

# **The influence of communication barriers on subsidiary intra-MNC connectedness**

**Kees van Poortvliet, 139645**

**Coach: Dr. René Olie**

**Co-reader: Dr. Job Hoogendoorn**

Erasmus University Rotterdam

Rotterdam School of Management

PTO MScBA/drs. Bedrijfskunde

Department of Strategic Management and Business Environment

Master Thesis

*September 2012*

## Acknowledgements

Writing this thesis was the last part of my study within the PTO MScBA program at the RSM Erasmus University. This study has been like a journey for me, and finalizing it leaves me with conflicting feelings. On the one hand there is a sense of relief that I have almost reached the destination of this journey. On the other hand there is the awareness that the most interesting part of this journey is not the destination, but the journey itself. Both the past seven months working on this thesis, as the preceding one and a half year with lectures and projects have given me a lot of new knowledge, insights and skills.

I would like to thank a number of people for the help and support they gave me during the process of writing this thesis. First and foremost I would like to thank my coach René Olie. He both challenged and supported me throughout the whole process, and gave me guidance, advice and useful suggestions, without which this thesis would not have been possible. Furthermore I would like to thank my co-reader Job Hoogendoorn. With his experience and extensive knowledge he gave me helpful insights and new angles of looking at several aspects of the subject.

I would also like to thank my family, friends and colleagues. The interest they showed, and the support they gave me during these months were very important to me and helped me to complete this thesis.

Kees van Poortvliet

Rotterdam, September 2012

## Abstract

The importance of knowledge exchange within Multinational corporations (MNCs) is widely recognized by scholars. It is known however that some subsidiaries are not active in the knowledge-exchange activities within the MNC, i.e. they are not connected with the other parts of the MNC. As knowledge exchange requires some form of communication, communication barriers could play a role in the level of knowledge exchange within a MNC. This study investigates the knowledge exchange between headquarters and its subsidiaries abroad. More specifically, it looks at the impact of communication barriers on knowledge exchange. It argues that communication barriers negatively influence intra-MNC connectedness of a subsidiary. Furthermore it argues that this effect is moderated by both the experience of the subsidiary with the corporate network, as by the proportion of expatriates in the subsidiary. Using data of 167 subsidiaries in a single host country, we find that communication barriers do have negative effects on communication intensity, however they do not influence knowledge exchange negatively.

**Keywords:** MNC, Connectedness, Knowledge exchange, Headquarters-subsidiary relationship, Communication, Language

## Table of Contents

1. Introduction to the research .....	6
1.1 Introduction .....	6
1.2 Research question .....	10
2. Theoretical Framework and Hypotheses .....	11
2.1 The importance of knowledge exchange within the MNC.....	11
2.2 Cross-national communication.....	11
2.3 Communication barriers and subsidiary intra-MNC connectedness .....	13
2.4 The moderating role of subsidiary experience.....	14
2.5 The moderating role of the proportion of expats .....	15
2.6 Conceptual model.....	16
3. Methodology .....	17
3.1 Research setting .....	17
3.2 Sample characteristics .....	17
3.3 Measures .....	17
3.3.1 Subsidiary connectedness.....	17
3.3.2 Communication barriers .....	18
3.3.3 Number of years in the corporate network.....	20
3.3.4 Percentage of expatriates .....	20
3.3.5 Control variables .....	20
3.4 Data analysis .....	23
3.4.1 Reliability and validity .....	23
4. Results .....	24
4.1 Descriptive statistics .....	24
4.2 Regression Analysis.....	27

4.2.1 Knowledge exchange as dependent variable .....	27
4.2.2 Communication intensity as dependent variable .....	30
4.3 Findings.....	32
5. Conclusions and discussion .....	33
5.1 Conclusions .....	33
5.2 Contribution.....	34
5.4 Managerial implications .....	35
5.5 Limitations and future research .....	35
References.....	37
Appendices .....	42
Appendix I - TOEFL test results 2008 per country .....	43
Appendix II - Classification scheme of languages.....	45
Appendix III - BOM Survey 2008.....	47

## 1. Introduction to the research

### 1.1 Introduction

The importance of Multinational corporations (MNCs) for the global economy can hardly be overestimated: the value they added in 2010 was approximately \$16 trillion (UNCTAD World Investment Report, 2011). According to the same report foreign affiliates of MNCs accounted for more than 10% of global GDP and one-third of global exports.

A MNC consists basically of a headquarter, and one or more subsidiaries. By definition at least one subsidiary is located in another country than the one in which the headquarters are located. MNCs can be conceptualized as a network of geographically dispersed units which control differentiated stocks of resources (Bartlett and Ghoshal, 1986), and can be seen as an orchestrator of knowledge and resources (Foss and Pedersen, 2002), with the purpose of gaining a competitive advantage over its competitors by exploiting local opportunities. Given the importance of MNCs for the world economy it is no wonder that there is a huge body of literature about them. A part of this literature could be broadly categorized as trying to answer the question: "Why do some MNCs outperform others?", or put differently: "What explains differences in performance of MNCs?", or "What are the determinants of MNC performance"?

A study by Rugman and Verbeke (2004) shows that of the companies in the Fortune 500 on average around 80% of total sales are in their home region of the triad (North America, Europe or Asia). This gives an indication of how difficult it is to do business far away from the home country successfully, and as Rugman and Verbeke (2004) conclude, many of the world's largest firms are not global but regionally based.

It is widely recognized by scholars that knowledge is a very important resource within a firm. According to the knowledge-based view of the firm, knowledge is even the most strategically important resource of a firm (for example Grant, 1996). Gupta and Govindarajan (2000: 473) state that the reason why MNCs exist is because of "their ability to transfer and exploit knowledge more effectively and efficiently in the intra-corporate context than through external market mechanisms". Knowledge needs to flow freely through the different units of the MNC, because the competitiveness of subsidiaries often depends upon knowledge created in other parts of the MNC (Birkinshaw and Hood, 1998).

So it clearly is very important that knowledge flows from- and to a given subsidiary, otherwise the subsidiary is deprived from receiving the most important strategic resource from other parts of the MNC, and vice versa.

It is however known that some subsidiaries have low knowledge in- and outflows with the other subsidiaries and with the headquarters of the MNC (for example Gupta and Govindarajan, 1991). To the knowledge of the author of this study there are two studies which refer to this state of low knowledge in- and outflows as subsidiary isolation: Monteiro *et al.* (2008), and Williams and Nones (2009). However, because the term isolation seems to indicate that it is an undesirable state *per se*, which it might not be as we will argue later, we will introduce a more neutral term for this state: low intra-MNC connectedness. The definition we use is the same as in the study of Monteiro *et al.* (2008) about what they call subsidiary isolation (p. 90): the tendency for some subsidiaries to be isolated from the knowledge-transfer activities within the MNC. Monteiro *et al.* (2008) have investigated this phenomenon of low intra-MNC connectedness and their research suggests that this is associated with underperformance. The results of a research conducted by Williams and Nones (2009) suggest that low intra-MNC connectedness is countered by parent and subsidiary experience: the greater the international experience of the MNC is, and the longer the subsidiary has been part of the MNC network, the less likely it is that the subsidiary is unconnected.

Some other researches implicitly acknowledge the existence of subsidiaries with a low intra-MNC connectedness. For example Gupta and Govindarajan (1991) categorize subsidiaries into four categories based on knowledge in- and outflow with the rest of the MNC. One of the categories is 'Local Innovator', which has low knowledge in- and outflow. So the authors implicitly confirm that this state exists, but they do not show why this situation is as it is, or what the consequences are. It is not exactly clear what the determinants and consequences of low intra-MNC connectedness are, as it is still a relatively underresearched phenomenon (Monteiro *et al.*, 2008).

But is it an undesirable situation *per se*? Or could it be a desirable state in some cases, created on purpose? Gupta and Govindarajan (2000: 477) suggest that a subsidiary consists of three bundles of knowledge: 1) duplicative knowledge, meaning that the knowledge is already available in other parts of the MNC; 2) non-duplicative knowledge only

relevant in the local environment; 3) non-duplicative knowledge also relevant to other units in the global network. Based on this framework, only subsidiaries which have the third kind of knowledge would have knowledge outflow. And subsidiaries would only have knowledge inflow as long as they do not have enough knowledge yet to conduct their activities. In a similar vein, one could also imagine situations in which a low level of subsidiary connectedness is not an undesirable state *per se*. For example, a subsidiary which performs activities which have no overlap with activities in other parts of the MNC, because the MNC has decided to divest those activities and has already been able to sell these activities in other countries. Or a subsidiary which operates in a market which is for certain products completely different from the markets in which the other parts of the MNC operate, making their knowledge irrelevant to other parts of the MNC. As Gupta and Govindarajan (2000) state, within a MNC a focal unit will see the knowledge stock of another unit located in an economically more advanced country as more valuable compared to that of a unit in a less advanced country.

What could play a part in the unconnectedness of a subsidiary are barriers to parent-subsidiary communication. Communication barriers have been shown to play a role in other MNC related phenomena. For example, Slangen (2011) found that communication barriers can have a significant influence on entry modes. Communication refers to 'the exchange of information through various media, including face-to-face contact, telephone, letter and electronic mail' (Nobel and Birkinshaw 1998: 483). Barriers refer to obstacles that complicate, impede or slow down the process of transmitting verbal messages (Krone *et al.*, 1987). These barriers could be language differences. For example, if the employees of a focal subsidiary and the headquarter do not speak a common language, this can impede knowledge exchange, other barriers could be cultural differences, i.e. differences in value systems. Culture plays an important role in giving meaning and in sense making. Even if people from different countries do speak a common language, the fact that they give different meanings to certain things still might impede effective communication between them.

What could dampen the effect of communication barriers on subsidiary connectedness is subsidiary age, or more specifically the number of years it has spent within the corporate network of the MNC. One could imagine that a subsidiary over time may



develop the capabilities and relations to share knowledge within the MNC (Birkinshaw *et al.* 2002). Intra-MNC connectedness is basically about knowledge flows. Knowledge flows through the MNC from the headquarters to the subsidiary and vice versa, but also from subsidiary to subsidiary (intersubsidiary flows). Although intersubsidiary flows have become undoubtedly more important over the past decades as a result of decentralization, the current research particularly focusses on the knowledge flows between headquarters and a focal subsidiary, as we expect this to be the most important knowledge flow. As Gupta and Govindarajan state (2000: 490): '...the parent corporation continues to serve as the most active creator and diffuser of knowledge within the corporation'. There could be several reasons why subsidiaries do not engage in intersubsidiary knowledge flows: it could be lack of incentives, conflicting interests or their knowledge might only be relevant in the local context (Barner-Rasmussen and Björkman, 2005).

There clearly still is a gap in our understanding of subsidiary unconnectedness. There have been as mentioned a some studies, but none of them has clearly identified the root causes. Some like Monteiro *et al.* (2008) have implicitly assumed that it is in any case an undesired state, which it might not be however. No study has to the knowledge of the author investigated the possible impact of culture related phenomena like language on subsidiary unconnectedness. The present study aims to build on the existing literature about it, and increase our understanding of what it is, and more specifically see what the impact of communication barriers could be. Shuter and Wiseman (1994: 7) say that "research providing a communication perspective is essential because communication shapes the form and functioning of multinational organizations". This research also adds to the literature on communication theory. Finally, it could also contribute in a broader sense to the literature about MNC management, and subsidiary performance.

## 1.2 Research question

This study aims to further the understanding both conceptually and empirically of subsidiary connectedness. This research addresses the following research question:

***"How do communication barriers between the MNC headquarters and its subsidiaries influence subsidiary intra-MNC connectedness?"***

## 2. Theoretical Framework and Hypotheses

### 2.1 The importance of knowledge exchange within the MNC

According to many scholars, knowledge exchange is the very reason why firms exist. For example Grant (1996: 112) says "...firms exist as institutions for producing goods and services because they can create conditions under which multiple individuals can integrate their specialist knowledge". In other words, the integration of this specialist knowledge is more efficient through a firm, than through market mechanisms.

However, although knowledge transfer within a firm might be easier compared to knowledge transfer between firms, it is still difficult. Witness to this fact are the many studies about the problems arising in intra-firm knowledge exchange. According to Szulanski (1996) the main obstacles to knowledge transfer are not motivational factors as one might think, but knowledge related factors. These are for example the lack of absorptive capacity on the side of the recipient. Another reason might be an arduous (i.e. laborious and distant) relationship between people, which might impede effective knowledge transfer (Szulanski 1996).

### 2.2 Cross-national communication

Communication between the headquarters and subsidiaries is crucial to effective MNC management (Ghoshal *et al.* 1994, Gupta and Govindarajan 2000). One aspect of communication is language (Krone *et al.* 1987). Language has received so far less attention in the international business literature than one might expect, "the language construct has no direct representation in the theoretical frameworks currently employed to explain key MNC decisions such as market entry and subsidiary control" (Luo and Shenkar 2006: 322).

According to Krone *et al.* (1987) virtually all communication scholars recognize the following aspects in communication: 1) a message 2) a sender 3) a coding scheme 4) a channel 5) transmission through the channel 6) a decoding scheme 7) a receiver 8) the assignment of meaning to the message. The present study focusses on the transmission of messages between headquarters and their subsidiaries, in which the employees of both headquarters and subsidiary act as both senders and receivers. It can be expected that a large part of the

communication between a MNC parent and its subsidiaries is cross-national communication. This can lead to problems in the communication, because for example people might not understand each others mother language. As Grant (1996: 116) puts it "The existence of a common language is fundamental to integration mechanisms which rely upon verbal communication between individuals, namely, integration through rules and directives, and integration through group problem solving and decision making". There could be barriers which make this kind of communication more difficult. Krone *et al.* (1987) define communication barriers as obstacles that complicate, impede or slow down the process of transmitting verbal messages. As Spencer-Rodgers and McGovern (2002: 610) put it "Intercultural communication barriers arise from group differences in cognition (e.g., fundamental epistemologies, values, norms, etc.), affect (e.g., types and levels of emotional expressivity), and patterns of behavior (e.g., language, customs, communication styles, etc.)". This shows that communication barriers are not limited to language alone; however the present study focusses on the influence of verbal communication barriers. So for example the fact that the headquarters employees of an Indian MNC speak English, and so do the employees of a Dutch subsidiary of the same MNC, does not mean that there are no communication barriers between the Indian headquarters and the Dutch subsidiary.

Another factor which plays a role in communication is the channel or medium, through which the communication is done. Communication media can be classified by level of richness. The richness differences include the mediums capacity for immediate feedback, the number of cues utilized, personalization, and language variety (Daft and Wiginton, 1979). The richest medium is 1) face-to-face, followed by 2) telephone 3) personal documents such as letters and memos 4) impersonal written documents 5) numeric documents (Daft and Lengel 1986). Lengel and Daft (1984) found that managers use rich media for bringing across difficult and equivocal messages. This has important implication for this study. It means that if a parent and subsidiary are located far away from each other, i.e. there is a large geographic distance, face-to-face contact will be very limited due to high travel and opportunity cost, which means that most communication will be done through 'poor' communication media. In case there is a large lateral geographic distance between the parent and subsidiary, another problem comes into play: different time zones. Consider for example a MNC based in Singapore with a subsidiary based in New York, USA, where it is in

summer twelve hours earlier. This will not only make face-to-face communication very costly, but also communication by telephone will be difficult, because when the people in the MNC headquarters in Singapore are working it is night time in New York, and vice versa. This means that the large majority of the communication will be done via the three poorest of the five media which there are: personal documents, mainly emails, impersonal written documents and numeric documents. So communication barriers increase with distance.

### **2.3 Communication barriers and subsidiary intra-MNC connectedness**

One could argue that, although communication barriers make knowledge transfer more difficult and time consuming, and therefore more costly in terms of money, by just putting in more effort and taking the additional transaction cost for granted, you will still reach the same level of knowledge transfer as with a subsidiary with lower communication barriers. However several scholars have described certain dynamics in knowledge exchange, which lead to a different situation, which brings us to argue that high communication barriers make low knowledge exchange more likely. First, communicating with people from different cultural background is often associated with a negative emotional response (Spencer-Rodgers and McGovern, 2002). For example, people might feel "awkward and anxious when interacting with culturally different others, in part, because of communication barriers" (Spencer-Rodgers and McGovern, 2002: 610). This might also lead to a negative spiral: "[u]ltimately, repeated communication failures and emotionally laden cultural misunderstandings can give rise to a negative evaluative orientation toward the culturally different" (Spencer-Rodgers and McGovern, 2002: 611).

Second, knowledge transfer creates reciprocity (Monteiro *et al.* 2008). So units which share knowledge with other units, will also receive more knowledge, compared to units who do not share their knowledge with other units. So units which are already unconnected due to linguistic and geographic communication barriers could come in a negative self-reinforcing spiral, leading to a situation in which they send nor receive knowledge (Monteiro *et al.* 2008). We therefore hypothesize:

*Hypothesis 1:* The higher the communication barriers between an MNCs home location and a host location, the higher the likelihood that the MNC subsidiary in that host location will be less connected.

## 2.4 The moderating role of subsidiary experience

We expect as stated in Hypothesis 1 that the likelihood of low subsidiary connectedness will increase with the level of the communication barriers, but we also expect that this positive effect will be contingent upon experience. More specifically, we expect that the positive effect of communication barriers on subsidiary unconnectedness will be weaker in case of a subsidiary with a lot of experience within the ownership structure of the MNC.

It is not experience *per se* but the resources and knowledge accumulated over time which enables the subsidiary to develop stronger ties with the headquarter. And the more experience a subsidiary has, the more important its position within the MNC will be. It will have more experience operating on its home market, and will therefore have more knowledge which is interesting for other subsidiaries and for the headquarters, which might lead to a higher level of communication between the headquarters and the focal subsidiary. Furthermore, the subsidiary will have more bargaining power within the MNC, which will enable it to get more involvement of the headquarter in its activities. We therefore hypothesize:

*Hypothesis 2:* The impact of communication barriers on the likelihood of low MNC subsidiary connectedness will be weaker in case of a subsidiary which has spent a long time within the corporate network of the MNC compared to a subsidiary which has spent a short time within the corporate network of the MNC.

## 2.5 The moderating role of the proportion of expats

The effect of communication barriers on subsidiary connectedness is also likely to depend upon the proportion of expats in the subsidiary. More specifically, we expect that in case of a high proportion of expatriates, the effect of communication barriers on subsidiary connectedness will be less.

Several studies have shown that managers of different national backgrounds have significant differences in managerial perspectives (Gupta and Govindarajan 2000). Consequently, the higher the proportion of local nationals in the management of a focal subsidiary, the more likely it is that the perspective of the management of the subsidiary will differ from the perspective of the management of the headquarter, and therefore the more likely it is that the headquarter and subsidiary managers will misunderstand each other. Expatriates could be helpful in several ways in mitigating the effect of communication barriers between the headquarter and the subsidiary. Because they have knowledge on the one hand of the MNC, but on the other hand also know the local situation of the subsidiary. This being member of two or more groups simultaneously is referred to as 'multimembership' (Wenger, 1998). Torbiörn (1982) suggested that expatriates can perform three functions in a subsidiary. First, they tend to have a network of contacts in other parts of the MNC including the headquarter. This enables them to function as a liaison between the subsidiary and the other parts of the MNC. Because they know both the focal subsidiary and other parts of the MNC, they can clarify things to the subsidiary employees, but can also give feedback to the headquarter as to how things 'land' in the subsidiary, as the result of which headquarters can make changes in its way of communicating if necessary. Second, they can have a control function. As their loyalty is probably more with the MNC as a whole than with the subsidiary, they are well suited to keep an eye on what is going on in the subsidiary and inform the headquarter if appropriate. Third, expatriates can help to enhance knowledge transfer. This can be, as Torbiörn (1982) suggested, inbound knowledge transfer, but it could also be outbound knowledge transfer from the subsidiary to other parts of the MNC. As Barner-Rasmussen and Björkman (2005: 33) put it "[c]ompared with local managers, expatriates are more likely to be familiar with the stock of knowledge and the organizational practices elsewhere in the MNC". Therefore they are well positioned to, on the one hand, know where in the MNC knowledge is available which the focal subsidiary might need, and on the other

hand, recognize knowledge available in the focal subsidiary which might be valuable to other parts of the MNC. We therefore hypothesize:

*Hypothesis 3:* The impact of communication barriers on the likelihood of low MNC subsidiary connectedness will be weaker in case of a high proportion of expatriates in the subsidiary.

## 2.6 Conceptual model

Now that the literature review has been done and the hypotheses have been determined, we can draw the conceptual model, with the aim of trying to answer the research question:

*"How do communication barriers between the MNC headquarters and its subsidiaries influence subsidiary intra-MNC connectedness?"*

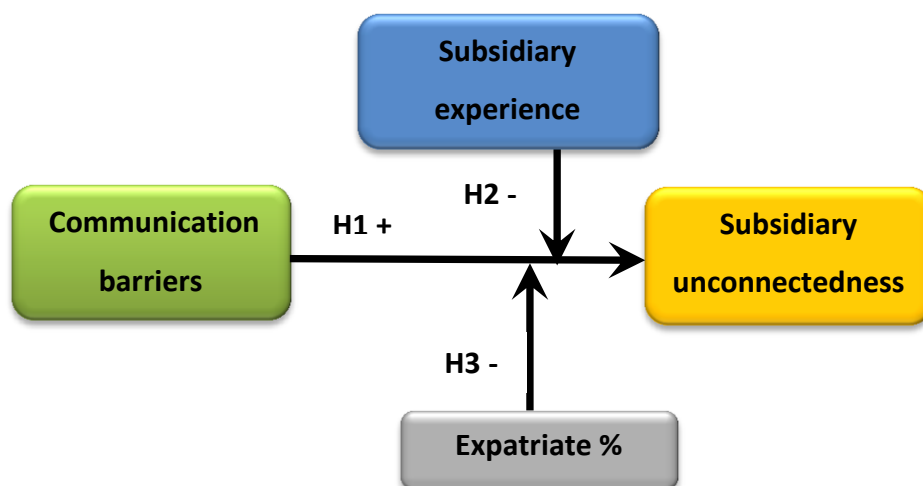


Figure 2.1: Conceptual Model



### **3. Methodology**

#### **3.1 Research setting**

This study follows a quantitative deductive approach. The primary data were collected using self-administered surveys. Country-of-location effects and within-country effects could have an influence on knowledge transfer between a subsidiary and its headquarters. In order to eliminate these effects the data were collected from subsidiaries in one country, The Netherlands, and from one particular region within The Netherlands, the southern province of Noord-Brabant, which attracts a large part of the Foreign Direct Investments in The Netherlands. The questionnaires were mailed to the managing directors of all foreign subsidiaries in that province. The database of the regional development agency was used to identify these companies. Before distributing the surveys in June 2008, they were pretested on business practitioners and academics to ensure face validity.

Secondary data such as number of employees and number of European subsidiaries was collected from the regional development agency (named BOM, [www.BOM.nl](http://www.BOM.nl)), and from the Orbis database. The unit of analysis is the combination of the headquarters abroad of a MNC and its subsidiary in The Netherlands.

#### **3.2 Sample characteristics**

Questionnaires were mailed to the managing directors of 1,085 foreign companies in the Noord-Brabant area. The number of useable responses received was 167, corresponding to a 15.4% response rate. The sample represents 167 subsidiaries from 24 different countries, including 101 from Europe, 44 from North America, 21 from Asia including the Middle East, and 1 from Australia.

#### **3.3 Measures**

##### **3.3.1 Subsidiary connectedness**

Subsidiary connectedness captures the degree of knowledge flows between the headquarters and the focal subsidiary. This is measured by two proxies: knowledge

exchange, and communication intensity.

Knowledge exchange is measured via fourteen items: respondents were asked to which extent knowledge and skills are provided by headquarters to the subsidiary, and vice versa, in seven different fields (R&D, Purchasing, Production, Distribution, Marketing, Management, systems and practices and Finance). They were able to answer on a 7-point Likert scale ranging from 'Not at all' to 'To a very large extent', for each of the seven items mentioned above. These items were adapted from Gupta and Govindarajan (2000). These fourteen items were put together to make one scale for knowledge exchange, which has a high internal reliability (Cronbach's alpha = .88).

Communication intensity was measured as the number of times that representatives of corporate headquarters on average visit the focal subsidiary per year, plus the number of times representatives of the subsidiary visit the corporate headquarters on average per year. This data was obtained via the questionnaire. These two items were aggregated into one scale.

### 3.3.2 Communication barriers

Communication barriers are measured through three proxies. Following Slangen (2011), we used the following measures: 1) geographic distance, 2) native language barrier, and 3) foreign language barrier.

Geographic distance between the Dutch subsidiary and the headquarters of the MNC was measured following Flores and Aguilera (2007) as the geographic distance between the capitals of the host and the home country. This is the distance 'as the crow flies' measured in kilometers between the midpoints of the capitals. We measured this using the Google Maps calculator developed by Daft Logic (<http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>, accessed on August 14 2012).

The native language barrier is measured following Dow and Karunaratna (2006) and Slangen (2011), as the degree of relatedness between the Dutch language and any of the major languages spoken in the country-of-origin of the MNC. For example, if the headquarters of a MNC were to be located in India, where English is one of several major languages due to historic reasons, this would in itself make communication easier compared to a MNC of

which the headquarters were located in China, where English is not a major language. This is because Dutch is closer related to English than it is to the major languages spoken in China. We measured it as follows, based on Dow and Karunaratna (2006). For the major language of the parent country closest related to Dutch, the level of relatedness was determined, on a scale ranging from 1 to 5, reaching from same language on the one end of the spectrum, to different language family on the other end. Major language is defined here as an official language spoken by more than 20% of the population. In Appendix II there are more details on the language classification scheme of Dow and Karunaratna (2006).

The foreign language barrier measures the degree to which inhabitants of the country-of-origin of the MNC are proficient in English, as this is the common language in which the employees of the Dutch subsidiary and the headquarters can communicate with each other. This is measured following Slangen (2011), as the average scores per country on the Test of English as a Foreign Language (TOEFL), in the year in which the primary data of the the present study was gathered, 2008. The TOEFL measures ones ability to use and understand English at the university level and is the most widely respected English language test in the world, recognized by more than 8500 colleges, universities and agencies in more than 130 countries (source: <http://www.ets.org/toefl>, accessed on July 29 2012). To give an indication about the number of students who take the test yearly, according to the Educational Testing Service (ETS) institute 577,038 students took the test in the twelve months between July 2002 and June 2003 (source [http://www.ets.org/research/policy\\_research\\_reports/toefl-sum-0203-data](http://www.ets.org/research/policy_research_reports/toefl-sum-0203-data), accessed on August 13 2012). This data is not publically available for 2008. In order to check whether the scores are reliable over time, the 2008 scores per country were compared with the 2007 scores<sup>1</sup>. For 21 out of 25 countries the 2007 score was either equal to, or deviated maximum 1 point from the 2008 score. Based on this outcome the score was deemed stable enough in time. The maximum score on the test is 120 points. The negative of the scores is taken, in order for a high score to represent a high foreign language barrier.

---

<sup>1</sup> Comparison to prior years is not possible because the way in which the test score is determined changed.

### **3.3.3 Number of years in the corporate network**

This variable captures the number of years that the subsidiary is part of the corporate network. This is not equal to the age of the firm. As an example, a firm might have started one hundred years ago, and might have operated as an independent firm for ninety-nine years, before being taken over by a MNC last year. In this example, the age of the firm is one hundred years, but the subsidiary is only a part of the corporate network for one year, and consequently has had only one year to learn how to communicate effectively within the MNC network.

A subsidiary can become part of the corporate network in various ways. This can be either because the parent established a subsidiary in the Netherlands, either alone or as a Joint Venture with another company, or because the parent acquired either a Dutch or a non-Dutch firm, of which the Dutch subsidiary was a part.

The data needed to determine the number of years of the subsidiary within the corporate network was obtained from the BOM regional development agency. Given the significant kurtosis and skewness of this variable, it was transformed using a natural logarithm.

### **3.3.4 Percentage of expatriates**

The portion of expatriates of the focal subsidiary was obtained from the questionnaire, by asking respondents to indicate what percentage of employees of the subsidiary is an expatriate. Given the significant kurtosis and skewness of this variable, it was transformed using a natural logarithm.

### **3.3.5 Control variables**

Based on the literature review the following six variables were identified which might also have an impact on subsidiary connectedness, and might therefore provide an alternative explanation for variances in subsidiary connectedness. These variables were included in the analysis.

### **Entry mode**

MNC parents generally need to communicate more extensively with acquired subsidiaries than with greenfield ones, when it comes to knowledge exchange (Slangen, 2011: 1703). Compared to employees of a greenfield, acquired employees will be less receptive to knowledge coming from the MNC Headquarter, and will be less willing to share knowledge with the rest of the MNC (Gupta and Govindarajan 2000). Knowing this, a MNC might choose a greenfield over an acquisition if it plans to share a lot of knowledge with the focal subsidiary. To control for this we use entry mode as a control variable. This data came from the respondents, who could answer how their subsidiary was established: via a Joint Venture, via acquisition of a Dutch firm, via acquisition of a non-Dutch firm or via a Greenfield. In order to use the data in the analysis it was recoded to a dummy variable, coded 1 in case of subsidiaries established through acquisitions (including joint ventures), and 0 in case of subsidiaries established through a greenfield investment.

### **Relative number of European subsidiaries**

One could argue that if a MNC has a relatively high number of European subsidiaries it will have a lot of experience with subsidiaries from European countries such as the Netherlands, and will therefore have learned to deal with communication barriers. As a result this might dampen the effect of communication barriers on intra-MNC connectedness, as assumed in the conceptual model. Therefore this is controlled for. It is measured as the number of European subsidiaries divided by the number of total subsidiaries of the MNC. This data was retrieved from the Orbis database.

### **Industry**

The degree of centralization of an MNC is likely to vary by industry. "Due to their worldwide scope and the intense inter-dependencies implied by their operations, more globalized industries (e.g. automotive, electronics) will tend to display higher levels of integration/centralization" (Young and Tavares, 2004: 219). Because some industries tend to be more integrated, they are likely to have a higher level of knowledge flow between the

different MNC units, therefore we control for this. Industry is measured through the NACE codes. This data was obtained from the Orbis database. The NACE code is a 4-digit code, indicating the industry in which the subsidiary operates. All of the four digits represent a certain level, ranging from general to very specific. Only the first two digits of the NACE code were used in the analysis, to limit the number of possible cases. Subsequently the data was recoded as a dummy value, ranging from 1 to 39. In this way it can be measured whether or not industry has an influence on the dependent variables, however it can not be established which kind of industry has which effect.

### **Subsidiary size**

Larger firms could have advantages in terms of resources compared to smaller ones (Jansen *et al.* 2006). This could be in the form of a higher cash flow, wider access to knowledge, or more human resources. This could lead to larger units having a higher ability to spread knowledge within their organization. However some others have argued that larger units are less flexible and have more rigid management structures (Knoben 2009). In both cases, subsidiary size could have an influence on connectedness, therefore we control for it. We control for subsidiary size through the number of Full-Time Equivalents (FTEs) of the subsidiary in 2008. This number was obtained from the questionnaire.

### **MNC size**

In a similar vein as subsidiary size could have an influence on connectedness, the size of the total MNC could also have an influence on connectedness. Therefore we control for MNC size through the number of Full-Time Equivalents (FTEs) of the total MNC worldwide in 2008. This number is was obtained from the Orbis database.

### **R&D intensity of the MNC**

This captures the percentage of sales spent on R&D activities by the MNC in the last three

years prior to 2008, the year of the questionnaire. The data was obtained from the questionnaire.

### 3.4 Data analysis

#### 3.4.1 Reliability and validity

Common method bias is defined as the variance caused by the method of measuring rather than by the variance of the actual constructs themselves. However, in the present research only the data to measure the dependent variable (subsidiary connectedness) comes from the questionnaire. The data regarding the independent variable have been retrieved in another way. For this reason it is assumed that that common method bias will not have a significant impact regarding the effect of the independent variable on the dependent variable.

Both the data to measure the dependent variable (subsidiary intra-MNC connectedness), as the two moderating variables (subsidiary experience and proportion of expatriates) come from the questionnaire. This could mean that common method bias plays a role in measuring the influence of the moderating variables. However because apart from the dependent variable only the moderating variables come from the questionnaire, and not the independent variable, common method bias is not expected to have significant influence on the measuring of the influence of the moderating variables either. As Chang *et al* (2010: 180) say "[c]ommon method bias is more likely to emerge in models that are overly simple".

## 4. Results

In this chapter the findings will be presented. First, the descriptive statistics will be shown, including the correlation matrix. Secondly, the regression analysis will be described. In the last section of this chapter the conclusions regarding the hypotheses developed in chapter 2 will be drawn.

### 4.1 Descriptive statistics

Table 4.1 shows the N, the Minimum, the Maximum, the Mean, the Standard Deviation, the Skewness and the Kurtosis for all variables<sup>2</sup>.

The data was checked on outliers. As already mentioned, MNC size and subsidiary size were measured through the proxy number of FTE's. For a Dutch subsidiary of a Japanese MNC the questionnaire results showed a remarkably high number of FTE's of the Dutch subsidiary (9500 FTE), which was much higher than the subsidiary with the second highest number of FTE's (which was 3500 FTE). After a check in the Orbis database this number of 9500 FTE turned out to be almost identical to the number of FTE's of the total MNC worldwide. And Orbis showed that the Japanese MNC had more than 10 subsidiaries worldwide. Based on this information a check was done in Orbis of the number of FTE's of the Dutch subsidiary. The number was subsequently replaced in the dataset with the correct number of FTE's of the subsidiary (351 FTE). It was assumed that the person who filled in the questionnaire had erroneously filled in the wrong number, i.e. the number of the total MNC instead of only the Dutch subsidiary.

All variables were checked for normal distribution. The natural logarithm was taken for some values, in order for them to converge to a normal distribution: communication intensity, percentage of expatriates, years in the corporate network, R&D intensity, MNC size, and subsidiary size. In cases where one of the subsidiaries had a 0 as value for one of these variables, it was replaced by 1, in order to facilitate the natural logarithm computation. For other variables missing values were replaced by 0. All variables used in the regression analysis have a normal distribution.

---

<sup>2</sup> The control variable Industry is not included in the descriptive statistics because this is a dummy variable with 39 different industry codes



For 46 subsidiaries it could not be established exactly how many years they were in the corporate network of the MNC. For these subsidiaries the year of establishment of the subsidiary was used to compute the number of years that they are part of the corporate network.

The N for this research is 167, which is clearly above the 'rule of thumb' threshold of 50.

**Table 4.1 - Descriptive statistics of the variables**

	N	Min.	Max.	Mean	SD.	Skewness	Kurtosis
Knowledge exchange	167	0,00	88,00	44,31	18,02	-0,01	-0,13
Communication intensity <sup>a</sup>	167	0,00	4,38	2,16	0,95	-0,24	0,08
Distance (KM's)	167	173,00	16662,00	3261,50	3470,68	0,90	-0,08
Foreign language barrier	167	-120,00	-61,00	-100,93	17,04	0,36	-0,77
Native language barrier	167	1,00	5,00	2,56	1,54	0,72	-1,04
% expats subs. <sup>a</sup>	167	0,00	4,61	0,90	1,37	1,26	0,08
Years in corp. Network <sup>a</sup>	167	0,00	4,09	2,37	0,97	-0,70	0,23
% of European subs.	167	0,01	1,00	0,60	0,35	-0,37	-1,27
R&D intensity <sup>a</sup>	167	0,00	4,44	1,17	1,20	0,51	-1,00
MNC size <sup>a</sup>	167	0,00	13,09	5,77	4,27	-0,21	-1,35
Subsidiary size <sup>a</sup>	167	0,00	8,16	3,14	1,77	0,37	-0,34
Entry mode	167	0,00	1,00	0,38	0,49	0,48	-1,79

<sup>a</sup> variable is log transformed in order to converge to normal distribution

Table 4.2 shows the correlation between the variables. One of the purposes of this table is to check for multi collinearity. As can be seen, all correlation coefficients are below the 'rule of thumb' threshold of .75, which indicates that there is no multi collinearity between the variables. A correlation with a significance of less than .05 is considered significant.

As can be seen, there is a strong negative correlation between the communication intensity and the distance between the Netherlands and the parent country. This indicates that there is significantly less face-to-face contact between employees of the Dutch subsidiary and employees of the headquarters if the headquarters is located far from the Netherlands, compared to headquarters closer to the Netherlands. However, the correlation between distance and knowledge exchange is very weak, although it is negative. Communication intensity is positively correlated with knowledge exchange.

The foreign language barrier, in short the extent to which people are not proficient in English (a higher score means less proficiency) is negatively correlated with knowledge exchange, but the correlation is not significant.

Native language barriers is negatively correlated with both distance and foreign language

barrier. This makes sense because, in general, languages which are closely related to Dutch are spoken closer to the Netherlands compared to languages which are not related to Dutch. And furthermore people whose native language is not related to Dutch, also tend to do worse in speaking English, compared to people whose native language is closer related to Dutch.

The percentage of European subsidiaries of the MNC is negatively correlated with distance, indicating that the MNC with a high proportion of European subsidiaries have their headquarters closer to the Netherlands.

R&D intensity is correlated with knowledge exchange, and the correlation is significant. So subsidiaries who spend a relatively high amount on R&D exchange more knowledge with the headquarters.

Entry mode is significantly positively correlated with communication intensity. Entry mode is a dichotomous variable, where 0 means greenfield and 1 means acquisition. Apparently acquired subsidiaries have more face-to-face contact with their headquarters compared to greenfields.

**Table 4.2 - Spearman's rho correlation matrix**

Nr.	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	Knowledge exchange	1,000											
2	Communication intensity	,182*	1,000										
3	Distance (KM's)	-,007	-,375**	1,000									
4	Foreign language barrier	-,068	-,023	,052	1,000								
5	Native language barrier	-,049	-,262**	,437**	,448**	1,000							
6	% expats subs.	,097	-,005	,045	,148	,199*	1,000						
7	Years in corp. Network	-,009	,034	-,134	,081	-,059	-,069	1,000					
8	% of European subs.	,120	,160*	-,437**	-,138	-,250**	-,024	,203**	1,000				
9	R&D intensity	,218**	-,010	,081	-,146	,021	,118	-,185*	-,045	1,000			
10	MNC size	-,158*	-,008	,150	,203**	,245**	,023	,089	-,178*	-,137	1,000		
11	Subsidiary size	-,003	,246**	-,046	,045	,073	,156*	,217**	-,030	-,107	,190*	1,000	
12	Entry mode	-,022	,259**	-,047	-,064	-,079	-,053	,034	-,082	-,153*	-,018	,338**	1,000

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

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

Valid N = 167

## 4.2 Regression Analysis

The hypotheses as developed in chapter 2 will be tested using regression analysis. In this section the hierarchical regression analysis and its outcomes will be discussed. Because the dependent variable subsidiary connectedness is measured by two proxies, there are two regression tables, one per proxy. As mentioned before, the two proxies are: knowledge exchange and communication intensity.

### 4.2.1 Knowledge exchange as dependent variable

Table 4.3 describes the influence of communication barriers on knowledge exchange.

Model 1 shows the impact of only the control variables on the dependent variable. The control variables are: percentage of European subsidiaries of the MNC, R&D intensity, MNC size, subsidiary size, entry mode and industry. As can be seen, R&D intensity is positively related to knowledge exchange, and MNC size is negatively related to knowledge exchange. The adjusted R square is .053, meaning that Model 1 is not sufficiently clear, based on the rule of thumb that a model is sufficiently clear in case of an adjusted R square of  $>.180$ .

Model 2 shows the impact of both the control variables and the independent variables on the dependent variables. As can be seen, R&D intensity is also in Model 2 positively related to knowledge exchange, and MNC size is negatively related to knowledge exchange.

Furthermore, the table shows that none of the three independent variables contributes significantly to explaining the dependent variable. The numbers as shown in the table are the outcomes when all three independent variables are added to the model at once.

However, the independent variables could also have an influence on each other, which could influence their impact on the dependent variable. It could potentially increase or decrease its effect. To test for this, the independent variables were also tested one at a time. Those analyses did not show a significant impact either, that is why the results are not shown separately. Furthermore, adding the independent variables slightly decreased the adjusted R square value, by .015, indicating that the model, after correction for the number of variables, has become less clear.

Model 3 shows the impact of all the variables: the control variables, the independent variables and the moderating variables. As can be seen, R&D intensity is also in Model 3

positively related to knowledge exchange, and MNC size is negatively related to knowledge exchange. Furthermore, the table shows that also in Model 3 none of the three independent variables contributes significantly to the variance of the dependent variable. Two of the six moderating variables have a significant influence on knowledge exchange: the impact of native language barrier on knowledge exchange is positively moderated by the number of years the subsidiary is in the corporate network, and the impact of foreign language barrier is negatively moderated by the number of years the subsidiary is in the corporate network. The explanatory power of the model increased somewhat by adding the moderating variables, by .011 to .049.

**Table 4.3 – Hierarchical regression analysis with knowledge exchange as dependent variable**

	Model 1	Model 2	Model 3
<b>Control variables</b>			
% of European subs.	.111	.100	.128
R&D intensity	.225***	.219***	.232***
MNC size	-.133*	-.138*	-.142*
Subsidiary size	.029	.026	.055
Entry mode	-.018	-.021	-.039
Industry	Fixed effects		
<b>Independent variables</b>			
Distance (KM's)		-.033	.008
Foreign language barrier		-.059	-.003
Native language barrier		.061	.038
<b>Interaction Effect</b>			
Distance x yrs. in corp. nw.			.024
Foreign lb x yrs. in corp. nw.			-.239**
Native lb x yrs. in corp. nw.			.189*
Distance x % expat. subs.			-.030
Native lb x % expat. subs.			-.095
Foreign lb x % expat. subs.			-.058
R <sup>2</sup>	.087	.090	.135
Adjusted R <sup>2</sup>	.053	.038	.049
Δ Adjusted R <sup>2</sup>	-	-.015	.011
F-Value	2.556**	1.726*	1.574*

**Notes:**

- \* p≤.10; \*\* p≤.05; \*\*\* p≤.01

- N = 167

- Standardized coefficients and two tailed tests are used for all hypotheses

#### 4.2.2 Communication intensity as dependent variable

Table 4.4 for shows the regression analysis with communication intensity as dependent variable. In Model 1 only the effects of the control variables on the dependent variables are measured. As can be seen three variables have a significant positive effect: percentage of European subsidiaries, subsidiary size and entry mode. The explanatory power of Model 1 is .0155.

When adding the independent variables in Model 2, we see that both distance and native language barrier have a negative effect on communication intensity. After adding the independent variables the explanatory power of the model corrected for the number of variables, as expressed in the R square adjusted, increases to .221, meaning that the model is clear enough, based on the rule of thumb that a R square adjusted of >0.18 indicates sufficient clearness. Although not shown in the table, separate tests were done with adding the independent variables one at a time, to see if the results are influenced by interaction effects of the independent variables on each other. It turned out that those results did not deviate in any significant way from the results as shown in the table, i.e. the results obtained from adding all the independent variables to the model at the same time.

In Model 3 we see that none of the moderating variables has a significant influence on the dependent variable. The explanatory power of Model 3 as expressed in the R square adjusted decreases somewhat versus Model 2, by .007.

**Table 4.4 – Hierarchical regression analysis with communication intensity as dependent variable**

	Model 1	Model 2	Model 3
<b>Control variables</b>			
% of European subs.	.192***	.042	.040
R&D intensity	.110	.135*	.131*
MNC size	-.033	.002	-.007
Subsidiary size	.155*	.169**	.166**
Entry mode	.198**	.173**	.181**
Industry	Fixed effects		
<b>Independent variables</b>			
Distance (KM's)		-.286***	-.269***
Foreign language barrier		.127	.111
Native language barrier		-.186*	-.180*
<b>Interaction Effect</b>			
Distance x yrs. in corp. nw.			-.055
Foreign lb x yrs. in corp. nw.			.040
Native lb x yrs. in corp. nw.			.068
Distance x % expat. subs.			.079
Native lb x % expat. subs.			.066
Foreign lb x % expat. subs.			-.112
R <sup>2</sup>	.155	.264	.285
Adjusted R <sup>2</sup>	.124	.221	.214
Δ Adjusted R <sup>2</sup>	-	.097	-.007
F-Value	4.908***	6.244***	4.009***

**Notes:**

- \* p≤.10; \*\* p≤.05; \*\*\* p≤.01

- N = 167

- Standardized coefficients and two tailed tests are used for all hypotheses

### 4.3 Findings

In this section the findings of the analysis will be shown. Table 4.5 shows an overview of the three hypotheses that were developed in chapter 2.

**Table 4.5 - Overview of the hypotheses developed in chapter 2**

Hypothesis 1	The higher the communication barriers between an MNCs home location and a host location, the higher the likelihood that the MNC subsidiary in that host location will be less connected.
Hypothesis 2	The impact of communication barriers on the likelihood of low MNC subsidiary connectedness will be weaker in case of a subsidiary which has spent a long time within the corporate network of the MNC compared to a subsidiary which has spent a short time within the corporate network of the MNC.
Hypothesis 3	The impact of communication barriers on the likelihood of low MNC subsidiary connectedness will be weaker in case of a high proportion of expatriates in the subsidiary.

As far as hypothesis 1 is concerned, the outcomes of the regression analyses show a mixed picture. As mentioned, the dependent variable intra-MNC connectedness is measured by two proxies, and the independent variable communication barriers by three proxies. As hypothesized, distance and the native language barrier are negatively related to communication intensity, so in that respect the hypothesis is confirmed. However foreign language barrier was hypothesized to impact communication intensity positively, but no empirical evidence was found for it. As far as knowledge flow is concerned, none of the three proxies for communication barriers influences it significantly. So hypothesis 1 is partly confirmed.

As far as hypothesis 2 is concerned, the influence of the native language barrier is as hypothesized positively moderated by the number of years that the subsidiary is part of the corporate network. However, apart from this, no significant relations were found, so in total, hypothesis 2 is rejected.

Hypothesis 3 is rejected since there are no significant effects of number of expatriates, neither on knowledge exchange, nor on communication intensity.



## 5. Conclusions and discussion

The findings of the previous chapter will be discussed in this chapter. This will be followed by the contribution to science of this study, followed by the managerial implications of it. This chapter will be concluded by a discussion of the limitations of this study, and possibilities for future research.

### 5.1 Conclusions

As stated in the research question in paragraph 1.2, this study is about the impact of communication barriers on subsidiary intra-MNC connectedness. It has developed a communication-based theory of intra-MNC connectedness of the subsidiary. Based on several extant scientific studies we have argued that high communication barriers between the parent country and the subsidiary country, will lead to lower intra-MNC connectedness of the subsidiary. Furthermore have we argued that this influence of communication barriers on intra-MNC connectedness will be moderated by the number of years that the subsidiary has spent within the corporate network of the MNC, arguing that through the years of working together, both the parent and the subsidiary have developed the knowledge and skills needed to overcome the communication barriers and communicate more effectively with each other. We also hypothesized that the influence of communication barriers will be moderated by the proportion of expatriates in the subsidiary, arguing that expatriates can lower the communication barriers.

Our empirical findings do find evidence suggesting that communication barriers, and more specifically the distance between the parent country and the Netherlands, and the native language barrier, do have a negative influence on communication frequency. As one might expect based on common sense, there is less face-to-face contact if the distance is greater. Interestingly enough though, we did not find support for influence of communication barriers on knowledge exchange. One could think that the fact that these MNCs cannot use a rich communication medium as face-to-face contact compared to other MNCs, would in some ways impede the knowledge flow between the subsidiary and the headquarters. Because communication theory says that a rich medium has a higher capacity for immediate feedback, and the number of cues utilized, for personalization, and for language variety (Daft

and Wiginton, 1979). But as the results show there is no significant impact. As already mentioned, there is little literature regarding communication related phenomena in the International Business literature, so these findings cannot really be explained based on existing literature, but could be the topic of future research.

We expected that the number of years that a subsidiary is part of the MNC would dampen the effect of communication barriers on intra-MNC connectedness. However no empirical evidence was found for this hypothesis.

Furthermore we expected that the proportion of expatriates in the subsidiary would dampen the effect of communication barriers on connectedness. No empirical evidence was found for this hypothesis either. Although there have been several studies indicating that expatriates can contribute to increased communication within a MNC (e.g. Barner-Rasmussen and Björkman, 2005), there are also studies indicating that there is a high failure rate amongst expatriates (e.g. Simeon and Fujiu, 2000; Naumann, 1993). As a reason for expatriate failure it is often said that firms mainly select expatriates based on the technical knowledge required, but fail to give sufficient attention to the important aspect of cross-cultural knowledge. As a result of this flaw in the process of selecting expatriates, it is argued that expatriates lack the much needed sensitivity towards cross-cultural communication. This could be a reason why the proportion of expatriates in our study does not have a positive impact on knowledge exchange, however this is speculation and further research is needed to draw a conclusion in this respect.

## 5.2 Contribution

Knowledge is a dominant source for a firm to develop a sustainable competitive advantage (Van Wijk *et al.* 2008). But knowledge exchange is as yet an elusive concept, or as Van Wijk *et al.* (2008: 830) put it "our understanding of its antecedents and consequences remains rather unclear". This study has looked at knowledge exchange from a, to the knowledge of the author, little used perspective, namely that of communication theory. The study shows that communication barriers do have an impact on connectedness. However the findings also show that the level of knowledge exchange between the Dutch subsidiary and

headquarters located far away is not lower compared to headquarters located nearer to the Netherlands.

#### **5.4 Managerial implications**

As the world continues to globalize, workforces of MNCs are becoming more and more divers. With for example the rise of the so called BRIC countries (Brazil, Russia, India and China), it becomes more likely that Western employees have to work together with colleagues who are located far away geographically, and who might not be very proficient in English. One could imagine that the communication between these divers groups who are physically far away from each other, possibly in different time zones, goes less well compared to communication between less divers groups, located physically closer to each other. This potential difficulty in communicating might pose a risk to a firm, because many studies have shown that knowledge exchange, which implies communication, is absolutely essential for the long-term survival a MNC. As this study shows, the communication barriers which there are between nations, do influence communication intensity, but do not influence significantly knowledge exchange. The managerial implication is that face-to-face contact is not necessary to reach a higher level of knowledge exchange. Furthermore, deficiency in English does not have to impede knowledge exchange, because we also found that the foreign language barrier does not impact the level of knowledge exchange. There can be several reasons to locate expatriates at a subsidiary, but this study has not found evidence for a positive impact of the proportion of expatriates in a subsidiary on intra-MNC connectedness.

#### **5.5 Limitations and future research**

This study has a number of limitations. First, the sample was taken from a single country, which is limiting with regard to the external validity of the conclusions.

This study does use industry as a control variable, but due to the research set-up no conclusions can be drawn as to which industry has which effect. It would be interesting to include this in future studies in a more detailed way. One would expect that industries which

are more integrated, such as the automobile- and consumer electronics industries, would have a high unidirectional flow of knowledge from headquarters to subsidiary (Chini *et al.*, 2005). However as said, due to the set-up in this research no conclusions could be drawn in this respect. Furthermore, this study takes into account knowledge exchange between the headquarters and the subsidiary, but does not take into account inter-subsidiary knowledge exchange. This is a limitation because the extent of intra-MNC connectedness of a subsidiary is also determined by the connections with other subsidiaries, both in- and outside the home country. Another limitation pertains to the measurement of the moderating variable number of years within the corporate network. Although this data was available for the large majority of the subsidiaries, for 46 cases this specific data was missing, and therefore the less accurate year of establishment had to be used to compute the number of years in the corporate network.

The present study was not intended to draw any normative conclusions. It tries to capture how things are going, instead of determining how they should go. Based on the findings of this study that communication barriers do impact communication intensity, but do not impact knowledge exchange, a possible next question could be about the way in which these MNCs exchange knowledge. How do subsidiaries and headquarters exchange knowledge in practice, in day-to-day situations? A case study approach might be most fitting for this purpose, in order to get a more detailed view of the subject.

## References

- Barner-Rasmussen, W, Björkman, I 2005, 'Surmounting Interunit Barriers: factors associated with interunit communication intensity in the multinational corporation', *International Studies of Management and Organization*, vol. 35, no. 1, pp. 28-46
- Bartlett, CA, Ghoshal, S 1986, 'Tap your subsidiaries for global reach', *Harvard Business Review*, vol. 64, pp. 87-94
- Bartlett, CA, Ghoshal, S 1989. '*Managing across borders: the transnational solution*', Boston: Harvard Business School Press
- Birkinshaw, J, Hood, N 1998, 'Multinational subsidiary evolution: capability and charter change in foreign-owned subsidiary companies', *Academy of Management Review*, vol. 23, no. 4, pp. 773-795
- Birkinshaw, J, Hood, N, Jonsson, S 1998, 'Building firm-specific advantages in multinational corporations: the role of subsidiary initiative', *Strategic Management Journal*, vol. 19, no. 3, pp. 221-242
- Birkinshaw, J, Nobel, R, Ridderstrale, J 2002, 'Knowledge as contingency variable: do the characteristics of knowledge predict organization structure?', *Organization Science*, vol. 13, no. 3, pp. 274-289
- Chang, S, Van Witteloostuijn, A, Eden, L 2010, 'Common method variance in international business research', *Journal of International Business Studies*, vol. 41, pp. 178-184
- Chini, T, Ambos, B, Wehle, K 2005, 'The Headquarters-subsidiary trench: Tracing perception gaps within the Multinational corporation', *European Management Journal*, vol. 23, no. 2, pp. 145-153
- Daft, RL, Lengel, RH 1986, 'Organizational information requirements, media richness and structural design', *Management Science*, vol. 32, no. 5, pp. 554-571
- Daft, RL, Wiginton, JC 1979, 'Language and Organization', *Academy of Management Review*, vol. 4, no. 2, pp. 179-191

- Dow, D, Karunaratna, A 2007, 'Developing a multidimensional instrument to measure psychic distance stimuli', *Journal of International Business Studies*, vol. 37, pp. 578-602
- Flores, RG, Aguilera, RV 2007, 'Globalization and location choice: an analysis of US multinational firms in 1980 and 2000', *Journal of International Business Studies*, vol. 37, pp. 1187-1210
- Foss, NJ, Pedersen, T 2002, 'Transferring knowledge in MNCs: The role of sources of subsidiary knowledge and organizational context', *Journal of International Management*, vol. 8, no. 1, pp. 49-67
- Ghemawat, P 2001, 'Distance still matters', *Harvard Business Review*, September 2001, pp.137-147
- Ghoshal, S, Korine, H, Szulanski, G 1994, 'Interunit communication in multinational corporations', *Management Science*, vol. 40, no. 1, pp. 96-110
- Grant, RM 1996, 'Toward a knowledge-based theory of the firm', *Strategic Management Journal*, vol. 17, pp. 109-122
- Gupta, AK, Govindarajan, V 1991, 'Knowledge flows and the structure of control within multinational corporations', *Academy of Management Review*, vol. 16, no. 4, pp. 768-792
- Gupta, AK, Govindarajan, V 2000, 'Knowledge flows within Multinational corporations', *Strategic Management Journal*, vol. 21, pp. 473-496
- Jansen, JJP, Van den Bosch, FAJ, Volberda, HW 2006, 'Exploratory innovation, exploitative innovation and performance: effects of organizational antecedents and environmental moderators', *Management Science*, vol. 52 no. 11, pp. 1661-1674
- Knoben, J 2009, 'Localized inter-organizational linkages, agglomeration effects, and the innovative performance of firms', *The Annals of Regional Science*, vol. 43, pp. 757-779

- Kobrin, SJ 1991, 'An empirical analysis of the determinants of global integration', *Strategic Management Journal*, vol. 12, issue S1, pp. 17-31
- Krone, KJ, Jablin, FM, Putman, LL 1987 'Communication theory and organizational communication: multiple perspectives', in Krone, KJ, Putman, LL, Roberts, KH, Porter, LM (Eds), *Handbook of Organizational Communication: An Interdisciplinary Perspective*, Newbury Park, CA: Sage, 18-40
- Luo, Y, Shenkar, O 2006, 'The multinational corporation as a multilingual community: Language and organization in a global context', *Journal of International Business Studies*, vol. 37, pp. 321-339
- Lengel, RH, Daft, RL 1984, 'An exploratory analysis of the relationship between media richness and managerial information processing', Working paper, Texas A&M University
- Monteiro, LF, Arvidson, N and Birkinshaw, J 2008, 'Knowledge flows within multinational corporations: explaining subsidiary isolation and its performance implications', *Organization Science*, vol. 19, no. 1, pp. 90-107
- Naumann, E 1993, 'Organizational predictors of expatriate job satisfaction', *Journal of International Business Studies*, vol. 24, no. 1, pp. 61-80
- Nobel, R, Birkinshaw, J 1998, 'Innovation in Multinational Corporations : control and communication patterns in international R&D operations', *Strategic Management Journal*, vol. 19, pp. 479-496
- Rugman, AM, Verbeke, A 2004, 'A perspective on regional and global strategies of multinational enterprises', *Journal of International Business Studies*, vol. 35, no. 1, pp. 3-18
- Shuter, R, Wiseman, RL 1994, 'Communication in multinational organizations: conceptual, theoretical, and practical issues', in Wiseman, RL, Shuter R (Eds), *Communicating in Multinational Organizations*, vol. 18, Thousands Oaks, CA: Sage, 3-11

- Simeon, R, Fujiu, K 2000, 'Cross-cultural adjustment strategies of Japanese spouses in Silicon Valley', *Employee Relations*, vol. 22, no. 6, pp. 594-611
- Slangen, AHL 2011, 'A communication-based theory of the choice between greenfield and acquisition entry', *Journal of Management Studies*, vol. 48, no. 8, pp. 1699-1726
- Spencer-Rodgers, J, McGovern, T 2002, 'Attitudes toward the culturally different: the role of intercultural communication barriers, affective responses, consensual stereotypes, and perceived threat', *International Journal of Intercultural Relations*, vol. 26, pp. 609-631
- Szulanski, G 1996, 'Exploring internal stickiness: impediments to the transfer of best practice within the firm', *Strategic Management Journal*, vol. 17, pp. 27-43
- Torbiörn, I 1982, *Living abroad: personal adjustment and personnel policy in the overseas setting*, Chichester: Wiley
- Van Wijk, R, Jansen, JJP, Lyles, MA 2008, 'Inter- and Intra-organizational knowledge transfer: a meta-analytic review and assessment of its antecedents and consequences', *Journal of Management Studies*, vol. 45, no. 4, pp. 830-853
- Welch, LS, Luostarinen, R 1988, 'Internationalization: evolution of a concept', *Journal of General Management*, vol. 14, no. 2, pp. 34-56
- Wenger, E 1998, *Communities of practice: learning, meaning and identity*, New York: Cambridge University
- Williams, C, Nones, B 2009, 'R&D subsidiary isolation in knowledge-intensive industries: evidence from Austria', *R&D Management*, vol. 39, no. 2, pp. 111-123
- Young, S, Tavares, AT, 2004, 'Centralization and autonomy: back to the future', *International Business Review*, vol. 13, pp. 215-237



## Internet sources

This study has used the following internet sources:

Daft Logic distance calculator, '<http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>', accessed on August 14 2012.

Educational Testing Service, '<http://www.ets.org/toefl>', accessed on July 29 2012, and '[http://www.ets.org/research/policy\\_research\\_reports/toefl-sum-0203-data](http://www.ets.org/research/policy_research_reports/toefl-sum-0203-data)', accessed on August 13 2012.

UNCTAD, World Investment Report 2011, '[http://unctad.org/en/docs/wir2011\\_embargoed\\_en.pdf](http://unctad.org/en/docs/wir2011_embargoed_en.pdf)', accessed April 25 2012.

## Appendices

## Appendix I - TOEFL test results 2008 per country

**Table 10. TOEFL iBT Total and Section Score Means<sup>1</sup> —  
All Examinees Classified by Geographic Region and Native Country<sup>2</sup>**

Geographic Region and Native Country	Reading	Listening	Speaking	Writing	Total	Geographic Region and Native Country	Reading	Listening	Speaking	Writing	Total
<b>AFRICA</b>						Montserrat	*	*	*	*	*
Angola	12	15	19	17	63	Netherlands Antilles	16	21	23	22	82
Benin	13	12	16	17	58	Nicaragua	20	21	21	21	83
Botswana	19	21	23	23	85	Panama	19	22	21	21	83
Burkina Faso	13	14	18	17	62	Paraguay	19	21	20	21	82
Burundi	14	15	19	17	65	Peru	20	21	21	21	84
Cameroon	15	16	19	19	69	Puerto Rico	21	23	21	22	87
Cape Verde	13	17	20	19	69	Saint Kitts and Nevis	*	*	*	*	*
Central African Republic	*	*	*	*	*	Saint Lucia	*	*	*	*	*
Chad	10	12	18	16	56	Saint Vincent and the Grenadines	*	*	*	*	*
Comoros	*	*	*	*	*	Suriname	*	*	*	*	*
Congo	12	13	18	17	60	Trinidad and Tobago	*	*	*	*	*
Congo, The Democratic Republic of	15	15	19	18	68	Turks and Caicos Islands	*	*	*	*	*
Cote D'Ivoire	15	14	17	17	63	United States	20	22	22	22	85
Djibouti	*	*	*	*	*	Uruguay	25	26	22	23	96
Equatorial Guinea	13	16	19	17	65	Venezuela	20	22	21	21	83
Eritrea	20	22	21	21	83	Virgin Islands (British)	*	*	*	*	*
Ethiopia	16	18	20	19	72	Virgin Islands (U.S.)	*	*	*	*	*
Gabon	16	17	19	18	70	<b>ASIA</b>					
Gambia	13	15	19	19	66	Afghanistan	12	16	21	19	69
Ghana	18	19	21	21	78	Azerbaijan	17	18	20	20	75
Guinea	14	16	19	18	67	Bangladesh	19	20	21	22	82
Guinea-Bissau	*	*	*	*	*	Bhutan	18	21	23	23	85
Kenya	17	19	20	20	77	Brunei Darussalam	*	*	*	*	*
Lesotho	*	*	*	*	*	Cambodia	14	15	18	19	65
Liberia	12	16	20	18	65	China	20	18	18	20	76
Madagascar	18	17	19	20	74	Christmas Island	*	*	*	*	*
Malawi	*	*	*	*	*	Cocos (Keeling) Islands	*	*	*	*	*
Mali	11	11	16	15	52	Hong Kong	18	20	20	22	80
Mauritania	11	15	20	17	64	India	21	22	22	22	87
Mauritius	24	23	22	25	94	Indonesia	19	20	19	21	79
Mayotte	*	*	*	*	*	Japan	16	16	16	18	66
Mozambique	13	14	19	19	65	Kazakhstan	16	19	20	19	74
Namibia	*	*	*	*	*	Korea, Dem. People's Republic of	17	17	18	19	72
Niger	16	16	18	18	68	Korea, Republic of	20	19	18	20	78
Nigeria	19	19	20	21	79	Kyrgyzstan	18	20	20	20	79
Reunion	20	19	20	20	79	Laos, People's Democratic Republic	12	12	17	17	59
Rwanda	14	15	19	19	68	Macao	15	16	17	19	66
Sao Tome and Principe	*	*	*	*	*	Malaysia	22	23	20	23	88
Senegal	13	13	18	17	61	Maldives	*	*	*	*	*
Seychelles	*	*	*	*	*	Mongolia	17	19	18	19	72
Sierra Leone	14	16	21	19	71	Myanmar	14	16	18	19	68
Somalia	12	17	20	18	67	Nepal	17	18	19	20	74
South Africa	23	25	25	25	98	Pakistan	20	22	23	23	87
Swaziland	*	*	*	*	*	Philippines	21	22	22	23	88
Tanzania, United Republic of	14	16	20	19	70	Singapore	25	26	24	26	100
Togo	13	14	18	18	63	Sri Lanka	19	21	21	22	83
Tunisia	18	19	19	19	75	Taiwan (Republic of China)	18	18	18	19	73
Uganda	18	19	22	22	80	Tajikistan	13	16	20	18	67
Western Sahara	*	*	*	*	*	Thailand	17	18	18	19	72
Zambia	15	20	22	21	78	Timor-Leste	*	*	*	*	*
Zimbabwe	20	22	23	23	88	Turkmenistan	17	20	21	20	79
<b>AMERICAN</b>						Uzbekistan	15	18	20	19	73
Anguilla	*	*	*	*	*	Viet Nam	17	16	17	20	70
Antigua and Barbuda	*	*	*	*	*	<b>EUROPE</b>					
Argentina	24	25	22	23	94	Aland Islands	*	*	*	*	*
Aruba	*	*	*	*	*	Albania	17	19	21	20	77
Bahamas	*	*	*	*	*	Andorra	*	*	*	*	*
Barbados	*	*	*	*	*	Armenia	18	21	21	21	80
Belize	*	*	*	*	*	Austria	24	26	25	25	100
Bolivia	19	21	21	21	82	Belarus	21	23	22	22	88
Brazil	22	22	21	21	86	Belgium	25	25	24	24	98
Canada	21	24	23	23	91	Bosnia and Herzegovina	18	22	22	21	83
Cayman Islands	*	*	*	*	*	Bulgaria	21	23	21	22	88
Chile	22	23	20	21	86	Croatia	22	25	23	22	92
Colombia	20	21	20	20	81	Cyprus	17	20	20	21	78
Costa Rica	23	25	23	23	94	Czech Republic	22	23	22	22	90
Cuba	19	19	20	19	77	Denmark	24	27	26	25	102
Dominica	*	*	*	*	*	Estonia	23	25	23	24	95
Dominican Republic	18	20	21	20	80	Faro Islands	18	25	23	23	89
Ecuador	20	22	21	21	84	Finland	23	26	23	24	97
El Salvador	20	22	22	22	86	France	23	23	21	22	88
Falkland Islands (Malvinas)	*	*	*	*	*	Georgia	18	21	21	20	80
French Guiana	*	*	*	*	*	Germany	23	26	24	24	97
Grenada	*	*	*	*	*	Greece	22	23	21	22	87
Guadeloupe	18	19	20	20	78	Greenland	*	*	*	*	*
Guatemala	18	21	21	20	80	Hungary	21	24	22	23	89
Guyana	*	*	*	*	*	Iceland	22	26	23	24	95
Haiti	12	14	18	17	61	Ireland	*	*	*	*	*
Honduras	19	22	22	21	84	Italy	24	21	20	21	85
Jamaica	19	21	23	22	83	Kosovo, Republic of	15	18	21	20	73
Martinique	*	*	*	*	*	Latvia	20	24	22	22	88
Mexico	21	22	21	21	85						

(continued)

Continued on next page

Continued from previous page

Geographic Region and Native Country	Reading	Listening	Speaking	Writing	Total	Geographic Region and Native Country	Reading	Listening	Speaking	Writing	Total
<b>EUROPE (cont'd)</b>						Libyan Arab Jamahiriya	14	17	20	18	68
Liechtenstein	*	*	*	*	*	Morocco	16	18	20	19	73
Lithuania	20	23	22	22	87	Oman	11	15	18	17	61
Luxembourg	23	25	23	24	94	Palestine Territories	13	17	19	18	68
Macedonia, Former Yugoslav Republic of	19	22	22	21	84	Qatar	11	15	18	16	60
Malta	*	*	*	*	*	Saudi Arabia	11	16	18	16	61
Moldova, Republic of	20	21	22	22	84	Sudan	14	18	20	18	70
Monaco	21	20	20	21	82	Syrian Arab Republic	15	19	20	19	73
Montenegro	17	22	21	21	81	United Arab Emirates	13	16	18	17	64
Netherlands	25	27	25	25	102	West Bank	16	16	20	20	72
Norway	21	25	24	24	94	Yemen	12	16	19	17	64
Poland	20	23	22	22	87	<b>PACIFIC REGION</b>					
Portugal	24	26	23	23	97	American Samoa	*	*	*	*	*
Romania	23	25	23	23	94	Australia	22	24	24	23	93
Russian Federation	20	22	21	21	84	British Indian Ocean Territory	*	*	*	*	*
San Marino	*	*	*	*	*	Fiji	*	*	*	*	*
Serbia	20	23	22	21	86	French Polynesia	22	23	21	22	88
Slovakia	21	23	22	23	89	Guam	*	*	*	*	*
Slovenia	24	26	24	24	98	Kiribati	*	*	*	*	*
Spain	23	23	21	22	89	Marshall Islands	*	*	*	*	*
Sweden	20	25	24	23	92	Micronesia, Federated States of	*	*	*	*	*
Switzerland	24	26	23	24	97	Nauru	*	*	*	*	*
Turkey	19	19	19	20	77	New Caledonia	*	*	*	*	*
Ukraine	20	22	22	21	85	New Zealand	*	*	*	*	*
United Kingdom	22	25	24	24	95	Niue	*	*	*	*	*
<b>MIDDLE EAST/NORTH AFRICA</b>						Norfolk Island	*	*	*	*	*
Algeria	15	18	19	18	71	Northern Mariana Islands	*	*	*	*	*
Bahrain	13	19	21	19	71	Palau	*	*	*	*	*
Egypt	18	20	21	20	79	Papua New Guinea	*	*	*	*	*
Gaza Strip	*	*	*	*	*	Samoa	*	*	*	*	*
Iran, Islamic Republic of	19	19	20	20	78	Solomon Islands	*	*	*	*	*
Iraq	14	18	20	19	71	Tonga	*	*	*	*	*
Israel	22	26	24	23	95	Vanuatu	*	*	*	*	*
Jordan	16	19	20	19	74						
Kuwait	11	16	19	17	63						
Lebanon	18	21	21	21	81						
<p><sup>1</sup> Because of the unreliability of statistics based on small samples, means are not reported for some native country subgroups. Due to rounding, section score means may not add up to the total score mean.</p> <p><sup>2</sup> Because of changes in region and/or country boundaries, certain countries may have been added or deleted since the previous table was published.</p>											

## Appendix II - Classification scheme of languages

Taken from Dow and Karunaratna 2006, pages 599 and 600


<b>Languages</b>				
<i>Families</i>	<i>Branches</i>	<i>First level sub-branches</i>	<i>Second level sub-branches</i>	<i>Selected languages within sub-branches</i>
Sino-Tibetan	Chinese Tibeto-Burman	Baric Bodic Burmese-Lolo		Mandarin, Min Nan, Yue Jingpho Tibetan Burmese
Japanese	Japanese Ryukyuan			Japanese Okinawan – Central
Korean				Korean
Niger-Congo	Atlantic-Congo Mande	Atlantic Volta-Congo	Benue-Congo	Themne Swahili, Tonga, Yoruba, Zulu, Igbo Mende
Uralic	Finno-Ugric	Finno-Permic Ugric		Finnish Hungarian
Diac	Kadai Tai	Central Northern Southwestern	East Central	Lati Tay Zhuang – Northern Thai, Tai – Northeastern, Tai – Northern
Austronesian	Malayo-Polynesian	Central-Eastern Western Malayo-Polynesian	Central M-P Eastern M-P Borneo Chamorro Meso Philippine Sundac	Dobel Fijian, Samoan, Tongan, Kiribati Lawangan Chamorro Tagalog Javanese, Indonesian, Malay, Malay – Pattani
Afro-Asiatic	Chadic Cushitic Egyptian Semitic	Central South	Aramaic South	Hausa Somali Coptic Chaldean Neo-Aramaic Arabic – Mesopotamian, Arabic – Standard, Hebrew Amharic
Altaic	Mongolian Tungus Turkic	Bolgar Eastern Southern	Azerbaijani Turkish	Mongolian – Halh Manchu Chuvash Uzbek – Northern Azerbaijani South Turkish
	Albanian Baltic Celtic	Insular	Brythonic Goidelic	Albanian – Tosk Latvian, Lithuanian Welsh Gaelic – Irish, Gaelic – Scots
	Germanic	East North	East Scandinavian Transitional Scand'n West Scandinavian Continental North Sea	Gothic Danish, Swedish Norwegian – Bokmal Icelandic German – Standard, Schwyzerdutch, Dutch English, Frisian – Northern

Continued on next page

Continued from previous page

<b>Languages</b>				
<i>Families</i>	<i>Branches</i>	<i>First level sub-branches</i>	<i>Second level sub-branches</i>	<i>Selected languages within sub-branches</i>
Indo-European	Greek	Attic Doric		Greek Tsakonian
	Indo-Iranian	Indo-Aryan	Central Zone	Hindi, Urdu
			Eastern Zone	Bengali
			Northern Zone	Nepali
			Northwestern Zone	Panjabi – Western, Sindhi
		Iranian	Eastern	Pashto – Eastern
			Western	Kurdi, Farsi – Western
	Italic	Latino-Faliscan		Latin
	Slavic	Romance	Eastern	Romanian
			Italo-Western	Italian, French, Spanish, Portuguese
		East		Russian, Ukrainian
				Bulgarian
	South	West	Eastern	Serbo-Croatian
			Western	Czech, Slovak
			Czech-Slovak	Czech, Slovak
			Lechitic	Polish

## Appendix III - BOM Survey 2008

Noord-Brabant Development Agency		RSM <i>Erasmus</i> ERASMUS UNIVERSITY	
			
<b>QUESTIONNAIRE FOREIGN-OWNED COMPANIES IN THE NETHERLANDS 2008</b>			
What is your job title (e.g. General Manager, Director)? .....			
<b>PART I: SUBSIDIARY CHARACTERISTICS</b>			
What is the year of establishment of the subsidiary?		..... (e.g. 1984)	
How many full-time employees are working for your subsidiary?		..... # of employees	
How many other subsidiaries does your company have in the Netherlands?		..... # of subsidiaries	
Is your subsidiary the first establishment of your company in the Netherlands?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
If your answer is 'No': How many prior subsidiaries in the Netherlands were established before your subsidiary?		..... # of subsidiaries	
Your subsidiary has been established through:		<input type="checkbox"/> Joint venture <input type="checkbox"/> Acquisition of a Dutch firm <input type="checkbox"/> Acquisition of a non-Dutch firm <input type="checkbox"/> Newly established subsidiary	
What is the core activity of your subsidiary?		<input type="checkbox"/> (Regional) headquarters <input type="checkbox"/> Research and development <input type="checkbox"/> Logistics and distribution <input type="checkbox"/> Service and repair <input type="checkbox"/> Manufacturing <input type="checkbox"/> Shared service center <input type="checkbox"/> Marketing and sales <input type="checkbox"/> Logistics and distribution <input type="checkbox"/> Other:.....	
What is the geographic focus of your subsidiary's activities?		<input type="checkbox"/> Netherlands <input type="checkbox"/> Benelux <input type="checkbox"/> Western Europe <input type="checkbox"/> EMEA <input type="checkbox"/> World (Europe, Middle East, Africa)	
What percentage of annual sales...			
... did the parent company spend on R&D activities in the last 3 years?		..... %	
... did the parent company spend on promotional and marketing activities in the last 3 years?		..... %	
... did your subsidiary spend on R&D activities in the last 3 years?		..... %	
... did your subsidiary spend on promotional and marketing activities in the last 3 years?		..... %	
Approximately,...			
How many times a year do you (or the general manager) visit corporate headquarters?		..... # of visits	
How many times a year do representatives from corporate headquarters visit your subsidiary?		..... # of visits	
How many times a year do you have face-to-face meetings with managers from sister subsidiaries?		..... # of meetings	
What percentage of employees of your subsidiary is an expatriate (non-Dutch national)?		..... %	
What percentage of these expatriates comes from other subsidiaries within the company?		..... %	
What percentage of employees of your subsidiary holds a degree of higher Education (Bachelor / Master)?		..... %	
What percentage of expatriates working for your subsidiary works in managerial jobs?		..... %	
Approximately,...			
What is the travel time to your corporate headquarters one-way from door-to-door?		..... # of hours	

Continued from previous page

PART II: THE NETWORKS OF YOUR SUBSIDIARY									
<b>In which functional areas does your subsidiary cooperate with external parties?</b>						Not at all		To a very large extent	
Research and development						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purchasing						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Production						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marketing						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Management, systems and practices						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finance						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>To what extent does your subsidiary collaborate with the following organisations in Noord-Brabant, the Netherlands, or internationally?</b>									
	Regionally (Noord-Brabant)		Nationally (The Netherlands)		Internationally				
	Not at all		To a very large extent		Not at all		To a very large extent		
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Direct competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Subcontractors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Advertising agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transport organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other knowledge institutions (e.g. TNO)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>To what extent does your subsidiary collaborate with other organisations from the same country of your parent organisation?</b>									
	Firms from the same home country <b>in</b> the Netherlands				Firms from the same home country <b>outside</b> the Netherlands				
	Not at all				To a very large extent				
Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Direct competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Subcontractors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Advertising agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transport organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Universities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other knowledge institutions (e.g. TNO)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Approximately,...</b>									
... how far is your most important customer located from your subsidiary?					..... # of kilometers				
... how far is your most important external supplier located from your subsidiary?					..... # of kilometers				
... how far is your most important internal supplier (intra-company) located from your subsidiary?					..... # of kilometers				
... how far is your most important external customer located from your subsidiary?					..... # of kilometers				
... how far is your most important internal customer (intra-company) located from your subsidiary?					..... # of kilometers				



### PART III: KNOWLEDGE ACTIVITIES

To what extent does your subsidiary provide knowledge & skills to sister subsidiaries and to the Corporate Headquarters in the field of:

	To sister subsidiaries						To Corporate Headquarters					
	Not at all			To a very large extent			Not at all			To a very large extent		
... research and development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... purchasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... management, systems and practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent does your subsidiary receive knowledge & skills from sister subsidiaries and from the Corporate Headquarters in the field of:

	From sister subsidiaries						From Corporate Headquarters					
	Not at all			To a very large extent			Not at all			To a very large extent		
... research and development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... purchasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... management, systems and practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### PART IV: INNOVATION AND LEARNING

To what extent do you agree with the following statements?

	Fully Disagree						Fully Agree					
Our subsidiary has frequent interactions with corporate headquarters to acquire new knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees of our subsidiary regularly visit other branches of the corporation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We collect industry information through informal means (e.g. lunch with industry friends)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other subsidiaries of our company are hardly visited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary periodically organizes special meetings with third parties to acquire new knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees regularly approach third parties such as accountants, consultants, or tax consultants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees of our subsidiary regularly visit our external partners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree with the following statements?

	Fully Disagree						Fully Agree					
Our subsidiary is slow in recognizing shifts in our market (e.g. competition, regulation, demography)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New opportunities to serve our clients are quickly understood by our subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary quickly analyzes and interprets changing market demands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree with the following statements?

	Fully Disagree						Fully Agree					
Our subsidiary regularly considers the consequences of changing market demands in terms of new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees record and store newly acquired knowledge for future reference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary quickly recognises the usefulness of new external knowledge to existing knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees often share knowledge and experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We grasp the opportunities for our subsidiary from new external knowledge obtained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary often meets to discuss the consequences of market trends and new product / service development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree with the following statements?

	Fully Disagree						Fully Agree					
It is clearly known how activities within our unit should be performed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary has a clear division of roles and responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We constantly consider how to better exploit knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary has difficulty implementing new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employees have a common language regarding our products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## PART V: OUTCOMES

### To what extent do you agree with the following statements?

	Fully Disagree				Fully Agree			
Our subsidiary accepts demands that go beyond existing products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We invent new products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We experiment with new products and services in our market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We commercialise products and services that are completely new to our subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We frequently utilize new opportunities in new markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary regularly uses new distribution channels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We regularly search for and approach new clients in new markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### To what extent do you agree with the following statements?

	Fully Disagree				Fully Agree			
We frequently refine the provision of existing products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We regularly implement small adaptations to existing products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We introduce improved, but existing products and services for our local market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We improve our provision's efficiency of products and services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We increase economies of scale in existing markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our subsidiary expands services for existing clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lowering costs of internal processes is an important objective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### To what extent do you agree with the following statements? The parent company...

	Fully Disagree				Fully Agree			
... is satisfied with the overall results of this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... believes that strategic goals of this subsidiary have been met	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... obtains large benefits from this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... is satisfied with the outcomes of this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... is able to reduce its costs through this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... has enhanced its competitive position through this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... has strengthened its skills / capabilities through this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... is satisfied with the knowledge gained from this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... has met its initial objectives with this subsidiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### To what extent does your subsidiary perform below or above expectations over the last 3 years in terms of...?

	Strongly below expectations				Strongly above expectations			
... Return on investments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... Return on equity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... Return on assets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... Cost control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... Operating profit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... New product / service development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**thank you very much for completing this questionnaire!**