps with the preparations. He sends the employee who will visit the other country an update by email about the situation of the project. In the view of the Dutch interviewees, the team leader needs to prepare the stay of the person who will visit India. A team leader can prepare meetings the person needs to join, so the person will be directly in contact with the right persons and can optimally use the time in India. An Indian interviewee stated: *'I do not prepare meetings for them, or give them an agenda for during their trip, that is prepared by them, because they are coming.'* In the view of the Indian interviewee, the team leader has a supportive role.

The employees are not prepared to a culture shock when they go to India. The people who are selected to go to India, have already a lot of experiences with India, or know how to deal with different cultures. All interviewees agree that you need to be in India to experience the cultural differences and that you cannot really be prepared for it.

All interviewees share the opinion that an expatriate program would be very useful for acculturation and they all agree that the project team leader needs to be involved with the exchange.

• **Reasons to contact expatriates:** The data show that there is contact between the Dutch employees and the Dutch expatriates in India. 14 Respondents sometimes, or always contact a Dutch expatriate when they need to get in contact with an Indian employee, however 15 respondents never contact an expatriate. For 16 respondents contact between them and their Indian colleagues was facilitated by a Dutch expatriate. Also according to the interviewees, the Dutch expatriates in India were most contacted in order to gain advice and to get in contact with the right Indian colleagues. However, this does not happen often and all interviewees agree it should happen more often. One interviewee thinks that to contact Indian employees directly is more useful, because the Indian scope is broader and the Indian employees know India much better.

Finally, twelve respondents asked Dutch expatriates to help in negotiations with Indian colleagues, 14 respondents never asked help from the Dutch expatriates.

Only two of the nine Indian respondents were in the situation where they needed to have contact with Dutch employees, or when they needed to negotiate with them. However, both did never

contact an Indian repatriate to help them. According to the interviews, this could be explained by the fact that not many Indian employees have experiences in the Netherlands.

Conclusions: The data from the questionnaire is unclear about the existence of a training program about how to transfer experiences, knowledge and socially embedded skills of expatriates to managers as well at DHV-NL as at DHV-India. The interviews showed that these programs do not exist, but that these programs should add value to the effectiveness of knowledge transfer. This statement is supported by the questionnaire data of DHV-NL.

The respondents were unclear about if there is help from the repatriates before, during and after a visit abroad. Therefore, correlations between the contact with repatriates and the effectiveness of knowledge transfer cannot be calculated. However, the Dutch interviewees state that it is a person's own initiative to contact an expatriate if he needs help with the preparations, during the trip, or with his return. The interviews also showed that a team leader has an important role with the preparations for a trip abroad. All interviewees state that an expatriate program would add value to the effectiveness of the transfer of knowledge.

According to both data sets, employees of DHV-NL have contact with the expatriates in India, mostly because the employees need advice or they need to get in contact with Indian employees. Sometimes expatriates are also asked to help with negotiations between Dutch and Indian employees. At DHV-India there is no contact with Indian expatriates in the Netherlands. The questionnaire supports the statement that contact with expatriates positively influences the effectiveness of knowledge transfer with a small positive correlation.

Influence of differences between organization cultures on effectiveness of knowledge transfer

The respondents and interviewees notice differences between the organization cultures of DHV-NL and DHV-India. 19 Respondents mentioned Power Distance as the biggest difference. Four respondents state the level of Individualism is the biggest difference. Also the level of pro-activity and directness were mentioned as big differences.

The culture of DHV-NL has been described as (relatively) open, friendly, free, and open to opportunities for innovation by the Dutch interviewees. The Indian interviewees described the culture of DHV-NL as friendly, frank and interactive.

The culture of DHV-India has been described by Dutch interviewees as hierarchical and more control by management and finances than it is controlled on the base of content. The Indian culture is viewed as very closed. The Indian interviewees describe the culture of DHV-India as very transparent, cordial and cooperative: *'We work together and respect the roles and responsibilities.'*

According to the conceptual model there is a correlation between the differences of organizational cultures and the effectiveness of transfer of knowledge. A striking result has been found: there is a small *negative* correlation between the Power Distance and the effectiveness of knowledge transfer at DHV-NL, but a small *positive* correlation has been found between the Power Distance at DHV-India and the effectiveness knowledge transfer. The values of the correlations between individualism at DHV-NL and DHV-India, and effectiveness knowledge transfer were too small to state that a correlation exists between the level of individualism and the effectiveness of knowledge transfer. However, the results of the univariate analysis and the interviews show that the cultural differences might influence the effectiveness of knowledge transfer. See appendix S for the values of the correlations.

• **Power Distance:** The level of power distance at DHV-NL (mean = 2.99) is a little lower than at DHV-India (mean = 3.30). However, the separate items which are measured, show bigger differences, see table 8 below.

At DHV-India a person's influence is based more on his authority instead of his abilities and contribution to the organization (mean = 4.00). This in contrast to DHV-NL, where a person's influence is more based on his abilities and contribution to the organization than on his authority (mean = 2.56). Furthermore, in DHV-NL subordinates are expected to question their boss (mean = 2.69). In DHV-India it more usual to obey your boss without question (mean = 3.67). According to the interviewees, the office in India is also equipped that way: the director of DHV-India had his own office, and it is not possible to just walk in and ask questions. The higher power distance at DHV-India is also shown by the following statements of Dutch interviewees: *'The project director tells everybody what to do. The employees are waiting for orders.'* And: *'In India people do not disagree with their manager'*. Also an Indian respondent stated that the two way communication subordinates have with seniors in the Netherlands does not exist at DHV-India.

	DHV-NL	DHV-India
Power Distance	2.99	3.30
At DHV-NL, a person's influence is based primarily on one's authority	2.56	4.00
At DHV-NL subordinates are expected to obey their boss without question	2.69	3.67
At DHV-India, people in positions of power try to increase their distance from less powerful people (R)	2.88	2.44

Table 8: Univariate analysis of Power Distance Scale

However, on one point DHV-NL seems to be more hierarchical. At DHV-NL someone with power tries to increase the social distance from less powerful people more (mean = 2.88) than at DHV-India (mean = 2.44). This may be explained by the socially desirable responses of the Indian respondents.
A Dutch interviewee stated that the power distance is slowing the process down and stops the knowledge transfer. *'An Indian employee is not allowed to contradict his boss, even if he knows his boss is wrong.'*

• **Individualism:** The results from the questionnaire show that the level of individualism is lower at DHV-NL (mean = 2.54) than at DHV-India (mean = 3.33). The individual items in table 9, presented below, show the origin of this difference.

One Dutch interviewee from the project DMIC agreed with the results from the questionnaire: *'Maybe Indian employees might even be more individualistic than Dutch employees, especially the top layer of the management'*.

The other Dutch interviewees think that DHV-NL is not individualistic and describe DHV-NL as a very open and friendly organization, with much cohesion.

	DHV-NL	DHV-India
Individualism	2.54	3.33
At DHV, people are generally very concerned about each other.	3.38	2.44
At DHV-NL, people are generally very sensitive towards others.	3.23	3.23
At DHV-NL, people are generally very friendly.	3.88	3.11
At DHV-NL, people are generally very generous.	3.35	3.00
At DHV-NL individualism is far more valued than group cohesion.	2.54	4.11

Table 9: Univariate analysis of Individualism Scale

An Indian interviewee states that DHV-NL is more individualistic: '*It is more individual oriented. They look at their own portion and other problems are not their responsibility. There is less a group feeling than in India.*' The Dutch interviewees on the other hand state that Indian employees are not open minded and are not able to look further than their own tasks.

As stated before, the collaboration between the Indian and Dutch employees was not very good at the DMIC-project. The Dutch members blame all parties to be individualistic. They state that every party wanted to do as little as possible and just work on their own part. From the Indian point of view it was just the Dutch project members being individualistic. Both state that a high level of individualism decreases the effectiveness of knowledge transfer.

• **Long-term orientation:** The interview data showed an extra cultural difference: the short-term orientation versus long-term orientation. By the members of both projects this difference was noticed and caused some problems in the transfer of knowledge.

The difference in long- and short-term vision is shown in the policy of DHV-NL and DHV-India. DHV-NL wants to deliver good, high-quality products and want to invest in high educated people with experiences. One Dutch interviewee stated: '*The quality is of great importance to receive good references and thereby new jobs in the future. The profit margin might be less, but you might receive more projects in the future.'*

In contrary, DHV-India has a short-term orientation and wants to gain a lot of money in a short time and with little effort. Therefore, for every project they temporarily hire low educated people and educate them for the project. So, within DHV-India there is no learning curve. Every project, the Dutch employees collaborate with different Indian employees, who they have to learn the same things as their predecessors.

Conclusions: Both data sets showed that the Power Distance at DHV-India is higher than at DHV-NL. The questionnaire showed that at DHV-NL the effectiveness of knowledge transfer is negatively influenced by a high power distance. At DHV-India this is the other way around. Also the

interviewees state that the difference in power distance negatively influences the effectiveness of the transfer of knowledge.

The questionnaire data show that the level of Individualism is higher at DHV-India. The interviews show that both parties view the other party as being individualistic. The data from the questionnaire do not show a correlation between the level of Individualism and effectiveness knowledge transfer. Meanwhile, both the Dutch and Indian employees state that a high level of individualism negatively influences the effectiveness of knowledge transfer, because the employees only work in their expertise area and do not share knowledge with other fields.

The interview data showed an extra cultural difference which negatively correlates to the effectiveness of knowledge transfer: DHV-NL has a long-term orientation, in contrary to DHV-India which has a short-term orientation.

Chapter 5 will draw conclusions out of the results.

Chapter 5: Conclusions

This chapter will draw conclusions from the results presented in chapter 4. The literature showed four factors which can be of influence on the effectiveness of tacit knowledge transfer across borders, see figure 6 below. The conclusions will be drawn per factor. Finally, the research question will be answered.

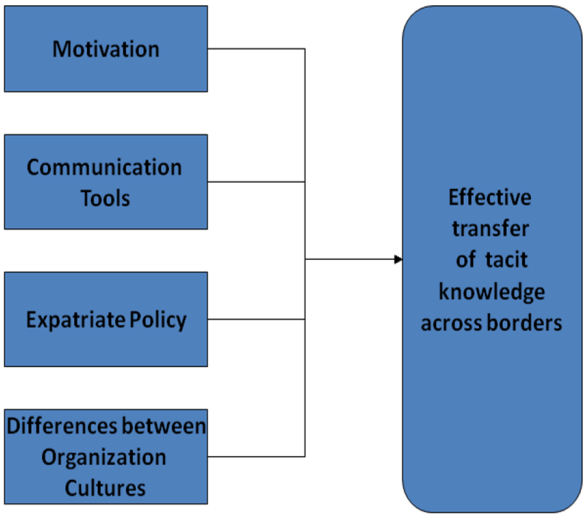


Figure 6: Conceptual Model

5.1 Conclusions per factor

With the use of the data from the questionnaire and the observations of the projects, the conceptual model was tested.

• **Motivation:** As expected, the data show that the motivation of the sender as well as the receiver influences the effectiveness of knowledge transfer. The interviews showed that the NIH-syndrome negatively influences the motivation of the receiver. When the relationship between the sender and receiver is good, this influences the motivation of both parties. An unexpected result from the project observation was that face-to-face contact seems to have a positive correlation with the relationship quality. Furthermore, the relationship quality has a positive correlation with the effectiveness of knowledge transfer.

• **Communication Tools:** The respondents use written documents most to transfer knowledge; however, they think they should use face-to-face contact more in order to effectively transfer knowledge. This can also be done by videoconference or with the use of a webcam.

The correlation between the use face-to-face contact and the effectiveness of knowledge is only shown by the interview results. Solely the use of ICT supports the knowledge transfer, but is not sufficient for the knowledge transfer to be effective.

• **Use of expatriates:** As the literature review, the results show a positive correlation between the use of expatriates and the effectiveness of knowledge transfer. There is a positive correlation between the existence of a training program about how to transfer experiences, knowledge and socially embedded skills of expatriates to managers and the effectiveness of knowledge transfer, according to both data sets. The interviews showed that the involvement of an expatriate, or

repatriate, with an employee who needs to go abroad, has a positive influence on the knowledge transfer. The project leader also needs to be involved to be able to transfer knowledge effectively.

Finally, if employees contact expatriates for help with negotiations or to find the right persons to contact, this would also positively influence the effectiveness of knowledge transfer.

• **Differences between organization cultures:** The two researched cultural differences were found. DHV-NL has a smaller power distance than DHV-India. This difference has a negatively correlation with the effectiveness of knowledge transfer. Furthermore, there is a difference between individualism at DHV-NL and DHV-India. This difference has a negative correlation with the effectiveness of the transfer of knowledge.
However, an unexpected is shown by the results of the interview data, which show an extra cultural difference which has a negative correlation with the effectiveness of knowledge transfer: long-term orientation vs. short term orientation. DHV-India has a short-term orientation, in contrast to DHV-NL.

5.2 Answer to the research question

The research question, as formulated in chapter 1, is:

Which factors influence the effectiveness of cross border transfer of tacit knowledge and how can DHV-Rail &Stations take these factors into account with the transfer of tacit knowledge between the Netherlands and India, in order to achieve economic benefit?

The first part of this research question can be answered with the results from the questionnaire and the project observations. Four factors influence the transfer of tacit knowledge between the Netherlands and India. These factors are: 1) the motivation of both the sender and the receiver of knowledge; 2) the communication tools which are used to transfer knowledge; 3) the use of expatriates; and 4) the differences between the organization cultures which want to exchange knowledge.

The recommendations to DHV-Rail & Stations will give an answer on how DHV-Rail & Stations can take these factors into account in order to achieve economic benefit.

Chapter 6: Discussion

This chapter will discuss the outcomes which are presented in chapter 4. First, the participants of this research will be shortly discussed, because their vision determines the outcomes of this research. Secondly, findings, outside the scope of the conceptual model, will be discussed. These outcomes might be an underlying explanation for the results from the conceptual model. Thirdly, the outcomes of the independent variables will be discussed sequent and finally conclusions will be drawn.

6.1 Participants - Vision of the respondents and interviewees

Chapter 4 mentions that the results are influenced by socially desirable answers of the respondents. Participants might give socially desirable answers because they are afraid that the research is not totally anonymous and it can be find out which answers they gave. The reason to give socially desirable answers differs per respondent group. According to appendix D, Dutch employees derive status from their education level, personal successes and career. This can explain that the Dutch respondents present themselves, and their career, better than they actually are, and thereby give socially desirable answers. The socially desirable answers of the Indian can be explained by the hierarchical organization culture. They are loyal to their employer and to the organization and will not desert them.

Many differences were noticed between the answers of the interviewees of DMIC and KEIP. This can be explained by the different experiences gained during the project processes. DMIC does not proceed smoothly, which causes many frustrations with the project members. Also, they are not very involved with the project and there are many mutual reproaches. The project members of KEIP, which project proceeds smoothly, are very passionate and involved with the project. Therefore they have a positive view on the collaboration.

6.2 General findings - Influence of management style and HR

This subsection will describe two findings other than the results from the conceptual model. These findings might explain some outcomes of the conceptual model.

The results show that the initial phase of a project is of great influence on the development of the project process and thereby on the effectiveness of knowledge transfer. It determines the motivation of the project members, the communication tools which are used, the people who will be contacted during the process and the amount of understanding of each other's culture. The team leader largely determines the process. According to Beer and Nohria (2000) and Luecke (2009) there are two types of leadership: Theory E and Theory O. Theory E manages from the top down. Theory O leaders want all the employees to participate and emotionally committed. E-type leaders typically focus on streamlining the 'hardware' of the organization – the structure and systems. Theory O initial focus is on building up 'software' of an organization – the culture, behavior and attitudes of employees (Beer & Nohria, 2000; Luecke, 2009).

At KEIP, the first (Dutch) project leader can be categorized as a Theory O leader. The first month was dominated by getting to know each other, teambuilding and understanding the project. This led to one vision among all project members, which made it easier to communicate; involvement of all project members; and, understanding of the cultural differences among the project members. In short, it led to an open atmosphere to share knowledge.
In contrast, DMIC was managed by a(n) (Indian) Theory E leader. The initial phase was dominated by understanding the project, getting to know all partners, and gaining understanding of the Indian organizational system. This caused that project members were unknown for each other and did not communicate in the initial phase. Furthermore, the project members did not have one vision on how

to approach the project; not all project members were known; and the project members were/ are not involved with the project. I.e., the project members of DMIC did not know who to share knowledge with and the knowledge transfer was not effective.

So, the management style of the team leader in the initial phase of a project influences the effectiveness of knowledge transfer later in the project.

A second general finding is the influence of HR, and more specified the HR selection and -strategy, on the effectiveness of knowledge transfer. First, if people who are extravert, open minded to different cultures, different approaches and with experience in collaboration with different countries are selected to participate in a project as KEIP and DMIC, it is more likely that the transfer of tacit knowledge will be more effective. However, further research is needed to support this statement. Next to the selection criteria, the content of the HR mission and HR strategy can also be of influence on the effectiveness of knowledge transfer. The website of DHV states that their HR mission is: *'We invest in our employees and provide an environment that allows them to continuously develop and be the best.'*

When employees are developed, knowledge is transferred. In my vision, DHV-NL as well as DHV-India, invests too little in the development of the collaboration between DHV-NL and DHV-India. At DHV-NL knowledge about how to collaborate with India is retained by less than ten Dutch employees. These ten employees are all above fifty and when they retire, the knowledge will be gone. So, in order to retain the knowledge about the collaboration between DHV-NL and DHV-India, HR needs to develop (younger) employees. At this moment, DHV-NL invests in two to five employees by OJT.
DHV-India acts more like an agency. Only a few experts work on multiple projects where collaboration with DHV-NL is needed, the other project members are temporarily hired. So, there is no continuous development of the employees and knowledge is not retained within the organization. This contradicts with the HR strategy of DHV-Group: *'Staffing and the availability of resources are increasingly important for all entities within the DHV. Skilled, confident and committed employees are fundamental to achieving our visions and goals'.* As the introduction chapter of this research already stated, also this HR strategy shows that resources, people, are increasingly important to remain globally competitive. Retention, nurturing and development of knowledge are needed to stay competitive.

6.3 Independent variables

This section will successively discuss the results of the independent variables: Motivation, Communication Tools, Use of Expatriates, and Differences between Organization Culture.

6.3.1 Motivation

Motivation is, next to differences between the organization cultures, seen as most influencing factor on effectiveness of cross border knowledge transfer.
The results show that there is a significant positive correlation between the external motivation of the receiver of knowledge and the effectiveness of knowledge. A more striking result is that this significance has not been found for the sender of knowledge. This difference can be explained from the perspective of both groups.

Employees are external motivated to receive knowledge, in order to develop faster in the organization. More knowledge means a better understanding of how to perform the tasks and the more chance to get a promotion. A promotion means that the employee works in a higher hierarchical level, which will increase a person's self-esteem, but also their status. As the results show, the identified regulation of receivers of knowledge is higher than the identified regulation of

the sender. A receiver wants to receive knowledge, because this contributes to his personal development. This incentive does not exist equally for a sender. A sender shares his knowledge out of intrinsic motivation, because he likes it and receives satisfaction when he does this. A receiver knows that when he retains, assimilates, and applies the received knowledge effectively, this might lead to a positive end-state, e.g. a promotion. Therefore, the positive correlation between external motivation of the receiver and effectiveness of knowledge transfer is significant, in contrary to the same correlation for the sender.

Above is stated that senders do not need to be external motivated, however at DHV there is external regulation to transfer knowledge. This external motivation is captured in the project contract. This contract determines how much time each individual project member can spend on the project, which includes the amount of knowledge transfer; it determines the amount of money which can be spend on the project, which includes how often the project members can visit each other; it determines the policies, which includes how the knowledge is transferred: by interim reports, evaluation reports, presentations, etc.

However, in the literature there is discussion about the effectiveness of external motivation. According to Beer and Nohria (2000), it is important that incentives reinforce the knowledge transfer, not drive it. Money can focus and motivate, but it can also hamper teamwork, commitment and learning. In this research, a negative correlation has also been found between external regulation and intrinsic motivation of a sender. This means that the more an employee transfers knowledge in order to obtain a reward or to avoid a negative end-state, the less knowledge is transferred out of personal choice, satisfaction, or pleasure. This statement is supported by Kohn (1999). He states that rewarding employees will give them the feeling that they will not transfer knowledge enough by themselves. On the other hand, Dur (2011) states that it can also be very frustrated not to be rewarded for extra effort. However, researches which already were done on this topic are not very valid and reliable. More research needs to be done in order to give valid and reliable comments on the correlation between external motivation and intrinsic motivation.

A second striking result is that the members of DMIC are more a-motivated and are more influenced by the NIH-syndrome than the KEIP members. This can be explained by the initial phases of these projects. As outlined above, the start of DMIC was not very smoothly, whereby the project members still do not really know each other and an atmosphere to share knowledge has never been created. This also explains that the relationship quality between the project members of DMIC is not really good, which means that there is no mutual trust or understanding. This may cause the NIH-syndrome, driven by the ego-defense mechanism and a power struggle (see chapter 2.3.1). Furthermore, the characteristics of the project members seem to be of influence on the motivation and the NIH-syndrome. The NIH-syndrome will be reduced when the project members are extravert, open-minded towards different cultures and different approaches, and when they have experiences with collaboration across countries. As stated above, further research is needed to support this statement.

Finally, as explained above, the relationship quality influences the effectiveness of knowledge transfer directly and not only, as stated by the conceptual model, indirectly via motivation. KEIP shows that a good relationship quality causes understanding, trust, openness, and patience to each other. This all contributed to the effectiveness of knowledge transfer (see chapter 2.3.1).

6.3.2 Communication Tools

As the literature review demonstrates, with an increased physical distance the probability of communication between employees decreases. This is shown by the two observed projects. At KEIP the employees communicate often face-to-face, because they work in the same office in India. In

contrary, at DMIC the project members almost all communicate via email. The choice for these communication tools is obvious, however, in my opinion, not the smartest. This research is about the transfer of *tacit* knowledge, which cannot be transferred solely by the use of ICT.

Different communication tools transfer different types of knowledge. Within KEIP skills, experiences, and competences, or in short tacit knowledge, is transferred. Within DMIC the technical, explicit knowledge is shared. As the literature review states, technology is an enabler, not a driver of knowledge management. The project observation also shows that when there are problems within a team, periodic face-to-face contact is very important in order to maintain a satisfactory level of confidence and trust to sustain team working, and relational proximity. However, the project members of DMIC only communicate by email instead, in order to capture all communication, because they feel they cannot rely on oral agreements. This vision creates a negative spiral: less face-to-face contact causes a lower relationship quality, which causes less effective transfer of tacit knowledge.

Finally, stated by an interviewee '*only the use of ICT could work, but than the desire should be there*.' However, it seems to be impossible to stay motivated without face-to-face contact. Face-to-face contact is needed to boost the mutual trust. This can also be done with the use of webcams or videoconferences, instead of real life visits.

6.3.3 Use of Expatriates

The data show that the use of expatriates positively influences the knowledge transfer. However, DHV has not facilitated in how to use the expatriates in an efficient way.

First, a training program for employees who go abroad has a significant positive influence on the effectiveness of knowledge transfer. These training programs should content how an employee can exchange experiences, knowledge and socially embedded skills towards the managers and employees abroad. At this moment these training programs do not exist at DHV, whereby the employees are not prepared well enough to transfer knowledge effectively. All employees who visit India (since there are no clear results about visits to the Netherlands), spent their first days abroad the same: finding out who to speak to, where to go to, how the culture is, etc. Normally, the employees are abroad for only a short period of time, therefore this time needs to be used as efficient as possible. Expatriates have the required experience, knowledge and socially embedded skills that can be implemented in appropriate training programs. So, with the use of the experiences of expatriates, employees who need to go abroad for a short period can transfer their knowledge more effectively.

Next to a training program, expatriates could also facilitate contact or negotiations with colleagues abroad. The data show that the Dutch employees already sometimes use the expatriates, but the Indian employees do not. This can have two reasons: 1) there are no, or only a few, Indian employees who have visited the Netherlands, whereby there are no employees with experiences with DHV-NL and advice cannot be given; or 2) the Indian employees do not contact expatriates, because of the power distance. Indian employees who go abroad might have a higher position within the organization, or might have obtained a higher position after their visit. As the data showed, in India it is not usual to question someone of a higher hierarchical level, whereby knowledge is not shared between employees who already went abroad and employees who plan to go abroad.
The HR department could play an important role in facilitating an expatriate program, which includes a training program and a network which can consult employees who plan to go abroad.

Finally, the expatriates can also play an important role in the transformation of DHV from multinational to transnational corporation. At the website, DHV states to be a transnational

corporation, however, as stated in chapter 1, DHV is a multinational corporation. This means that their strategies are geared to be nationally responsive and they have the willingness to invest in the growth of these markets while learning to be self-sufficient and independent from the parent company. In order to become a transnational corporation, an organization needs to adopt an emerging transnational mentality as its strategic posture. In this position, resources and activities are dispersed and specialized. This duality leads to efficiency and flexibility at the same time. The dispersed geographic resources, assets and activities are integrated into an interdependent network of operations for sustainable advantage. However, responsiveness and differentiation are not enough to achieve transnational mentality (Som, 2009). DHV has to learn from local markets, and integrate and share this learning globally to build a worldwide competitive advantage. The integration and sharing of knowledge could be done with the use of expatriates. With a solid program, expatriates can share their knowledge, experiences and skills about habits of employees abroad, values in the other country, and important people within the other DHV-unit. Once this is done, DHV shall achieve competitive advantage as a transnational corporation by developing global-scale efficiency, flexibility and worldwide learning with dispersed, interdependent and specialized assets and capabilities.

6.3.4 Cultural differences

Differences between the organization cultures of DHV-NL and DHV-India were found. The interviewees state that it is needed to be aware of these differences, instead of trying to change them. This statement can be illustrated by the DMIC project. The Indian interviewee of DMIC stated that the initial phase of DMIC was hard, because the cultural differences were huge and the Dutch employees did not want to adapt to the Indian culture. Instead, the Dutch employees act the same as they used to do in the Netherlands, which led to frustrations with Indian employees. When time went by, the Dutch employees adjusted increasingly to the Indian way of working and the frustration of the Indian employees decreased. However, this example shows that initially there was no collaborative and cooperative climate within DMIC. Therefore, there was no trust in the Dutch employees and no room for experimentation. According to Goh (2002), all these facets need to be present in order to decline the cultural barriers. Again, the initial phase of a project is of huge influence; it influences how project members deal with the cultural differences.
The differences found between the organization cultures of DHV-NL and DHV-India will be discussed in succession.

Power Distance

A striking result was that a negative correlation was found between power distance and effectiveness of knowledge transfer at DHV-NL, while the same correlation was positive at DHV-India. This difference can be explained with the help of the theory of Weber's Bureaucracy (Weber, 1947). According to Weber, the growth in space and population being administered, the growth in complexity of the administrative tasks being carried out, and the existence of a monetary economy results in a need for a more efficient administrative system. At this moment India is economically growing very fast, see appendix E. According to the theory of Weber, this leads to a need of a more efficient administrative system. DHV-India is more hierarchical than DHV-NL, which is ideal for bureaucracy. It has delineated lines of authority in a fixed area of activity; action are taken on the basis of, and recorded in, written rules; rules are implemented by neutral officials, career advancement depends on technical qualifications judged by organization, not by individuals. The Indian see the power distance as a rational, efficient method of organization.

In the view of the Dutch employees, bureaucracy leads to less effective knowledge transfer. They see the same threat as Weber foresaw, a threat to individual freedom in which increasing rationalization of human life traps individuals in the "iron cage" of bureaucratic, rule-based, rational control (Ritzer, 2004; Swedberg, 2005). Employees will be less intrinsic motivated to transfer knowledge, because

too many formal routines need to be performed, it is hard to share the knowledge directly with the right people, and informal knowledge transfer is counteracted. Furthermore, the Dutch economy is further developed, and Dutch organizations have already many negative experiences with bureaucracy, in contrary to India, where bureaucracy is just developing.
So, the results show that there is a correlation between power distance and effectiveness of knowledge transfer, however the interpretation of whether this is a positive or negative correlation differs.

Individualism

A second striking result is that no correlation has been found between individualism and the effectiveness of knowledge transfer, despite the suspected negative correlation described in the literature review (see Chapter 2.3.4). Furthermore, the results show that the level of individualism is slightly higher at DHV-NL than at DHV-India, which contradicts with the outcomes of Hofstede's research. To explain both results, the items of GLOBE which were used to measure individualism need to be questioned. The first four items measure how employees act and how they deal with their colleagues. However, these do not measure the degree to which individuals are integrated. Respondents can fill out that all employees are very friendly and generous, while simultaneously individual pride and respect are highly held values and degrading a person is not well received, accepted, or appreciated. This can also explain that India scored lower on these four items. Indian employees might have a negative view on colleagues in other hierarchical levels, or on employees who participate in other groups. This might bias their view and explain why Indian employees judge their colleagues as less friendly, generous, concerning and sensitive. So, these items measure the vision of the respondent on the way their colleagues act, instead of the values hold in the organization. The last item is an exception. This item measures what is valued more: individualism or group cohesion. However, this is an item which researches the policy of an organization instead of the values of the employees. At DHV-NL it is a policy to work in integral teams, while at DHV-India employees are more rewarded for individual successes. So, for this research the items drawn by GLOBE did not measure the individualism which needed to be researched.

Another striking result is that the Dutch project members of DMIC blame the Indian project members of being individualistic and vice versa. This conflict says more about the relationship quality than the level of individualism of the project members. The definition of individualism used by the interviewees is another than described by the literature review. In their vision being individualistic is 'to work only within your own sector, take no responsibilities, and being individually oriented'. However, the literature states that a high score on individualism means that people value individual pride and respect. The statement of the interviewees can be explained by a low relationship quality. If this relationship quality was high, the project members would be friendlier, more cooperative, and feel more responsibility for tasks outside their own scope. Probably, both parties would than not blame the other party to be individualistic.

Long term orientation

According to the results, a third cultural difference is of influence on the effectiveness of knowledge transfer, namely the long term versus short term orientation. According to the Dutch interviewees of both DMIC and KEIP, the Indian employees act as is good for the organization on the short term, without considering the consequences for the long term.
The difference between the level of long term orientation in the Netherlands and India is researched by Hofstede (2002). Hofstede argues that values associated with Long Term Orientation are thrift and perseverance; values associated with Short Term Orientation are respect for tradition, fulfilling social obligations, and protecting one's 'face'. The dimension Long Term Orientation rank in India is 61, with the world average at 48. The Netherlands are ranked at 44. Hofstede's outcome is notable. In my opinion, respect for tradition, fulfilling social obligations and protecting one's face, are values which

suit collectivistic cultures. These cultures live according to their traditions and are careful with changes. In the first place, they want to protect their in-group members and their position within that group. This leads to actions aimed at the tradition and not with a vision to the future. So, I would suspect the ranking on individualism to be higher for the Netherlands and lower for India, instead of vice versa.

The difference in long and short term orientation cause different expectations and a different attitude, which can be illustrated with the DMIC project. Within this project DHV-India paid little attention to the quality control, which frustrated the Dutch project members. This might be explained by the difference in long and short term orientation. DHV-India is looking for solutions to be good enough for that moment, and when the solution does not fit the future, they will solve it at that moment. Unlike the Indian employees, the Dutch employees are looking for a long-term solution. In their vision, high quality leads to good references and thereby to more jobs in the future.

Another example to show the difference in level of long term orientation is the HR policy of DHV-India as described before. DHV-India often temporarily hires employees, whereby knowledge is not retained and in the long run DHV-India does not receive benefit from their actions.

Above, the short term orientation of DHV-India has been explained by their cultural values. However, also the economic growth can be an explanatory factor. At this moment the economy of India is emerging (see appendix E), whereby the demand to civil matters grow. With the experience of DHV, DHV-India has a good reference. Based on the international experiences of DHV, DHV-India wins contracts. However, often the employees who are mentioned in the contract do not participate in the project, because these employees are expensive experts. DHV-India rather temporarily hires employees, which is less expensive. This approach leads to lower project costs, but also to lower quality of the end result. Apart from the ethical discussion which can be held on this topic, this approach might have negative consequences in the long run. However, at this moment there are no consequences on the short term. India is still emerging, the demand remains high, and DHV-India will still win contracts.

6.4 Conclusions

This chapter discussed the results presented in chapter 4.

First, the influence of the participants on this research was discussed. The results of the questionnaire were biased by the socially desirable answers the respondents gave. These results might be caused by the fear for the consequences of honest answers. Also, the vision of the interviewees of DMIC differed from the vision of KEIP project members. This difference is due to the success of the project, which is respectively disappointing and high.

Secondly, the outcomes outside the scope of the conceptual model were discussed. The start of the project seems to be of great influence on the effectiveness of knowledge transfer. The start is determined by the project leader. The team leader of DMIC adopted a theory E way of managing, which is from the top down. In contrast, the KEIP team leader adopted a theory O management style, which involves all members to contribute to all phases of the project. Theory O showed to have a positive influence on the effectiveness of knowledge transfer.
Next to the team leader, HR has a great influence on the effectiveness of knowledge transfer by selecting the right people and implementing the HR strategy. DHV-India does not operate according to the HR strategy of DHV, which negatively influences the effectiveness of knowledge transfer.

Then, the results of the measurement of the conceptual model were discussed.

• **Motivation:** Motivation is, next to organization cultural differences, mentioned as most influencing factor on the effectiveness of knowledge transfer. The significant positive correlation between external regulation of the receiver and effectiveness of knowledge can be explained by their incentive to develop their career. This incentive is not equally for the sender of knowledge.
DHV uses external motivation tools, e.g. contracts, to motivate employees to transfer knowledge; however the employees are not aware of this motivator. The influence of external motivation on the intrinsic motivation is a recommendation for further research.
Secondly, a high relationship quality positively influences the motivation of the employees and decreases the NIH-syndrome, which is clearly showed by KEIP. Furthermore, it also positively influences the effectiveness of knowledge transfer directly.

• **Communication tools:** The use of different communication tools cause the transfer of different types of knowledge. When tacit knowledge needs to be transferred, face-to-face contact is necessary and the use of ICT can support this transfer. ICT is often used to transfer explicit knowledge and when the project members do not trust each other. This creates a negative spiral: less face-to-face contact, leads to a lower relationship quality, which leads to less effective knowledge transfer.

• **Use of expatriates:** A training program given by expatriates to employees who will go abroad positively influences the effectiveness of knowledge transfer. These training programs could be organized by the HR department.
At this moment Indian employees do not have contact with expatriates, this can be caused by the presence of only a few expatriates, or by the high power distance between the expatriates and the employees.
Furthermore, expatriates could play an important role if DHV wants to turn their multinational strategy into a transnational strategy.

• **Differences between organization cultures:** Differences in organization culture were found. It is important to be aware of these differences in order to decrease cultural barriers. The different vision of the Dutch and Indian employees on the influence of power distance on the effectiveness of knowledge transfer can be explained by the bureaucracy theory of Weber.

The fact that no correlations were found between the level of individualism and effectiveness of knowledge transfer can be explained by the use of items which are not reliable to measure individualism. This research measured the way employees treat each other, instead of their values.

Finally, a third difference was found in the results: DHV-India has a short term orientation, while DHV-NL has a long term orientation. This difference can be explained by 1) the cultural values, concerning tradition, social obligations and protection of in-group members; and 2) the economic growth in India.

Chapter 7: Recommendations

This chapter will answer the second part of the research question. Recommendations will be given to DHV about how to take the factors, which are of influence on the transfer of tacit knowledge across borders, into account. In the second subsection recommendations for further research will be given.

7.1 Recommendations for DHV

1. DHV-Group should be clear about their corporate strategy.

At this moment DHV-Group has a multi-domestic strategy, but is slowly transforming into a transnational organization. DHV needs to communicate their strategy clearly to all DHV-countries, because this influences the process of knowledge transfer. If DHV decides to maintain a multi-domestic strategy, knowledge needs to be retained at DHV-India, in order for them to be able to operate independently. In that case, DHV-India should get the lead of all projects in India. DHV-NL will only support DHV-India until DHV-India is able to operate without any help. The corporate policies will be adapted to the local needs.
On the other hand, if DHV decides to become a transnational organization, the policies will be centralized. A template might be needed which states for what kind of projects DHV-India will be in lead and for which DHV-NL will be in lead. The knowledge transfer will continue, it will even increase, and resources are integrated through strong interdependencies.

2. DHV-Group should add transfer of tacit knowledge between DHV-NL and DHV-India to their vision 2015.

The project observations showed that it needs to be clear to all employees of DHV-NL and DHV-India that the expansion towards DHV-India is a focus of DHV. If DHV communicates that their vision is to increase the collaboration, and thereby the knowledge transfer, between DHV-NL and DHV-India, employees of both countries will put more effort in the transfer of knowledge, whereby it will be more effective.

3. DHV-Group should invest in an international business plan.

Some Dutch employees have already invested in the development of an international business plan, but because of cuts this development was ceased. However, an international business plan contributes to an effective knowledge transfer and therefore DHV should invest again in this plan. This plan should include a clear mission about which countries should increase their collaboration. Furthermore, it should include an international network of international business development managers and/ or expatriates and repatriates. This group of employees will have a conference call every month, in which international issues will be discussed. These issues could include new acquired projects, conflicts, negotiation problems between countries, or the demand for experts. This network should also be known by employees, in order for them to be able to discuss their international issues. This network makes it easier for employees to get in contact with the right people and to learn from the experiences of their colleagues.

4. DHV-Group should develop an expatriate program.

An expatriate program contributes to the effectiveness of knowledge transfer. This program is meant for employees who will visit another DHV-country. It should include a training about how to transfer experiences, knowledge and socially embedded skills to the colleagues abroad. Furthermore, it

should help employees to prepare their visit and their return home. Also, it should include help during their stay abroad.
This program needs to be facilitated by repatriates and expatriates, whereby their knowledge is retained in the organization. When the repatriates and expatriates from a DHV department are known, the barrier to contact them when there is need for facilitation of contact and help with negotiations between employees from different DHV-countries will decrease.

5. The HR policies should implement an incentive policy for the transfer of tacit knowledge between DHV-NL and DHV-India.

HR could contribute to the effectiveness of knowledge by their incentive policy. Receivers of knowledge can be motivated by a monetary reward. For example, personal development goals could be formulated. If these goals are achieved, the employee will receive a bonus. This incentive is not needed for the senders of knowledge, this even can counteract.

6. HR should focus on the retention of knowledge.

At this moment knowledge transferred between DHV-NL and DHV-India is not retained well. This can be improved, first by the retention of experienced employees. When people leave the organization, their knowledge will go with them. This recommendation is of special interest for DHV-India, where often people are hired temporarily.
Secondly, knowledge can be retained by the internal education of younger employees. At this moment only a few employees within DHV-NL have experiences with the collaboration between DHV-NL and DHV-India. If they retire, knowledge will flow outside the organization. When the experienced employees educate younger employees by OJT, knowledge will be retained.
Finally, knowledge needs to be shared increasingly. DHV could develop a template how to share knowledge gained abroad and who to share it with. This template could for example include an evaluation report and a meeting when the employee has returned.

7. DHV-Rail & Stations should invest in communication tools which facilitate face-to-face contact.

At least one visit is recommended during a project. However, if this is not possible, an investment in communication tools which facilitates face-to-face contact is recommended. These tools include a webcam and videoconferences.

8. The initial phase of a project should focus on teambuilding.

Teambuilding in the initial phase of a project is essential for the effectiveness of knowledge transfer during the project. Teambuilding contributes to the understanding of each other's cultural differences, expectations and way of working. When the project members know each other, they feel safe and trust their colleagues, this will contribute to the effectiveness of knowledge transfer.

9. The project leader should adopt a management style which supports knowledge transfer.

Project leaders should adopt a combination of theory E and O way of managing. This means that a project leader should give direction from the top and engage people below. A project leader has to focus simultaneously on the hard and soft sides of the team: the team must be less hierarchical, more egalitarian, and more transparent. Furthermore, project leaders have to plan for spontaneity. The dilemma is to apply Theory E incentives in an O way.

7.2 Recommendations for further research

This research has some limitations, caused by the limit of time and money. First, recommendations will be given to improve this research. Secondly, recommendations will be given for further research.

7.2.1 Limitations of this research

1. The research should include more case studies in more different organizations.

This research is only based on DHV, whereby it is hard to generalize the outcomes of this research. It is recommended to redo this research, including more case studies and more different organizations in order to improve the external validity.

2. The research should include a visit to India.

Unfortunately, it was not possible to visit India during this research project. A visit to India would add value to the research. First, because the researcher can experience the cultural differences and meet the participants, which might lead to more support for the research. The researcher can explain the goal of the research, gain trust, and convince more people to participate in the research. A visit to India can lead to more participants, less socially desirable answers and a clear view on the situation, whereby it will contribute to the internal and external validity of the research.

3. The research should use other items to measure individualism.

The items used by GLOBE did not measure the level of individualism which the researcher intended to measure. So, new items need to be developed in order to measure the level of individualism.

7.2.3 Recommendations for further research

1. Redo the same research with the focus on other countries.

The results from this research are based on the transfer of knowledge between the Netherlands and India. These results can impossibly be generalized to other countries, because the differences between organizational cultures will differ. Therefore, it would be a contribution to the international business literature to do the same research, but with the focus on other countries.

2. Research the influence of characteristics on effectiveness of knowledge transfer.

This research states that employees who are extravert, open minded towards different cultures, and different approaches, and with experiences with collaboration across countries have a positive influence on the effectiveness of knowledge transfer. However, further research is needed to support this statement.

3. Research the influence of all five dimensions of Hofstede on the effectiveness of knowledge transfer across borders.

The results from the project observations showed that a difference in level of long-term orientation negatively influences the transfer of knowledge. However, neither a quantitative research to this correlation has been done, nor a research was done to the influence of the other two dimensions of Hofstede, which are the level of uncertainty avoidance and masculinity. It is interesting to research the correlation between all five dimensions of Hofstede and the effectiveness of tacit knowledge transfer across borders.

4. Research the correlation between the intrinsic motivation and external regulation of employees to transfer knowledge.

Some theoretical research to the influence of external regulation on the intrinsic motivation of people has already been done. However, these theories were never tested, neither were these researches focused on the motivation to transfer knowledge. So, a research which examines the correlation between external regulation and intrinsic motivation would be a contribution to the science.

References

- Allen, T.J., (1977), *Managing the Flow of Technology*, Cambridge, MA, MIT Press; In Roberts, J., (2000).
- Allport, G. W., (1937), *Personality: A Psychological Interpretation*. Holt, New York; In Gupta, A.K., & Govindarajan, V. (2000).
- Almeida, P., Song, J., and Grant, R.M., (2002), *Are Firms Superior to Alliances and Markets? An Empirical Test of Cross-Border Knowledge Building*. In: Organization Science, Vol. 13, No. 2, (March – April), pp 147 – 161.
- Argote, L., (1999), *Organizational Learning: Creating, Retaining and Transferring Knowledge*. Dordrecht, The Netherlands: Kluwer Academic Publisher Group.
- Argote, L., and Ingram, P., (2000), *Knowledge Transfer, A Basis for Competitive Advantage in Firms.* In: Organizational Behavior and Human Decision Processes, Vol. 82, No. 1, pp 150–169.
- Babby E. (2004), *The practice of social research*, Thomson.
- Bartlett, C.A., and Ghoshal, S., (1989), *Managing across Borders*, Harvard Business School Press, Boston; In Dinur, A., et al., (2009).
- Beer, M. and Nohria, N. (2000). *Cracking the Code of Change*, Harvard Business Review, May-June, p.133-141.
- Bender, S. and Fish, A., (2000), *The transfer of knowledge and the retention of expertise: the continuing need for global assignments*. In: Journal of Knowledge Management, Vol. 4, No., 2, pp 125 – 137.
- Bhagat, R. S., Kedia, B. L., Harveston, P. D., and Triandis, H. C., (2002), *Cultural Variations in the Cross-Border Transfer of Organizational Knowledge: An Integrative Framework*. In: The Academy of Management Review, Vol. 27, No. 2, April, pp 204 – 221.
- Black, S., Mendenhall, M. and Oddou, G., (1991), *Toward a comprehensive model of international adjustment: an integration of multiple theoretical perspective*. In: Academy of Management Review, Vol. 16, pp 291–317; In Fang, Y. et al., (2010).
- Briggs, S.R. and Cheek, J.M. (1986), *The role of factor analysis in the development and evaluation of personality scales*. Journal of Personality, Vol. 54, pp 106 – 148.
- Buckley, P. J. and Carter, M. J., (1999), *Managing Cross-Border Complementary Knowledge Conceptual Developments in the Business Process Approach to Knowledge Management in Multinational Firms*. In: International Studies of Management & Organization, Vol. 29, No. 1, pp 80 – 104.
- Cavusgil, S. T., Ghauri, P. N., Agarwal, M. R., (2002), *Doing Business in Emerging Markets, Entry and Negotioation Strategies*, Sage Publications.
- Cohen, J.W. (1988), *Statistical power analysis for the behavioral science.* (2nd edn). Hillsdale, NJ: Lawrence Erblaum Associates.
- Cohen, W. M., and Levinthal, D. A., (1990), *Absorptive capacity: a new perspective on learning and innovation*. In: Administrative Science Quarterly, Vol. 35, pp 128–52 ; In Fang, Y., et al., (2010).
- Cummings, J. L., Teng, B. S., (2003), *Transferring R&D knowledge: the key factors affecting knowledge transfer success.* In: Technology Management, Vol. 20, pp 39 – 68.
- Daft, R.L. (2006), *Management*, Thomson.
- Darr, E. D., Argote L, and Epple D., (1995), *The acquisition, transfer, and depreciation of knowledge in service organizations: productivity in franchises*. In: Management Science, Vol. 41, No. 11, pp 1750–1762; In Kalling, T., (2003).
- Das, T. K. and Teng, B. S., (1998), *Between trust and control: developing confidence in partner cooperation in alliances*. In: Academy of Management Review, Vol. 23, pp 491–512; In: Perez, L., et al., (2008).
- Davenport, T. H. and Prusak, L., (1998) *Working knowledge*. Boston: Harvard Business School Press; In Bhagat et al., (2002).
- Devillis, R.F. (2003), *Scale development: Theory and applications* (2nd edn). Thousand Oaks, California: Sage.
- Dinur, A., Hamilton, R. D. and Inkpen, A. C., (2009), *Critical context and international intrafirm best-practice transfers*. In: Journal of International management, Vol 15, pp 432-446.

- Druckman, D., Bjork, R.A. (Eds.), (1991) *In the Mind's Eye: Enhancing Human Performance*. National Academy Press, Washington, DC; In Cummings et al., (2003).
- Dur, R. (2011); in Boland, C. (2011), *De blackbox van het bonusbeleid; variabele belonging: we doen maar wat*, Intermediar, Vol. 20, P 16 - 19
- Epple D, Argote L. and Devadas R., (1991), *Organisational learning curves: a method for investigating intra-plant transfer of knowledge acquired through learning by doing*. In: Organization Science, Vol. 2, No. 1, pp 58–70; In Kalling, T., (2003).
- Fang, Y., Jiang, G. F., Makino, S., and Beamish, P. W., (2010), *Multinational Firm Knowledge, Use of Expatriates, and Foreign Subsidiary Performance*. In: Journal of Management Studies, Vol. 47, No. 1, pp 27 – 54.
- Garcia-Pont, C., Canales, J. I. and Noboa, F. (2009), *Subsidiary strategy: the embeddedness component*. In: Journal of Management Studies, Vol. 46, pp 182–214; In Fang, Y. et al., (2010).
- Garud, R., and Nayyar, P. R. (1994) *Transformative capacity: Continual structuring by intertemporal technology transfer*. In: Strategic Management Journal, 15: 365-385; In Bhagat et al., (2002).
- Geurts, P (1999) *Van probleem naar onderzoek,* Bussum Coutinho.
- Glaser, E.M., Abelson, H.H., and Garrison, K.N., (1983). *Putting Knowledge to Use*. Jossey-Bass, San Francisco, CA.; In Cummings et al., (2003).
- Goh, S. C., (2002), *Managing effective knowledge transfer: an integrative framework and some practice implications*. In: Journal of Knowledge Management, Vol. 6, No. 1, pp 23 – 30.
- Grant, R. M. (1996), *Toward a knowledge-based theory of the firm*. In: Strategic Management Journal, Vol. 17, pp 109–22.; In Perez, L., et al., (2008).
- Greengard, S. (1998b), *Will your culture support Knowledge Management*. In: Workforce, Vol. 77 No. 10, pp. 93-4; In Bender, S. & Fish, A. (2000).
- Greengard, S. (1998c), *How to make Knowledge management a reality*. In: Workforce, Vol. 77 No. 10, pp. 90-1; In Bender, S. & Fish, A. (2000).
- Gupta, A. K., and Govindarajan, V. (1991), *Knowledge flows and the structure of control within multinational corporations*. In: Academy of Management Review, Vol. 16, No. 4, pp 768 – 792.
- Guay, F., Vallerand R.J. and Blanchard, C. (2000), *On the assessment of situational intrinsic and extrinsic motivation: The Situational Motivation Scale*. In: Motivation and Emotion, Vol. 24, pp 175–213.
- Gupta, A. K., and Govindarajan, V. (1994), *Organizing for Knowledge Flows within MNCs.* In: International Business Review, Vol. 3, No. 4, pp 443 – 457.
- Gupta, A.K. and Govindarajan, V. (2000), *Knowledge Flows within Multinational Corporations*. In: Strategic Management Journal, Vol. 21, No. 4, April, pp. 473 – 496.
- Handy, C., (1995), *Trust and Virtual Organisations*. In: Harvard Business Review, May–June, pp. 40–50; In Roberts, J. (2000).
- Hansen, M. T. (2002), *Knowledge Networks: Explaining Effective Knowledge Sharing in Multiunit Companies.* In: Organization Science, Vol. 13, No. 3, pp 232 – 248.
- Harris, L., Doughty, D., and Kirk, S. (2002), *The devolution of HR responsibilities – perspectives from the UK's public sector*. In: Journal of European Industrial Training, Vol. 26, No. 5, pp 218-229.
- Harzing, A. W. (2001), *Who's in charge? An empirical study of executive staffing practices in foreign subsidiaries*. In: Human Resource Management, Vol. 40, pp 139–58; In Fang, Y. et al., (2010).
- Hébert, L., Very, P. and Beamish, P. W., (2005), *Expatriation as a Bridge Over Troubled Water: A Knowledge-Based Perspective Applied to Cross-Border Acquisition*. In: Organization Studies, Vol. 26, No. 10, pp 1455 – 1476.
- Hofstede, G.J., Pedersen, P.B., Hofstede, G., (2002), *Exploring Culture Exercises, Stories and Synthetic Cultures*, Intercultural Press Inc.
- Holden, N. J. and Kortsfleisch, Von, H. F. O., (2004), *Why Cross-Cultural Knowledge Transfer is a Form of Translation in More Ways than You Think.* In: Knowledge and Process Management, Vol. 11. No. 2, pp 127 – 136.
- House, R., Hanges, P.M., Javidan, M., Dorfman P. and Gupta (eds), (2004), *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Sage
- Huselid, M.A. (1995), *The impact of human resource management practices on turnover, productivity, and corporate financial performance*. In: Academy of Management Journal, Vol. 38. No. 3, pp 635-672.

- Ingram P, and Baum J. A. C., (1997), *Chain affiliation and the failure of Manhattan hotels*, *1898–1980*. In: Administrative Science Quarterly, Vol. 42, pp 68–102; In Kalling, T., (2003).
- Javidan, M., Stahl, G. K., Brodbeck, F. and Wilderom, C. P. M., (2005), *Cross-border transfer of knowledge: Cultural lessons from Project GLOBE.* In: Academy of Management Executive, Vol. 19, No. 2, pp 59 – 76.
- Johanson, J. and Vahlne, J. E., (1977), *The internationalization of the firm: A model of knowledge development and increasing foreign market commitments*. In: Journal of International Business Studies, Vol. 8, pp 23–32; In Hébert, L., et al., (2005).
- Kalling, T., (2003), *Organization-internal Transfer of Knowledge and the Role of Motivation: A Qualitative Case Study*. In: Knowledge and Process Management, Vol. 10, No. 2, pp 115 – 126.
- Kumar, R. & Sethi, A.K. (2005), *Doing business in India: A guide for Western managers.* New York: Palgrave Macmillan.
- Kogut, B. and Zander, U., (1993)., *Knowledge of the firm and the evolutionary theory of the multinational corporation*. In: Journal of International Business Studies 24, pp 625–645; In Dinur, A., et al., (2009).
- Kohn, A. (1993), *Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, A's, Praise, and Other Bribes*, Boston: Houghton Mifflin.
- Lam, A. (1997), *Embedded Firms, Embedded Knowledge: Problems of Collaboration and Knowledge Transfer in Global Cooperative Ventures*. In: Organization Studies, Vol. 18, No. 6, pp 973 – 996.
- Lewis, R.D. (1999), *When cultures collide: Managing successfully across cultures.* Nicholas Brealey Publishing: Londen.
- Luecke, R.A. (2009), *Surviving change: A manager's guide: essential strategies for managing in a downturn*, Harvard Business School Press.
- Lundvall. B-A. and Johnson, B., (1994), *The Learning Economy*. In: Journal of Industry Studies, December, pp. 23–42; In Roberts, J. (2000).
- Madhok, A., (1997), *Cost, value and foreign market entry mode: The transaction and the firm*. In: Strategic Management Journal, Vol. 18, pp 39–61; In: Hébert, L., et al., (2005).
- Martin, X., and Salomon, R., (2003), *Knowledge transfer capacity and its implications for the theory of the multinational corporation.* In: Journal of International Business Studies, Vol. 34, pp 356–373; In: Hébert, L., et al., (2005).
- McGovern, P., Gratton, L., Hope Hailey, V., Stiles, P., and Truss, C. (1997): *Human resource management on the line?*. In: Human Resource Management Journal, Vol. 7, No. 4, pp 12-29.
- Mowery, D. C., Oxley, J. E., and Silverman, B.S., (1996), *Strategic Alliances and Interfirm Knowledge Transfer.* In: Strategic Management Journal, Vol. 17, pp 77 – 91.
- Nehles, A.C., Riemsdijk van, M, Klok, I. and Looise, J.K. (2006): *A First Line Management Challenge*. In: Management revue, Vol. 17, No. 3.
- Nonaka, I., (1999), *A Dynamic Theory of Organizational Knowledge Creation*. In: Organization Science, Vol. 5, No. 1, February, pp 14 – 37.
- Pallant, J. (2010), *SPSS Survival Manual*. (4th edn). Open University Press, New York.
- Pedersen, T., Petersen, B. and Sharma, D., (2000), *Knowledge Transfer Performance of Multinational Companies*. Department of International Economics and Management and Department of Marketing, Copenhagen Business School.
- Perez, L., Kedia., B. L., Datta, D. K. and Rasheed, A. A., (2008), *Effectiveness and Efficiency of Cross-Border Knowledge Transfer: An Empirical Examination*. In: Journal of Management Studies, Vol. 45, No. 4, June, pp 714 – 744.
- Pfeffer, J. (1981), *Power in Organizations,* Pitman, Marshfield, MA; In: Gupta, A.K., & Govindarajan, V. (2000).
- Ratelle, C., Baldwin, M. and Vallerand, R. (2005): *On the cued activation of situational motivation.* In: Journal of Experimental Social Psychology, Vol. 41, No. 5, pp 482-487.
- Ritzer, G., (2004), *Enchanting a Disenchanted World: Revolutionizing the Means of Consumption*, Pine Forge Press.

- Roberts, J., (2000), *From Know-how to Show-how? Questioning the Role of Information and Communication Technologies in Knowledge Transfer*. In: Technology Analysis & Strategic Management, Vol. 12, No. 4. pp. 429 – 443.
- Rubin, R. B., Palmgreen, P., and Sypher, H. E., (1991), *Communication research measures: a sourcebook.* The Guilford Press, New Jersey.
- Saunders, N.K., Lewis, P., and Thornhill, A., (2009), *Research Methods for Business Students,* 5th edition, Prentice Hall
- Sherif, M and H. Cantrill (1947), *The Psychology of Ego Involvements, Social Attitudes and Identifications,* Wiley, New York; In Gupta, A.K., & Govindarajan, V. (2000).
- Shenkar, O., & Li, J. (1999). *Knowledge search in international cooperative ventures*. In: Organization Science, 10, pp 134-143; In Bhagat et al. (2002).
- Som, A. (2009), *International Management - Managing the Global Corporation,* Glasgow: McGraw-Hill Higher Education.
- Spector, P. (2006), *Industrial and organizational psychology*, University of South-Florida.
- Stewart, T.A., (1996). *The invisible key to success*. In: Fortune, 5 August, 173–176; In Cummings et al., (2003)
- Swaak, R. (1997), *Repatriation: a week link in global HR*. In: HR Focus, Vol. 74 No. 4, pp. 29-30; In Bender, S. & Fish, A. (2000).
- Swedberg, R. (2005), *The Max Weber dictionary: key words and central concepts*. Stanford University Press. p. 18-21.
- Szulanski, G. (1995), *Unpacking stickiness: an empirical investigation of the barriers to transfer best practice inside the firm*. In: Academy of Management Journal, Best Paper Proceedings, pp 437–41; In Perez, L., et al., (2008); Hébert, L., et al., (2005).
- Szulanski, G. (1996), *Exploring internal stickiness: impediments to the transfer of best practice within the firm.* In: Strategic Management Journal, Vol. 17, pp 27–43.
- Szulanski, G., and Jensen, R. J., (2006), *Presumptive adaptation and the effectiveness of knowledge transfer.* In: Strategic Management Journal, Vol. 27, pp 937 – 957.
- Teece, D. J., Pisano, G. and Shuen, A., (1997), *Dynamic capabilities and strategic management*. In: Strategic Management Journal, Vol. 18, pp 509–33; In Perez, L., et al., (2008).
- Triandis, H. C. (1995), *Individualism and collectivism,* Boulder, CO: Westview; In Bhagat, R., et al., (2002).
- Triandis, H. C. (1998), *Vertical and horizontal individualism and collectivism: Theory and research implications for international comparative management*. In: Advances in International Comparative Management, Vol. 12, pp 7-35; In Bhagat, R., et al., (2002).
- Trompenaars, F., (1993), *Zakendoen over de grens: Leren omgaan met andere culturen.* Amsterdam/ Antwerpen: Uitgeverij Contact.
- Vallerand, R.J, Biais, M.R., Briere, N.M., & Pelletier, L.G. (1989), *Construction and validation of the Echelle de motivation en education (EME).*In:Canadian Journal of Behavioural Sciences. Vol. 21,pp 323–349.
- Weber, M. (1947), *The Theory of Social and Economic Organization*, London: Collier Macmillan Publishers.
- Wernerfelt, B. (1984), *A resource-based view of the firm*. In: Strategic Management Journal, Vol. 5, pp 171–80; In Perez, L., et al., (2008).
- Winkler, J.K., Dibbern, J, and Heinzl, A. (2008), *The impact of cultural differences in offshore outsourcing—Case study results from German–Indian application development projects.* In: Inf Syst Front Vol. 10, pp 243–258.
- Yin, R.K. (2003): *Case Study Research: Design and Methods (3rd ed.)*, Sage Publications, Thousand Oaks, California, USA
- Zaltman. G., R. Duncan and J. Holbek (1973). *Innovations and Organizations*. Wiley, New York. In: Szulanski (1996).

Other

- Cushman & Wakefield, Ecorys, DHV, KuiperCompagnons, (2010), *Epicentre of Prosperity, Delhi – Mumbai Industrial Corridor Corporation LTD.,* Preperation of Development Plan for Khushkhera – Bhiwadi – Neemrana, Inception Report Part A and Part B.
- Inception Report, Kolkata Environmental Improvement Project, 2003

Websites

- www.DHV.com
- www.NPC.eu
- www.geert-hofstede.com
- http://www.keip.in/bl3/
- http://dmic.co.in/

Appendix A: Company description DHV

DHV-Rail & Stations is one of the departments of DHV-Group. In this appendix first DHV-Group will be described and second DHV-Rail & Stations.

DHV-Group

DHV-Group (DHV) is a leading international consultancy and engineering firm, providing services and innovative solutions in Transportation, Water, Building & Industry, Urban and Regional Development, and Environment & Sustainability. DHV offers services, including management consultancy, advice, design and engineering, project management, contract management and asset management.

DHV, headquartered in the Netherlands, is maintains a network of 75 offices worldwide. Figure 7 shows the international organization chart.

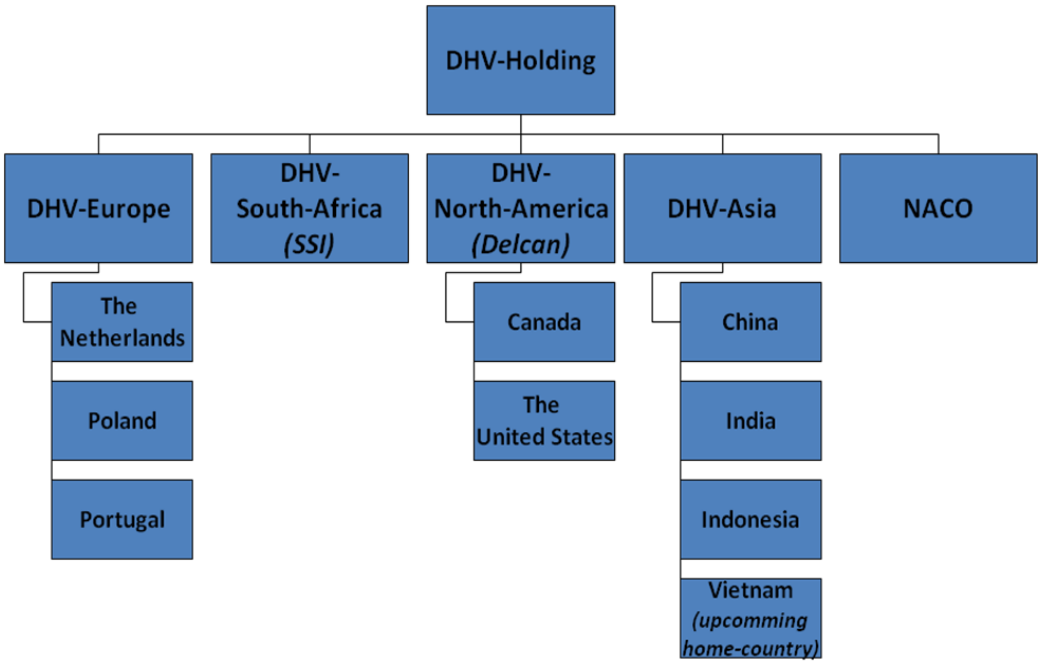


Figure 7: Organization chart DHV-Group

The DHV-Group has a staff of 6000 in a total of 75 offices worldwide. Its net turnover in 2009 was € 481 million.

Their mission is to provide multidisciplinary services for the sustainable development of the living environment, in a close relationship with clients, employees, and partners, based on mutual loyalty, while providing a solid return to their shareholders.

DHV aims to be a leading international engineering consultancy firm, active in both public and private sectors and which is open to lasting partnerships based on shared values.
Their ambitions are to focus on their clients, be appropriately rewarded for the value they bring (profitability), and be recognized for innovation and sustainability.

Their core values are integrity, respect and freedom. These values are reflected in their commitment to social responsibility and liability. DHV stimulates empowerment, coupled with a strong personal and professional responsibility. They respect other visions and support freedom of thought and action.

Their most important clients are governments, utilities and semi-governments, industry and business services, contractors and developers, and international financial institutions.

Vision 2015

DHV started as local companies and expanded by taking expertise abroad. More recently they have grown through cooperation between regions and international expertise positions. The next step is to build a transnational network, with centers of expertise in more regions, clearer definition of roles and responsibilities, and disciplined collaboration. This will be made more explicit and supported by incentives. Home countries are the anchoring points for developing this network. Achieving top positions in national markets and building on world-wide expertise positions provide the foundation of their success.

During 2010 - 2015 DHV will focus on the global markets of Water and Transportation. DHV will outperform peers in their home countries within 2 till 5 years and build global positions in select expertise areas, linked to their main market focus. In the other markets, DHV will concentrate on achieving recognized top positions at a national level.

Long term relationships and understanding local context are invaluable to growing business. DHV will concentrate business development on their home countries, most of which are expected to show the most positive economic growth of their regions. The aim is to reach a recognized national top three position, based on market share or a minimum turnover of at least € 25 million in a home country.

DHV history - milestones

- 1919, January 1st: the "United Engineering Consultancies for Construction and Hydraulic Engineering in Rotterdam and The Hague" was founded, but the name DHV - taken from the names of Dwars, Heederik and Verhey, would endure.
- 1952: DHV undertook its first overseas assignment, in Syria.
- 1970, December 1st: the Dutch Pollution of Surface Waters Act came into effect, which led to a period of growth for DHV, which was a leading authority in the area of water purification.
- Early 1980s-1990s: DHV began to concentrate on overseas growth. Its process of internationalization was continued, helped by participation in a number of overseas engineering consultancies and later, in the 1990s, by acquisitions.
- 1982/83: Financial losses led to major reorganization.
- 1991, January 1st: DHV Raadgevend Ingenieursbureau changed its name to the DHV Group, a group of market-oriented specialist companies.
- 1995: Financial losses have led to major reorganization.
- 2002 – 2005: DHV became increasingly international:
    - 2002: DHV acquired a 40% interest in the Canadian engineering firm Delcan.
    - 2003: DHV took over (100%) NACO, Netherlands Airport Consultants.
    - 2005: DHV increased its participating interest in its South African partner SSI to 65%. As a result, DHV is the first Dutch consultancy and engineering firm with a majority interest in a South African consultancy firm.
- 2007: DHV finished the project of widening the Panama Canal.

- 2007: DHV completes the Dutch high-speed train line (South).
- 2008: The South African Turgis Consulting (mining) and Innova Aviation Consulting companies were added.
- 2009: The Dutch NPC (station and station areas) company was added.
- Early 2010: the Board of Directors of the DHV Group decided to render its business activities climate-neutral and, in this way, contribute to resolving the climate crisis.

DHV regions and markets

At this moment DHV operates worldwide via a network of local offices in Europe, Asia, Africa and North- America. Operations in the following home countries account for the greater part of their total turnover:

- Europe (2,899 employees in 19 offices): the Netherlands, Poland and Portugal.
- Asia (815 employees in 10 offices): China, India and Indonesia. Vietnam will be a focus country the coming years.
- Africa (1.015 employees in 25 offices): South-Africa.
- North-America (591 employees in 19 offices): Canada and the United States.

DHV has the following markets: Transportation, Water, Building & Industry, Urban and Regional Development, Environment & Sustainability. Every market has its own sub-divisions. The demand to this research comes from DHV-Rail & Stations. DHV-Rail & Stations is part of the market 'Transportation'.

DHV-Rail & Stations

The department Rail & Stations consists of DHV-Rail and NPC. The focus of DHV Rail is on consulting, designing, and supervising infrastructural modifications in the field of rail. NPC was formerly part of Dutch Railways (Nederlandse Spoorwegen, NS). NPC used to be an abbreviation for NS ProjectConsult. On March 1st, 2009, DHV took over NPC, whereby their expertise on the field of rails and station expanded. In the rail market DHV-Rails engages in the planning and implementation of complex adaptations of existing and yet to be built rail infrastructure. DHV-Rails also manages 60 km of rail infrastructure for private parties. DHV-NPC focuses on the development, renovation, furnishing, and management of stations (or station areas) and sites. This combined knowledge makes DHV-Rail & Stations a leading Dutch consulting firm in the rail sector.

DHV-Rail & Stations has experience in an integrative approach, covering the entire railway planning process: from initial studies and conceptual design, to project management and construction supervision.
At DHV-Rail & Stations, about 200 professionals are working throughout the Netherlands. DHV-Rail & Stations is headquartered in Utrecht. Their clients are the Dutch railways, ProRail, municipalities, provinces, metropolitans, and regional- and municipal transporters. It is a flat organization with short connections.

DHV-Rail has 3 different departments:

- Technical teams
- Project management
- Network studies

NPC has five different departments:

- Consultancy
- Expert centre
- Proces management

- Region North (Amsterdam and Zwolle)
- Region South (Rotterdam and Eindhoven)

It has expertise in Station and station area development, Transfer and passenger logistics, Commercial and functional design of stations, Safety and security, and Transfer facilities between forms of public transport.

Appendix B: Approach of Literature review

This section explains the strategy used to write the literature review. This strategy has been set up according to the theory described in Saunders, Lewis, and Thornhill (2009). Step-by-step will be explained how the literature review has been done.

Step 1: Research question defined

In order to avoid an information overload, a research question has been defined. The research question is:

Which factors influence the effectiveness of cross border transfer of knowledge and how can DHV-NPC take these factors into account with the transfer of knowledge between The Netherlands and India, in order to achieve economic benefit?

The research question includes the objective of my research: to find factors which influence cross border transfer of knowledge.

Step 2: Parameters of the search defined

Parameters which are needed for this research had to be clear. These parameters derived from the research question and the courses taken in the master period:

- Language of publication: English
- Subject area: international management/ knowledge management/ Transfer of knowledge
- Business sector: consultancy
- Geographical area: Europe and India
- Publication period: last 20 years
- Literature type: academic journals and books

Step 3: Databases chosen

This research used the following data bases:

- Quicksearch search engine of the University of Twente:
    - Scopus
    - Web of Science
    - PiCarta
- isiknowledge
- scholar.google
- Library University of Twente

For searching within literature the Quicksearch search-engine of the University of Twente has been used. This search-engine includes 3 databases: Picarta, Scopus and Web of Science. Searching in those databases, offers coverage of the 25 best-rated journals.

Most of the selected articles are from the top management journals, which are:

- Academy of Management Review
- Academy of Management Journal
- Administrative Science Quarterly
- Strategic Management Journal
- Organization Science

The top journals in international management are:

- Journal of International Business Studies
- Journal of World Business
- Management International Review

Step 4: Key words and search terms generated
Out of the research question, key words can be defined. The first key words were:

- Transfer of knowledge/ knowledge transfer/ transferring knowledge
- Cross border transfer of knowledge/ cross border knowledge transfer/ transfer of knowledge across borders/ knowledge transfer across borders
- Transfer of knowledge to India/ transfer of knowledge towards India/ transfer of knowledge from the Netherlands/ transfer of knowledge to emerging economies
- Collaboration between the Netherlands and India/ Cross border collaboration/ Collaboration with India
- Communication between the Netherlands and India/ Communication across borders/ Communication with emerging economies
- Sharing information across borders/ intra-organizational information sharing.

These key words led to certain articles. Within these articles is referred to the same authors over again. So, backward searching to these authors was the next step.

Step 5: Source of literature defined
The literature research contains primary, secondary and tertiary literature sources. However, the focus of the literature review is on secondary sources, such as (academic) journals and books. These secondary sources are mainly found by the use of tertiary sources: abstracts and indexes. Finally, two theses are used to achieve more insight in the topic.

Step 6: Create an overview of found literature
After reading the found articles, an overview of the found literature was created. This was done by defining the underlying theory evaluated or proposed by each paper. Per article key words were written down to get insight in the main topics which are related to the field of international transfer of knowledge. These topics are shown in an excel sheet (see table 10: Overview of Literature Review). The topics which were found, were clustered into 4 main topics, which are bolded in the excel sheet. This categorization was based on the founded literature.

	Mot	NIH	Sharing	Opp	RQ	Rewards	Mot to learn	**CT**	ICT	F-t-F	**HR**	Expats	**Diff Culture**	Culture Org	Culture Cou	Lang	CultDim	**AC**
1993, Trompenaars													**x**	x				
1996, Szulanski	x		x	x	x		x											x
1997, Lam													x	x				
1999, Buckley & Carter	x	x	x	x														
1999, Nonaka																		
2000, Argote														x				x
2000, Bender&Fish						x		x		x	x	x	x	x				
2000, Pedersen et al								x		x								
2000, Roberts	x		x		x			x	x	x								
2000, Gupta & Govindarajan	x	x	x			x		x		x	x							x
2001, Tsai																		x
2002, Almeida et al	x																	x
2002, Bhagat et al	x												x		x		x	x
2002, Goh	x		x		x	x		x	x	x	x		x	x				
2002, Hofstede													x		x		x	
2003, Kalling	x						x	x		x								x
2004, Holden & Kortsfleisch								x					x			x		
2005, Javidan et al	x												x		x	x	x	
2005, Hebert et al										x	x	x						
2008, Perez et al	x	x			x		x						x		x		x	
2009, Dinur et al	x				x		x	x		x			x	x	x		x	
2010, Fang et al	x				x			x		x	x	x						x

Table 10: Overview of Literature Review

Legend of table 10:

- NIH: Not Invented Here Syndrome
- Sharing: Sharing knowledge with colleagues
- Opp: Opportunism
- RQ: Relationship Quality
- Mot to learn: Motivation to learn of receiver
- CT: Communication tools
- ICT: Information and communication technologies
- HR: Human resource policy
- Expats: Expatriates
- Culture org: culture of the organization
- Culture Cou: Culture of country
- Cult Dim: Cultural dimensions
- AC: Absorptive capacity

Out of this excel sheet a tree has been created to obtain an overview of the literature (see figure 8). After the first phase of seeking literature, some areas needed more literature references. These areas are starred (*).

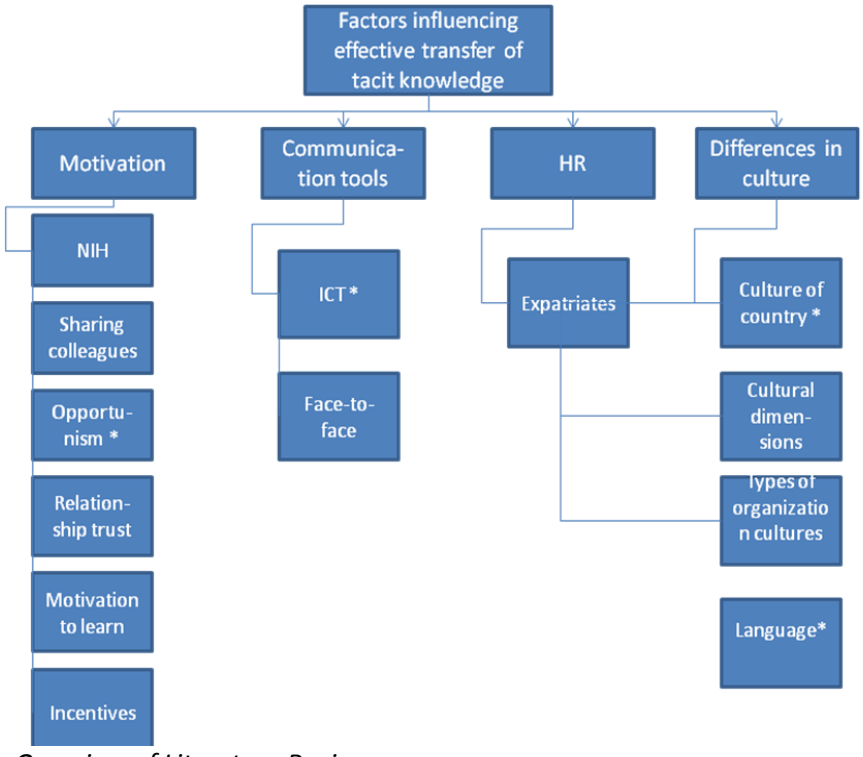


Figure 8: Overview of Literature Review

Step 7: Further literature explored

The overview showed which topics needed more research. In the same way as described above, more articles were found on these topics.

Step 8: Work discussed

In order to find the right articles and books, the research has been discussed several times with friends and colleagues. The ideas, feedback, new approaches acquired by these discussions, were used in the process.

Appendix C: Knowledge Hierarchy

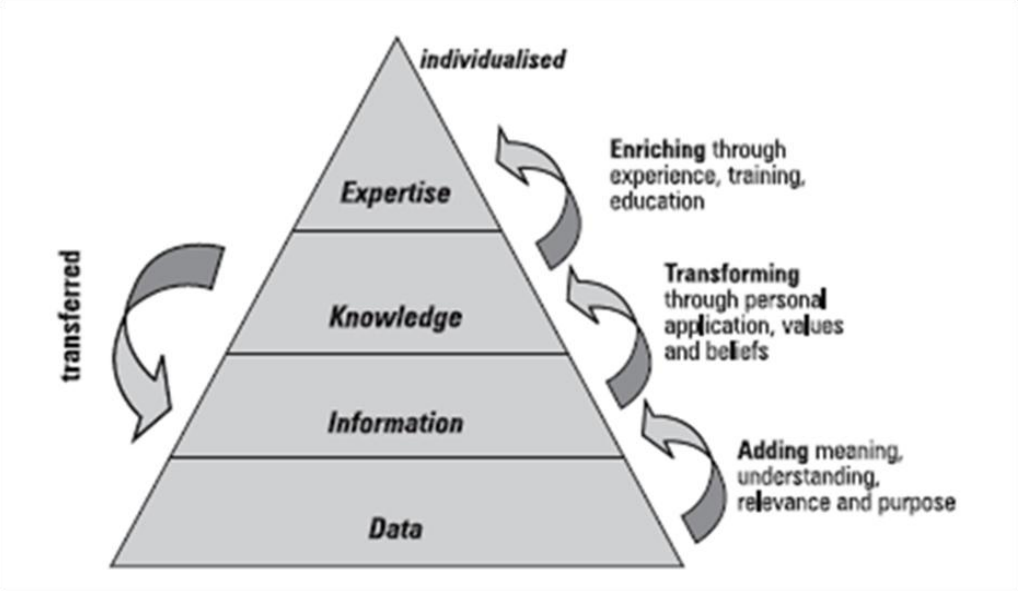


Figure 9: Knowledge hierarchy (Bender and Fish; 2000)

Appendix D: The culture of The Netherlands

The Netherlands can be defined as a developed country. The World Bank shows the following data: The Netherlands is a country with a population of 16,445,593. The Gross National Product (GNP) per capita shows the total economic activity in money created per inhabitant of the country. The GNP per capita in The Netherlands is $49,340. They are on the seventh place in rank of the highest GNP per capita – the highest is $84,003 and the lowest is $320. Life expectancy can be used to determine health levels and is in The Netherlands 80 years. The literacy rate and poverty rate are unknown by the World Bank. The literacy rate is a good measure for the education level and the poverty ratio is the percentage of the population living below the national poverty line. The first one is probably unknown, because it is obligatory to go to school until the age of 16.

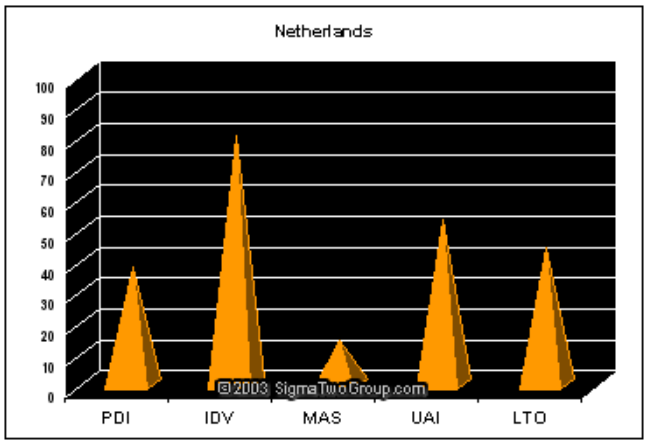
The Netherlands' religious demographics indicate no predominate religion (over 50%) being practiced within the country. However, the largest portion of the population (39%) identifies themselves as Atheist. The next highest practicing group is Catholic at 31%, followed by Christians at 21%, Muslims at 5%, and others with 4%.

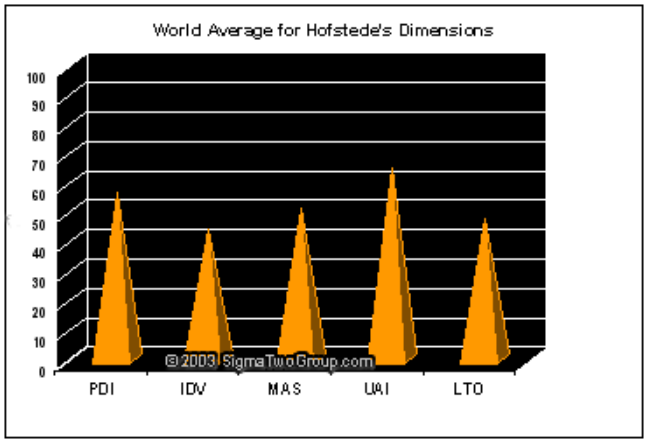
The Dutch daily life is very structured. Their private life, as well as their business life, is well planned. Dutchmen are very individualistic and appreciates privacy. Therefore their private and business lives are very well separated at the work floor. The closest relatives are their partner and children. Friends are most of the time more important to a Dutchman than their brothers and sisters.

Dutchmen derive status from their education level, personal successes and their career. However, it is not customary to boast about these successes.
Dutchmen have trouble to accept hierarchy, especially when the differences are huge. Therefore, most Dutch organizations have a flat structure.
In a Dutch organization many meetings are held, for which agendas are always prepared. It is important to gain insight in the views of all who are involved. Furthermore, Dutchmen prefer to research everything in detail before they make a decision. This way of working seems for foreigners very inefficient.

The Dutch social etiquette is informal. Their way of communication is very direct, which might confuse foreigners. Dutchmen prefer to be open and honest. They criticize work done by others and expect the same for their own work.
Dutchmen appreciate intensive eye contact, which is a sign of reliability and sincerity. However, the physical distance between individuals is huge.

Hofstede (2003) mapped the culture of The Netherlands by using his five cultural dimensions. The graphs below show the results of his research. The first graph shows the ranking for The Netherlands, the second shows the world's average.
The most striking results out of the research of Hofstede will be discussed. The Netherlands highest Hofstede Dimension is Individuality at 80, which ties with Canada as the fourth highest worldwide Individuality ranking, behind the United States (91), Australia (90), and the United Kingdom (89). The high Individualism ranking for the Netherlands is indicative of a society with more individualistic attitudes and relatively loose bonds with others. The population is more self-reliant and looks out for themselves and their close family members. This individuality is integral to in the daily lives of the population and must be considered when doing business in this country. Due to the importance of the individual within the society, individual pride and respect are highly held values and degrading a person is not well received, accepted, or appreciated.





www.hofstede.nl

The second highest Hofstede dimension for the Netherlands is Uncertainty Avoidance at 53, compared to a World average of 64.
The lowest Hofstede Dimension for the Netherlands is Masculinity at 14. This relatively low Masculinity Index value may be indicative of a low level of differentiation and discrimination between genders. In this culture, females are treated more equally to males in all aspects of society. This low Masculinity ranking may also be displayed as a more openly nurturing society.

The Netherlands can be defined as horizontal-individualist culture. This means that The Netherlands are quite adept in articulating and absorbing knowledge that is explicit and independent of context and are most effective in transferring knowledge to other horizontal individualist cultures (Bhagat et al., 2002). Horizontal individualists are self-reliant, but they do not like people who stick out (Triandis, 1995, 1998; in Bhagat et al., 2002). Horizontal individualists are more comfortable in transferring and receiving knowledge that, in addition to being logical and abstractive, also helps in sustaining the sameness of the self with others.

These cultural characteristics influence the organization culture. Dutch organizations are in general very flat, which means that there are little people on the top and a lot of people on the base of the pyramid. Jobs are well defined and all employees know what they are supposed to do. Everything is coordinated from the top and the person holding the top position could be replaced at any time without having an effect on the work being done. Decisions are made rational and based on rules. The employees derive their status from their function, education, and capabilities. Foreigners describe these organizations as impersonal and efficient.

Appendix E: The culture of India

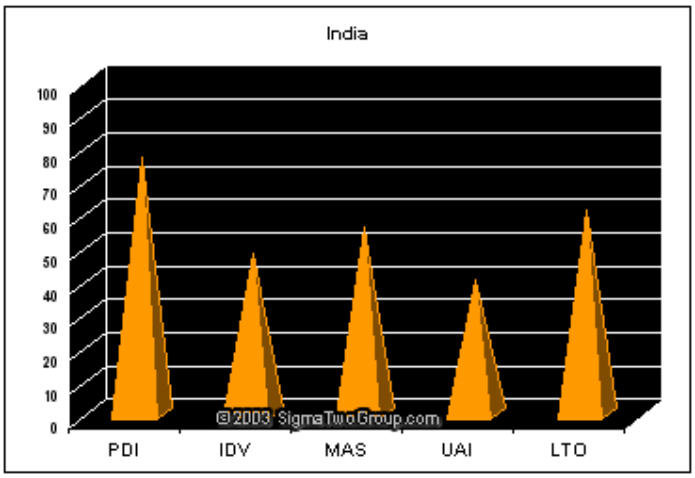
India can be defined as an emerging economy. There are several different definitions used in academic literature on what an emerging economy or market is. But all have in common that it must be (1) a country in the transition from developing to developed, (2) showing steady growth of wealth (GNP, health, education, etc) and (3) offering opportunities for business (trade, investment, etc).
The World Bank shows the following data: India is a country with a population of 1,139,964,932. The Gross National Product (GNP) per capita shows the total economic activity in money created per inhabitant of the country. In India the GNP per capita is $1,040. The poverty headcount ratio in 2008 was 28.6%, in comparison to 36% in 1994. The poverty ratio is the percentage of the population living below the national poverty line. Life expectancy can be used to determine health levels and foreign direct investment as criteria for opportunities for business. The life expectancy in India is at this moment 64 and it is increasing. The literacy rate is a good measure for the education level and is 63% in comparison to 41% in 1981. The profit remittance on foreign direct investment (FDI) is $10,140,826,212. The results indeed show growth and this combined with the 128th place worldwide for the GNP per capita classify India as an emerging economy.

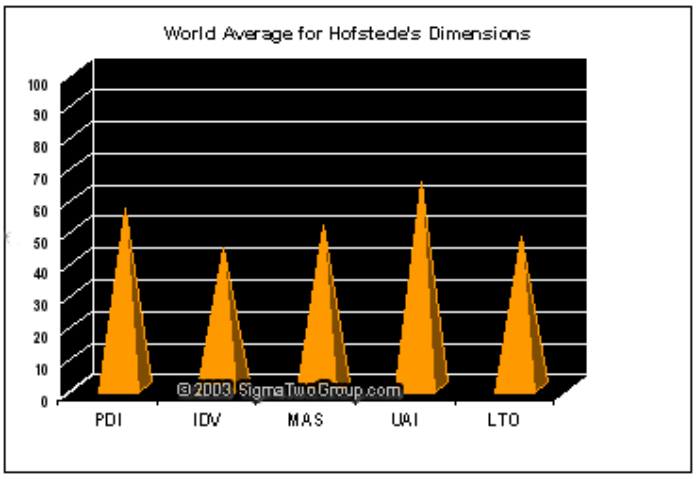
After decades of isolation and restriction on FDI in 1991 India opened its economy to foreign firms and investors. India is a country which has many well-educated people. About 125,000 engineers graduate every year, twice as many as in the United Stated. Indian companies are very active in e-commerce and wireless technology (Cavusgil, Ghauri, Agarwal, 2002).
Liberalization in India provides enormous opportunities for Western firms, especially in consumer goods, to satisfy the demand of the more than 300 million members of the middle class.
India has a relatively well-developed infrastructure, distribution channels, and a well-trained and educated workforce.
It is relatively easy to identify opportunities to do business in India and to conduct feasibility studies, because it is possible to find reliable information and learn local business practices. In India, there are three organizations which are willing to help foreign investors with information on their member organizations and industries. These three organizations are: Associated Chamber of Commerce, The Confederation of Indian Industries and The Federation of Indian Chamber of Commerce and Industry (Cavusgil, Ghauri, Agarwal, 2002).

Although the Indian market is really attractive for Western countries, for example because of their well-qualified and motivated workforce and their huge rural market, the main problem is that the Indian partner may have personal ambitions and dreams that may not be consistent with the Western firm's objectives. Indians are less sensitive for deadlines, because they pursue an ideal end result. This ensures that Indians find it hard to compromise and to work in a team.
Furthermore, Indians prefer to work in a hierarchical system. However, their employer needs to be very social. When this is the case, the work ethics of Indians is very strong (Lewis, 1999; Kumar & Sethi, 2005).

Indians have little need for privacy. They prefer to have their emotions on the surface. The Indian norms and values are aimed the family ties. Within families and other social groups loyalty is appreciated. The honor of the family and social groups is strong defended. Indians also appreciate material success and creativity.

The dimensions of the culture of India also have been surveyed by Hofstede. The first graph shows the outcome of the dimensions in India, the second graph shows world's average.





www.hofstede.nl

The power distance has been ranked the highest of the five dimensions of Hofstede in India, with a ranking of 77 compared to a world average of 56.5. This Power Distance score for India indicates a high level of inequality of power and wealth within the society. This condition is not necessarily subverted upon the population, but rather accepted by the population as a cultural norm.
The dimension Long Term Orientation rank is 61, with the world average at 48. A higher score can be indicative of a culture that is perseverant and parsimonious.
India has Masculinity as the third highest ranking Hofstede Dimension at 56, with the world average just slightly lower at 51. The higher the country ranks in this dimension, the greater the gap between values of men and women. It may also generate a more competitive and assertive female population, although still less than the male population.
India's lowest ranking dimension is Uncertainty Avoidance at 40, compared to the world average of 65. On the lower end of this ranking, the culture may be more open to unstructured ideas and situations. The population may have fewer rules and regulations with which to attempt control of every unknown and unexpected event or situation, as is the case in high Uncertainty Avoidance countries.

India can be defined as a vertical collectivism. India's caste system is deeply ingrained in differences in social and occupational roles, and although no longer accepted by the government, it is still important among the masses (Bhagat et al., 2002). Vertical collectivist cultures are more sensitive to information and clues coming from authorities and more sensitive to knowledge that includes information on hierarchy. Transferring knowledge from a vertical collectivist culture firms encounter

difficulties mainly because of the fact that while the broad context of collectivism facilitates transfer, the differences owing to horizontalness versus verticalness may impede such transfers (Bhagat et al., 2002).

These cultural characteristics influence the organization culture. Indian organizations are in general very hierarchical. Power is very important in these organizations. The leader is regarded as a caring parent who knows what's best for his personnel. A leader has been selected because of his social skills, he might not always be the best person for the job. Decisions are made based on intuition instead of ratio. There are no decisions taken without the approval of the leader. Employees derive their status from the person they are and from personal relations with people of high status. These organizations are characterized by traditions, customs, and associations that bind together the personnel and make it difficult for outsiders to become member.

Appendix F: Items Motivation source and receiver

What I want to research in this section:
Motivation: The willingness among employees to successfully transfer knowledge across borders.

- Is the respondent motivated to share knowledge (motivation source)?
- Is the respondent motivated to receive knowledge (motivation receiver)?

Motivation of the source and receiver
This can be researched by the Situational Motivation Scale.

Situational Motivation Scale (SIMS) (Guay, Vallerand and Blanchard, 2000)
The Situational Motivation Scale (SIMS; Guay, Vallerand & Blanchard, 2000) will be used to measure the employees' desire to transfer knowledge. The SIMS is a reduced version of the Academic MotivationScale (AMS; Vallerand et al., 1989), which was composed to assess students' contextual motivation toward education activities. The SIMS contains of four subscales, namely intrinsic motivation, extrinsic motivation, which is assessed by the subscales identified regulation and external regulation, and a-motivation. There are 4 items per subscale and thus a total of 16 items. For this questionnaire I used 2 items per subscale, so a total of 8 items.

One item of the intrinsic motivation subscale was reformulated in order to assess the perceived value of transfer of knowledge for employees. Again, an example might illustrate this: The original question from the SIMS reads: "Why are you currently engaged in this activity?" The specific item adapted to the value of transferring knowledge reads: "Why are you currently engaged in transferring knowledge between India and the Netherlands?"

A 5-point Likert scale is used: (1) corresponds not at all, (2) corresponds a little, (3) corresponds moderately, (4) corresponds enough, (5) corresponds exactly.

The items look as follows:

Intrinsic motivation (Alpha .95)
Because I think that this motivation is interesting
Because I think that this activity is pleasant
Because this activity is fun
Because I feel good when doing this activity

Identified regulation (Alpha .80)
Because I am doing it for my own good
Because I think that this activity is good for me
By personal decision
Because I believe that this activity is important for me

External regulation (Alpha .86)
Because I am supposed to do it
Because it is something that I have to do
Because I don't have any choice
Because I feel that I have to do it

A-motivation (Alpha .77)

There may be good reasons to do this activity, but personally I don't see any
I do this activity but I am not sure if it is worth it
I don't know; I don't see what this activity brings me
I do this activity, but I am not sure it is a good thing to pursue it

Appendix G: Items Relationship Quality

What I want to research in this section:
Motivation: The willingness among employees to successfully transfer knowledge across borders.

- Relationship quality

- How is the relationship quality of the respondent and the receiver of his knowledge? (Relationship quality)?

Relationship quality
The relationship quality will be measured by the measurement of Szulanski (1996):
Relationship Quality (a = 0.71, Items = 3)

Communication between <source> and <receiver> is:
1. VERY EASY
2. FAIRLY EASY
3. FAIRLY DEMANDING
4. VERY DEMANDING

Collaboration between <source> and <receiver>:
1. IS SOUGHT ACTIVELY BY <SOURCE>
2. IS WELL RECEIVED BUT NOT SOUGHT BY <SOURCE>
3. IS PREFERABLY AVOIDED BY <SOURCE>
4. OCCURS ONLY IF <SOURCE> HAS NO CHOICE

Collaboration between <source> and <receiver>:
1. IS SOUGHT ACTIVELY BY <RECEIVER>
2. IS WELL RECEIVED BUT NOT SOUGHT BY <RECEIVER>
3. IS PREFERABLY AVOIDED BY <RECEIVER>
4. OCCURS ONLY IF <RECEIVER> HAS NO CHOICE

Appendix H: Items Communication Tools

What I want to research in this section

- Use of ICT
- Existence of face-to face contact

Use of Communication Tools

- Of the total time you engage in communication with India, about what percentage of the time **do you use** the following methods to communicate?
    - Written ___%
    - Face-to-face ___%
    - Telephone ___%
    - Other (specify) ___%

      _____
- Of the total time you engage in communication with India, about what percentage of the time you **should use** the following methods to communicate most effectively:
    - Written ___%
    - Face-to-face ___%
    - Telephone ___%
    - Other (specify) ___%

      _____
- How often do you visit India?
- How long does a visit in general take?
- How often does your Indian colleague visit you in the Netherlands?
- How long does a visit in general take?
- I think face-to-face contact is necessary:
    - To be able to understand the expectations of my Indian colleagues.
    - To be able to understand the way my Indian colleagues are working.
    - For my Indian colleagues to understand my expectations.
    - For my Indian colleagues to understand the way I work.
    - To successfully complete a project.
- How do you feel about communications in general at DHV, including the amounts of information you receive, the accuracy of information available, interaction with colleagues abroad, etc.

Appendix I: Items Use of Expatriates

What I want to research in this section:

- Are expatriates used to transfer knowledge

Use of Expatriates

- At DHV a socialization process to transfer experiences, knowledge and socially embedded skills of Dutch expatriates to Indian managers exists.
- At DHV a training program to transfer experiences, knowledge and socially embedded skills of Dutch expatriates to Indian managers exists.
- At DHV repatriates help expatriates for their preparation for their assignment in India.
- At DHV expatriates are in contact with an Indian repatriate during their stay in India.
- At DHV a Dutch repatriate helps the expatriate to prepare their return to the Netherlands.
- I contact a Dutch expatriate in India when I need to get in contact with a Indian employee.
- A Dutch expatriate facilitates communication between me and my Indian colleagues.
- I ask Dutch expatriates in India to help in negotiations with Indian employees.

Appendix J: Items Differences between Organizational Cultures

What I want to research in this section:
In this section, the beliefs about what the norms, values, and practices are in the organization in which the participant works is researched. In other words, the way his/ her organization is—not the way he/ she thinks it should be.

Culture of the organization: Shared motives, values, beliefs, identities, and interpretations or meanings of significant events within an organization that result from common experiences of employees and the behavior of employees resulting from these values and norms (GLOBE, see Javidan et al., 2005).

The differences in culture will be measured by the following two variables:

- Power Distance
- Individualism

In order to measure these variables, the questionnaire of GLOBE has been used. This questionnaire asks questions about the 5 dimensions of Hofstede. The questions about Power Distance and Individualism are selected for this questionnaire.

How are the dimensions of Hofstede in the organization (total 14 items):

- Power distance: (un)equal power distribution (7 items)
- Individualism: the amount individuals are integrated into groups (8 items)
- Awareness of differences between the cultures of DHV-BV and DHV-India (2 items).

The questions of this section are from the GLOBE research, used by Javidan et al. (2005).
As discussed in Chapter 8 of the 2004 book (House, Hanges, Javidan, Dorfman, & Gupta, 2004), as well as further detailed in Hanges & Dickson (in press at The Leadership Quarterly), the GLOBE culture scales were developed in a theory-driven manner. Before the items were written, the various culture constructs that needed to be measured, were defined, and the general nature of these constructs were specified. The selection and definitions of the culture dimensions were developed after a review of the culture literature (Guidelines for the Use of GLOBE Culture and Leadership Scales, August 1, 2006).

The scales were developed with the expectation that the measured constructs would have a convergent-emergent nature. These constructs are convergent because the responses from people within organizations or societies have been shown in the GLOBE research to have high inter-rater agreement represented by scale means. They are called emergent because even though the origin of these constructs is a function of the cognition, affect, and personality of the survey respondents, the properties of these constructs are actually manifested at the aggregate—or group—(e.g., organization or society) level of analysis (see Chapter 8, Hanges & Dickson, and Chapter 21, Dorfman, Hanges, & Brodbeck in the 2004 book).

Consistent with this definition of these constructs, a variety of statistical analyses to assess the psychometric properties were performed (e.g., rwg, ICCs, multilevel confirmatory factor analyses, reliability analysis) of our scales. Overall, these statistical analyses supported the following conclusions:

• Respondents converged in their descriptions of organizational and societal culture.

• Scales were uni-dimensional at the organizational and/or societal level. (It should be noted that due to sample size issues at the aggregate level of analysis and the desire to confirm the constructs that were previously identified qualitatively, the factor analyses were performed one scale at a time).

• Scales were reliable at the organizational and/or societal level.

As described in Chapters 8 and 9 of the 2004 book (House et al., 2004) , the construct validity of the culture scales was confirmed by examining the correlations between the GLOBE scales with independent sources (e.g., Hofstede's culture dimensions, Schwartz's value scales, World Values Survey, and unobtrusive measures).

The GLOBE scales were designed to be psychometrically sound at the organizational and societal levels of analysis. This means that the scales were designed to explain "between-organization" differences or "between-society" differences. The scales were not designed to explain "between-individual" differences. The reliability of the scales is a joint function of inter-rater agreement and inter-item consistency.

The items used in this research:

- At DHV-India, a chain of command is well stipulated and communicated.
- At DHV-India, a person's influence is based primarily on one's ability and contribution to the organization.
- At DHV-India, people are generally not dominant at all.
- At DHV-India, group members take pride in the individual accomplishments of their group manager.
- At DHV-India, subordinates are expected to obey their boss without question.
- At DHV-India, group managers take pride in the individual accomplishments of group members.
- At DHV-India, people in positions of power try to strongly increase their social distance from less powerful individuals.
- At DHV-India, managers encourage group loyalty even if individual goals suffer.
- At DHV-India, people are generally not at all concerned about others.
- The pay and bonus system at DHV-India is designed to maximize individual interests.
- At DHV-India, people are generally not at all sensitive toward others.
- At DHV-India, people are generally very unfriendly.
- At DHV-India, people are generally not at all generous.
- At DHV-India group cohesion is far more valued than individualism.
- I experience cultural differences between DHV-the Netherlands and DHV-India.
- The biggest cultural difference I experience with my Indian colleagues is:

Appendix K: Items Absorptive Capacity

What I want to research:

- The absorptive capacity of the receiver of the knowledge.
- The retentive capacity of the receiver of the knowledge.

For this part of the questionnaire, the questionnaire of Szulanski (1996) has been used.
These questions are reformulated to what the receiver does when he receives the information.

Receiver lacks absorptive capacity (a = 0.83, Items = 9), default scale

Members of <receiver> have a common language to deal with the <practice>;
<receiver> had a vision of what it was trying to achieve through the transfer;
<receiver> had information on the state-of-the-art of the <practice>;
<receiver> had a clear division of roles and responsibilities to implement the <practice>;
< receiver> had the necessary skills to implement the <practice>;
<receiver> had the technical competence to absorb the <practice>;
<receiver> had the managerial competence to absorb the <practice>;
It is well known who can best exploit new information about the <practice> within <receiver>;
It is well known who can help solve problems associated with the <practice>.

Receiver lacks retentive capacity (a = 0.81, Items = 6), default scale

<receiver> periodically retrains existing personnel on the <practice>;
<receiver> has mechanisms to detect malfunctions of the <practice>;
<receiver> regularly measures performance and corrects problems as soon as these happen;
<receiver>'s personnel can predict how they will be rewarded for good performance in the <practice>;
<receiver>'s personnel are provided with numerous opportunities to commit freely and publicly to perform their role;
At <receiver> there is a clear focal point for the < practice>.

Appendix L: Assessing the factors influencing effective cross border transfer: Development and validation of the research instrument questionnaire

Concept	Operationalization	Measures and constructs
Motivation	Personal motivation of the sender to share knowledge and of the receiver to achieve knowledge	General Motivation: • Motivation sender (16 items) • Motivation receiver (16 items) • Relationship quality (3 items)
Communication Tools	Means used by the sender to share information	• ICT (3 items) • Face-to-face contact (11 items)
Expatriate policy	Perceived influence of the support of the expatriate policy on the effectiveness of cross border transfer of knowledge	• Expatriate policy (8 items)
Differences in organization culture	Perceived influence of the cultural differences between organizations on the effectiveness of cross border transfer of knowledge	• Power Distance (7 items) • Individualism (8 items)

Appendix M: Description of Delhi Mumbai Industrial Corridor (DMIC)

General

Start project: May 2010
Planned end of project: December 2010, now March 2011

Company: Kuiper Compagnons
Partners: DHV-India, DHV-BV

Staff

Project role	Person
Key Staff	
Infrastructure Planning Expert/ Project Leader Development	Frank Sutmuller
Water resource Expert	Jaap Butter
Airport Sector Expert	Paul Wessels
Multi Model Logistics/ Railway Expert	Alok Jain, M. Eng
Agro Infrastructure Expert	G.C. Pande
Skill Development/ Capacity Building Expert	Kali Sankar Ghosh
Environmental Expert	Jan Nuesink
AutoCAD/ GIS Expert	Alok Srivastava
Adittional Professional Staff	
Team Coordinator	K.G. Batra
Highway Expert	Jitesh Gupta
Social Expert	Sumita Akhaury
Legal Expert	S.L. Mangat
Professional Staff	
Logistic and traffic Expert	Hans Vermij
Urban planner/ Designer	Jai Singh
Infrastructure Planning Engineer	Soumitra Sen
Water Engineer	Jitendra Hathwar
Railway Engineer	S.B. Aggarwal
Skill Development/ Capacity Building	Mr. Putturaju
Junior Social Expert	Neeti Tyagi
Environmental Support	Sanhita Bandyopadhay
Airport Engineer	To be named
AutoCAD/ GIS Support	Sanjeev Dhawan

Goal of project
The purpose of the current consultancy assignment is to prepare a Development Plan for the Kushkhera – Bhiwadi - Neemrana Investment Region. In parallel with this project the preparation of Techno-Economic Feasibility Studies for the identified Early Bird Projects for implementation through Public Private Partnership will take place. It is an ambitious project worth about 60 Billion Euros.

Summary of project
The government of India is planning to develop Multi-modal High Axle Load Dedicated Freight Corridor (DFC) between Delhi and Mumbai covering a distance of 1483 Km. The DFC would link Jawaharlal Nehru Port at Mumbai with proposed end terminals at Tughlakabad and Dadri in the

National Capital Region. The Delhi Mumbai Industrial Corridor (DMIC) along the alignment of DFC is being planned as a "Corridor of Future Development" as part of the overall economic development strategy. The two initiatives, DFC and DMIC, are complementary to each other and can be seen as Critical Milestones for the future growth levels in the country.

The objective of DMIC would be to optimize on the present potential and enhance investment climate and promote economic development of the region through creation of a long term enabling environment supported by World Class Infrastructure. The vision of DMIC is to create a strong economic base with globally competitive environment and state-of-the art infrastructure to attract local commerce, enhance foreign investments and attain sustainable development. The DMIC Project aims at:

- Doubling employment potential in five years
- Triple industrial output in five years
- Quadruple exports from the region in five years

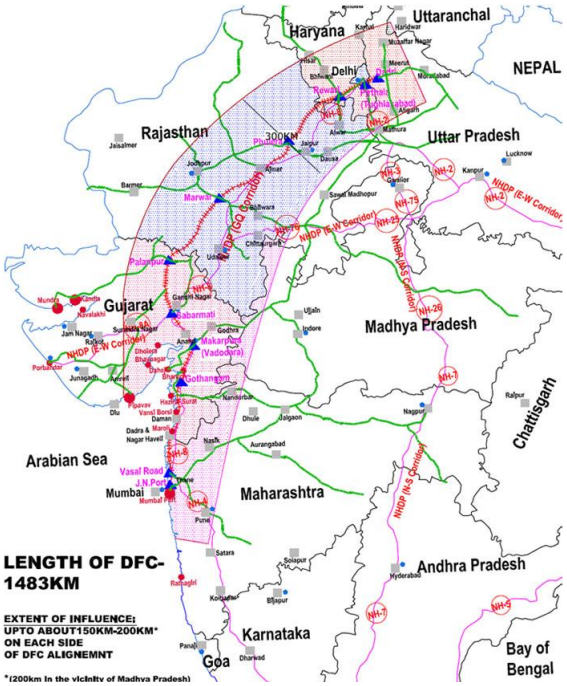


Figure 10: DMIC Project Area

The purpose of the current consultancy assignment is to prepare a Development Plan for the Kushkhera – Bhiwadi - Neemrana Investment Region. This Development Plan sets out a basic framework for approximately 200 sq km providing it with a globally competitive investment climate and promoting the economic development of the region through creation of a long-term enabling environment. In parallel with this project the preparation of Techno-Economic Feasibility Studies for the identified Early Bird Projects for implementation through Public Private Partnership will take place. These Early Bird Projects are: the development of an Aerotropolis near Jaipur, a Road Link connecting Bhiwadi and Neemrana and the development of a Knowledge City (Inception report,2010; http://dmic.co.in/).

Appendix N: Description of Kolkata Environmental Investment Project (KEIP)

General

Start project: June 2003
Planned end of project: December 2010

Company: DHV-BV (water)
Partners:

- DHV-India
- Hyder Consulting Limited
- Tata consultancy services

Staff

Project role	**Person**
Sewerage & Drainage Specialist	Beale, D.C.
Team Leader / Project Management Specialist	Butter, J.H.C.
International Procurement Specialist	Gier, R.F.M.
Hazardous & Biomedical Waste Specialist	Groot, M.
Team Leader / Project Management Specialist	Haan, de, S.
Team Leader / Project Manager	Sutmuller, F.W.M.
Sewerage & Drainage Specialist	Voorhoeve, J.G.
SWM Expert)/Hemelaar,L. (Fin.Analyst	Woerkom, van, F.J.H

Goal of project
Improve quality of life in Kolkata.

Summary of project
The Sewerage and Drainage component will optimize sewage collection, removal and treatment, and reduce flooding through improved storm water drainage. About 50 km trunk sewers and 450 km secondary sewers will be laid; 7 existing sewage pumping stations will be upgraded and 3 new pumping stations will be constructed; about 94 km trunk and 755 km secondary storm drainage lines will be laid and 7 new pumping stations will be constructed; about 90,000 properties will be connected to the existing and newly extended networks; 2 existing treatment plants were upgraded (WWTP Bangur 500,000 PE and WWTP Gorden Reach 500,000 PE) and 1 new treatment plant was constructed: WWTP South Suburban East 700,000 PE.

The Solid Waste Management component will improve the municipal, hazardous and biomedical waste streams. Under this component, which comprises the entire city area or about 5 million beneficiaries, open containers will be replaced with closed containers; open-back trucks will be phased out and replaced with compactor trucks; bulldozers will be procured to efficient landfill operations; mechanical sweepers will be introduced and the night soil tankers will be phased out

progressively as the sewerage system is expanding. For hazardous and biomedical waste appropriate facilities will be introduced.

The Slum Improvement component addresses the environmental conditions of informal and formal low-income settlements, including water supply, drainage and sanitation. A crisis management approach has been adopted to address the immediate needs for water supply and sanitation in un-recognized low- income settlements affecting around 65,000 slum dwellers. The works include the provision of 9,350 water stand posts, the construction of 4,200 sanitary latrines, 910 community latrines and 430 units washing/bathing platforms. The long term improvements include widening and realignment of neighborhood access roads; electric lighting to illuminate lanes and public spaces; widening and lining of drains; construction of sewer/drainage lines; construction of water supply lines; provision of solid waste containers; and improvement to public open space. An estimated 190,000 people will benefit from these interventions.

About 53 km canals have to be improved under the Canal Improvements component. These canals, which are the major outfalls for the sewerage and drainage systems, are almost completely silted up and very polluted. This component comprises the lining of 12 km canals, replacement of 30 culverts and bridges, the rehabilitation of 2 existing pumping stations and the construction of 2 new ones. The improvement of the canals will require the resettlement of about 11,000 people living on the canal banks.

The Implementation Assistance and Capacity Building component, funded by DFID and administered by the ADB, includes the computerization of KMC's operations; development of GIS and financial management information system; development of an integrated asset management system; implementation of a composite area linked system to levy Property Tax; develop O & M program emphasizing health, safety and effluent monitoring; adoption of urban poverty reduction analyses and the development of a Human Resources Development Program.

The Stakeholder Consultation Process is to promote stakeholder involvement in the Project and to contribute to the effective implementation of the project investments. NGOs have been recruited to guide this process, which will affect about 5 million citizens. As a cross-cutting component, the stakeholders consultation process underpins the promotion of affordable access of the poor to basic urban services in low-income areas, and facilitate community empowerment through development and adoption of demand-led, participatory approaches across all Project components (Inception Report, 2003; http://www.keip.in/bl3/)

Appendix O: Framework of interview

General questions

- Function within the project
- How long are you already collaborating with the Netherlands
- How is the transfer of knowledge within DHV at this moment in general

Communication Tools

- Which communication tool are used
- Visit the Netherlands
  - Help of expats before, during and after trip
    - For the right persons to contact/ negotiations
  - Relationship changed because of visit
  - Dutch colleague to India
- Only ICT sufficient for transfer of knowledge

How to deal with gained knowledge

- What do you do with gained knowledge
  - Save
  - communicate
- share with colleagues

Reason (not) to share knowledge

- Intrinsic motivation of you and your colleagues
  - Pleasure
- External motivation
  - Have to (contract)
  - incentives
- What have you learned from the Dutch colleagues
- Did you have knowledge nobody else had in this project
  - Shared?
- Relationship with NL
  - Easy/ difficult
  - From you/ from NL
- Trust in colleagues

Differences between organisation cultures

- Describe culture DHV-NL and DHV-India
- Which differences frustrated you
- DHV culture stimulating the transfer of knowledge

Last questions

- What should change most in order to stimulate the transfer of knowledge within this project
- Which factor most influencing

Appendix P: Overview of preliminary analyses

Variable	Items
Effectiveness of knowledge transfer α = .84 skewness = -.381 Sig = .173	
Absorptive Capacity α = .82 skewness = -.387 Sig = .200	Members of DHV-the Netherlands have an established process to deal with transferred knowledge I had a clear view on the purpose of the transferred knowledge. I was aware of relevant knowledge transferred. I knew where to find the transferred knowledge. I had a clear division of roles and responsibilities to implement the transferred knowledge. I had the necessary skills to implement the transferred knowledge. I had the technical competence to absorb the transferred knowledge. I had the managerial competence to absorb the transferred knowledge. It is well known who can best utilize new information about the transferred knowledge within DHV-the Netherlands. It is well known who can help solve problems associated with the transferred knowledge.
Retentive Capacity α = .62 Inter-item correlation = .293 skewness = -.478 Sig = .016	DHV-the Netherlands periodically retrains existing personnel on how to transfer knowledge I have mechanisms to detect malfunctions of the transferred knowledge. I regularly measure performance and correct problems as soon as these happen. It is well known who can help solve problems associated with knowledge transfer
Motivation of sender and receiver	
Intrinsic Motivation (4 items) Sender: α = 71 skewness = -2.284 Sig = 0.000 Receiver: α = 70 skewness = .058 Sig = 0.001	I think that transferring knowledge is interesting I think transferring knowledge is pleasant. Because transferring knowledge is fun. Because I feel good when I transfer knowledge.
Identified Regulation (3 items) Sender: α = .51 Inter-item correlation: .272 skewness = -.708 Sig = 0.004 Receiver: α = .63 Inter-item correlation: .358 skewness = -.224 Sig = 0.000	I am doing it for my own good. I think that transferring knowledge is good for me. Because I believe that transferring knowledge is important for me.
External Regulation (4 items) Sender: α = .66 Inter-item correlation: .342 skewness = -.671 Sig = 0.014 Receiver: α = .81 skewness = -.735 Sig = 0.000	I am supposed to do it. Because it is something that I have to do. Because I don't have any choice. Because I feel that I have to do it.
Amotivation (4 items) Sender:	There may be good reasons to transfer knowledge, but personally I don't see any. (R)

α = .84 skewness = -.211 Sig = 0.122 Receiver: α = .86 skewness = .065 Sig = 0.049	I transfer knowledge, but I am not sure if it is worth it. (R) I don't know, I don't see the benefit of transferring knowledge. (R) I transfer knowledge, but I am not sure it is a good thing to pursue it. (R)
Relationship Quality (3 items) α = .42 Inter-item correlation: .268 skewness = -.309 Sig = 0.001	Collaboration between DHV-NL and DHV-India is very demanding Collaboration between DHV-NL and DHV-India is actively sought by me (R) Collaboration between DHV-NL and DHV-India is actively sought by the other (R)
Communication Tools	
General question	How do you feel about communications at DHV in general (including the amounts of information you receive, the accuracy of information available, interaction with colleagues abroad, etc.)?
Used communication Tools	For communication, do you use written documents? For communication do you use face-to-face contact? For communication do you use telephone contact? For communication do you use other contact?
Communication Tools should use	For communication, should you use written documents? For communication should you use face-to-face contact? For communication should you use telephone contact? For communication should you use other contact?
Face-to-face contact (4 items) α = .88 skewness = -.320 Sig = 0.002	For Dutch to be able to understand the expectations of Indian colleagues. For Dutch to be able to understand the way Indian colleagues are working. For Indian colleagues to understand Dutch expectations. For Indian colleagues to understand the way Dutch work. To successfully complete a project.
Visits abroad	How often does a Dutch colleague visit India? How long does a visit in India in general take? How often does a Indian colleague visit the Netherlands? How long does a visit from the Indian colleague in general take?
Use of expatriates	
Existence of training program (2 items) DHV-NL: α = .98 DHV-India: α = 1.0	At DHV-NL a training program about the socialization process to transfer experiences, knowledge and socially embedded skills of Dutch expatriates to Indian managers exists. At DHV-NL a training program to transfer experiences, knowledge and socially embedded skills of Dutch expatriates to Indian managers exists.
Involvement of expatriates (3 items) DHV-NL α = .70 skewness = -.898 Sig = 0.000 DHV-India α = .92 skewness = -.875 Sig = 0.005	At DHV-NL repatriates help expatriates for their preparation for their assignment in India. At DHV-NL expatriates are in contact with an Indian repatriate during their stay in India. At DHV-NL a Dutch repatriate helps the expatriate to prepare their return to the Netherlands.
Reasons to contact expatriates (3 items) DHV-NL α = .82 skewness = -1.620 Sig = 0.000 DHV-India α = 1.0 skewness = -1.620 Sig = 0.000	I contact a Dutch expatriate in India when I need to get in contact with an Indian employee. A Dutch expatriate facilitates communication between me and my Indian colleagues. I ask Dutch expatriates in India to help in negotiations with Indian employees.
Differences between organization cultures	
Power Distance (3 items)	At DHV-NL, a person's influence is based primarily on one's authority

DHV-NL α = .70 skewness = -.898 Sig = 0.000 DHV-India α = .92 skewness = -.875 Sig = 0.005	At DHV-NL, subordinates are expected to obey their boss without question (R) At DHV-India, people in positions of power try to increase their distance from less powerful people (R)
Individualism (5 items) DHV-NL α = .54 inter-item correlation: .255 skewness = -.342 Sig = 0.161 DHV-India α = .85 skewness = -.628 Sig = 0.200	At DHV-NL, people are generally very concerned about each other. (R) At DHV-NL, people are generally very sensitive towards others (R) At DHV-NL, people are generally very friendly (R) At DHV-NL, people are generally very generous (R) At DHV-NL Group cohesion is far more valu ed than individualism

α = Cronbach's alpha coefficient
(R) = reversed item

Table 11: Overview of preliminary analysis

Appendix Q: Description of the respondents of the questionnaire and interviews

Description of respondents of the questionnaire

What is your age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 30 or younger	3	7,5	7,5	7,5
	2 31 - 40 years	16	40,0	40,0	47,5
	3 41 - 50 years	10	25,0	25,0	72,5
	4 51 - 60 years	9	22,5	22,5	95,0
	5 61 years or older	2	5,0	5,0	100,0
	Total	40	100,0	100,0	

Table 12 : Age of respondents of questionnaire

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	38	95,0	95,0	95,0
	2 Female	2	5,0	5,0	100,0
	Total	40	100,0	100,0	

Table 13 : Sex of respondents of questionnaire

In what country were you born?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 The Netherlands	31	77,5	77,5	77,5
	2 India	9	22,5	22,5	100,0
	Total	40	100,0	100,0	

Table 14: Origin of respondents of questionnaire

In what country do you currently live?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 The netherlands	30	75,0	75,0	75,0
	2 India	10	25,0	25,0	100,0
	Total	40	100,0	100,0	

Table 15: Place of residence of respondents of questionnaire

For which Business Unit are you working?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Infrastructure	8	20,0	20,0	20,0
	2 Mobility	1	2,5	2,5	22,5
	3 Rail & Stations	2	5,0	5,0	27,5
	5 Buildings	2	5,0	5,0	32,5
	8 Consultancy/ Area development	5	12,5	12,5	45,0
	9 Water Treatment/ Contract Management	3	7,5	7,5	52,5
	10 Environment and sustainability	2	5,0	5,0	57,5
	11 Land and Water	3	7,5	7,5	65,0
	13 Other, namely	14	35,0	35,0	100,0
	Total	40	100,0	100,0	

Table 16: Business Unit the respondents of questionnaire are working for

For how long have you been collaborating with DHV-India/ NL?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Less than 6 months	5	12,5	12,5	12,5
	2 6 - 12 months	8	20,0	20,0	32,5
	3 1 - 1.5 years	7	17,5	17,5	50,0
	4 1.5 - 2 years	4	10,0	10,0	60,0
	5 2 - 3 years	5	12,5	12,5	72,5
	6 3 - 5 years	5	12,5	12,5	85,0
	7 Longer than 5 years	6	15,0	15,0	100,0
	Total	40	100,0	100,0	

Table 17: Amount of time the respondents of the questionnaire are collaboration with the other DHV-country

With how many Indian/ Dutch employees are you collaborating?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 1-5	21	52,5	52,5	52,5
	2 6-10	12	30,0	30,0	82,5
	3 more than 10	7	17,5	17,5	100,0
	Total	40	100,0	100,0	

Table 18: Amount of colleagues with whom the respondents of the questionnaire collaborate

I think the knowledge flow goes more often:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 From the Netherlands towards India	29	72,5	72,5	72,5
	2 From India towards the Netherlands	1	2,5	2,5	75,0
	3 Fairly equal	10	25,0	25,0	100,0
	Total	40	100,0	100,0	

Table 19: Direction of knowledge flow according to the respondents of the questionnaire

Description of respondents of interviews

Two projects were selected to observe. The first project is the Delhi – Mumbai Industrial Corridor (DMIC). Five of the 22 key members of the project team were interviewed. Of those five members, four are Dutch and one is Indian. All interviewees have different roles within the project, some were experts and some were in the management of the project. All interviewees were involved in the project from May 2010. DMIC is not on schedule. The interviewees blame the poorly organized management, the difficult communication, and the cultural differences.

The second project is the Kolkata Environmental Improvement Project (KEIP). Three of the eight key members of that project were interviewed. Two of the interviewees are Dutch, one is Indian. All were involved in the management of the project team. The KEIP project goes smoothly. The interviewees explain this by well motivated project members and good communication between the members.

Appendix R: Univariate analyses of all variables

	Mean
Effectiveness of knowledge transfer	
Total Absorptive Capacity	3.12
Absorptive Capacity	3.38
Retentive Capacity	2.85
Motivation Sender	
Intrinsic Motivation sender	3.81
Identified Regulation sender	3.66
External Regulation sender	2.99
A-motivation sender	1.89
Motiavtion receiver	
Intrinsic Motivation receiver	3.78
Identified Regulation receiver	3.83
External Regulation receiver	2.94
A-motivation receiver	1.12
Relationship Quality	
Relationship Quality	3.08
Communication Tools	
Face-to-face contact	4.10
Use of expatriates	
Training programs at DHV-NL	2.54
Training programs at DHV-India	3.00
Contact with expats DHV-NL	3.33
Contact with expats DHV-India	3.33
Differences in organization cultures	
Power Distance at DHV-NL	2.99
Power Distance at DHV-India	3.30
Individualism at DHV-NL	3.28
Individualism at DHV-India	3.11

Table 20: Univariate analyses of all variables

Appendix S: Bivariate analyses of independent variables and Effectiveness of knowledge transfer

	Effectiveness of knowledge transfer	Significance
Motivation Sender	.087	.626
Intrinsic Motivation sender	-.164	.296
Identified Regulation sender	.200	.256
External Motivation sender	.187	.289
A-motivation sender	-.071	.688
Motiavtion receiver	.248	.158
Intrinsic Motivation receiver	-.108	.545
Identified Regulation receiver	.175	.322
External Motivation receiver	.340*	.049
A-motivation receiver	-.052	.772
Relationship Quality		
Relationship Quality	.205	.244
Communication Tools		
Use of written documents	.076	.667
Use of telephone	-.083	.642
Use of face-to-face contact	-.113	.524
Need to have face-to-face contact	-.096	.590
Visits to DHV-India	.015	.931
Visits to DHV-NL	0.008	.964
Use of expatriates		
Training programs at DHV-NL	.811**	.001
Training programs at DHV-India	0.051	.935
Contact with expats DHV-NL	.171	.404
Contact with expats DHV-India	-	-
Differences in organization cultures		
Power Distance at DHV-NL	-.272	.179
Power Distance at DHV-India	.145	.733
Individualism at DHV-NL	.0005	.979
Individualism at DHV-India	.096	.820

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 21: Bivariate analysis of independent variables and effectiveness of knowledge transfer

Appendix T: Correlations between Motivation of sender scales

Correlations

		The Intrinsic Motivation is high	The Identified Regulation is high	The External Motivation is high	Tot_Amot
The Intrinsic Motivation is high	Pearson Correlation	1	,187	-,435**	-,497**
	Sig. (2-tailed)		,248	,005	,001
	N	40	40	40	40
The Identified Regulation is high	Pearson Correlation	,187	1	,104	-,309
	Sig. (2-tailed)	,248		,525	,052
	N	40	40	40	40
The External Motivation is high	Pearson Correlation	-,435**	,104	1	,254
	Sig. (2-tailed)	,005	,525		,114
	N	40	40	40	40
Tot_Amot	Pearson Correlation	-,497**	-,309	,254	1
	Sig. (2-tailed)	,001	,052	,114	
	N	40	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Table 22: Correlations between the motivation scales of the sender

Appendix U: Correlations between Motivation of receiver scales

Correlations

		The intrinsic motivation for receiver is high	The identified Regulation for receiver is high	The External Motivation for receiver is high	Tot_RAmot
The intrinsic motivation for receiver is high	Pearson Correlation	1	,631**	-,199	-,599**
	Sig. (2-tailed)		,000	,219	,000
	N	40	40	40	40
The identified Regulation for receiver is high	Pearson Correlation	,631**	1	-,004	-,281
	Sig. (2-tailed)	,000		,980	,079
	N	40	40	40	40
The External Motivation for receiver is high	Pearson Correlation	-,199	-,004	1	,353*
	Sig. (2-tailed)	,219	,980		,026
	N	40	40	40	40
Tot_RAmot	Pearson Correlation	-,599**	-,281	,353*	1
	Sig. (2-tailed)	,000	,079	,026	
	N	40	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 23: Correlations between the motivation scales of the sender

Appendix V: Overview of results correlations

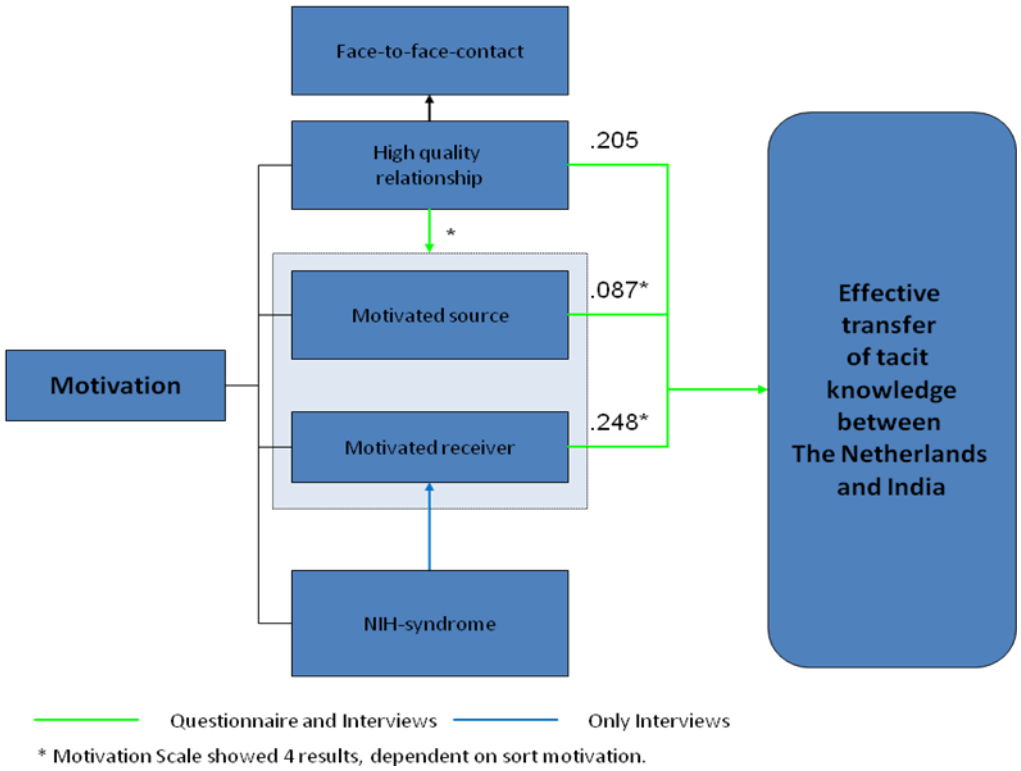


Figure 11: Correlation between Motivation and Effectiveness of international knowledge transfer

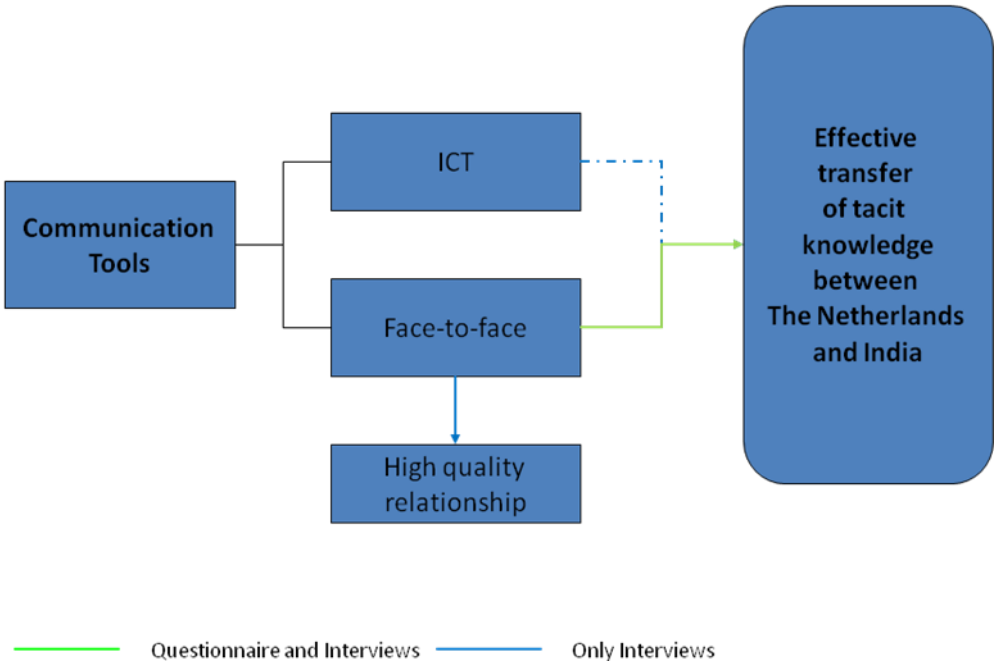


Figure 12: Correlation between Communication Tools used and Effectiveness of international knowledge transfer

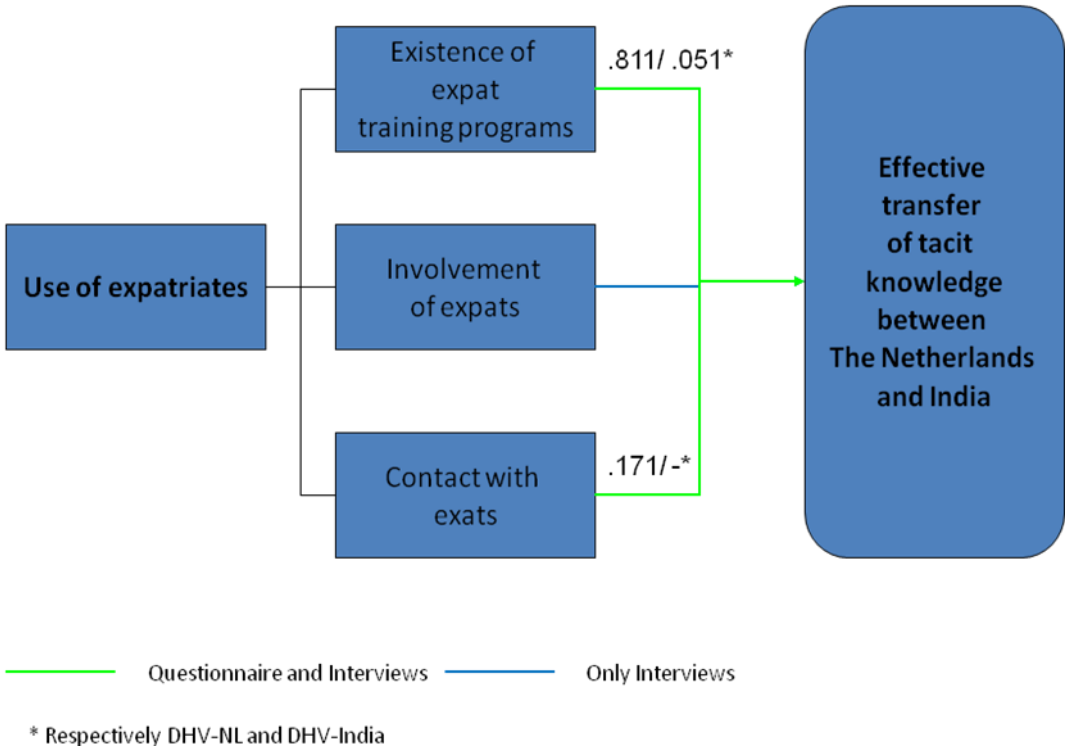


Figure 13: Correlation between Use of expatriates and Effectiveness of international knowledge transfer

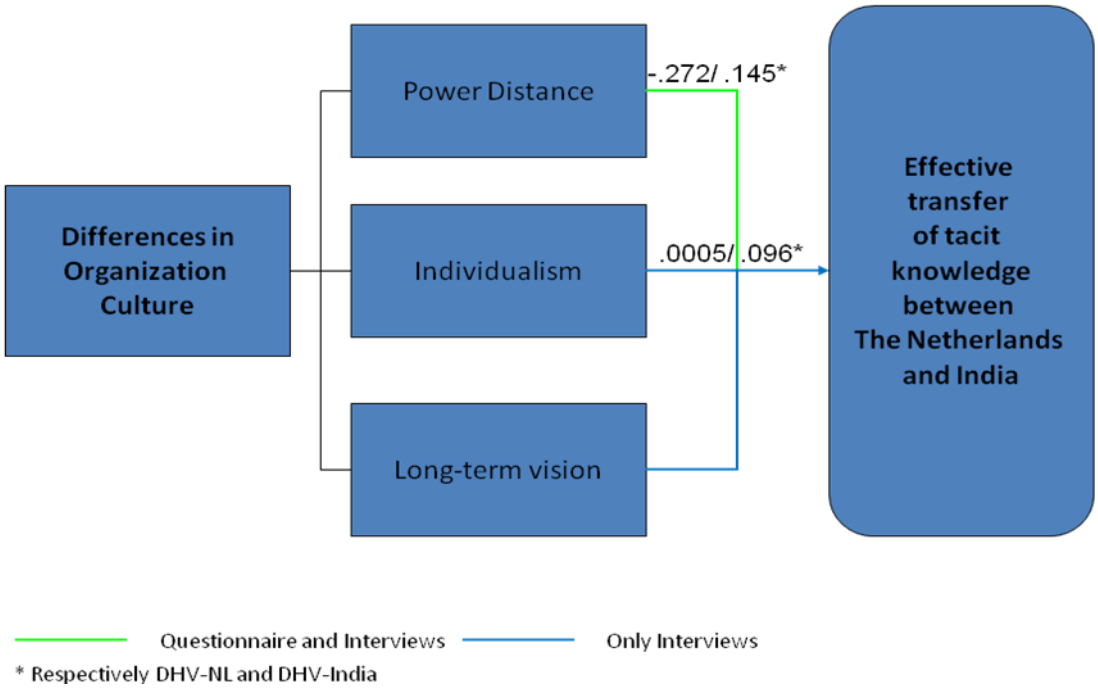


Figure 14: Correlation between Differences in organization culture and Effectiveness of international knowledge transfer