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Knowledge transfer from globally dispersed subsidiaries to the parent company: a study of stickiness in a multinational organisation

Margret Schuller
University of Wollongong

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**Knowledge transfer from globally dispersed subsidiaries
to the parent company: A study of stickiness in a
multinational organisation**

A thesis submitted in fulfilment of the requirements for the award of the degree

Doctor of Philosophy

from

University of Wollongong

by

Margret Schuller (MBA)

School of Management, Operations and Marketing

2017

Abstract

Knowledge is a valuable asset for any organisation, including multinational companies (MNC). Knowledge transfer is an important process which helps organisations gain and sustain competitive advantage. Despite extensive research, achieving effective knowledge transfer remains a major challenge for many organisations. Tacit knowledge is particularly complex and often becomes “sticky” and thus slow and difficult to transfer. Previous research has indicated that stickiness characteristics can be of a cognitive or an organisational nature. Moreover, these characteristics typically do not occur in isolation and have different effects in particular contexts.

The present study expands on current theoretical understandings of stickiness by exploring the challenges of knowledge transfer within a multinational organisation, particularly from globally dispersed subsidiaries to the parent company. While most previous research has used surveys to study specific stickiness characteristics, this research uses open-ended interviews with staff at all levels and in different areas of the organisation, to achieve a broader and deeper view of stickiness characteristics. Communication can be both positively or negatively associated with sticky knowledge and patterns in the data at an early stage of the analysis suggested that it would be useful to examine sticky knowledge at different levels of communication “intimacy”. Hence this study analysed stickiness at three levels of communication, from low to high levels of intimacy: formal, less formal, and informal.

The analysis found that many stickiness characteristics were the same when transferring knowledge from subsidiaries to the parent as when transferring knowledge from parent to subsidiary. These specific characteristics had been studied earlier. However, others were new and were more characteristic of knowledge transfer from subsidiary to parent. For example, outsourcing as a predictor of stickiness is seldom mentioned in the literature. Outsourcing increases stress on subsidiary employees, might increase high staff turnover and decreases employee’s trust in management, consequently increases cognitive stickiness in transferring knowledge to the parent company. The implementation and management of processes, including “lean” processes, can diminish absorptive and retentive capacity. Others, however, such as misused and inappropriate formal communication tools, the parent company’s failure to give appropriate feedback to the subsidiaries (“defective feedback loop”), and

conflicting perceptions of the quality of communication between the parent company and its subsidiaries were also more salient in subsidiary to parent knowledge transfer. Still others, such as differences in national language and culture, were much less a source of stickiness than one might expect.

The results have implications for theory. The analysis showed how various stickiness characteristics impact on each other and cannot be adequately evaluated in isolation. This provides a broader and more comprehensive understanding of stickiness characteristics. Further, the study revealed that the parent company's senior managers differ in their perceptions of what is occurring in the organisation compared to subsidiary and parent company employees. The differences affect knowledge transfer to an extent that could actually harm the company's competitiveness.

The research also has implications for practice. Executive officers and senior managers could learn from the findings how they might foster a culture that encourages a more effective knowledge transfer, which would allow CEOs to make better informed decisions and thus contribute to the organisation's competitive advantage. Further, senior managers should evaluate their own perceptions against those of employees to become more aware of how well processes are really working, how some processes might not have the intended long lasting benefits, and how processes may negatively affect each other.

Thesis Certification

Certification

I, Margret Schuller, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the School of Management, Operations and Marketing, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Signature:

Date: 23 February 2017

Publications related to the thesis

Schuller, M., Barrett, M. (2010). Transferring the knowledge from subsidiaries across multinational companies. The XXI ISPIM Conference 2010 Bilbao, Spain, 6-9 June. 2010 ISBN 978-952-214-926-8. The full paper and/or presentation is available to current members of ISPIM-International Society for Professional Innovation who must log in to the Members Section of <http://www.ispim.org> to gain access.

<http://www.ispim.org/members/proceedings/ISPIM2010/commonfiles/files/23097180Paper.pdf>

Schuller, M. (2014). Stickiness in knowledge transfer. In H. Hasan (Ed.), *Being Practical with Theory: A Window into Business Research* (pp. 61-63). Wollongong, Australia: THEORI. Available at

http://eurekaconnection.files.wordpress.com/2014/02/p-61-63-stickiness-in-knowledge-theory-theori-ebook_finaljan2014-v3.pdf

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Dedication

This dissertation is dedicated to my late husband John. His words of love, encouragement and support sustained me during this adventure, and I know he would be immensely proud of me. Also to my son Tristen, who believed in me and never doubted I would overcome any challenges the PhD would throw at me. I hope seeing me overcome these dilemmas will help him discover the strength and encouragement to pursue his own dreams. Words cannot describe the appreciation and love I feel for my family. I do not forget the manifold support from others, and they know who they are. To my friends and family who for many years have patiently listened to my complaints and frustrations, always providing a sympathetic ear, providing only words of encouragement. Finally, to my partner Greg, who has travelled the long final roads of this PhD with me, thank you. I truly appreciate your patience, care, support, and encouragement; they have immeasurably helped me endure those lonely roads.

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Guide to acronyms

KPI	Key performance indicators
CBS	Con-Glom business system (company business system)
MNC	Multinational company
KT	Knowledge transfer
KM	Knowledge management
VoC	Voice of the customer
RBV	Resource-based view
KBV	Knowledge-based view
R&D	Research and development

Chapter 1

Introduction

Knowledge management is essential for the sustainability and growth of all businesses, including multinational companies (MNCs). Such companies span continents, cultures and time zones; thus, providing mechanisms for quality knowledge sharing across the whole organisation is a major challenge. While much research has been devoted to knowledge disseminated from headquarters to subsidiaries, knowledge transfer in the reverse direction, from subsidiaries to headquarters, has received less attention. This thesis reveals barriers to the transfer of knowledge from subsidiaries to headquarters, causing information “stickiness”. Removing stickiness could provide better-quality knowledge to support the decision-making of managers at headquarters.

Theoretical context

MNCs have realised that their core competencies and superior knowledge are their main source of competitive advantage (Ghoshal & Bartlett 2000; Bartlett, Ghoshal & Birkinshaw 2004; Birkinshaw & Hood 1998; Grant 1996; Spender 1996). According to Porter (1990), sustainable competitive advantage is gained through taking offensive or defensive action to create a defensible position in an industry, in order to compete successfully over the long term. In other words, if a company makes profit in excess of its cost of capital, it is probably able to do so because it has achieved a competitive position that offers long-term advantages over its rivals. The resource-based view (RBV) adds to this idea by pointing out that competitive advantage is frequently gained when a company has unique resources that are difficult or impossible to duplicate. These resources can be in tangible or intangible form. An organisation needs to protect its intangible resources, such as knowledge, internal relationships, and the strength of its network (Barney 1991). The organisation’s knowledge is considered to be a valuable resource that needs to be transferred and shared within the organisation’s network.

Despite considerable research aimed at improving understanding of knowledge transfer (KT), many companies are frustrated by the lack of effective knowledge transfer. Executives, middle managers, human resource departments and employees on the floor are often disillusioned and discouraged by a lack of available knowledge. Even if the knowledge is available, it is often difficult to find, and acted on only partially, if at all. Ghoshal and Nohria (1989) and Gupta and Govindarajan (1991), recognise that knowledge may be located in different parts of a multinational firm. While one division might be very successful in transferring knowledge, another division within the same company and country, and dealing with the same network, may fail to pass on its knowledge. Researchers have developed theoretical frameworks to try to understand effective knowledge transfer (e.g. Kostava 1999; Szulanski 2004; Riege 2007; Bonache & Zárraga-Oberty 2008). Nevertheless, companies are still struggling to achieve effective knowledge transfer (Ghoshal & Bartlett 2000; Birkinshaw & Hood 1998).

To understand the function and process of knowledge transfer, researchers have examined the failure to transfer knowledge, which has been dubbed “stickiness”. In particular, scholars have sought to find out what constitutes stickiness and how to avoid it (e.g. Kostava 1999; Szulanski 2003; Riege 2007; Bonache & Zárraga-Oberty 2008). The characteristics of stickiness that create barriers to knowledge transfer from the parent company to the subsidiaries have been identified; for example: causal ambiguity, unproven knowledge and lack of motivation or credibility on the part of the knowledge source (Szulanski 1996; Teece 1998; Kostava 1999; Argote 1999; Holm & Pedersen 2000; Bonache & Zárraga-Oberty 2008; Minbaeva et al. 2003, 2014). Scholars have provided theoretical and practical guidelines on how to overcome these barriers (e.g. Szulanski 2003; Bartlett & Ghoshal 1989; Gupta & Govindarajan 2001; Tannenbaum & Alliger 2000; Martin & Salomon 2003). However, these studies usually focus on only a few specific predictors of stickiness and often only provide generic solutions (Argote 1999; Probst et al. 2000). Riege (2007) tried to fill a gap in knowledge-transfer research by exploring how managers’ actions might affect knowledge transfer and which management actions led to effective knowledge transfer. He interviewed managers interested in knowledge transfer in 20 MNCs, focusing on large, well-established Australian organisations. Based on their answers, he compiled a list of practical solutions to help management to improve organisations’

internal and external knowledge transfer. The managers were aware of the importance of knowledge transfer and were open to receiving advice. Riege said that large-scale exploratory research was needed to confirm his findings and to offer a new understanding of the variables that affect knowledge transfer.

This study adds to previous research on this topic. Using an exploratory case study, the research aims explore the nature of “sticky” points in a reverse knowledge transfer process – that is, from subsidiaries to headquarters – within a large MNC.

Research objective

The objective of this research is to fill a gap in knowledge-management theory by understanding knowledge transfer from subsidiary to parent and among subsidiaries, and to help multinational companies manage these relationships for maximum strategic advantage.

Research questions and research method

The research questions addressed in the current study are:

- How do subsidiaries of a multinational company transfer their local knowledge to the product development, marketing and sales departments of the parent company?
- What prevents subsidiaries from transferring knowledge across national borders?
- To what extent does the parent company encourage and enable knowledge transfer from its subsidiaries?
- Why does subsidiaries’ knowledge become sticky?
- Are subsidiaries involved in transferring their knowledge to other subsidiaries, and if so, how do they do this?

These questions involve several new, relatively unexplored topics, and thus have been addressed through an exploratory, qualitative case study approach (Eisenhardt 1989; Huberman & Miles 2002; Creswell 2003; Maxwell 2005). Accordingly, this thesis is a detailed case study that explores a European-based MNC with subsidiaries in the Asia-Pacific region. The people interviewed were members of sales and marketing teams, staff involved in product training and R&D, as well as some manufacturing staff. These staff were chosen as they were all directly involved in product development processes in which knowledge is transferred. They included both management and more junior staff. The majority of studies to date have gathered information from upper management only; to gather information from all levels of staff involved in knowledge transfer provides a richer information source. Field staff and lower-level employees might have different perceptions from management about knowledge transfer and the reasons for stickiness. Moreover, using data from subsidiaries in developing as well as developed countries provides a broader information source. Interviews were held with staff from the following countries in which subsidiaries are located: China, Singapore, Japan, Korea and other Southeast Asian countries, as well as Australia and the business unit and parent company in Europe.

Company background

The study's subject is a business unit of a well-known multinational company that develops, manufactures and distributes high-technology medical equipment. The company is owned by a large conglomerate, but operates autonomously and has its head office and business units in Europe. Business units focus on individual products, and for that reason have synergy with each other, although the products are aimed at different end users. The selection of the specific business unit as the focus of the study was based on its high level of innovation and the length of its product life cycle, which is on average three years. A too-rapid product life cycle would not have provided enough time to conduct an in-depth study, while a product at the very mature stage of its life cycle might not have provided enough information about knowledge transfer as it relates to product development. The company's strategic planning is done by head office and the selected business unit. The business unit, its R&D department and the product managers are the primary drivers of innovation, including new-product

development. The innovation process includes assessing the strategic importance of new products, their financial impact and their likely technical feasibility. The subsidiaries provide market knowledge, including the “Voice of the Customer” process (meaning listening to customers and understanding their needs). The manufacturing plant and a second R&D department are situated in Asia.

Research approach

The primary data-gathering technique was semi-structured interviews. The aim was to explore how employees in the subsidiary transfer their knowledge, and to gain their perspective about the extent to which the parent company accepts and benefits from that knowledge. In interviewing parent company staff a second aim was to understand the extent to which they receive, encourage and accept the subsidiary’s knowledge. In keeping with an exploratory case study approach, interviews aimed to help the researcher understand the knowledge-transfer process as it appears from different individuals’ perspectives (Eisenhardt 1989; Huberman & Miles 2002). For example, interviews included questions to establish where interviewees saw themselves both within specific processes and more broadly. The interviews sought to find out what kinds of misunderstandings arise when people use processes that are supposed to help them exchange knowledge, and how successful and unsuccessful knowledge transfer affects the communication and work practices of the subsidiaries and the parent company. Is the parent company listening to one subsidiary more than another, and does this make a difference to the overall operation? The data-gathering process resulted in over 80 hours of interviews, which provided rich data for the analysis.

Motivation and contribution

There were several reasons for focusing on knowledge transfer from subsidiary to parent company. Subsidiaries’ knowledge is often strategically important to the parent company because it often includes knowledge about competitors’ activities. Because local market and customer knowledge can be used to improve MNCs’ knowledge creation, product development and competitiveness, subsidiaries’ knowledge is often a source of competitive advantage (Ambos, Ambos & Schlegelmilch 2006; Bartlett &

Ghoshal 2000; Birkinshaw & Hood 1998; Tregaskis et al. 2010). Limited research has been conducted into identifying the transfer of knowledge from subsidiaries to parent company, and the reasons why the parent company might not hear the subsidiaries' knowledge; in other words, where and why the subsidiaries' knowledge might be sticky.

After this chapter, the thesis is organised as follows.

Chapter 2: Literature Review

This chapter discusses the knowledge-transfer literature, particularly studies that examine problems of knowledge flow in multinational companies. The evolution of the term “sticky knowledge”, or “stickiness”, is discussed, as are the controversies relevant to this thesis. Szulanski's (1996) theory of “sticky knowledge” provides the basis for reviewing studies that use his theory of predictors of stickiness in their research. The chapter concludes by discussing why the problems of knowledge flow in multinational companies should be explored.

Chapter 3: Methodology

This chapter discusses the philosophical underpinning of the chosen research method and justifies the choice of an inductive, exploratory case study using face-to-face interviews. A detailed explanation of the research method is given.

Chapter 4: Company context

The chapter provides detailed background information about the chosen company and its Asia-Pacific subsidiaries and distributors. The company structure and its strategic tools are explained and the choice of the company as the study's subject is justified.

Chapter 5: Prologue to the analysis chapters

This chapter explains the basis for dividing the analysis into three chapters. It explains the structure of those chapters and the reasons behind the structure.

Chapters 6 to 8: Analysis chapters

As communication is closely associated with knowledge transfer (Kostova 1999; Goh 2002), the three analysis chapters each explore a different level of communication intimacy: low, medium and high. Chapter 6, Domain: “Low intimacy”, explores the effects of the organisation’s strategic tools. Chapter 7, Domain: “Medium intimacy”, explores more-general organisational communication such as the general flow of communication between the parent company and the subsidiaries and distributors, regardless of the direction. Chapter 8, Domain: “High intimacy” explores the communication that occurs where participants know each other personally. In each chapter the interviews are analysed in detail and findings are compared with the relevant literature.

Chapter 9: Discussion and conclusion

This chapter recapitulates the findings of the three analysis chapters. This is followed by discussion of some practical implications of the research and limitations of the study. The chapter concludes with a summary of the thesis’s contributions and suggestions for further research.

Summary

This chapter has provided an overview of the research problem and its theoretical context, and described the organisation of the thesis.

Chapter 2

Literature Review

Introduction

This thesis is located in the field of knowledge management and, as introduced in Chapter One, examines problems of knowledge flow in multinational companies (MNCs). To highlight the challenges of knowledge flow, this literature review relies in particular on the concept of “sticky knowledge” (Szulanski 1996), which is concerned with explaining resistance to knowledge flow, and thus the success or failure of transferring knowledge from source to recipient. As this thesis focuses on the particular challenges of knowledge transfer from an organisation’s subsidiaries to the parent company, the first section of the literature review briefly defines “subsidiary” and describes the role of subsidiaries in an organisation. This is followed by a review of four studies that provide relevant background on the parent-subsidiary relationship. The subsequent section examines relevant core concepts associated with knowledge, in particular the differences between tacit, explicit and codified knowledge, and clarifies how these concepts are used in this thesis. This is followed by an explanation of the differences between data, information and knowledge; various concepts of knowledge creation; and a discussion of the differences between knowledge transfer and sharing. Literature on the evolution of the term “stickiness” with respect to knowledge flow in organisations is then reviewed. This is followed by a review of studies that use Szulanski’s (1996) predictors of stickiness as a basis for their research. The chapter concludes with a summary of the literature on sticky knowledge and highlights gaps that motivate the research reported in this thesis.

Concept and role of subsidiaries

Subsidiaries are companies whose voting stock is at least 50% controlled by another company. For liability reasons, subsidiaries in foreign countries must follow the host country’s laws, such as those relating to taxation and regulation. While parent companies are financially responsible for subsidiaries, a subsidiary and its parent company can be sued as separate entities. (Drucker 1997; Longman Business English

Dictionary 2007) MNCs that do not produce goods or services may own shares in a company located in a foreign country, to form a corporate group, or they may own single entities, such as manufacturing or sales operations. A company may own one or several subsidiaries in a single country.

The parent company's decisions about subsidiaries are based on how they perceive the role of their subsidiary. Subsidiaries' roles are influenced by their host country's environment or how managers in the subsidiaries view the subsidiary's role, or they may be determined by the parent company. Birkinshaw and Hood (1993, p. 774) describe a subsidiary as a value-adding entity in a host country. A company's subsidiaries might have the same roles – for example, they might be selling units of equal importance to the parent company – or very different responsibilities (Birkinshaw & Hood 1993). Vernon (1966) and Johanson and Vahlne (1977) describe a subsidiary as an extension of an MNC's global activities. Hence, a subsidiary's role is to expand the selling or manufacturing of its products or services by following the parent company's requirements. A company's decision to own subsidiaries in foreign markets usually has an economic basis, such as saving manufacturing costs. Over time the parent company builds on the experiences of the subsidiary and its market (Birkinshaw & Hood 1993).

The management of the parent company may see the subsidiary as an equal partner, with each able to influence the other (Dunning & Lundan 2008; Rugman & Verbeke 1992). Moreover, if a company is structured as an inter-organisational network with low hierarchical focus, subsidiaries may be able to develop their own unique resources (Ghoshal & Bartlett 1991). Often the parent company uses the subsidiary network as a tool to implement its strategies and to gain competitive advantage. By providing market intelligence, subsidiaries contribute to the parent company's knowledge (Bartlett, Ghoshal & Birkinshaw 2004; Birkenshaw & Hood 1998; Rugman & Verbeke 2001). Cantwell and Mudambi (2005) argue that this position can increase the importance of a subsidiary's role.

The nature of a subsidiary's relationship with its parent company depends on its relative power; that is, the power and independence that the subsidiary's managers perceive that it has in relation to the parent company (Forsgren et al. 1992; Forsgen & Phalberg 1992; Ghoshal & Bartlett 1991). However, the parent and subsidiary

companies' managers often have different perceptions of each other's roles (Birkinshaw et al. 2000). Reviews of the literature by Forsgren et al. (1992), Forsgren and Phalberg (1992), Ghoshal and Bartlett (1991) and Birkinshaw et al. (2000) have found that if a subsidiary manager overestimates the subsidiary's strategic value, managers of the subsidiary tend to perceive parent company managers' level of control to be too high. In these cases, subsidiary managers can become increasingly reluctant to cooperate with the parent company. In contrast, a low gap in between the two organisations' perceptions of the importance of each leads to less parent-company control over the subsidiary and a higher level of cooperation between the two.

Asakawa (2001) surveyed parent-company and subsidiary managers about their perceptions of mutual information sharing and expectations to explore how gaps in power perception affect tension between the head office and the subsidiary. He found that as the subsidiary's autonomy increases, the motivation of its staff to transfer knowledge to the parent company increases. However, regardless of a subsidiary's level of autonomy, if subsidiary managers believe they do not receive adequate information from the parent company, there will be a strong negative effect on the relationship. Asakawa (2001) suggests that studies are needed to understand how factors such as the corporate environment may create tension in the parent-subsidiary relationship, and the forms these tensions can take.

Chine et al. (2005) expanded on Asakawa's (2001) research by exploring whether his findings could have been affected by the strategic environment in which parent companies and subsidiaries operate. In a study of 79 subsidiaries operating in global, multinational and transnational environments, they found that in a global environment where there is standardisation across all subsidiaries, the lack of subsidiary autonomy creates tension, with subsidiaries perceiving that they do not receive enough information from the parent company to perform to the parent company's expectations. In the transnational environment, the company's R&D departments are usually standardised. However, subsidiaries need high autonomy to be able to adapt to local markets. In national environments, subsidiaries also have to adapt to the local markets, but if subsidiaries have high autonomy, little or no relationship tension between parent and subsidiary develops. In transnational environments, subsidiaries and parent companies each rely on knowledge transfer from the other. This eliminates the perception gap, resulting in little or no relationship tension. Chine et al. (2005)

confirmed that different environments, such as global, transnational or national environments, are likely to affect the level of tension in a parent-subsidiary relationship.

The next section discusses some key terms, ideas and concepts used in the knowledge-transfer literature (Table 1). These ideas about knowledge contribute to the definitions used by the researcher in this thesis.

Knowledge

MNCs' superior knowledge is a main source of competitive advantage (see, for example, Quinn, Anderson & Finkelstem 1996; Nonaka, Toyama & Konno 2000; Alavi & Leander 2001). The concept of knowledge within an organisation and the management of the knowledge residing within an organisation have been discussed by scholars since the mid-1990s. From an information and communications technology (ICT) perspective, "knowledge is the top of the data-information-knowledge hierarchy where information is meaningful, processed data and knowledge is information that is actionable" (Handzic & Hasan 2003, p. 2). Davenport (1994) argues that managers relying on information technology (IT) need knowledge and judgement for the information to be of value. Knowledge is a complex concept, and authors have different views of what organisational knowledge is (Table 1). While some authors see it as an object that can be captured, stored, manipulated, distributed and reused, others argue that knowledge resides within individuals and is difficult to capture, store and transmit (Handzic & Hasan 2003).

Table 1: Concept of knowledge in the context of knowledge management

Source	Concepts
Alavi & Leander 2001	Organisational knowledge resides and is managed within an organisation's internal network.
Davenport & Prusak 2000	"Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms." (p. 5).
Gamble & Blackwell 2001	Knowledge is know-how and understanding formed by personal experiences and the way new information is processed by the mind. Knowledge is thus highly personal. Hence for knowledge to become useful and capable of being used by others, it must be transmitted from a source to a receiver in a way that lets it be understood and absorbed.
Brown & Duguid 1991; Drucker 1991; Kogut & Zander 1992; Nonaka 1994; Quinn, Anderson & Finkelstem 1996; Davenport, Jarvenpaa & Beers1996	Knowledge is what one believes to be true and values. Knowledge is built on experiences, communication and the interpretation of messages received.
Zack 1999	"Valuable strategic asset" (p. 46) (economic benefit). Knowledge can be stored and manipulated.
Nonaka, Toyama & Konno 2000	"An important source of a firm's sustainable competitive advantage" (p. 6). "Justified true belief...focus is on justified rather than the 'true' aspect of belief" (p. 7).
Fahey & Prusak 1998	Knowledge might be represented in organisations; however, knowledge is embedded within a person's mind.
Kogut & Zander 1992	Knowledge is embedded within the individual as know-how. It is expressed in social settings such as networks, and it can be in explicit, codified or tacit format. "Knowledge is embedded in the organizing principles by which people cooperate within organizations" (p. 383).
Grant & Baden-Fuller 1995; Conner & Prahalad 1996	Tacit and explicit knowledge that resides within the internal organisational network is an asset that provides competitive advantage.
Edwards & Kidd 2003	"Knowledge consists of deeper structures and patterns that a person has recognised in information as potentially transferable to other issues-even ones that have not arisen yet" (p. 2)

As shown in Table 1, the various ideas scholars provide for “knowledge” have commonalities, such as that knowledge has both tacit and explicit elements. It can be tacit and/or explicit; that it provides competitive advantage; that it is personal and embedded within individuals who consider the knowledge to be true and valuable. However, the consensus appears to be that the value of knowledge depends on how it is communicated and understood. Therefore, in this thesis knowledge is defined as what someone believes to be true, and is considered to be built on personal experiences and personal interpretations of messages received.

Tacit and explicit knowledge

The tacit knowledge residing in an organisation has long been seen as an asset leading to competitive advantage (Winter 1987; Leonard-Barton 1995; Nonaka & Keuchi 1995; Bartlett, Ghoshal & Birkinshaw 1992; Davenport & Prusak 1998; O’Dell and Grayson 1998; Bollinger & Smith 2001; Manhart & Thalmann 2015; Fraj, Matute & Melero 2015; Cheong & Tsui 2016). However, scholars’ concepts of tacitness vary. Indeed, Cowan et al. (2000) write, “the meaning of this term itself is something that remains literally tacit” (p. 211). Table 2 presents various ideas and concepts of tacit, and explicit knowledge.

Table 2: Concepts of tacit knowledge

Source	Concept
Polanyi 1962	Intuitive awareness and understanding of objects and things that exist.
Polanyi 1966; Nonaka 1994	Personal knowledge or “know-how”, built on personal experiences, intuition and beliefs.
Polanyi 1962, 1966; Nonaka 1994; Szulanski 1996	Knowledge that is difficult to transfer, articulate and share, as it is internalised within an individual.
Martin & Salomon 2003	Tacit knowledge is intangible as it resides within an individual. It is difficult to capture and transfer, although this offers the advantage that it is difficult to copy.

Nonaka & Takeuchi 1995	Tacit knowledge is hidden within the organisation and entrenched in the individual.
Nonaka & Konno 1998	Two type of tacit knowledge: “know-how”, or skills, and the beliefs, values and deeply ingrained knowledge the owner assumes as granted.
Mack 1990; Allen, James & Gamlen 2007; Taminiau, Smit & De Lange 2009; García-Holgado, García-Peñalvo, Hernández-García & Llorens-Largo 2015; Wherton, Sugarhood, Procter, Hinder & Greenhalgh 2015	Often scholars use the term “informal knowledge” when referring to tacit knowledge.
Nelson & Winter 1982	“Imperfectly accessible to conscious thought” (p. 79).
Cowan & Foray 2000	Holistic understanding of things.
Kay 1999	“Not ‘knowledge that’, but ‘knowledge how’” (p. 13).
Von Hippel 1994	Sticky information.
Zack 1999	“Tacit knowledge is subconsciously understood and applied, difficult to articulate, developed from direct experience and action, and usually shared through highly interactive conversation, storytelling, and shared experience” (p. 46).
Crossan et al. 1999; Hansan et al. 1999; Mladkova 2012; Snowden 2002; Sveiby 1997; Tsui 2005; Venkitachalam & Busch 2012	Tacit knowledge might be a challenge to transfer. It is often transferred by story-telling. Knowledge can be shared by mentoring and/or transmitted from a master to an apprentice.
Busch & Richards 2000	It is the individual’s foundation of knowledge, which develops over time by absorbing, creating and circulating knowledge.

As shown in Table 2, scholars appear to agree that tacit knowledge is informal knowledge, often referred to as personal know-how. Know-how is formed over time through the use of personal skills and the application of values, beliefs and intuition. It is personal knowledge that is difficult to transfer. In this thesis, tacit knowledge is defined as personal know-how, which is entrenched in the individual. Due to its tacit nature, it is difficult to transfer or share and, following Szulanski (1996), is therefore “sticky”.

Table 3: Concepts of explicit knowledge

Source	Concept
Polanyi 1962, 1966; Nonaka 1994, 2008	Knowledge that can be codified, formalised and communicated in formal and systematic language.
Nonaka & Takeuchi 1995	Explicit knowledge is codified.
Nonaka & Konno 1998	“Explicit knowledge can be expressed in words and numbers and shared in the form of data, scientific formulae, specifications, manuals, and the like” (p. 1).
Martin & Salomon 2003	Explicit knowledge can easily be copied by the competition.
Zack 1999	“Explicit knowledge is more precisely and formally articulated, although removed from the original context of creation or use” (p. 46).
Mack 1990 Allen, James & Gamlen 2007; Taminiau, Smit & De Lange 2009; García-Holgado, García-Peñalvo, Hernández-García & Llorens-Largo 2015; Wherton, Sugarhood, Procter, Hinder & Greenhalgh 2015	Explicit knowledge is often called “formal knowledge”.

As shown in Table 3, scholars agree that explicit knowledge is formal knowledge, which is codified and can easily be transferred and communicated in words and numbers. It can be found in documents and databases. However, as it is easily accessible, it can easily be copied by the competition. Therefore, in this thesis explicit knowledge is defined as formal and precisely codified knowledge. In addition, the thesis uses Nonaka’s (1994, 1995, 1998, 2008) concept that explicit knowledge is relatively easily accessible, as it is stored in depositories such as documents and databases. It is easily transferred and communicated, as it is expressed in words or numbers.

Data versus information and knowledge

The tables below list concepts of data, information and knowledge.

Table 5: Concepts of data

Source	Concept
Davenport & Pruska 2000	Data is unprocessed information, which is of low value compared to information.
Tuomi 1999	Data alone does not produce a benefit or outcome.
Quigley & Debons 1999	Data is words or numbers that do not solve a problem.
Bolisani & Handzic 2015	“Unprocessed facts and observations” (p. 28).
Bellinger, Castro & Mills 2004	Data is equivalent to symbols.

To summarise the concept of data as found in the literature, most scholars agree that data is unprocessed information of low value, as numbers, words or symbols alone do not change outcomes. Hence, data by itself without information or knowledge is of little benefit to an organisation.

Table 6: Concepts of information

Source	Concept
Davenport & Pruska 2000	Information is organised into some beneficial meaning.
Tuomi 1999	Information shows patterns, and gives some relevance to data.
Nonaka 1991	Information is context-specific and relational, meaning that it is similar to knowledge; however, information has a higher factual element compared to knowledge, which is based on beliefs.
Kogut & Zander 1992	Information is knowledge that cannot be transmitted with integrity.
Nonaka & Takeuchi 1995	Information is meaningful messages.
Nonaka & Konno 1998	Information is tangible.
Quigley & Debons 1999; Bellinger, Castro & Mills 2004	Information answers the questions who, when, what or where.
Bolisani & Handiz 2015	Information is data that has had context added.
Edwards & Kidd 2003	“Information is data processed for a purpose” (p. 2).

As shown in Table 6, scholars typically consider information as having higher value than data, as information shows patterns and provides meaning to data. Some scholars argue that information and knowledge are not synonymous, but in the management literature the terms are often used interchangeably. Nonaka (1991) and Kogut and Zander (1992) argue that information is similar to knowledge, but that knowledge might not be as factual as information. Under “concept of knowledge”, Nonaka (1991), as well as Kogut and Zander (1992), characterise knowledge as what one believes to be true. Beliefs may not always be based on facts, however. Quigley and Debons (1999) and Bellinger, Castro and Mills (2004) define information as that which answers the questions who, when, what or where.

Table 7: Concept of knowledge versus information

Source	Concept
Davenport & Pruska 2000	Knowledge is of the highest value and brings meaning into action.
Tuomi 1999	Knowledge provides a certainty of an outcome, and hence is of highest value.
Bolisani & Handiz 2015 Ackoff 1989; Sharma 2008	Knowledge is information with wisdom, meaning information with understanding and insight; information that has been evaluated and judged.
Nonaka 1991	Like information, knowledge is context-specific and relational; however, knowledge converts information into action.
Nonaka & Takeuchi 1995	Knowledge is commitment and opinions derived from information.
Nonaka & Konno 1998	Knowledge is intangible.
Kogut & Zander 1992	“Knowledge [is that] which can be transmitted without loss of integrity”. (p. 20).
Quigley & Debons 1999; Bellinger, Castro & Mills 2004	Knowledge provides the answer to why and how.
Bolisani & Handiz 2015	“Structured information, information with meaning, transferable from one issue to another” (p. 28).

As shown in Table 7, scholars agree that in contrast to data and information, knowledge provides context and meaning, and hence is of the highest value for organisations. Knowledge allows information to be used for action. Nonaka and Konno (1998) refer to information as tangible, whereas knowledge is intangible. Quigley and Debons (1999) and Bellinger, Castro and Mills (2004) contrast knowledge with information in that knowledge answers the questions why and how. Wilson (1996) presents a hierarchical model: a pyramid with data at the bottom, followed by information, knowledge, decision and action; this echoes the views of other scholars. Therefore, in this thesis data is defined as having a lower level of meaning than information. Information provides facts, patterns and relevance to data, while knowledge brings meaning to information, which can then support action.

Knowledge creation

For companies to gain competitive advantage, the organisation needs to apply existing knowledge and use it to create new knowledge (Alavi & Leidner 2001). In other words, knowledge transfer may lead to changes in the recipient's behaviour or the development of some new idea that leads to new behaviour and the creation of knowledge (Davenport & Prusak 1998). Table 8 lists definitions of knowledge creation.

Table 8: Concepts of knowledge creation

Source	Concept
Smith, Collins & Clark 2005	Knowledge creation is built on existing knowledge.
Boland & Tenkasi 1995; Hargadon & Fanelli 2002	Existing knowledge combined with new knowledge creates innovative knowledge.
Nonaka & Konno 1998; Nonaka 1994; Nonaka, Toyama & Konno 1994	Knowledge creation converts tacit knowledge into explicit knowledge and back into tacit knowledge.

As shown in Table 8, scholars agree that knowledge is created by combining existing knowledge with new knowledge.

Nonaka and Takeuchi (1991) developed what is known as the SECI model (socialisation, externalisation, combination and internalisation), which was further refined by Nonaka and Toyama (2003). They argue that creating new knowledge can be achieved in four stages. In the first, socialisation allows tacit knowledge to be transferred to other individuals or groups through storytelling or via a master teaching an apprentice. Because tacit knowledge is difficult to access, the second step is externalisation, where tacit knowledge is codified to make it explicit. The third step, combination, refers to the spread of explicit knowledge via manuals, documents and databases. While combining, explicit knowledge might create new knowledge, it does not extend the company's current knowledge unless explicit knowledge is enriched with personal knowledge. This occurs in the final stage, internalisation, when what Nonaka (1991) calls "explicit to tacit knowledge" occurs. During this stage employees use explicit knowledge, internalise it and, by changing or expanding it with their personal knowledge, create new knowledge. Nonaka's SECI model has been adopted

by many scholars studying organisational learning (e.g. Chatti et al. 2007; Rice & Rice 2005), or when studying knowledge creation (Richtnér et al. 2014; Sian & Kelkar 2013; Auernhammer & Hall 2013). Therefore, in this thesis knowledge creation is defined as the combination of existing knowledge with new knowledge to create innovative knowledge.

Knowledge translation

In the last 15 years, scholars have started to use the term “knowledge translation” (Carlile 2004; Estabrooks et al. 2006; Johnson 2005; Røvik 2016). Knowledge-translation theory refers to the process and measurement of the success of knowledge transfer, creation, re-creation, innovation and implementation across various boundaries. However, despite its increasing use by scholars, the exact definition is still unclear and is often used in slightly different contexts with different connotations. Scholars more commonly use the phrase “knowledge utilisation” when they refer to measuring the implementation success of an organisation’s knowledge asset (Estabrooks et al. 2006).

Knowledge transfer and sharing

The terms usually associated with knowledge flow are “knowledge transfer” and “knowledge sharing”. These terms are not well defined in the knowledge-management literature, and are often used interchangeably, sometimes even by the same authors within the same publication (Paulin & Suneson 2015). According to Paulin and Suneson (2015) and Choo and Neto (2010), “knowledge sharing” seems to be more frequently used when referring to individuals. However, if the focus is a department, business unit or organisation, “knowledge transfer” seems to be the more frequently used term. Either way, O’Dell and Grayson (1998) and Szulanski (1996) stress that before transferring knowledge, the company must be aware that the knowledge exists and know where it resides and how to access it. Usually the search for knowledge within the organisation is initiated when the need for knowledge arises, such as when a problem needs to be solved or competitiveness improved (Teece 1976; Cohen,

March & Olsen 1972). The table below provides concepts of knowledge transfer and sharing.

Table 9: Concepts of knowledge transfer

Source	Concept
Szulanski 1996	The knowledge exchange process between the source and the recipient.
Szulanski 1996	<p>Four stages of knowledge transfer:</p> <p>1st stage: Initiation, which comprises all the events that led up to the transfer of knowledge, such as identifying that knowledge is needed, searching for the knowledge and, when found, initiating the transfer.</p> <p>2nd stage: Implementation, where the exchange of knowledge between the source and the recipient begins.</p> <p>3rd stage: Ramp-up, when the recipient starts using the knowledge and improves it over time or creates new knowledge.</p> <p>4th stage: Integration, which refers to the knowledge becoming routinely used within the organisation and no longer being unique to one individual.</p>
Martin & Salomon 2003; Mowery, Oxley & Silverman 1996	Knowledge flow throughout the organisation.
O'Dell & Grayson 1998; Paulin & Suneson 2015; Choo & Neto 2010	A continuous process in which knowledge is identified, created, collected, organised, shared, adapted and used.
Argote & Ingram 2000	"[T]he processes through which one unit (e.g., group, department, or division) is affected by the experience of another" (p. 151).

As shown in Table 9, the terms “knowledge transfer”, “knowledge sharing” and “knowledge flow” share the common idea of a process of creating and passing knowledge from one person or group within an organisation and its networks to another, and finally implementing it.

Table 10: Concepts of knowledge sharing

Source	Concept
Fahey & Prusak 1998	Shared understanding, “shared context”.
Riege 2005	Knowledge shared between individuals.
Paulin & Suneson 2015; Choo & Neto 2010	The term “knowledge sharing” is more frequently used when knowledge exchange is between individuals.

As shown in Table 10, knowledge sharing seems to be more often used when knowledge is exchanged between individuals. However, as mentioned in the introduction to this section, often scholars use the terms “sharing” and “transferring” interchangeably. The emphasis is on the knowledge-exchange process between the source and the recipient, leading to a continuous process where knowledge flows throughout an organisation.

Managing knowledge transfer and sharing is critical for MNCs to gain competitive advantage (Kostova 1999; Foss & Pedersen 2002; Inkpen & Tsang 2005). Many impediments to knowledge transfer can arise; the restricted flow and transfer of knowledge is referred to as “stickiness”.

The evolution of ideas about stickiness

That knowledge can have “stickiness” which restricts its flow and the ease of knowledge transfer, was recognised by Michael Polanyi as early as 1958. In his book *The Tacit Dimension*, he argues that people know more than they can express (p. 4), and that when knowledge cannot be verbalised, it becomes difficult to share. Theorists such as Nelson and Winter (1982) and Nonaka and Takeuchi (1995) see these difficulties as linked to the perception that knowledge has economic value; this aspect of tacit knowledge continues to arouse interest (Cowan et al. 2001; Johnson & Lundvall 2001). Connections between the economic value of knowledge and the process of finding and distributing it within an organisation were mentioned by scholars well before companies began adopting formal strategies to try to manage knowledge as an asset. The following section discusses the evolution of stickiness and sticky knowledge.

Kenneth J. Arrow (1962) and von Hippel (1994)

As early as 1962, Arrow recognised that knowledge has economic value. Drawing on sociological research into learning theory and innovation diffusion, he explained some of the challenges in acquiring knowledge. Further, he suggested that if knowledge can be replicated or transferred without any cost, then the transfer or replication can continue until the implementation has succeeded or been understood. Von Hippel's (1994) research also linked ease of knowledge transfer with costs to the organisation. He argued that if knowledge moves around a company easily, then there is no cost attached. Conversely, if it is difficult to transfer knowledge, or if knowledge is difficult to obtain or use, then there is a cost. He argues that as stickiness increases, cost increases. He assigned the term "sticky" to knowledge that flows sluggishly throughout the organisational network. Further, he proposed that knowledge can be sticky due to its tacitness. For example, high-tech companies such as R&D firms often find it difficult to know what knowledge to share and how to share it. As well, the transfer of knowledge can be sticky due to characteristics of the sender and receiver. Like Arrow, von Hippel identified characteristics of stickiness such as "arduous" knowledge transfer, but he did not apply his findings in specific research contexts.

Paul Attewell (1992) and Pinto and Mantel (1990)

Other researchers have made similar observations. For example, Attewell (1992) observed that organisations often delay implementing complex technology until their managers feel they have all the required knowledge, and argued that this delay might create barriers to innovation. Implementing processes that would lower or remove barriers would lower transaction costs and increase the speed of knowledge flow. Consequently, the learning process would increase, and the resulting greater know-how and knowledge would increase the organisation's capacity to innovate, including developing new products. Attewell did not use the term "sticky"; however, one can assume that barriers slowing the process of knowledge transfer create stickiness.

Pinto and Mantel (1990), when studying the causes of project failure, found that success was associated with specific factors in the implementation of the project. These factors depend on situational characteristics such as the availability of

resources and expectations of the project's success. As the gap between expectations and the final outcome widens, the transfer of knowledge becomes sticky.

Gabriel Szulanski (1996, 2002)

Building on previous research, Szulanski (1996) explored internal stickiness. In line with von Hippel's theory that knowledge transfer can be sticky, he defined knowledge that is difficult to transfer or share as sticky knowledge, or stickiness. However, the term "sticky" had, in fact, been used by past researchers; Szulanski's (1996; 2002) contribution was to recognise the "event" nature of "stickiness". An "event" means something must be happening, such as the cost of knowledge transfer increasing, or the time it takes to transfer knowledge, or the gap between expectation and outcome. If knowledge transfer is easy and happens unnoticed, is of low cost and is fast and successful, it is not an event; it is not "sticky". He postulates that stickiness might be created by intrinsic characteristics of the knowledge-transfer process or by the characteristics of a specific situation. In line with his focus on stickiness as an event, he concentrated on finding operational indicators of stickiness. He argued that various characteristics of knowledge and stickiness depend on the sources of knowledge, the recipient of knowledge and/or the situation. Thus, Szulanski moved the focus of knowledge-transfer theory to the operational level.

Four stages of knowledge transfer

Table 9 in this chapter explained Szulanski's (1996) four stages of knowledge transfer. Each of those stages could become a source of stickiness. For example, lack of awareness that the knowledge is needed or where to find it, poor communication skills between the source and the recipient, problems in achieving the anticipated performance and maintaining new skills and processes as routine tasks could all accumulate and increase stickiness. Szulanski suggested that these stages may create stickiness due to specific, measurable factors such as: causal ambiguity and unprovenness, a source or recipient lacking motivation, a source not being perceived as reliable or poor absorptive and retentive capacity on the part of the recipient. Furthermore, a barren organisational context and an arduous relationship between

source and recipient can create stickiness. These factors are defined and discussed in the section of this chapter titled “Studies based on Szulanski’s predictors of stickiness”.

Later studies by Szulanski explored characteristics contributing to stickiness and provided guidance on how to manage knowledge transfer (e.g. Szulanski 2001; Szulanski & Winter 2002; Szulanski & Jensen 2004; Szulanski & Jensen 2006; Ringov & Jensen 2014; Szulanski, Ringov & Jensen 2014; Brueller & Szulanski 2014). Over time some of the characteristics he first described changed their relative importance (Szulanski 2000; Szulanski, Cappetta & Jensen 2004; Szulanski 2014); nevertheless, most researchers settled on Szulanski’s characteristics as the most significant. Later theories added to his contribution.

Kostova’s (1999) development of Szulanski’s “Stickiness model”

Kostova (1999) developed a theoretical framework to help MNCs gain competitive advantage by transferring their strategic processes from the parent company to its foreign subsidiaries. Rather than observing the characteristics of stickiness itself, she examined factors that might create barriers to knowledge transfer. She argued that knowledge transfers do not occur in social isolation; rather, they are entrenched in situations, and can therefore be influenced by individuals, social factors, the organisation’s behaviour and/or aspects of the situation such as differences between the cultures of the countries in which the parent company and its subsidiaries operate. Kostova postulated that an organisation’s practices reflect the culture of its country. Hence, practices or processes transferred to a subsidiary from a parent company located in a different country might not be agreeable to the subsidiary, and might negatively affect knowledge transfer (Kostova 1999, p. 314).

Like Szulanski, Kostova stressed that a positive relationship between the source and the recipient encourages successful knowledge transfer and implementation. However, he postulated that the motivation to implement knowledge depends more on the receiver (subsidiary) than on the source (parent company). This motivation is influenced by aspects of the parent-subsidiary relationship, such as their power and dependence levels. Motivation is high if the subsidiary accepts the parent company’s

values and if the subsidiary is keen for the parent company to succeed. Trust in the parent company positively influences motivation, as does the subsidiary's perception of how the parent company values the subsidiary. Kostova also acknowledged that the absorptive capacity of the recipients is crucial, and agreed with Ghoshal and Bartlett (1988) that subsidiaries are valuable for the parent company's capacity for innovation and its ability to adopt and create knowledge.

Bonache and Zárraga-Oberty (2008)

Bonache and Zárraga-Oberty (2008) moved away from Szulanski's and Kostova's macro-level approach to the micro level by investigating how individual managers' dealings with particular local employees affect knowledge transfer. Bonache and Zárraga-Oberty's focus was mainly on tacit knowledge, which, as mentioned earlier, creates greater challenges to transfer. They theorised that organisations transfer tacit knowledge by means of team or individual job projects and use manuals and electronic means to transfer explicit knowledge. While individuals might transfer personal knowledge to individuals, a team would provide collective knowledge to teams. Teams' knowledge would usually be specialised knowledge.

Further, a recipient needs to have the ability and the motivation to absorb knowledge. The recipient's motivation will depend on their relationship with the knowledge source and the presence of transparent and reliable communication between the parent company and the subsidiary. A positive relationship is created when the employees of the parent company's staff are sensitive to the local culture of the subsidiary, when interpersonal socialising creates a sense of belonging and when team spirit develops. For motivation to implement new knowledge to increase, the receiver has to understand the importance of the knowledge and have appropriate and easy-to-use work systems. As a final point, Bonache and Zárraga-Oberty suggested that as some people are more inclined than others to transfer knowledge, the organisation should be selective in choosing the right sender and receiver. The organisation should also consider reward systems, either intrinsic or extrinsic, to encourage people to transfer or share knowledge. While previous research focused mainly on the various barriers that create stickiness, Bonache and Zárraga-Oberty suggested how staff could be motivated to transfer knowledge.

Studies based on Szulanski's predictors of stickiness concept

While theorists such as Kostova and Bonache and Zárraga-Oberty have extended Szulanski's (1996) model, many researchers still use Szulanski's original concept of stickiness in empirical work. Szulanski's (1996) article "Exploring internal stickiness: Impediments to the transfer of best practice within the firm" indicated that major barriers to knowledge transfer are connected to "knowledge-related factors". He classified them into four groups:

- 1) Characteristics of knowledge and stickiness
 - a. Causal ambiguity
 - b. Unproven knowledge
- 2) Characteristics of source and stickiness
 - a. Source lacks motivation
 - b. Source lacks credibility
- 3) Characteristics of recipient and stickiness
 - a. Recipient lacks motivation
 - b. Recipient lacks absorptive capacity
 - c. Recipient lacks retentive capacity
- 4) Characteristics of context and stickiness
 - a. Barren organisational context in an intra-organisational setting
 - b. Arduous relationship between source and recipient

The following sections review research that relies on Szulanski's (1996) model. Each section defines the specific stickiness characteristic, and briefly reviews the studies that have tested the concept empirically. It concludes with a summary of those studies, including a table highlighting the research method and data type for each study.

1. Characteristics of the knowledge transferred and stickiness

a. Causal ambiguity

This section discusses causal ambiguity including its relationship to the resource-based view (RBV) and the knowledge-based view (KBV) of the firm.

Conceptualisations of causal ambiguity and resource-based views (RBV) theory

Lippman and Rumelt (1982) defined causal ambiguity as uncertainty about underlying reasons and how they interrelate. They argued that this phenomenon has both a positive and a negative effect on an organisation's long-term survival. On the one hand, uncertainty can be positive, providing a competitive advantage to companies, as uncertainty factors are difficult for the competition to recognise and imitate. However, on the negative side, it prevents the organisation from effectively implementing its strategic resources. The concept of "strategic resources" is an aspect of the RBV. The theory reasons that organisational resources are strategic assets that provide the organisation with the opportunity to increase profits and superiority over its competitors (Mahoney & Pandian 1982; Barney 2001; Coff et al. 2006). Based on Lippman's and Rumelt's view of causal ambiguity, the followers of the traditional RBV supported the belief that causal ambiguity, while it might create problems for managers, was in general positively related to organisational success (Barney 1986; Wernerfelt 1984; Reed & DeFillippi 1990; Barney 1991; Peteraf 1993).

The idea from RBV theory that causal ambiguity is a source of competitive advantage for the organisation has its critics (Priem & Butler 2001; Szulanski 1996; McEvily, Das & McCabe 2000; Kunc & Morecroft 2010). In fact, empirical studies have showed that causal ambiguity is a barrier to knowledge transfer and a characteristic of stickiness (Levin & Cross 2004; Simonin 1999; Szulanski et al. 2004).

Causal ambiguity and knowledge-based view (KBV)

Over time the RBV was extended to include the KBV of the firm. The idea behind the KBV is that a company's competitiveness relies on the knowledge resources within it, and that for the company to thrive, knowledge such as "know-what", "know-how" and

“know-why” needs to be treated as an asset (Kogut & Zander 1992; Grant 1996; Brown & Duguid 1998; Szulanski 1996). One of the differences between the two ideas seems to be that the RBV considers knowledge as being just one of several company resources (Penrose 1959; Barney 1991; Grant 1991), while KBV theorists stress that knowledge is the most important resource for companies’ competitive advantage (Grant 1996; Foss 1996; Phelan & Lewin 2000; Kogut 2000; Nickerson & Zenger 2004).

Szulanski’s causal ambiguity model

Szulanski (1996) took the view that knowledge characteristics such as causal ambiguity create barriers to transferring knowledge. He based his argument on Polanyi’s (1962, p. 49) suggestion that an unspecified amount of tacit knowledge and skills resides in individuals. Winter (1987) and Kogut and Zander (1992) endorsed this idea, and added that tacit knowledge can be held within a group. Further, tacit knowledge is prone to causal ambiguity (Reed & DeFilippi 1990; Spender 1993; Nonaka 1994; Grant 1996). Simonin (1999) examined how know-how was transferred and, with it, the effects of causal ambiguity, by surveying 147 senior managers in US companies about their ability to transfer their knowledge of international alliances. While the focus of the study was on international alliances rather than organisations’ internal networks, his conclusion confirmed Szulanski’s observation that ambiguity significantly affects knowledge transfer, and is further complicated if the knowledge is of a tacit nature rather than codified knowledge. Further, ambiguity is negatively related to a company’s performance. However, the notion that causal ambiguity might have a positive effect on a company’s performance persisted. While the different viewpoints contradict each other, they do share some truth, and have been dubbed by King and Zeithaml (2001) the “causal ambiguity paradox”.

Causal ambiguity and trusting a knowledge source

Expanding Szulanski’s research on the characteristics of knowledge transfer, Szulanski, Cappetta and Jensen (2004) studied the relationship between trusting a knowledge source and causal ambiguity. They surveyed eight companies to observe transfers of 38 practices that could only be performed by a group. They tested 110

sources, 101 recipient units and 60 third parties. Ambiguity was based on the theory of uncertainty, and was tested by asking corporate-office staff and outside consultants to indicate how much they agreed with statements such as “With [the practice] we know why given action results in a given outcome” and “When a problem surfaced with [the practice] the precise reason for failure could not be articulated even after the event”. Trustworthiness questions explored whether the sources believed they had enough resources to transfer the knowledge and adequate support to enable the recipients to put the knowledge into practice. The same questions were sent to the source, the recipient and individuals aware of the knowledge transfer but not directly involved with either unit. The research revealed that while usually trust was positively related with knowledge transfer, in the case where causal ambiguity was high, trusting the source could have a negative effect on the knowledge transfer’s correctness. For example, a process that was high in causal ambiguity might be implemented incorrectly because the recipient might not validate the accuracy of the knowledge received. In other words, in a situation of high causal ambiguity, as the recipient’s trust in the source increases, the accuracy of the implementation of the practice decreases.

Causal ambiguity and management perception

Powell, Lovallo and Caringal (2006) analysed the link between causal ambiguity and management perception to identify whether causal ambiguity has an impact on companies’ performance and competencies. They used “empirical findings in social psychology and behavioural decision-making” (p. 2), and integrated and compared those findings with existing studies of causal ambiguity. They concluded that the outcome of companies’ strategies seems to be evaluated according to what managers believed caused the performance.

Paradox of causal ambiguity

As noted earlier, causal ambiguity has been seen as an impediment to effective knowledge transfer, and therefore a hindrance to strategic performance, as well as a source of competitive advantage. Law (2014) tried to resolve this paradox by pointing out that researchers are inconsistent in their definition of causal ambiguity, and often use the same classification when they discuss knowledge ambiguity, tacitness and

causal ambiguity, whereas each has a different meaning. Law built on Grant (1996) and Szulanski (1996), who argued that tacit knowledge is difficult to transfer effectively, as it is embedded in the individual or a group; however, he used Van Wijk et al.'s (2008) and Lippman and Rummelt's (1982) definition of knowledge ambiguity as uncertainty about underlying reasons and how they interrelate.

Tacitness of knowledge increases ambiguity

The tacitness of knowledge increases the ambiguity, adding to its complexity and the challenge of using and implementing the knowledge (Reed & DeFilippi 1990). Law (2014) postulated that causal ambiguity has a second component. As well as causal ambiguity, which is uncertainty how to use knowledge, there is uncertainty about the knowledge content, which he called component ambiguity. Component ambiguity means that it is difficult to manage the knowledge content due to its tacitness, ingrained context and complexity. In contrast to causal ambiguity, which makes it difficult to apply knowledge when it is not clear which actions lead to a specific result, component ambiguity makes simply communicating the knowledge clearly a challenge. Causal ambiguity, for example, would occur when “firms can acquire and assimilate knowledge but might not have the capability to transform and exploit the knowledge for profit generation” (Zahra & George 2002, p. 191), Law (2014) expands on that concept. He advocates that there are two parts to ambiguity, component ambiguity and causal ambiguity. Component ambiguity is uncertainty about knowledge content while causal ambiguity is uncertainty about how to use the knowledge. Content ambiguity would occur when a recipient obtains and integrates knowledge but later has difficulty trying to recreate and exploit the knowledge to generate performance (Law 2014, p. 445). Law quoted Shariq (1999), who wrote that all human-to-human interactions are based on cognitive behaviour and communication. Hence cognitive aptitude is an essential part of effective knowledge transfer (Nonaka 1994). Law (2014) suggested that when transferring knowledge, managers need to understand which type of ambiguity is creating a challenge to knowledge transfer. While component ambiguity might require improved communication or a beneficial database to store and retrieve information, managers dealing with causal ambiguity need to support and empower employees to analyse and alter knowledge to understand what they need to do to achieve a specific outcome.

b. Unproven knowledge

This section discusses unproven knowledge, often referred to as “absence of proof of the knowledge’s usefulness”. Szulanski’s (1996) concept of unproven knowledge as a characteristic of knowledge transfer and its positive correlation with stickiness is explained, followed by an examination of unproven knowledge as discussed in the literature.

Conceptualisations of unproven knowledge

Szulanski (2003) considered unproven knowledge – that is, knowledge that is not proven to be beneficial – as positively related to stickiness, though Liebeskind (1996) would call this unproven information, as she considered that knowledge already has proof, and hence cannot be unproven. However, by using the term “unproven”, Szulanski (1996) was referring to knowledge that is proven to be true, but has not been routinely implemented or applied. He argued that knowledge that is perceived but has not proven itself to be beneficial might not be trusted by the receiver. Hence the receiver might not see it as a priority to transfer or implement this knowledge, and might be reluctant to recreate new knowledge if the unproven knowledge does not meet expectations (Szulanski 2003, p. 27). Some studies have applied Szulanski’s model in various settings to confirm that knowledge characteristics like unprovenness are of high importance and might create stickiness.

Testing Szulanski’s concept of unproven knowledge

Blackman et al. (2013) tested whether the effectiveness of governments and departments that supposed to communicate effectively with each other to achieve a coherent result or strategy are inhibited by knowledge stickiness. They conducted semi-structured interviews with 78 participants from four groups of government agencies and departments that were working on joint projects. They confirmed the presence of Szulanski’s stickiness characteristics, but found that the importance of these characteristics varied from department to department. While employees often tried to share knowledge, the lack of facilities and the bureaucracy often made this

difficult or impossible. Further, some departments were not aware of their knowledge or did not know how to transfer it. However, if staff were newly employed or if employees had an arduous relationship with the knowledge source, unproven knowledge became a slight stickiness problem and staff were less motivated to apply, recreate or transfer the knowledge.

Timbrell et al. (2001) were interested in how to improve knowledge transfer across a knowledge-management system. They investigated how the knowledge transfer was affected by stickiness when implementing new software that was supposed to support clients, vendors and implementation partners. They surveyed 479 government-agency staff by asking questions such as “What do you consider have been the major issues an implementing, managing and/or supporting the SAP financials in [your Government] Agency?” They found that unproven knowledge becomes a stickiness issue during the “ramp-up stage”, when recipients start to use the knowledge. This is in contrast to Szulanski’s finding that unproven knowledge tends to create stickiness when a person within the organisation first becomes aware that knowledge is required and the decision is made to transfer knowledge, as well as during the knowledge-transfer phase. Timbrell et al. (2001) finds that if the knowledge does not fulfil the recipient’s expectations, they are likely to stop using the new knowledge and are reluctant to share it.

Cabrera-Suarez et al. (2016) tested the unprovenness characteristic of knowledge by exploring the impact of knowledge when transferred from a predecessor to a successor within a small to medium business. They found that positive relationships, clear communication and training improved the transition, and that successors were likely to build on the predecessor’s know-how and trust their knowledge, regardless of whether it was perceived as proven or unproven.

Influence on joint variable factors leads to stickiness due to unprovenness

The above studies suggest that stickiness due to unproven knowledge is not necessarily a major stickiness characteristic of knowledge. Unproven knowledge becomes sticky when the source and recipient have an arduous relationship, there is high staff turnover or the knowledge does not meet the recipient’s expectations.

Specific circumstances, rather than the mere fact of something being unproven, increase the stickiness associated with unprovenness.

This observation is supported by Minbaeva (2007), who conceptualised that, if viewed in isolation, stickiness characteristics such as unproven knowledge might not be responsible for creating stickiness when transferring knowledge. Minbaeva criticised researchers for having accepted all Szulanski's early work without rigorously testing his model. Hence, she tested Szulanski's four groups of stickiness characteristics (characteristics of knowledge, source, recipient and context) by analysing knowledge transfer from parent companies to their subsidiaries. Managers of 92 subsidiaries of MNCs located in 11 countries were surveyed. The publication does not state the questions asked. Minbaeva found that knowledge characteristics cannot be ignored; however, they are not all equally important in creating stickiness, and they seem to be influenced by combinations of factors. These shared factors might involve receivers and/or senders, such as their motivation and absorptive and retentive capacity, as well as the quality of the relationships between senders and receivers. Szulanski in his later work did note that several factors and choices made by receivers and senders influence stickiness (Szulanski & Cappetta 2003). Further, while Szulanski (1996) considered unprovenness to be positively related to stickiness, in his 2000 publication he did claim unprovenness to be of low importance compared to some of the other characteristics, such as recipient's lack of absorptive capacity, causal ambiguity and arduous relationship between source and recipient.

2. Characteristics of source and stickiness

a. Lack of motivation

This section asserts that understanding motivation (or the absence of motivation) is necessary for understanding stickiness. Lack of motivation can be associated with the characteristics of the source as well as of the recipient. After discussing various definitions of lack of motivation, this section uses researchers who have used Szulanski's model to study the link between stickiness and lack of motivation. The section finishes with a summary.

Conceptualisations of motivation

Motivation has been discussed extensively in the literature, and numerous definitions have been provided. Within organisational-behaviour research, motivation is defined as an individual's willingness to perform their job. In the past, the focus in the outcome of motivation literature has largely been on how to predict and measure employees' behaviour, work performance or consumer choice, rather than specifically on what motivates these behaviours (Siemsen, Roth & Balasubramanian 2007). The following section focuses on the motivation to transfer/share knowledge within an organisation using Szulanski's concept of stickiness.

The source lacks motivation

A source can be the keeper or the creator of knowledge, an individual or a group. The source is in control of how to transfer knowledge, as well as how much to transfer or share with another individual or group. Szulanski argued that there could be two ways for a source to lack motivation: the source might be worried that sharing knowledge or empowering others might result in their own loss of power (Hollander & Offermann 1990), or the source might feel that they will not get adequate recognition for passing on the knowledge, or that they might not have time to transfer the knowledge or support the recipient in understanding the knowledge and how it should be used (Szulanski 1996).

Szulanski testing his model of motivation creating stickiness

Szulanski tested his model (1996) of stickiness characteristics by investigating companies seeking to transfer best practice within their network. "Organisational practices", sometimes called "best practice", is defined as the routine use of knowledge, or as the replication of an organisation's routine processes (Szulanski 1996). Eight MNCs were surveyed. Questionnaires were sent to the source and to those recipients who were transferring the firm's best practice from head office throughout their networks. He concluded that while lack of motivation from either the source or the recipient can create stickiness, motivation depends on barriers such as the recipient's lack of absorptive capacity, causal ambiguity and arduous relationship with the source. In the past scholars conceptualised that motivation to transfer

knowledge is related to management issues, such as managers' failure to provide knowledge and recipients' lack of motivation to seek the knowledge (Porter 1985; Goold, Campbell & Alexander 1994). However, it seems that stickiness characteristics, as described by Szulanski have a greater impact on employees' motivation.

Rewards and motivation

Osterloh and Frey (2000) undertook a meta-analysis of studies into what type of reward, if any, motivates employees to transfer knowledge. They confirmed that employees are motivated by intrinsic as well as extrinsic incentives. For example, they found that tacit knowledge transfer is usually driven by intrinsic motivation such as personal relationships and team spirit. However, while tacit knowledge is important for a company's competitive advantage, it is difficult to measure whether the knowledge transfer has been effective. Explicit knowledge transfer can easily be observed and measured; hence the transfer can be rewarded using extrinsic incentives. Jeon, Kim and Koh (2011) and Martín-Cruz, Martín Pérez and Cantero (2009) confirmed these findings when studying motivation in local companies. They agreed that an intrinsic reward, such as helping others, is more important than extrinsic incentives.

Burgess conducted a case study at a US company's head office by surveying 480 people and interviewing 58 employees of varying ages and job functions. The aim was to measure the factors that influenced employees to share or find knowledge outside their immediate workgroup. For example, they explored whether employees showed higher motivation if they felt that the organisation gave them credit for sharing knowledge, or if they associated knowledge with power, and hence shared less of their knowledge. While Burgess found that intrinsic incentives had a higher motivational influence on sharing tacit knowledge than extrinsic rewards, he concluded that lack of extrinsic rewards reduced motivation to share knowledge regardless of whether the knowledge was tacit or explicit. To generalise, while rewards motivate employees to share knowledge, they are more likely to share within their own division than between divisions as their association is stronger with their own division than with the organisation. Even people who have a positive attitude towards sharing and seeking knowledge have their motivation negatively affected by what they perceive as an inappropriate organisational culture and reward structure. While the perceptions of the

employees Burgess interviewed varied, they all agreed that the incentive structure was too results-driven, as only the sales figures seemed to be of importance to the company. Knowledge sharing was not rewarded or praised as a benefit to the individual or the organisation. Employees felt that they were not rewarded for their time and effort in sharing knowledge, despite management having introduced various knowledge-transfer initiatives. The culture of departmental competition created a “silo mentality” of isolation and self-interest. Similar observations have been reported by Pfeffer and Sutton (2000) and Kohn (1986).

Motivation affected by “complementary” factors

The negative effect of performance pressure on motivation to transfer knowledge is confirmed by Gardner (2012). She performed a two-field analysis, using qualitative and quantitative research in the form of surveys and observations, to examine project teams sharing knowledge under performance pressure. They measured performance pressure and team performance by asking clients questions about whether the team had adhered to its schedule and whether outcome expectations had been met. Actions to direct team effort were determined by questions such as “Name several things that this team does especially well (compared to your experience in other AuditCo teams) and some areas where it could improve” (p. 20). Gardner also explored the effect that general professional and domain-specific expertise has on sharing knowledge under pressure. Her study concluded that under pressure, employees are more motivated to perform well, but knowledge sharing decreases. Team members are more likely to draw on their own knowledge than enrich their knowledge with the expertise of the other team members; hence their overall performance as a team declines.

Siemsen, Roth and Balasubramanian (2007) developed a model for managers to understand their employees’ motivation to share knowledge with their co-workers. Survey questions were answered by 140 employees from four companies. Questions included: “Please think about the most recent occasion where you had some work-related knowledge (‘tricks of the trade’) that would have been of some potential use to one of your co-workers, and you (attempted/did not attempt) to share this knowledge with him or her whether your co-worker acquired it in the end or not” and “Think of a situation where, for example, you learned something new or you had a new idea for

improvement, where you detected errors in regular work procedures or where it became obvious to you that some of your existing knowledge may be valuable to a co-worker. If this knowledge would have been of some use to many of your co-workers, just pick one of them to refer to” (p. 442).

Siemsen, Roth and Balasubramanian (2007) found that motivation does not depend on a specific factor, but on what they classified as complementary factors, meaning that motivation depends on different situations, and that different issues or factors affect motivation differently. For example, lack of ability to transfer knowledge might result in lack of motivation. However, lack of ability in a different situation might not result in lack of motivation. Hence, Siemsen et al. (2007) called these complementary factors to motivation, which define whether someone lacks motivation. Unless managers are aware of and address the specific motivational factors that support knowledge sharing, processes to encourage it will not work. Some of the main factors that have a negative impact on motivation to share knowledge are lack of opportunities and time pressure. Knowledge transfer is further reduced if the opportunity or ability to share knowledge is lacking. Recipients’ ability, meaning their awareness of their knowledge, is usually regarded as a motivational factor for sharing knowledge (Bonache & Zárraga-Oberty 2008).

The study by Siemsen, Roth and Balasubramanian differed from Szulanski’s approach in that Szulanski explored the transfer of routinely used knowledge, or an organisation’s routine processes (departmental knowledge transfer), while Siemsen’s study focused on the knowledge residing in individuals and being transferred to co-workers (individual knowledge transfer). The research method is different, as are the views on the concepts; hence the survey question would have been differently structured. These factors might explain the studies’ different conclusions.

Motivation to share knowledge with external entities

While all the above studies focus on motivation to transfer knowledge within an organisation and its departments, Dyer and Nobeoka (2000) examined the motivation of knowledge transfer between an organisation and its suppliers. The Japanese automotive company Toyota is known for its successful Toyota Production System, with its lean manufacturing processes, including kaizen (a concept that includes

notions of continuous efficiency and personal improvement). Toyota developed knowledge sharing processes, such as motivating its employees and partners to share and value knowledge, while ensuring that knowledge is protected from its competitors, as well as reducing the cost associated with sharing knowledge by understanding which knowledge is valuable. Dyer and Nobeoka's (2000) exploratory case study aimed to understand how Toyota seems to have overcome the challenges of organisational knowledge sharing, particularly the motivational factors responsible for the success. They interviewed 30 Toyota and 97 supplier executives, besides collecting archival and survey data.

Dyer and Nobeoka (2000) found that Toyota builds strong networks with its suppliers first by transferring explicit knowledge for low cost. The suppliers become members of the Toyota network in the hope that they will receive more work from Toyota; however, as they start to receive Toyota's explicit knowledge for low cost, the suppliers begin to see the benefits of becoming members of the network. As Toyota starts to include some tacit (know-how) knowledge, suppliers begin to feel obliged to reciprocate; as the bonds between Toyota and the suppliers increase, tacit and explicit knowledge exchange in both directions increases. This strengthens the network to the point where knowledge is shared between the supplier networks. The strong network is built on mutual respect, acknowledging that both sides benefit from the knowledge exchange. Suppliers are rewarded for their participation in knowledge exchange by receiving more support, such as opportunities for one-to-one tacit knowledge exchange, or offers of increased business. Toyota seems to have managed to combine its production "know-how" system with building a strong motivated network to share the knowledge that resides within the suppliers. Dyer and Nobeoka recommended that further research explore how companies in other industries have copied the Toyota model.

Summary of studies using Szulanski's characteristics motivation and stickiness

As mentioned earlier, while there are multiple studies into motivational factors to transfer knowledge, there seem to be multiple reasons affecting motivations, and not all have been mentioned in this literature review; an example is Shaikh's (2013) exploration of the negative impact of job stress on motivation to share knowledge.

Further, several scholars seem to accept unquestioningly the Szulanski model by using it as a fact without further testing; this has been criticised by Minbaeva (2007). Others have challenged the model and explored how its results might differ from their own findings. Some studies support Szulanski's findings; others do not. However, the different findings might not be due to an inconsistency with Szulanski's findings, but rather the research questions, the situation or the type of knowledge tested. As Siemsen, Roth and Balasubramanian (2008) point out, Szulanski (1996, 2000) only focused on knowledge that is difficult to transfer. As mentioned earlier, Szulanski's concept of sticky knowledge is that if the transfer is not an event, then it is not sticky; hence he might have only focused on transfers that experienced difficulties. Szulanski did not consider motivation to be a major stickiness factor. Since his studies in 1996 and 2000, the question of whether motivation is a major or minor stickiness characteristics of knowledge transfer has been broadened. When motivation was first explored in the context of knowledge transfer, it was defined more narrowly, and seen as a management issue. However, over time, the relationship of motivation and knowledge transfer has become a wider area. Even in this short literature review it is noticeable how researchers explore motivation in various different contexts.

b. Source lacks credibility

While lack of motivation is associated with the characteristics and stickiness of the source and the recipient, lack of credibility is associated with the characteristics of the source alone, along with stickiness. The following section focuses on contexts within which the source lacks credibility to transfer or share knowledge within an organisation, using Szulanski's concept of stickiness.

Conceptualisation of the source lacks credibility

During a communication process, the receiver evaluates the message and decides whether the source can be trusted and/or is perceived as an expert. The acceptance of the message, knowledge or idea is based on the recipient's perception, not necessarily on the source's actual character. However, acceptance might depend on who sends the information (Hovland & Weiss 1951; Berlo et al. 1969). Further, the source of knowledge might lack credibility, which can cause stickiness. Szulanski's

(1996) concept of source credibility is based on the notion of how the source, such as an individual, a department, or a unit, affects the receiver's behaviour. His model claimed that if the knowledge source lacks credibility or the source is not perceived as reliable, knowledge becomes sticky and difficult to transfer (Szulanski 2000), and the receiver resists accepting knowledge from that source (Walton 1975). Szulanski rated source credibility or reliability as more important than source motivation in reducing stickiness. However, source credibility is less important than the recipient's motivation to transfer knowledge. His model did not discuss in detail the effect that trust might have on stickiness. However, he contrasted the term "trustworthy" with "not reliable". Trust is known to motivate the receiver to accept and absorb knowledge (Carley 1991; Levin 1999; Mayer et al. 1995; Srinivas 2000). Hence, one could conclude that while lack of trust is not mentioned as a characteristic of stickiness in Szulanski's 1996 model, it is an important factor when the knowledge of the source is to be perceived as reliable and acceptable to the receiver.

Trust and positive interpersonal relationships increase the credibility of the source

Bonache and Zárraga-Oberty (2008) drew on the RBV literature (Barney 1991; Peteraf 1993; Grant 1996; Argote & Ingram 2000) in developing a complementary model to Szulanski's concept. They suggested that a relationship of trust between the source and the receiver increases the reliability and credibility of the source, and therefore knowledge and advice are more easily accepted. Further, source reliability is increased through socialising and interpersonal relationship building, sensitivity to the national culture and team spirit.

Lee et al. (2008) confirmed those findings when exploring knowledge transfer between MNCs' headquarters and their subsidiaries to investigate its impact on the development of new products. They defined knowledge flow as how and whether knowledge is transferred between subsidiaries, as well as between subsidiaries and the parent company, regardless of the direction. The survey was conducted with several US organisations with foreign subsidiaries. Within the sample of 139 companies, 90% of survey respondents were senior executives of the parent companies. Lee et al. found that a strong relationship built on trust between the parent company and the subsidiaries has a positive impact on knowledge flow.

Social network ties

Trusting the source is discussed in the literature on social networks (Adler & Kwon 2002), network structure (Reagans & McEvily 2003; Granovetter 1973; Hansen 1999; Marsden & Campbell 1984) and organisational learning/knowledge (Szulanski 1996; Uzzi & Lancaster 2003; Zander & Kogut 1995). Research has investigated whether strong or weak ties between networks are more beneficial to knowledge transfer.

Levin and Cross (2004) focused on the positive outcome the receiver might gain from the knowledge, calling it “receipt of useful knowledge”, rather than change in the recipient’s behaviour (Cyert & March 1963; Nelson & Winter 1982; Levitt & March 1988). Levin and Cross conducted a two-part survey of three divisions within three different industries. All participants were involved in knowledge-intensive work, such as R&D, financial modelling and oil exploration. One hundred twenty-seven employees completed the survey, which gathered 508 observations.

Levin and Cross concluded that perceived trustworthiness increases beneficial knowledge transfer due to social strong ties. Social ties are defined as the connections between people who share knowledge, state of mind and experiences. Researchers have suggested that strong ties are positively associated with knowledge transfer (Ghoshal et al. 1994; Hansen 1999; Uzzi 1997; Turner & Petrunin 2015; Shah et al. 2015). Further, Levin and Cross discovered that even weak ties are positively related to valuable knowledge transfer. However, for tacit knowledge, strong ties increase knowledge flow more than weak ties. Reagans and McEvily (2003) made similar observations in their study of trust and knowledge flow among networks of a contract R&D company in the US. They collected survey data over a two-year period from 104 employees. Both of these studies were conducted across different industries; however, both investigated networks within the organisation and did not include external network groups. While Reagans and McEvily’s (2003) study included equal numbers of male and female employees of various ages, neither study specified respondents’ organisational level.

3. Characteristics of recipient and stickiness

a. Recipient lacks motivation

The recipient needs to be motivated to accept knowledge from a source. Further, the recipient has to feel motivated to apply and recreate the knowledge. The acceptance of knowledge can be measured by the recipient's successful application of the new knowledge, while recreating knowledge refers to applying one's own knowledge combined with the new knowledge. Lack of motivation can be expressed in several ways, such as not accepting the knowledge, ignoring it, not implementing new processes and not communicating with the source (Szulanski 1996).

b. Recipient lacks absorptive capacity

If the knowledge recipient lacks absorptive capacity, the knowledge becomes sticky. Before reviewing the literature on stickiness and lack of absorptive capacity, this section discusses the concept of lack of absorptive capacity used by Szulanski, Cohen and Levinthal (1990) and Zahra and George (2002).

Conceptualisations of absorptive capacity

According to Szulanski, a further cause of stickiness is that the recipient lacks absorptive capacity: the ability to recognise and understand how to use knowledge from an outside source. Further, absorptive capacity includes the recipient's awareness of how the knowledge might increase their own knowledge and the ability to find where and how complementary expertise can be exploited within or outside an organisation. Absorptive capacity depends on recipients' prior knowledge. Someone with high absorptive capacity is more likely to recognise and value how to recreate new knowledge than someone who has poor absorptive capacity.

Szulanski based his concept of absorptive capacity on Cohen and Levinthal's model (1990). They considered absorptive capacity to be something organisations should accumulate and build on. They associated absorptive capacity with strong investment in an organisation's R&D, and recommended increasing resources for internal R&D (for example, increasing the number of employees in R&D). By increasing resources,

the organisation would be in a stronger position to absorb external knowledge. Further, Cohan and Levinthal strongly urged companies to have diverse teams, as the wide variety of knowledge improves the absorptive capacity of each individual within the team.

Later research has criticised their concept as being too narrow. Ten years after Cohen and Levinthal defined absorptive capacity, Zahra and George (2002) redefined and expanded the concept. They postulated that there should be two concepts: “potential absorptive capacity” and “realised absorptive capacity”. Each consists of two parts. The first part of “potential absorptive capacity” is knowledge acquisition, which refers to an organisation’s capacity to identify and acquire external knowledge and the time it takes for the organisation to use the knowledge. The second part is assimilation, which refers to how well the new knowledge can be integrated with existing knowledge. The first part of “realised absorptive capacity” is transformation, which refers to how well the organisation can create new knowledge based on both existing and new knowledge. Its second part is exploitation, meaning how well and for how long the organisation can use the newly gained benefits.

Szulanski (1996) considered the lack of absorptive capacity to be a major inhibitor of knowledge transfer. Since then his findings have been supported by many researchers (e.g. Gupta & Govindarajan 2000; Tsai 2001; Schulz 2003; Minbaeva et al. 2003; Carlile 2004; Foss & Pedersen 2004; Schmidt 2005; Noorderhaven & Harzing 2009; Volberda, Foss, & Lyles 2010).

Collaboration and management’s positive attitude toward knowledge transfer

Abreu et al. (2008) were interested in exploring whether companies’ absorptive-capacity characteristics depended on regions or the company’s sector of operation, and whether regional differences affected innovation. They concluded that the region had no significant impact on absorptive capacity. However, industries developing products, especially scientifically based products, had higher absorptive capacity than service-based industries. The study’s result agrees with Cohan and Levinthal (1990) and Zahra and George (2002), who found that increasing the number of R&D employees had a higher positive effect on innovation than increasing R&D expenditure

per employee. Further, they found that absorptive capacity increased if a firm was competing internationally. Management's positive attitude toward collaboration, training, sponsoring external education of employees and encouraging knowledge transfer has been shown to have positive effects on absorptive capacity. Abreu et al. (2008) summarised their study by quoting Schmidt (2005) that a firm's absorptive capacity is not just the sum of its employees' knowledge and skills, but includes the way the firm organises the transfer of knowledge throughout the organisation (p. 27). In other words, absorptive capacity is more than a company being aware of its knowledge and skills. To increase innovation, management needs to provide the environment to implement the knowledge. Further, collaboration with external sources of knowledge increases innovation, especially international collaboration rather than that among local networks, whose scope might be too narrow.

Absorptive capacity in subsidiaries social context

As before, Abreu et al. postulated that management's attitude affects knowledge transfer and absorptive capacity. Hotho et al. (2012) expanded those findings by conceptualising that employees' socialisation is positively related to knowledge transfer and absorptive capacity. They explored how individual subsidiary employees understand, absorb, integrate and transform the knowledge they receive. A case study explored a major MNC with 6,200 employees that operated in over 80 countries. They analysed company data and interviewed staff from head office and two subsidiaries of similar size and structure but located in two different countries: Germany and the UK. In the head office, they interviewed three senior managers, while in the subsidiaries they interviewed three senior and four middle managers. Both subsidiaries followed the Toyota lean manufacturing process with tools such as kaizen, continuous improvement and KPI. While the subsidiaries were similar in size, knowledge base and staff motivational attitude, and transferred knowledge through similar channels, they were very different in how they transformed and applied acquired knowledge.

The German company worked as an empowered team, with open communication and everyone considered hierarchically equal and valued for their skills and knowledge. Lean manufacturing processes were adopted according to the needs of the individual department. The processes were considered to be guidelines, to be adjusted to the

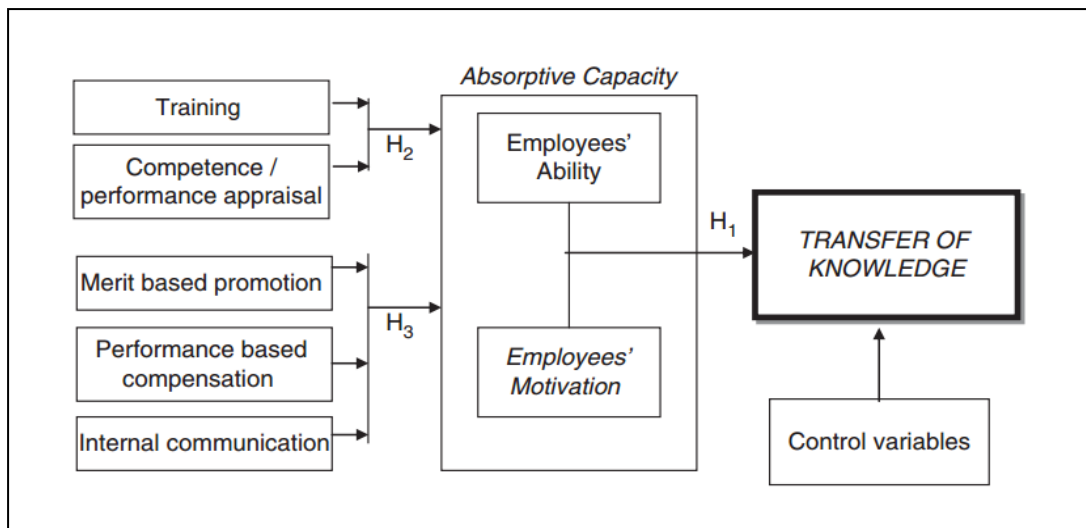
various conditions. As one person said, “Each plant is different. I can get ideas from somewhere, but I then have to see what fits my system best”. Management encouraged and enabled all employees to participate in transforming and exchanging knowledge. Continuous-improvement processes were based on strong social bonds. The German subsidiary engaged in extensive transformation of newly received knowledge and successfully applied those newly learned skills. In contrast, the UK subsidiary had a top-down hierarchical structure where managers encouraged competition among the employees and departments. They discouraged socialising and ruled by dividing employees instead of empowering them. The focuses were on performance indicators, meeting high targets and following strict guidelines such as production targets and work schedules, and the KPI were posted on the shop floors’ noticeboards to be followed without question or discussion. The communication via noticeboards and unrealistic targets did not motivate the employees. Very few employees understood the aim or the processes of continuous improvement. The culture was not to share knowledge and to distrust management. Communication was poor. As one operator complained, “We just don’t find out!” (p. 393). While the continuous-improvement process had been successfully implemented and maintained in Germany, it had failed in the UK, and the few initiatives that were implemented were not sustained. Based on the subsidiaries’ ability to transform newly gained knowledge, apply the knowledge and maintain the new processes, the UK subsidiary’s absorptive capacity was low, while the German subsidiary’s absorptive capacity was high. The study concluded that knowledge must be acquired, transformed and integrated, and is part of a learning process that does not happen in isolation. Instead, individuals learn and absorb knowledge in a social environment. Socialising encourages people to exchange knowledge and learn from each other. Further, it motivates employees to share and apply knowledge (Reagans & McEvily 2003).

Endogenous absorptive capacity model

Minbaeva et al. (2014) studied foreign-owned subsidiaries’ absorptive capacity further by exploring the contribution of employees’ motivation to improve absorptive capacity and the kinds of organisational processes needed to advance it, and the way various skills, behaviours and processes depend on each other. They developed a model of

the transfer of knowledge absorptive capacity (Diagram 1).

Diagram 1: Minbaeva's Conceptual Model



Minbaeva et al. (2014)

As shown Diagram 1, training and competence/performance appraisals were hypothesised to increase employees' ability, while merit-based promotion, performance-based compensation and internal communication were hypothesised to affect employees' motivation. These two factors are positively related to knowledge transfer.

Parent companies surveyed were located in Sweden, Germany, Japan, USA and Finland. The organisations had 62 subsidiaries in Finland, 100 in Russia and 79 in the USA. The study asked questions of one manager per subsidiary, the general managers, the deputy or the HR manager. No questions were asked of the parent companies' managers. Questions asked of the subsidiaries' managers included "To what extent did the subsidiary receive knowledge from the parent company or other subsidiaries?" and "To what extent was the knowledge applied?" To test the employees' ability, respondents were asked about things such as the ability of the subsidiaries' employees compared to the competition in terms of skills, education and overall ability. Three questions – whether the employees behaved in ways that helped company performance and contributed in a positive way to company performance, and whether the subsidiary, compared with the parent company, had a highly-motivated group of employees (p. 44) – tested subsidiary employees' motivation in general, and their motivation and work effort compared to that of the competition. The questionnaire also asked how much training was provided, whether employees received regular

performance appraisals, merit-based promotions and performance-based compensations and to what extent internal communication was encouraged, and asked about company culture, structure and location.

Minbaeva et al. (2014) concluded that while absorptive capacity increases knowledge transfer, both ability and motivation are needed to absorb and implement knowledge from other parts of the organisation; on its own, neither one results in knowledge transfer. However, absorptive capacity increases when managers provide higher levels of training, encourage transparent communication and provide motivational factors such as performance-based compensation and regular performance reviews.

These findings support the research done by Zahra and George (2002). Like Minbaeva et al. (2014), they found that absorptive capacity is dynamic and, rather than depending only on knowledge acquisition and exploitation, depends on employees' past experiences, the diversity of the knowledge source and how complementary the knowledge is (p. 198). These studies differ from Szulanski (1996), who argued that knowledge transfer takes place between the source and the receiver as a dyadic process. However, Minbaeva et al. (2014) argued that unless the recipient uses the knowledge, it is of little value (p. 39).

There are acknowledged limitations to Minbaeva et al.'s (2014) study. While it included several companies and multiple subsidiaries, only one manager per organisation was questioned. Therefore, the responses would have reflected only the perceptions of that manager. Further, only managers from subsidiaries were interviewed; hence no data on the perceptions of the parent companies' managers is available. It would be interesting to explore whether their perceptions would have differed from those of the subsidiaries managers.

Minbaeva and her colleagues have published similar research in which they conceptualise that MNCs must motivate employees to absorb knowledge, and highlight that ability and motivation cannot be separated. Their 2014 study concluded that managers need to foster an environment that enhances and develops those aspects to increase knowledge transfer.

They identified individuals' behaviour as an important factor to influence absorptive capacity, along with the need for individuals to have both ability and motivation, asserting that managers should provide an environment that enhances and develops

those aspects. Further, Ambos and Ambos (2009), Phene and Almeida (2008) and Rabbiosi (2011) conceptualised that the receiver must not only absorb knowledge, but implement and extend it. Other studies stress that more research is required to understand the role of individual motivation and interpersonal relationships in transferring knowledge (Mäkelä & Brewster 2009; Reiche, Harzing & Kraimer 2009; Wang et al. 2009).

According to Felin and Hesterly (2007), research should explore how organisational-level knowledge transfer originates at the individual and interpersonal levels. Minbaeva et al. (2014) postulated that researchers are aware of the importance of individual employees' behaviour when studying knowledge transfer. However, it is difficult to collect data about individual employees within multinational companies that are internationally dispersed. Hence, studies usually use quantitative, collective data, with one or a small number of managers providing answers on behalf of departmental, unit or organisation's employees. Further, it might be challenging to measure the "aggregation from 'individual' to 'collective', especially the aggregation from individuals' abilities and motivations to absorb knowledge to organisations' absorptive capacity" (Felin & Hesterly 2007, p. 56).

Methods used to explore absorptive capacity

Schleimer and Pedersen (2013) investigated what motivates an MNC's subsidiaries to absorb marketing strategies set by the parent company. They define this as: "how well the MNC's subsidiary applies, implements, and integrates the strategy into its own process and operations" (p. 657). Semi-structured survey questions were mailed to a total of 1,102 senior executives and senior sales managers of 213 Australian subsidiaries with overseas parent companies. Managers were asked the extent to which they agreed with statements such as "Subsidiary managers generally make decisions as they relate to their work without the need to check with head office" (Schleimer & Pedersen 2013, p. 668). They concluded that subsidiaries' absorptive capacity depends on the organisation's structure: it is positively related to increased decision-making power. The study indicates that absorptive capacity is increased if the parent company and the subsidiary share similar values, goals and standards. Further, if organisations have a culture that encourages innovation, their subsidiaries

have a higher absorptive capacity, and are correspondingly more likely to absorb, transform and implement their parent company's marketing strategy. The local environment, including local laws, economic conditions or local competitors, influences the implementation of the marketing strategy. They are able to merge the parent company's knowledge with the local knowledge and implement the strategy that best fits the organisation's need. Further, Schleimer and Pedersen confirmed previous research that the drivers of absorptive capacity are multifaceted (Minbaeva et al. 2003; 2014; Hotho et al. 2012; Abreu et al. 2008; Jansen et al. 2005; Lane et al. 2006). They suggested that future studies should widen the search for possible drivers that affect subsidiaries' absorptive capacity, and whether knowledge transfer from the subsidiary to the parent company would have different drivers and consequences than those found in previous studies. They recommended that subsidiaries from more diverse countries should be studied.

Song (2014) reviewed literature on subsidiaries' absorptive capacity and knowledge transfer within MNCs, including an analysis of Minbaeva et al.'s (2003) study, with the aim of finding gaps for future research. Song suggested that while Minbaeva et al. (2003) argued that subsidiaries' absorptive capacity depends on motivation and ability, motivation should be treated as a separate concept from absorptive capacity. Song argued that motivation is a third variable that affects absorptive capacity and knowledge transfer.

Song suggested that future research is needed to study human resource management's role in motivating knowledge transfer within organisations and to develop a wider conceptual framework to explore the factors that influence subsidiaries' absorptive capacity and knowledge transfer. Further, he suggested that studies are needed that distinguish between knowledge transfer from the parent company to subsidiaries and between subsidiaries, as well as "reverse knowledge transfer", where knowledge is transferred from subsidiaries to the parent company, and that scholars should also explore how knowledge is obtained from host countries and lost to competitors or host countries. Lastly, Song proposed that future research should treat absorptive capacity, knowledge transfer and knowledge creation as complementary, and that they should be studied concurrently, along with examinations of subsidiaries' ability and motivation.

Srivastava et al. (2015) studied how absorptive capacity influences knowledge transfer within alliance networks, where an organisation collaborates with external companies. They investigated the benefits of alliance networks within the US semiconductor industry by analysing the National Bureau of Economic Research patent database and the Alliance Securities Data Company database. They measured technological effort using R&D intensity, often referred to as the effort an organisation invests in R&D (Tsai & Wang 2008) and expressed as the firm's ratio of R&D expenditures to its sales (p. 352). For some companies, despite high effort, the income from sales is lower than the cost spent on R&D. Technological capability was measured by the ability to implement external knowledge and numbers of newly developed technologies. Strength was measured as the company's "share of patents among the sample companies in the semiconductor industry in a given year" (Srivastava et al. 2015, p. 353).

Their findings confirmed that companies that show high technological effort but might not have high capability, that recognise the value of knowledge and that invest in the relationship with alliance partners are more motivated to search for external knowledge. These companies have high absorptive capacity, resulting in increased technological innovation. In contrast, a company that only has strong technical capability is more likely to have low absorptive capacity, and is less likely to search for external knowledge, as it assumes that it has the know-how. This results in lower absorptive capacity. While such a company might have higher ability to use external knowledge, it is less likely to search for or implement it, and more likely to look inwards. Consequently, the company's technological innovation is reduced.

c. Recipient lacks retentive capacity

Lack of retentive capacity on the part of the recipient is another source of stickiness. This section first discusses how various authors conceptualise lack of retentive capacity, then reviews studies that explore how a lack of retentive capacity creates stickiness.

Conceptualisations of lack of retentive capacity

A further cause of stickiness is that the recipient lacks retentive capacity. If recipients do not retain or apply the newly received knowledge, they lack retentive capacity.

Szulanski based his definition on work by Druckman and Bjork (1992) and Kostova (1999). Rogers (1983) and Zucker (1977) conceptualised that either knowledge is only retained by an individual until it is routinely used, and hence has lost its novelty and has become institutionalised or that the newly transferred knowledge is recreated, which means that the receivers combine newly transferred knowledge with their existing knowledge, thus extending it and creating new knowledge. Some studies have found that after implementing new knowledge, employees will stop using it, despite the new knowledge being superior to original knowledge (Yin et al. 1978; Goodman et al. 1979). Szulanski argued that the receiver might experience difficulties in receiving or implementing new knowledge; or recipients might stop using the new knowledge because they lack motivation to implement or use it. Szulanski associated lack of retentive capacity with stickiness, but saw it as a minor characteristic compared to causal ambiguity, lack of absorptive capacity and arduousness of the relationship.

Revised knowledge-transfer process model

Kwan and Cheung (2006) argue that for recipients to be able to use received knowledge, they have to both absorb and retain the knowledge. Kwan and Cheung (2006) reviewed 20 empirical publications on knowledge transfer published between 1990 and 2003, and suggested modifications to Szulanski's four-stage knowledge-transfer (Table 11).

Table 11: Szulanski's (1996) and Kwan & Cheung's (2006) knowledge transfer models

Szulanski's knowledge transfer four stages model		
1st stage	Initiation	Comprises all the events that led up to the transfer of knowledge, such as identifying a need for knowledge, searching for the knowledge and, when it is found, initiating the transfer.
2nd stage	Implementation	The exchange of knowledge between the source and the recipient begins.
3rd stage	Ramp-up	The recipient begins using the knowledge, and improves the knowledge over time or recreates new knowledge.
4th stage	Integration	Knowledge becomes routinely used within the organisation and is no longer unique.

**Kwan's and Cheung's knowledge transfer three stages model
(implementation and ramp-up are combined into a single stage in Kwan and Cheung model)**

1st stage	Initiation	The motivation and matching stage.
2nd stage	Implementation	The exchange of knowledge between the source and the recipient begins. The recipient begins using the knowledge, and improves the knowledge over time or recreates new knowledge.
3rd stage	Retention	The importance of using and maintaining the knowledge is emphasised.

As shown in Table 11, in Kwan and Cheung's model the initiation stage becomes the motivation and matching stage. They combine Szulanski's implementation and ramp-up stage in the implementation stage. Kwan and Cheung referred to the last stage as the retention stage to emphasise the importance of using and maintaining the knowledge. They argued that knowledge transfer always starts with motivation, when the gap between the current knowledge and the knowledge needed might be identified. However, being aware of the need might not necessarily lead to a search for knowledge or to knowledge transfer, for reasons such as "not invented here", a term used to describe a departmental culture where employees will not accept knowledge from outside their department (Katz & Allen 1982). The source might not be inclined to share its knowledge (Jarvenpaa & Staples 2000), or the organisation's culture might not encourage knowledge sharing (McDermott & O'Dell 2001). The knowledge transfer itself might be initiated by the source, who is aware that the knowledge might be needed in other parts of the organisation, or by the recipient searching for the knowledge. The search ends when the source or the recipient finds its match. Szulanski's characteristics of stickiness, such as organisational context, relationships and source not perceived to be reliable, affect the matching stage. Once the partner is found and everyone involved in the knowledge transfer is motivated, the process leads into the implementation stage. Knowledge transfer between source and recipient is activated, and depending on the absorptive capacity of the recipient, the knowledge is implemented. The implementation stage is considered to be completed when the recipient can use the new knowledge to a satisfactory level. The final stage of retention refers to the recipient being able to maintain the knowledge. Regardless

of whether the knowledge has become institutionalised and routinely used, the recipient needs to be able to retrieve the knowledge when required.

Szulanski (2000) found that knowledge transfer is a process that needs to be understood and managed. He recommends that stickiness needs to be monitored at each stage. Problems might arise at the different stages, for example, an arduous relationship between the source and the recipient can increase stickiness. Likewise, implementing the new knowledge successfully might differ depending on whether the process has been ordered by a superior or been recognised as positive by an employee. Szulanski (2000) refers to the latter process as 'spontaneity'. Szulanski (2000) provides recommendations on how to recognise, avoid and manage those problems to minimise stickiness.

Lack of motivation increases lack of retentive capacity

Kalling (2003) also found that motivation affects the cognitive factors of knowledge transfer, such as retentive capacity, causal ambiguity, tacitness and absorptive capacity. He applied a case-study methodology to explore six manufacturing plants in different European countries. He interviewed 36 people, including general, production and sales managers, supervisors and operators, regarding Knowledge Transfer Programs (KTP) within their organisation. Questions included "How informed or educated are senior plant management about KTP?", "What training is done internally?" and "Is there always good motivation to work with KTP?" Kalling found that individuals' motivation to learn influences how hard they will work and whether they are interested in learning and implementing new technology and skills. Individuals are motivated by their perceptions of whether programs are an opportunity to learn or a means to fulfil management's ambitions. Kalling (2003) further found that individuals interested in improving their own performance have higher retention capability, while lack of communication from management and not understanding the reason for the new knowledge reduces retention capability due to lack of motivation.

Understanding stickiness and retention capability to understand failure to implement lean production systems

Othman (2016) explored the failures of implementing lean production systems. He confirmed the findings of Kalling (2003) and Kwan and Cheung (2006) that lack of retention capacity creates stickiness, and hence has a negative effect on lean production systems. Lean production (or lean manufacturing) was introduced into the automotive industry by Toyota as a management system to reduce waste, while adding value and encouraging continued improvement of organisation's processes (Dyer et al. 2000). While "lean" has been taken up by organisations around the world, it has not been without challenges, and it is claimed that 50 to 95% of "lean" initiatives fail due to management issues, financial constraints, low employee skills and organisational culture (Theten 2014; Dora et al. 2013). Othman argued that the implementation of a lean production system (LPS) uses aspects of knowledge transfer that can be sticky. Hence the failure to implement LPS successfully might be explained by analysing knowledge-transfer processes.

Othman (2016) selected Szulanski's framework to understand the barriers that interfere with the implementation of LPS. His analysis of each knowledge-transfer characteristic and its stickiness found that causal ambiguity can be attributed to a failure to understand LPS, and that stickiness of LPS knowledge is lower when the knowledge source understands LPS well and has prior experience of it, compared to when the source has limited experience or when the recipient lacks motivation. He matched each of Szulanski's characteristics of stickiness to an LPS stickiness. For example, stickiness is low in barren organisations due to low employee involvement. Lack of retention becomes a major barrier when an LPS improvement initiative is treated like a training program and the main responsibility is delegated to middle management, as these managers usually do not have the authority to implement the new initiatives. Further, lack of retentive capacity of LPS is mainly associated with poor leadership and management's lack of know-how and long-term vision and strategy. Kwan and Cheung (2006) found that managers often underestimate the time, resources (including financial resources) and effort needed to implement LPS initiatives.

4. Characteristics of context and stickiness

a. Barren organisational context

This section discusses the characteristics of context and stickiness. This section discusses “barren organisational context” as described by Szulanski, who was the first to use this metaphor, and then as discussed in the literature.

Conceptualisations of barren organisational context

A major cause of stickiness is created by “barren organisational context”, a term first used by Szulanski in describing how an organisation drives knowledge transfer within its network. He used the agriculture metaphor of barren lands where plants cannot grow (Szulanski 1996) for organisations that might discourage the growth of knowledge-transfer practice, or where organisations do not have an environment or organisational culture that fosters knowledge transfer. He used the metaphor of fertility versus infertility to discuss whether the seed of knowledge germinates, and what it yields in a given context. While the seed might grow in certain circumstances, it might die or result in poor yield in a different context, or might never have been planted in the first place. Barren organisational context within a company can affect knowledge transfer, as well as the recreation of knowledge. It can be caused by a firm’s structure, systems or processes (Chakravarthy & Doz 1992; Chew & Clark 1990; Timbrell et al. 2001) or by actors’ behaviour (Ghoshal & Barlett 1994; Schein 1985).

Szulanski argued that barren organisational context creates knowledge-transfer stickiness. Other researchers postulate that a “rich” or “poor” environment might encourage or discourage knowledge transfer (Argote 2012; Swift & Hwang 2013; Sankowska 2013; Levine & Prietula 2012), or that an organisation’s culture may inspire or inhibit knowledge transfer (Davenport & Prusak 1998; Vaara et al. 2012; Wiewiora 2013; De Long & Fahey 2000; McDermott & O’Dell, 2001; Bartlett, Ghoshal & Birkinshaw 1992).

Based on Szulanski's concept of barren organisational context

The studies by Blackman et al. (2013) and Trimbrell (2001) were discussed under the heading "unproven knowledge". Both authors conducted surveys within government organisations and compared their findings to the Szulanski model. Blackman found that a lack of facilities and a bureaucratic structure made it difficult or often impossible to share knowledge. For example, with few or no consultations, decisions were made in different departments. The lack of knowledge flow created stickiness due to staff being frustrated and having poor relationships with staff from the other department. Staff were often poorly trained and staff numbers were too low to deal with the work load, increasing the poor relationships with management. Management had limited power, and the outcome of projects relied on managers using their personality or influence skills to motivate staff. This resulted in the staff having reduced motivation to share knowledge. Blackman et al. (2013) argued that poor organisational management in a barren organisational context resulted in arduous relationships, and, in turn, in high staff turnover, worsened absorptive and retentive capacity and further stickiness.

Conflicts and tension between knowledge worker and management

Bobadilla and Gilbert (2015) explored six scientific and technical R&D organisations to study the tension and conflicts between management and its R&D knowledge workers. They used data such as company reports on implementation of practices and devices, R&D meeting notes and managers' testimonies, as well as 15 semi-structured interviews of HR managers and R&D managers, experts and scientists.

Bobadilla and Gilbert (2015) found that an organisation's decisions are mainly driven by market demands such as profit-seeking, competition, opportunities and customers. Management's decisions are often based on the results from efficiency and performance tools, as well as on inventory and human-resource issues, and are mostly driven by short-term objectives such as time for return on investment and time to market. While conflict between market objectives and management objectives are rare, conflicts are high between management, market and R&D objectives. R&D staff often feel that management does not understand their role and expertise, while

management feels that R&D staff need to be extroverts to sell their ideas and better understand the market's requirements. R&D staff are often frustrated, as they feel that they are managed by accountants. Some firms make the mistake of promoting R&D experts into management roles. R&D experts, while skilled innovators, do not necessarily have the abilities to be good managers, with the result that the organisation loses an expert and gains a poor manager. The authors did not use the terms "barren organisational context" or "arduous relationships"; however, they argued that organisations that create an environment that "fosters rather than manages the creative and innovative potential of knowledge workers" (Bobadilla & Gilbert 2015, p. 10) increase knowledge sharing. Further, when informal communication and knowledge sharing are encouraged between the networks in an organisation, the tensions between management and R&D described above do not exist. Moreover, providing R&D employees with flexibility and autonomy increases their knowledge sharing.

b. Arduous relationship between source and the recipient

This section discusses arduous relationships between the source and the recipient, and explains Szulanski's (1996) concept of these relationships as a characteristic of knowledge transfer and its positive correlation with stickiness. This is followed by reviewing several studies as discussed in the literature and some of Szulanski's later work.

Conceptualisations of arduous relationships between the source and the recipient

Arduous relationships between the source and the recipient are the final cause of stickiness in Szulanski's model. The transfer of knowledge is usually not a one-off event; rather, it requires constant communication between the source and the recipient. The source might have to explain the possible usefulness of the knowledge and how to apply the knowledge, and monitor its implementation (Szulanski 2003). The success of the transfer depends largely on the relationship between the source and the recipient, referred to by some researchers as the strength of the tie between

the two parties (Hansen 1999; Levin & Cross 2004; Tamer et al. 2003). The quality of the relationship can be measured by the ease of communication between the source and the recipient (Arrow 1974; Simonin 1999; Albino et al. 1998; Ko et al. 2005; Teo & Bhattacharjee 2014). Marsden (1990) referred to this as the level of “intimacy”. Szulanski described arduous relationships between the source and the recipient of knowledge transfer as one of the three major characteristics correlated with stickiness.

Szulanski’s model for investigating implementation in healthcare contexts

Elwyn et al. (2007) applied Szulanski’s model when exploring how an understanding of the concept of sticky knowledge might close the gap in the primary healthcare system between what should be done and what is done in practice. Each of Szulanski’s characteristics of stickiness was used in a make-believe practical situation, using a hypothetical doctor called Kate working within primary care. The authors created a scenario that included background information on the imaginary settings, including the obstacles Kate had to overcome to implement what is known as “best practice”, referred to in the scenario as a “Gold Standard Framework”). They provided hypothetical examples using each of Szulanski’s characteristics. For example, when Kate tried to implement the new processes at a second surgery, the participants could not imagine that the new system could be of benefit and were upset about being forced to change current processes.

The authors postulated that the implementation team did not encourage the staff to implement the new knowledge. The lack of encouragement and empathy with the staff created a barren organisational context. Further, as the staff of the second surgery felt that Kate did not understand their priorities, this further aggravated the relationship. The barren organisational context made the new knowledge become sticky. The authors concluded that using Szulanski’s model demonstrated the stickiness of knowledge transfer in a clinical setting, and that implementing new knowledge might be too difficult for busy clinicians. However, if the clinicians and the managers were aware of the characteristics that might create stickiness, it might be easier to remove barriers that increase stickiness.

Walker et al. (2007) used Szulanski's concept to study how sticky knowledge can hinder knowledge transfer and innovation due to apathy and an arduous relationship between the source and the recipients. They undertook two studies of contractors, clients and engineering consultants in three large construction companies. One study focused on the introduction of information communication technology, while the other focused on the use of the software systems. They found that a barren organisational context was related to the organisational culture and governance structure of the companies they surveyed, and that the barren organisational context hampered projects' movement through the stages of implementation. The support the project received from management also affected knowledge transfer. The most significant stickiness was created by the recipients' lack of absorptive capacity due to management not supporting existing knowledge or experiences. This was followed closely by the recipients' lack of retention (for example, they would often forget important details). The third major stickiness issue was the arduous relationship between the knowledge source and the recipients. Lack of trust, empathy or a commitment to collaborate or share knowledge could be displayed by either the source or the recipients. The study concluded that management needs to take into consideration people's influence on processes' success. Similar to Elwyn et al. (2007), Walker et al. (2007) hoped that Szulanski's model could help organisations become aware of the characteristics that might create sticky knowledge. Not only does their study provides an understanding of how to overcome knowledge stickiness, it aligns the knowledge management of people, processes and technologies. They identified that Szulanski's 1996 and 2003 model missed the link between people, processes and technology.

Relationship between barren organisational context and arduous relationship

Walker et al. (2007) and Elwyn et al. (2007) found that a barren organisational context and arduous relationships create sticky knowledge. For example, Walker et al. found that if an organisation does not foster knowledge sharing or fully support projects, managers might be more likely to experience arduous relationships with their employees, resulting in lack of trust or commitment to collaborate or to share knowledge. Elwyn et al. (2007) found that in a clinical setting, a barren organisational

context resulted in staff not being encouraged to implement the new knowledge. Further, the staff members' perception that their priorities were not understood created an arduous relationship between the source and the recipient. Barren organisational context might lead to problematic relationships; however, difficult relationships can be created by other factors. Hence, Szulanski argued that an arduous relationship is more likely than a barren organisational context to create stickiness. The following two publications (Sulanski & Jensen, 2004 and Szulanski et al. 2016) cite arduous relationships between source and recipient as a major stickiness factor in knowledge transfer; however, barren organisational context does not seem to be the main driver.

Investigation whether templates can reduce stickiness

Over an eight-year period, Szulanski and Jensen (2004) investigated whether templates would overcome internal stickiness when transferring best-practice processes to improve the performance of Rank Xerox, a subsidiary of Xerox. Templates represent a project process and serve as vehicles for the information used in that process. A template is a guide to performing projects or processes in a reproducibly successful manner (Evans 2009). The aim was to use templates to replicate the knowledge, as reusing knowledge is difficult and expectations are often not met (Gupta & Govindarajan 2000; Ruggles 1998; Szulanski 1996). The process to transfer the knowledge was done in three stages, during which data was collected in real time. The research team visited the parent company once a year and several business units were visited before, during and after the implementation of the new processes. Data was then collected using documentation, phone surveys and archival data.

Szulanski's stickiness model was used to analyse the data. Stages one and three were implemented with little stickiness, while stage two suffered high stickiness. Stages one and three had used known practices, which served as benchmarks for the replication templates, and the knowledge was located in one specific area, hence easily found. In contrast, stage two used smaller processes that were not as well known, and were dispersed throughout the European organisation. Due to the nature of the process, management had to be involved and the replication of the knowledge suffered major barriers to the transfer and had low levels of implementation and poor outcomes. The

context was welcoming in all three stages, which was probably due to the fact that Xerox had a history of successfully implementing best practice across their organisation. The source was motivated to transfer the knowledge. However, the relationship was particularly arduous in the second phase, as were all other predictors of stickiness. This could have been because phase two was more complicated to implement than the other two phases. Team leaders could not provide evidence that the new processes would be beneficial, and the regional units considered headquarters to be “bigwigs”. Despite the second phase showing high stickiness, the study confirmed that templates reduce the stickiness of existing knowledge and could be used by organisations to transfer knowledge within its organisation with low levels of stickiness.

Szulanski’s model to investigate the effect of the mode of transfer on tacit-knowledge transfer

Szulanski et al. (2016) investigated how knowledge transfer of organisational practices, or “best practice”, could become sticky depending on the method of transfer. Kostova and Roth (2002) defined “best practice” as routine use of knowledge. Knowledge transfer can use many different methods and tools, such as audio or electronic communication and personal communications. The time frame or the order in which the knowledge is transferred can hinder the flow of knowledge. For example, the effect of the method might differ depending of the transfer stage. Szulanski et al. call the initiative stage “front-loading”, and the implementation stage “back-loading”. For instance, a delayed presentation might not achieve the desired result; or a project initiation might be transferred quickly but its implementation take several months. Further, the transfer method may impose constraints; for example, the time to transfer a manufacturing process would be far longer than to transfer knowledge during a conference. Szulanski et al. (2016) analysed 2,711 occurrences in 116 transfers of 37 organisational practices in eight companies. The survey questions, such as “[Does the transfer afford] interaction between source and recipient?”, “Does the method allow for interactive communication between knowledge source and recipient?”, “[Does the transfer afford] recipients’ practice?” and “Does the method allow for actual performance by the recipient of practice to be transferred?” (p. 311) were different for the source and recipient units.

They concluded that the timing and method are important, and that the same transfer mode has different results depending on the timing. The major characteristics of stickiness are causal ambiguity and an arduous relationship between the source and the recipient. If the knowledge is slightly ambiguous at the front-loading stage, providing better understanding might overcome the problem. However, if the relationship between source and recipient is arduous, front-loading might be more difficult to manage. When ambiguity is high but the relationship is less arduous, or when causal ambiguity is low and the relationship is arduous during the back-load stage (p. 316), the problems might be easier to manage. However, if causal ambiguity is high and the relationship between source and recipient is very arduous, knowledge transfer becomes tremendously sticky.

Summarising some of the main points of the studies based on Szulanski's predictor of stickiness concept

Organisational knowledge is an asset organisations can use to gain competitive advantage. However, to use knowledge, organisations need to be aware of it, and of where within their network it resides. Further, the internal and external knowledge needs to be transferred throughout its network and made accessible, implemented, created and maintained. This is often a challenge due to knowledge being embedded within the organisation, and tacit knowledge being highly personal and often difficult to access. Hence, knowledge might become "sticky", meaning that the flow of knowledge becomes restricted.

Szulanski's (1996) model to predict stickiness has become the benchmark to identify the characteristics that create barriers to the easy flow of knowledge throughout an organisation: causal ambiguity and unprovenness, a source or recipient lack of motivation, a source not perceived to be reliable, recipient's absorptive and retentive capacity, barren organisational context and arduous relationship between source and recipient. Researchers have tested and verified Szulanski's concept, and confirmed that the most important characteristics of stickiness are lack of absorptive capacity of the recipient, causal ambiguity and arduous relationship. However, while Szulanski's (1996) model evaluated each of these predictors of stickiness as individual

characteristics, researchers postulate that these characteristics do not occur in isolation, but that they often depend on each other; for example, an arduous relationship might be due to a barren organisational context.

Further, different situations, such as the phase of implementation, the event and/or timing might influence the knowledge transfer and its stickiness. Szulanski's model has been shown to miss the link between people, processes and technology. As Minbaeva et al. (2014) conceptualised, behaviour and processes depend on each other; in other words, as Kostova (1999) found, knowledge transfer does not occur in social isolation, but is entrenched in situations. Szulanski's (1996) model does not include factors such as trust and the importance of transparent communications. While Szulanski acknowledged that lack of motivation can create stickiness, he did not consider it an important characteristic of stickiness. His later research found that motivation seems to have a more significant effect on knowledge transfer than first assumed. This might be due to the fact that motivation might be closely associated with an individual's behaviour, rather than being an isolated event.

Extension of Szulanski's idea

Since Szulanski published his concept in 1996, the model has been extended as scholars have identified that barriers to knowledge transfer can be created by additional stickiness predictors such as lack of trust (Riege 2005; Goh 2002; Bollinger & Smith 2001) and poor communication (Riege 2005; Goh 2002; Sveiby & Simons 2002; Peltokorpi 2015). Further, some scholars postulate that national culture needs to be managed well to keep it from imposing barriers to knowledge transfer (Ahammad et al. 2016; Solli-Saether & Karlsen 2015; Jandhyala & Phene 2015). Language differences might create stickiness (Hass & Cummings 2015; Liu et al. 2015; Luring & Klitmoller 2015), but positive interpersonal relationships might decrease stickiness (Leonardi & Meyer 2015; Mudambi et al. 2014; Minbaeva 2013). While Szulanski named barren organisational context as a stickiness characteristic, other scholars have conceptualised that organisational culture (Riege 2005; Simonin 1999; Nonaka & von Krogh 2009; Edwards & Kidd 2003; Ismail Al-Alawi et al. 2007) or environment (Grant 1996; Argote 2012; Paulin et al. 2015) might encourage or discourage

knowledge transfer. The challenge of managing knowledge flow seems to be as complex as it was 20 years ago, when Szulanski first published his concept of stickiness characteristics.

Table 12 outlines the articles discussed in this literature review. All used Szulanski's model as the basis to study stickiness. However, various methodologies were used to explore the numerous stickiness characteristics. The table provides information on the names of the authors and the date of publications, the stickiness characteristics they explored, the methodology they used and the participants who were questioned.

Table 12: Summary of the literature-review methodologies as per Szulanski's predictor of stickiness model

	Author	Stickiness Characteristic	Methodology	Actors
		Causal ambiguity		
1	Simonin (1999)		Empirical quantitative (survey)	Senior managers
2	Cappetta & Jensen (2004)		Empirical quantitative (survey)	Senior managers and outside consultants
3	Powell, Lovallo & Caringal (2006)		Conceptual	
4	Law (2014)		Conceptual	
		Unproven knowledge		
5	Blackman et al. (2013)		Empirical qualitative Semi-structured personal Interviews	Senior managers, middle managers and supervisors
6	Timbrell et al. (2001)		Empirical quantitative (survey)	Clients, vendors – implementation partners
7	Cabrera-Suarez et al. (2016)		Conceptual	

8	Minbaeva (2007)		Empirical quantitative (survey) Subsidiary*	Subsidiaries' senior manager, none from parent company
		Lack of source/recipient's motivation		
9	Szulanski (1996)		Empirical quantitative (survey)	Senior managers
10	Osterloh & Frey (2000)		Conceptual	
11	Jeon, Kim & Koh (2011)		Empirical quantitative (survey)	Senior managers
12	Martín-Cruz, Martín Pérez & Cantero (2009)		Case study quantitative interviews (survey)	Directors and employees
13	Burgess (2005)		Empirical quantitative (survey)	Directors and employees
14	Gardner (2012)		Empirical quantitative (survey)	Managers and employees
15	Siemsen, Roth & Balasubramanian (2007)		Empirical quantitative (survey)	Employees and co-workers
16	Dyer & Nobeoka (2000)		Empirical qualitative interviews	Senior managers
			Source lacks credibility	
17	Bonache & Zárraga-Oberty (2008)	Conceptual		
18	Lee et al. (2008)	Empirical quantitative (survey) subsidiary*		Senior managers of parent company only
19	Levin & Cross (2004)	Empirical quantitative (survey)		Senior managers
20	Reagans & McEvily (2003)	Empirical quantitative (survey)		Employees, hierarchical status unknown
		Recipient lacks absorptive capacity		
21	Abreu et al. (2008)		Empirical quantitative (database analysis)	
22	Hotho et al. (2012)		Empirical qualitative (interview) subsidiary*	Parent company - senior managers 2x

				Subsidiaries – human resource managers, team leaders, operators
23	Minbaeva et al. (2014)		Empirical quantitative (survey) subsidiary*	One senior manager of each subsidiary None from parent company
24	Minbaeva et al. (2003)		Conceptual subsidiary	
25	Schleimer & Pedersen (2013)		Empirical quantitative (survey) subsidiary*	Senior executives and senior sales managers of subsidiaries. None from parent company
26	Song (2014)		Conceptual subsidiary	
27	Srivastava et al. (2015)		Empirical quantitative (database analysis)	
		Recipient lacks retentive capacity		
28	Kwan & Cheung (2006)		Conceptual	
29	Kalling (2003)		Empirical qualitative Interview – semi-structured and closed questions	General, production and sales managers, supervisors, two operators
30	Othman 2016		Conceptual	
		Barren organisational context		
31	Blackman et al. (2013)		Empirical qualitative Interview – semi-structured	Senior managers, middle managers and supervisors
32	Trimbrell (2001)		Empirical quantitative (survey)	Clients vendors, implementation partners
33	Bobadilla & Gilbert (2015)		Empirical qualitative Interview – semi-structured	Parent company manager and R&D employees
34	Elwyn et al. (2007)		Conceptual – Scenario build on Szulanski's framework	
		Arduous relationship between source and recipient		
35	Walker et al. (2007)		Empirical quantitative (survey)	Senior managers-engineers

36	Szulanski & Jensen (2004)		Empirical quantitative (survey) subsidiary*	Senior managers Parent company only
37	Szulanski et al. (2016),		Empirical quantitative (survey)	Senior managers
38	Birkinshaw et al. (2000)		Conceptual	
39	Roth & Nigh (1992)		Empirical quantitative (survey)	Presidents and directors
40	Asakawa (2001)		Empirical quantitative (survey)	Senior executives
41	Chine et al. (2005)		Empirical quantitative (survey)	Directors

(* highlights studies conducted researching knowledge transfer from subsidiaries to the parent company)

As shown in Table 12, 41 publications published between 1996 and 2016 were reviewed. They used the following methodologies: 17 x empirical quantitative surveys; 2 x database analysis; 10 x conceptual papers; 13 personal interviews. Six studied subsidiaries while the rest were performed in the parent company of the organisation. In 18 companies, only senior managers, directors or executives were questioned.

How this thesis contributes to existing research

In the stream of literature based on Szulanski's predictors of stickiness, it became apparent that the overwhelming majority of those studies were conceptual or empirical quantitative research. Surveys were the most common form of data collection. Only a small number of studies used a fully qualitative methodology. With the exception of a small number of studies, only senior managers or directors were questioned, and these were mostly limited to head-office managers. The few studies that explored stickiness within subsidiaries surveyed either parent-company senior managers to provide the answers on behalf of the subsidiary or one manager of several subsidiaries, without including data collected from the parent company. A qualitative case study would extend this work by exploring the stickiness characteristics that might encumber knowledge transfer from the subsidiaries of an MNC to the parent organisation. Furthermore, as Minbaeva et al. (2014) argued, while researchers are aware of the importance of studying individual employees' behaviour with regard to knowledge transfer, it has been difficult to collect data from individuals within multinational companies that are internationally dispersed. This has limited researchers to companies that are more easily accessible.

Thus, this thesis aims to help close the gap revealed in Minabeava et al. (2014) by studying individual employees' knowledge transfer behaviour in a novel setting; and by examining how knowledge is transferred from subsidiaries to the parent in an MNC with locations across many countries. The second contribution is to explore stickiness characteristics and to understand individuals' motivation and interpersonal relationships as components of knowledge transfer, as more studies are needed in this area (Mäkelä & Brewster 2009; Reiche, Harzing & Kraimer 2009; Wang et al. 2009).

Further, the majority of past studies have concentrated on knowledge transfer from the parent company to its subsidiaries. While in the years since Asakawa (2001) suggested that more publications on reverse knowledge transfer from a subsidiary to its parent company were needed, several studies of this area (Mudambi et al. 2014; Ambos et al. 2006; Kim et al. 2011; Mäkelä et al. 2012; Schleimer & Pedersen 2013; Perri & Andersson 2014) have been done. However, they have usually focused on

one specific aspect of stickiness, such as absorptive capacity or the power dynamic between head office and subsidiary. Hence the third contribution of this thesis is that it explores subsidiary-to-parent and subsidiary-to-subsidiary knowledge transfer, as well as links between various factors that may create tension between parent-subsidiary relationships.

This study's fourth contribution, which it makes by interviewing a larger number of individuals within dispersed subsidiaries and their parent company, should become apparent if there is a gap in how knowledge-transfer processes between the subsidiaries and the parent company are perceived. The final contribution is that, rather than imposing existing stickiness characteristics on the data, this study will allow any predictor of stickiness to emerge from the data collected within the case organisation.

Most existing studies test how specific stickiness characteristics might create stickiness (for example, how motivation might influence knowledge transfer). This thesis is of an exploratory nature, as it searches for reasons for the creation of sticky knowledge, and hence ways that stickiness characteristics might emerge.

Summary

This chapter has discussed the conceptualisation of the core concepts associated with knowledge transfer, particularly with regard to sticky knowledge, and how these concepts are defined within this thesis. Further, Szulanski's concept of knowledge transfer and his description of stickiness characteristics was used as the foundation to explore how MNCs manage knowledge flow, with the focus on the predictors of stickiness. The next chapter will explain in depth the methodology applied in this thesis.

Chapter 3

Research Methodology

Introduction

This chapter describes and justifies how the research in the thesis was conducted. It reiterates the research questions posed in Chapter 1, provides an overview and justification for the choice of the interpretive research philosophy and inductive approach, and explains the choice of the single qualitative case study method. The chapter includes an overview of the case-study method, with a discussion of the theoretical sampling technique within a single qualitative case. It describes the selected case, and explains why face-to-face interviews were used to generate data. It provides information on where the interviews took place, how the interviewees were selected and how the interviews were conducted. Further, it discusses the importance of trust between interviewees and interviewer. Information is provided on additional data collection, the time span and quantity of data collection, and how NVivo software was used for the data analysis. The chapter concludes with a discussion of validation, reliability and bias issues of qualitative case study research and how these were addressed in the research.

Research questions

As presented in Chapter 1, the research questions addressed are:

- How do subsidiaries of a multinational company transfer their local knowledge to the product development, marketing and sales departments of the parent company?
- What prevents subsidiaries from transferring knowledge across national borders?
- To what extent does the parent company encourage and enable knowledge transfer from its subsidiaries?
- Why does subsidiaries' knowledge become sticky?

- Are subsidiaries involved in transferring their knowledge to other subsidiaries and if so, how do they do this?

Research philosophy/paradigm

The research presented in this thesis addresses the problem of knowledge flow in multinational companies by exploring the stickiness characteristics that might encumber knowledge transfer from the subsidiaries of an MNC to the parent organisation. The study applies an interpretive paradigm, which allows the researcher to explore and understand the organisation's knowledge-flow challenges when transferring knowledge from the subsidiaries to the parent company. The research philosophy is interpretivism, as will now be justified.

Positivism and interpretivism research philosophy

Two commonly used research frameworks are positivism (empiricism) and interpretivism (constructivism) (Ponterotto 2005). Quantitative research commonly, but not always, applies positivism, while qualitative research commonly applies an interpretive paradigm (Creswell 2003). Positivism is associated with the objective truth of knowledge (Creswell 2003; Phillips & Burbules 2000). It is possible to study social phenomena using a positivist approach, if one accepts that knowledge or truth is a matter of exploring the objective qualities of what is "out there". However, an interpretivist approach is required to explore how different people experience or construct the world (Petty, Thomson & Stew 2012; Crotty 1998; Creswell 2003). To understand different subjective experiences of the same social phenomena, human behaviours and experiences need to be interpreted and analysed.

Hence, it is claimed that observations and interpretations might vary between researchers, as researchers construct their own reality and would interpret human actions differently (Creswell 2003; Creswell 2007; Petty, Thomson & Stew 2012). However, Schwandt (1994) argues that individuals construct their own reality by the interaction of language with the world around them; it is the language used that forms reality. "Language does not passively label objective reality but actively shapes and moulds reality" (Scotland 2012, p. 11). An interpretive paradigm reflects on the

unbiased interpretation of data generated jointly by the researcher and the study's participants (Ponterotto 2005; Petty, Thomson & Stew 2012; Scotland 2012). Interpretive research typically leads to an inductive research approach, with the aim being to understand individual or group experiences or to discover and understand phenomena that might exist within certain settings (Cohen et al. 2007; Scotland 2012).

Research Approach

A research approach can be either inductive or deductive. The conventional view is that quantitative research analyses numbers, while qualitative research analyses narratives. Further, quantitative research uses a deductive approach, while qualitative research uses an inductive approach (Hyde 2000; Thomas & James 2006; Dudovskiy 2016). However, a more precise distinction between the two approaches would be that a deductive approach tries to confirm or compare an existing theory or assumption, or tries to prove or disprove one or several hypotheses. In contrast, inductive research starts with observations and searches for patterns. The theory is not formed until the end of the analysis (Dudovskiy 2016). Some researchers use a complementary approach, such as producing a set of hypotheses and testing them using a survey (Uggen & Blackstone 2004).

Justification of an inductive approach

This thesis's research questions are broad to allow unexpected interpretations or issues to emerge. The literature on barriers to knowledge transfer applies as a guide to understanding the challenges an organisation might face when transferring knowledge from its subsidiaries to the parent company. Data was collected using semi-structured, open-ended interviews to provide the basis for the analysis. The participants were free to tell their story, without being restricted to answering specific questions. The researcher wanted to understand the behaviour and the dynamics of and between the employees and senior management, as well as gain some rich understanding of what was occurring within the organisation. Details of the data collection, coding and reduction and of the generation of the themes are described in the section "Analysis of data: Using NVivo". The study of these phenomena reveals repeating patterns. By analysing and explaining these patterns and supporting the

analysis with reference to previous research, a theory is developed. Based on the theory, recommendations might be provided on how to improve knowledge transfer between subsidiaries and from subsidiaries to the parent company. An inductive research approach has been applied in similar research; for example, Dyer and Nobeoka's (2000) study of a high-performance knowledge-sharing network, and Hotho et al.'s (2012) study of absorptive capacity through social interaction.

The Case-study strategy

An exploratory, qualitative case study approach is considered appropriate for investigating new and relatively unexplored topics (Eisenhardt 1989; Huberman & Miles 2002; Creswell 2003; Maxwell 2005). Yin (2009, p. 635) defines the case-study research method "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; especially when the boundaries between phenomenon and context are not clearly evident". This case study explores the phenomenon of sticky knowledge transfer within an organisation. Stickiness has been explored before, but the experiences of employees have not previously been investigated. In view of this new aspect of the topic, an exploratory, qualitative study is appropriate.

Case studies are suitable for understanding complex human behaviour, which is influenced by many different factors and where the research is trying to answer "how" and "why" questions. While experiments also try to answer these questions, in experiments the researcher controls the experiment, while in an exploratory case study the researcher tries to discover what is happening. Surveys have "how" questions, but they ask "how much" or "how many", whereas in a case study the question would be how something might be happening; nor does a case study have survey questions that ask "who", "what" and "where". Surveys focus on current events, unlike historical studies, and allow observation of situations; combined with data analysis, they explain why and how processes or situations occur (Tellis 1997; Zonabend 1992).

Case-study research can be qualitative, quantitative or a mixture of the two (Yin 2009). Qualitative research uses procedures that do not quantify data or use mathematics for the analysis; qualitative case studies are usually based on the interpretation of text-based data (Strauss & Corbin 1998). They are best suited for research where the aim is to understand a process or a reason behind a phenomenon by exploring specific situations and happenings in depth. Qualitative case studies typically employ observations, in-depth interviews and background data. They might not be researching a wide number of samples, but the research is rich, meaning data is detailed and descriptive and takes in all nuances of the collected samples and data (Yin 2009).

Justification for the use of a case-study strategy

The majority of research into barriers to knowledge transfer has focused on transfer from parent companies to subsidiaries, and has used surveys of managers (e.g. Kostava 1999; Szulanski, et al. 2000; Szulanski & Jensen 2004; Riege 2007; Bonache & Fernández 1997; Bonache & Zárraga-Oberty 2008). In contrast, this research explores possible barriers of knowledge transfer in the reverse direction, from subsidiaries to parent company, and uses interviews with field staff as well as management. A researcher trying to understand the processes in knowledge transfer and its possible effect on the company and its stakeholders must be aware that many variables in these processes influence each other. Questions are “how” and “why”. Accordingly, a qualitative single case study was used to answer these questions.

Theoretical sampling

Maxwell (2005) and Eisenhardt (1989) share the view that to build theory from case studies, random sampling is inappropriate. Instead, case studies should use theoretical sampling; that is, the researcher should “choose cases which are likely to replicate, or extend emergent theory” (Eisenhardt 1989, p. 537; Gilgun 2011). Theoretical sampling explores new areas, and samples build on previous samples and data. One could compare it with a funnel, where various samples and data are collected. During the collection, further samples emerge, but as a theory emerges and data is analysed the knowledge of the phenomenon being studied becomes deeper

(Strauss & Corbin 1998). Comparing the emerging concepts of real-life stories and circumstances with existing research for similarities and differences may confirm current theories or add new insight into current knowledge (Becker 1996).

Justification for the use of theoretical sampling

This research aims to gain a deeper understanding of the challenges an organisation faces when knowledge is transferred from the subsidiary to the parent company. It asks why processes are in place that encourage the transfer or why knowledge transfer might be compromised, and how subsidiaries of a multinational company transfer their local knowledge to the parent company's product development, marketing and sales departments. Theoretical sampling will provide an understanding of the process and situations using a wide scope of settings, conditions and material along with people's perceptions. The research aim is to understand knowledge transfer from subsidiaries to parent companies, and any possible stickiness in that transfer. It also examines whether, and in what ways, knowledge transfer is found to differ from how it is described in the current literature, which has mainly explored knowledge-transfer stickiness from parent to subsidiaries. The case selected for this study was a single MNC with its head office in Europe and subsidiaries and distributors in the Asia-Pacific region; this site has the potential to experience knowledge-transfer stickiness when transferring knowledge from the subsidiaries to the parent company.

Qualitative single case study

Since the publication of Campbell and Stanley's (1966) work on research validity, some researchers claim that findings of a single case study would only be usable for pilot studies, that multiple case studies would be needed to confirm the conclusion, or that they could not be used for generalisation (Dogan & Pelassy 1990; Diamond 1996). The debate is ongoing; for example, Payne and Williams (2005) conclude that generalisation from single cases is still considered a major problem. However, Flyvberg (2006) and Denzin and Lincoln (2011) dispute those views, emphasising that case studies, including single case studies, could be better science than some quantitative research, and are as well suited for generalisation as quantitative

research. In his conclusion, he argues that in any research the most important aspect is the contribution to new knowledge, which can be gained by several methods, including single case studies. (Flyvberg 2006; Denzin & Lincoln 2011). Publications as early as 1992 have concluded that studies' conclusions can be generalised and are transferable to similar situations and places if they meet the following criteria:

- Observation and understanding what is happening,
- Establishing relationships,
- Reporting the findings,
- Connecting findings to other studies (Harper 1992; Vaughan 1992).

Using face-to-face interviews

If using an exploratory case study to understand why or how something is happening, one must investigate a variety of behaviours, processes, events and relationships to answer the research question (Yin 2009). A qualitative case study using in-depth, face-to-face interviews offers the flexibility to address and adjust inquiry as surprises are exposed by direct and spontaneous interaction between the participants and the researcher (Fontana & Frey 2005). Surveys, while they can be used in quality qualitative and quantitative research, do not allow the depth required for researching the problem closely and identifying the mechanisms by which the variables interrelate (Yin 2009); nor would statistical research methods be applicable, as behaviour cannot be quantified into numbers, nor can mathematical models be applied to understand the different factors that influence behaviour (Creswell 2003).

First-hand interaction with participants allows the researcher to explain in depth the aim of the questions and research to the interviewees, and to answer their questions. It is possible to obtain valuable information by asking further exploratory or clarifying questions, which might have the added benefit of allowing the researcher to gain new ideas or thoughts previously not considered (Opdenakker 2006; Yin 2009; Stake 1995). Using the tape recorder ensures that nothing of importance the interviewee says is missed. Even the tone and expressions of emotions can be replayed (Sacks 1992; Silverman 2006).

A researcher can record information as it is revealed, unusual features can be noticed during meetings and participants can provide necessary historical and anecdotal information (Vaughan 1992; Creswell 2003). It is easier to capture what interviewees might be thinking or feeling, and to hear their perceptions of specific situations. It is possible to catch the various nuances of the voice, facial expressions and body posture, all giving clues to the interpretation of the spoken words. Final conclusions are based on understanding the phenomena and not on the number of times something was mentioned (Yin 2009).

While face-to-face interviews have many advantages, the very personal, conversational nature of interview situations highlights many of the basic ethical issues of any research or evaluation method, such as maintaining confidentiality and minimising potential physical or physiological risks (Patton 1990). The next section explains how the researcher managed these issues in this case study.

The Current Case Study

Preliminary arrangements for data collection

A friend of the researcher, who is also the general manager of the Australian subsidiary, made the first contact with the company. The referral to the senior executive of the parent company resulted in an informal meeting to explain the research needs and requirements. The senior executive discussed the request with various managers and provided an opportunity for the researcher to have informal contact with potential participants. Everyone indicated that they were interested in taking part. Those contacts were made by phone or via email. The company emailed their approval to be used as a research case.

All participants worked in the division of surgical devices. The researcher selected that business unit because an area where high complexity of knowledge is transferred presents the possibility of knowledge stickiness (Von Hippel 1994). Another important aspect was the length of the division's product life cycle, which in this case was on average three years. A short product life cycle would not allow enough time to conduct an in-depth study, while a very long one might not provide enough beneficial

information within the time available for the thesis. The management of the case company suggested this division for the same reasons. Also, one of the other two divisions was going through a major restructure, and so was not a stable environment in which to conduct interviews, and the third had very mature products with little to no innovation, and so would not be such a rich source of data for knowledge transfer and possible knowledge-transfer stickiness.

The researcher chose to interview managers and employees from the parent company, the subsidiaries and the distributors. The majority of studies to date have gathered information from senior managers only; gathering information from all staff involved in knowledge transfer provides a broader information source. Employees, who are not part of the management teams, might have different perceptions from management about knowledge flow and the reasons for stickiness. Moreover, using subsidiaries and a distributor from both developed and developing countries provides a broader information source, as the impact of culture, language and resources might differ, as might views on what causes any problems.

The researcher explained to management that she was interested in staff from departments involved in product development and processes in which knowledge was transferred. The selection of people to interview was based on managers' recommendations and referrals; those contacts often provided further suitable referrals.

Interviewees' selection and location for this research project

This study interviewed 42 staff members. The study was confined to employees who work in the sales and marketing department and in the R&D and engineering areas, plus a small number of staff involved in technical product support. According to management, the R&D department and its product managers were the primary drivers of innovation, including new product development. The innovation process included screening of the strategic importance of new products, and assessing their financial impact and likely technical feasibility. The subsidiaries provided market knowledge, including the tool known in the company as "voice of the customer" (meaning listening to customers and understanding their needs).

The staff members interviewed were: 16 employees (including two from manufacturing) from five subsidiaries; nine employees from seven distributors; and 17 staff members from the parent company, including the R&D area.

Location of people interviewed

Staff were located in China, Singapore, Japan, South Korea and other Southeast Asian countries such as the Philippines, Thailand, Vietnam and Malaysia – as well as in Australia and the business unit and parent company in Europe. As all staff were interviewed face to face, for practical reasons the researcher focused on the parent company (in two places in Europe), the knowledge management manager (in a third European country) and staff from subsidiaries/selling units in the Asia-Pacific region. The majority of the subsidiary and distributor staff members were interviewed in Singapore during a week-long Asia-Pacific product-development and training conference. Staff members in Australia and China were interviewed at a later stage by visiting the various offices.

Building trust with the interviewees

It is important to gain and maintain the trust of the people being interviewed, as it increases the likelihood that they will participate honestly in the interviews (Fontana & Frey 2000). Being able to share their viewpoint encourages people to share their experiences. If questions in an open-ended interview are based on answers provided by the participants, active-listening skills are essential (Silverman 2006). In face-to-face interviews, answers can be influenced by factors such as the age, social class, education, gender and race of the interviewer. The respondent might have concerns regarding the interviewer's values or attitudes (Guttman 1944). However, if the interviewee trusts the interviewer and feels safe speaking without negative consequences, they might speak freely and honestly. Being able to share their viewpoint encourages people to share their experiences.

This research project gained trust

Establishing trust between interviewer and interviewee was an aim very early in the project. Prior to the formal interviews, the researcher built relationships with many of the employees who were to be interviewed by visiting their office on an informal basis, or through phone conversations or email. Some preliminary interviews were conducted at the parent company and some of the subsidiaries. The researcher is German, and while the interviews were held in English, being able to speak the language of the country in which the company is based created a more familiar atmosphere, and helped to build rapport when interviewing the employees of the parent company. Further, the researcher has a medical-science degree and had previously held a management position in a subsidiary of an MNC in a related industry. She had travelled extensively throughout Asia, which meant that she had experience dealing with different cultures, and an understanding of people working in a similar field. Being able to share the interviewees' viewpoints encouraged people to share their experiences. The researcher had developed active-listening skills during her many years working in marketing and sales management.

Prior to the formal face-to-face interview, participants received an information sheet that explained in plain English the purpose of the research, and how it would be conducted. Each participant signed a consent form prior to the interview. It was always made very clear at the beginning of each interview that there were no wrong or right answers to the questions, as the interview was only intended to reflect the perceptions of the people interviewed. All participants were assured of the voluntary nature of their participation, and of their right to decline or withdraw from participation in the project. They were advised that if they withdrew from the project, all data they had already provided would be deleted. Being aware of this seemed to induce a sense of ease and trust in the people being interviewed.

None of the participants who were interviewed withdrew from the project. They seemed to enjoy the interviews, and some commented that it had felt good being able to speak freely about their perceptions of various company issues. People appeared relaxed and did not seem to be worried or influenced by the interviewer's values or attitudes. The researcher felt that only one staff member seemed to provide answers that were "safe". The researcher had the feeling that he was paraphrasing the

company's policies, rather than giving his version of the story. The researcher's feelings were supported by his repeatedly emphasising that he was happy for head-office management to read or hear what he had said. After the assurance of total privacy, every other person interviewed seemed to be providing honest answers, and did not hesitate to share their personal opinion. At the start of an interview, some people seemed to feel a bit intimidated by the microphone, but once they started talking, they usually forgot that the recorder was running, and they no longer seemed to feel that it was intrusive. Even people who were hesitant at the start and would only provide short answers eventually opened up and talked freely.

The interviews

The interviews were recorded with a digital recorder, to capture everything that was said and the speaker's tone of voice. The words could not be misreported, as they could be checked and rechecked at any time, and the sequence of the conversation could be easily followed. It was possible to recheck details to clarify, confirm or correct the analysis; interviewees could also be contacted later to clarify their comments. Every participant was asked to provide a short job description, and the date and time of the interview was noted. Interviews included questions to establish where interviewees saw themselves both within specific processes and in the knowledge-transfer process as a whole.

Questions had been divided into broad headings, but information was gathered by semi-structured interviews. Questions focused in a direct or indirect way on knowledge transfer and its possible barriers. Questions were based on current literature, but were enhanced by further probing when interesting data emerged. There were questions about whether the company was listening to the customer's voice when developing products, and about how the individual participated in a kaizen. Staff members were asked if they thought the subsidiary possessed knowledge worth sharing; if the answer was yes, they were asked what kind of knowledge. If the answer was no, they were asked why they held that opinion. While the interviews were guided by a set of specific questions, they were flexible and took into consideration the interviewees' answers. Specific answers suggested further questions. People seemed to be happy to just talk

and tell their story, and very little probing was needed. Interviewees were interrupted as little as possible (usually only if the speaker did not seem to come back to the topic).

At the end of the interviews, which each lasted 60 to 70 minutes, there were two final questions: “If you had the absolute power to change anything within the organisation, what would it be?” and “What do you think the organisation does really well?” These open-ended questions provided very beneficial answers for the research. While answers differed from person to person, patterns emerged of similar phenomena. The in-depth interviews with the employees and observations made during interviews provided an understanding of the actors’ varying perspectives. Further, the interviews provided rich data for the analysis to determine where the sticky points were in transferring knowledge from the subsidiaries to the parent company.

Data-collection quantity and time span

Specific recommendations for how many quantitative interviews are enough for a meaningful analysis vary greatly in the literature (Baker et al. 2012). Saturation is reached if any additional data does not add to or change the final conclusion (Creswell 1998; Maxwell 2005; Mason 2010)

Data collection for this research

This project sought for patterns to emerge and to find answers that seemed to be important to understand the narrative. During or shortly after each interview, the written notes were copied into a diary, including the researcher’s personal thoughts and feelings, observations and reminders to cross-reference or to ask someone else to confirm or clarify a response. Questions that might be of importance for the analysis were noted. Further notes were taken every evening while listening to the interviews of the day. This allowed the researcher to recognise themes and patterns as they emerged. When specific questions were answered in a similar way by several personnel, this was an indication that data had reached saturation. Further, interviewees would recommend other staff members who would be beneficial to talk to. When no new names were mentioned, it was another sign that all the relevant people had been interviewed. The primary data was collected within a period of six

months; further clarification was sought and additional information was collected over the following 12 months.

Ethical issues

Because respondents were sharing personal perceptions and company information, it was important to ensure that confidentiality was preserved. Due to commercially sensitive information exposed during the research project, confidentiality of company information was guaranteed to the company's managing director in writing. Privacy protection was provided to the interviewees by informed consent verbally and in writing. After being informed of the project's potential risks and benefits, the company's management provided signed permission agreeing to allow employees to participate in the research, but not influence them one way or other in exercising the choice to participate. Interviews were held in the employees' usual work environment, such as their office or a meeting room.

Analysis of data using NVivo

In the early 1990s computer programs were developed to help analyse qualitative data; these programs are now well accepted. While the software stores, sorts, codes and retrieves data, it does not perform the analysis (Kelly 1997). NVivo is a qualitative data analysis computer software package produced by QSR International. The software is designed to help with the organisation and analysis of qualitative research data, simplifying the complex procedure of coding. Codes compare text segments that come from different sources but refer to a common topic (Charmaz 1983) and/or have similar meanings (Strauss & Corbin 1990). Coding allows searching for meaningful patterns, and thus helps to make sense of interviews (Jorgensen 1989).

Additional notes regarding the interview should be taken while transcribing ideas. Huberman and Miles (2002) recommended recording reflective questions about what the interviewee is saying and notes on topics that needed further investigation or where clarification is needed from interviewees. Comments should be made about the interviewees' intonation, as this could give a different meaning to the spoken words.

Charmaz (2006) suggested that at this stage notes can be cryptic and very short, as the aim is only to capture the essence of the interview.

Analysis with NVivo in this research

NVivo was chosen primarily because it provides all the required functions in a user-friendly format. NVivo software allows all the data to be kept together; it also allows the importation of documents directly into the software package.

Data coding, reduction and generating themes

While it would have been possible to code directly from the imported mp3 files of the interviews, this would have been a very difficult and slow process. It was easier to transcribe the interviews by listening to the digital tapes several times. The first few interviews were transcribed word for word by a professional, but time and cost pressures meant that partial transcription became the preferred method for most interviews. Recordings were played back several times. Listening and transcribing occurred simultaneously. For any passages that seemed to be unclear, the time code of the passage was noted, allowing a return to the section for clarification. In an open-ended interview, where the participants told their story, the story might go off the topic; these digressions were ignored as not important or relevant to the research. However, the participants were, in general not interrupted. For what were seen as important sections, a detailed word-for-word transcription was written. The researcher took notes while listening to the interviews. The resulting data was imported into NVivo; this also included interview data, articles and other publications on topics relevant to this research, with memos and notes regarding literature relevant to this research, personal notes of observations from interviews, and the research journal with thoughts, ideas and questions. The journal questions had headings such as: who, why, what – what for, what if, with what result, when, where, how and how much. These headings aimed to clarify why those questions had been asked and what the answers might mean. At the beginning, the filing categories for the codes were those identified through literature discussing knowledge transfer, stickiness, knowledge barriers and other topics relevant to the study. As the data was studied and the text progressively

coded, new categories were added. This process typically involved reading an interview or other sources and contemplating whether and how the information related to the research question, what other topics it linked to and where it might lead.

In the process of coding, every part of a transcribed sentence was coded and filed. Any parts of the sentence that did not seem to fit a theme were coded under the heading “orphan”. Those orphan codes were examined at a later stage and either filed under a new heading that might have emerged during coding or ignored as not relevant. The coded data was reviewed many times before, during and even after the analysis to ensure that nothing had been missed and that the interpretation of the data was internally consistent. Once the coding was completed, text belonging to the same code and/or categories was retrieved. Observing and studying expected and unexpected linkages between bits of encoded text led to a comprehensive interpretation of the data.

Validity and reliability

The Merriam-Webster dictionary (2012) defines the root of the word “valid” as meaning “strong or potent”, and the meaning as “something being well-grounded or justifiable: being at once relevant and meaningful; logically correct”. According to the Macquarie Thesaurus (1986), if an argument is valid, its conclusion is considered to be sound and logical. Validity in research has traditionally meant that the researcher’s conclusion cannot be challenged as being false or biased and that the conclusion drawn from the data is reasonable and answers the research question (Yin 2009; Feagin, Orum & Sjoberg 1991).

While validity refers to the analysis of the data, reliability refers to the consistency of the data collection (Stake 1995) and the minimisation or elimination of bias in a research project (Yin 2009). Stenbacka (2001) conceptualised that reliability in qualitative research is impossible, as the data can never be consistently repeated as in quantitative research methods. However, Yin (2009) and Stake (1995) define reliability in qualitative research as the documentation of the data to the extent that any person can follow the same procedure and arrive at similar conclusions those reached by the researcher. For example, the sound of a voice can be interpreted by different researchers the same or differently, but other data, such as field notes, would

have only one interpretation. In other words, if there is a consistency among different people in the interpretation of the data, research findings can be considered to be reliable. Similarly, open-ended interviews might result in different wording when repeated, though the wording should have the same meaning. The consistency of the data collection would not be affected by the repeat interview, even if different wordings were used (Yin 2009). For example, any person listening to the taped interviews should be able to replicate the transcription, and a transcription summary of the interview should be the same regardless of who does it (Creswell 2003; Maxwell 2005; Holliday 2007).

Qualitative research has been accepted as being as “scientific” as quantitative research (Myers 1997; Calder 1977; Morse et al. 2002). However, researchers have discussed how validity can be achieved when using only a single qualitative case study (e.g. Abercrombie, Hill & Turner 1984; Campbell & Stanley 1966; Morse et al. 2002; Denzin & Lincoln 1998, 2008). As Flyvbjerg (2006) pointed out, validity is not the goal in exploratory quality research.

A qualitative exploratory case study aims to learn what is happening, and why; it does not measure phenomena as quantitative research might do. The researcher has very little control over the variables, and hence validity does not need to follow the same rules as quantitative research (Stake 1995; Cutcliffe 2003). Eisenhardt (1989) stated that validation is established if qualitative data provides a good understanding of what is happening, answers the “why” question and provides an understanding of the cognitive and motivational reasons why something is happening. Prior to Eisenhardt’s statement, Geertz (1973), LeCompte and Goetz (1982) and Mitchell (1983) asserted that, as long as the researcher has established credibility by collecting data that is descriptive and transferable to allow for powerful and plausible interpretation of both the data and the analysis, no further proof is required. Stake (1995), Creswell (2003) and Silverman (2006) similarly stated that if the research is based on data that can be trusted and the analysis is based on sound arguments and thinking, it is good research; moreover, the emphasis ought to be on “how you will rule out specific plausible alternatives and threats to your interpretation and explanations” (Maxwell 2005).

In the last 20 years, other researchers have supported the argument by saying that in qualitative research the researcher proves validity and reliability by showing that it is believable and without bias (e.g. Seale 1999; Davies & Dodd 2002; Mishler 2000; Stenbacka 2001; Creswell 2003; Maxwell 2005; Silverman 2006; Flyvbjerg 2006; Yin 2009). Guba and Lincoln (1981, 1985, 1989) when discussing validity in qualitative research were the first to mention terms like “trustworthiness”, “authenticity” and “credibility”, as well as “transferability” and “dependability”. Those terms have been further debated in the qualitative research literature (e.g. Clont 1992; Campbell 1996; Hoepfl 1997; Seale 1999), in terms of their use in proving reliability and validity. At a later stage, some researchers felt that if a piece of research fulfilled the requirements of being credible, dependable, trustworthy and transferable, it could be considered valid and reliable (Creswell & Miller 2000; Lincoln & Guba 2000; Creswell 2003). Lincoln and Guba (1985) define these terms as follows:

Credibility relates to the findings and interpretation being based on the original data and to the concept and conclusion being believable (Lincoln & Guba 1985, p. 296).

Dependability refers to the quality of the data collection, its analysis and the final conclusion. In a case study using interviews to collect data, the researcher cannot measure the same thing twice, but tape recordings mean that interviews can be rechecked by the researcher, as well as by any other person.

Trustworthiness exists if the arguments supporting the findings are “worth paying attention to” (1985, p. 290).

Transferability, often referred to in the literature as generalisation, means the degree to which the findings and conclusion can be applied to other cases of similar settings.

Validity and reliability approach of this research project

Credibility was achieved by using good techniques to gather high-quality data that was carefully analysed to provide consistent findings to answer the question of why something was happening, and the reason behind it.

Dependability was gained by storing the actors’ interview recordings and transcripts, the company’s reports and the researcher’s diary in the NVivo software. The coding process is transparent and can be cross-checked for credibility. Each step of the data-

collection process is described in the methodology chapter. It is possible for an independent auditor to replicate the researcher's work.

Trustworthiness can be claimed as the analysis would be plausible to others analysing the same data.

Transferability was gained by the analysis being based on the in-depth interpretation of data collected across several departments and offices of a large multinational company in a number of countries. The findings and conclusion were compared to conflicting, as well as confirming, literature, and one would expect a high degree of transferability to other multinational companies in similar settings.

To support the interpretation of the data, several interviewees were asked to confirm the findings.

Further validity and reliability were achieved by establishing trust between the interviewer and the interviewees to encourage honest participation. Using face-to-face interviews allowed an awareness of the environment, the atmosphere and the feelings people had, and not just the sound of spoken words. Interviews had only a few structured questions, and all open-ended questions focused in a direct or indirect way on knowledge transfer and its possible barriers.

In keeping with an exploratory case study approach, interviews were aimed at understanding the process of knowledge sharing and transfer as it appeared from these individuals' perspectives. Sufficient numbers of people were interviewed to establish patterns when the data was analysed. Each one was given enough time to tell their story uninterrupted and in their own words. Where data was unclear, people were contacted to clarify some of their statements to ensure that the analysis was based on what they really meant and felt. Allowing people to verify their comments enabled them to elaborate, qualify, retract and generally confirm what they said. It provided higher insurance that their story was interpreted correctly.

Apart from asking several interviewees to confirm the findings, field notes, observations and current literature were used to support the interpretation of the phenomenon. For in-depth analysis tape-recording all interviews allowed data to be checked by anyone wishing to do so. Listening to the tapes several times and rereading the notes made during and after the interviews reduced the risk of missing

anything of importance. This research followed the literature recommendation to compare any conclusions the researcher has drawn from the interviews with the current literature; and to present all findings, including those that do not fit with the final conclusion.

Bias

Bias can affect the validity and reliability of qualitative research, and has a negative effect on the final conclusion of a research project (Collier & Mahoney 1996; Rajendran 2001; Creswell 2003; Maxwell 2005).

In a case study, there are two major sources of bias:

- The personal biases of the researcher, which can influence the assumptions the researcher makes, and thus the way the study is designed and data is gathered and interpreted (e.g. Eisenhardt 1989; Rapley 2001; Voss, Tsikiktsis & Frohlich 2002; Flyvbjerg 2006; Silverman 2006). What one “selectively” hears the respondent saying, and how one chooses to probe for more information, is too often a function of what one thinks one will hear, or wants to hear (Elwyn & Gwyn 1999).
- Poor sampling strategies, which can allow the perspective of the case company’s personnel to affect the final conclusion (Silverman 2006). To eliminate the possibility of sample selection bias, a wide range and a breadth of samples must be collected and analysed (Collier & Mahoney 1996; Rajendran 2001; Creswell 2003; Maxwell 2005).

Bogan and Biklen (1982) felt that bias can be controlled by collecting rich data, as it would provide for more information than any idea the researcher might have favoured prior to carrying out the research. The term “rich data” is used in qualitative research, such as where the researcher explores a phenomenon or occurrence by interviewing people in depth and uses all the nuances of those interviews, as well as literature and other supportive material, to understand and interpret the meaning of those stories (Wood & Welch 2010).

Ortlipp (2008) suggested that keeping a journal of the research project and process creates transparency, as it can show how the researcher's values and experiences might have influenced the research project and its findings. Apart from an outside observer being able to follow the researcher's thought process, the researcher can check for subjectivity and bias throughout the project. In this study, the researcher kept a journal during the interviews and coding process and at the early stage of the research process. The journal entries helped her reflect on the mood of the participants during the interview, as well as her own thoughts, including negative thoughts; for example:

When interviewing a person with very poor command of the English language, I became aware of my own impatience with the slowness and difficulty in the communication. I felt embarrassed to be consistently interrupting the story by asking clarification questions. I was worried that some valuable information might have been lost, or incorrectly interpreted. Luckily this was the only person where, due to the language difficulty, clarification would not have been possible.

Further, the journal helped the researcher to follow and monitor her own thought process and served as a reminder of what literature to explore.

How bias was minimised

The researcher has worked in an industry similar to that of the case company, and while this has certain advantages, it might increase the possibility of personal bias (Rabin & Schrag 1999). As the researcher was well aware of the possibility of showing personal bias (confirmation bias), the questionnaire was designed as a guide to help people tell a story and to reduce the possibility of leading questions and personal bias.

Questions were formulated as follows:

- Please tell me about your involvement in product development, instead of, Do you do X or Y?
- Do you receive feedback from customers? What do you do with the feedback? instead of, Do you send the feedback to the parent company?

- Have you ever participated in kaizen? In your opinion, what are the strengths and weaknesses of a kaizen? instead of, Some people think kaizen has little value. What do you think?

To ensure that answers were not misunderstood, direct questions were asked for clarification, such as: Did you say...? or Did you mean...? or Do I understand correctly? Also, similar questions were asked in a slightly different way to ensure that there was no misunderstanding. This was of particular importance when interviewing people from different cultures and/or who had limited command of the English language.

As mentioned previously, a wide range of people were interviewed, head-office staff to those working for subsidiaries and distributors. Management and staff from different hierarchical levels were given the opportunity to tell their stories. This breadth of interviews aimed to eliminate the possibility of sample bias.

Using attendees at a conference has the risk of self-selection. However, this was the organisation's annual Asia/Pacific conference attended by senior and middle management from the parent company, the subsidiaries and distributors, product manager, R&D staff, engineers, sales and marketing staff from the subsidiaries and distributors, as well as manufacturing staff. While distributors are encouraged to participate in these conferences, for the other staff members it is mandatory. The range of interviews in terms of staff roles was as wide as when visiting the various offices.

Conclusion

This chapter has explained why a case-study approach was chosen to answer the research question, and described how the research was conducted. It described the selection of the case, the choice of the method of data collection and analysis, the justification for the use of semi-structured, face-to-face interviews and how and where they were conducted. The chapter also provided the number of people interviewed, the sample selection and criteria, and why that number of samples was collected. Facts were provided on the time span and how saturation of data collection was established. Information was presented on the use of NVivo software. The chapter concluded with a discussion on how the research addressed validity and reliability,

and how bias was minimised when collecting and analysing the data. The next chapter will provide background on the case company studied and the prologue to the analysis. It explains the rationale for the subsequent analysis chapters.

Chapter 4

Company Context

Company and its knowledge – Description of the case

This chapter explains why the researcher chose this particular division for the project. This is followed by insight into the parent company's background, as well as on its subsidiaries and distributors. The company's major strategy tools – “lean”, policy deployment, kaizen and KPIs – are succinctly explained. In addition, the organisation's structure is outlined.

As described in the methodology chapter, this background information is based on data from various sources. To maintain privacy, the company requested to stay anonymous. Hence, company names, as well as department and product names, have been changed. The conglomerate is referred to as “Con-Glom”, and the medical-device division used as the case-study organisation as the parent company “Callbor”. Where necessary, geographical locations are disguised. Great care has been taken to prevent any possible identification without the loss of important information, or any compromise to the research project.

During the interviews and other information-gathering, it became apparent that the company finds knowledge management a challenge. The researcher identified barriers interfering with knowledge transfer from the subsidiary to the parent company. In the three next chapters, the findings from the analysis are discussed and related to the stickiness literature, as well as to literature from areas that demonstrate comparable issues.

The remainder of the chapter is structured as follows:

1. Summary of the case company and why it was chosen
2. Basic company structure
 - a. The transnational conglomerate
 - b. Company's Business System/ Con-Glom's Business System (CBS)
3. Summary of the case company's context

4. Background of the case company
 - a. Callbor's company structure
 - b. Structure of the medical-device division
5. Callbor's subsidiaries and distributors
6. Overall reporting structure.

Summary of the case company and why it was chosen

The literature review covers a wide range of research, discussing the attributes of stickiness when transferring knowledge from a parent company to its subsidiaries (Szulanski 1995; Birkinshaw & Hood 1998; Szulanski & Jensen 2004; Bonache 2000). Far less is known about the attributes of stickiness when transferring knowledge from subsidiaries to the parent company; hence, this is the focus of this research.

As noted in the methodology section, the company Callbor's medical-device business unit appeared to be a suitable venue to investigate because of its level of innovation and the length of its product life cycle. A too-rapid product life cycle would not provide enough time to conduct an in-depth study, and a very long product life cycle might mean the length of time to gather adequate data would be too long to be practical. For instance, one of the company's divisions develops and markets new products every year. The research and development in that division would be too rapid to allow an in-depth study that takes several years. Similarly, if a division conducts very modest research and innovation, as the product ranges do not change over several years, the research would not be able to provide rich data about knowledge transfer. The division chosen for the project fell between the two extremes: new products were developed over a time span of around three years and upgrades of existing products were an ongoing activity. A parent-company senior manager suggested that the division developing and manufacturing a particular type of medical device would be the most suitable division.

Further, Callbor fully supported this research project. The interviewees perceived it as a benefit that the researcher was familiar with related industries and the case company's technical language. Her previous experience of the industry enabled her to build trust with the interviewees and made it easier for her to understand the context of the company and its issues. Stenbacka (2001) said that having first-hand

experience and insights into an organisation's general practice, and not having to rely fully on second-hand understanding such as literature, is valuable, as it can increase the understanding of the phenomena studied. In addition, the parent-company manager was personally interested in the outcome of the research. He felt that the case-study division was one where the company had the least knowledge about whether they were meeting customer and market expectations, and whether they were capturing the knowledge of the subsidiaries and their customers. Having full support from the parent company's senior management team, as well as the subsidiaries' staff, allowed for a rare insight into a multinational company.

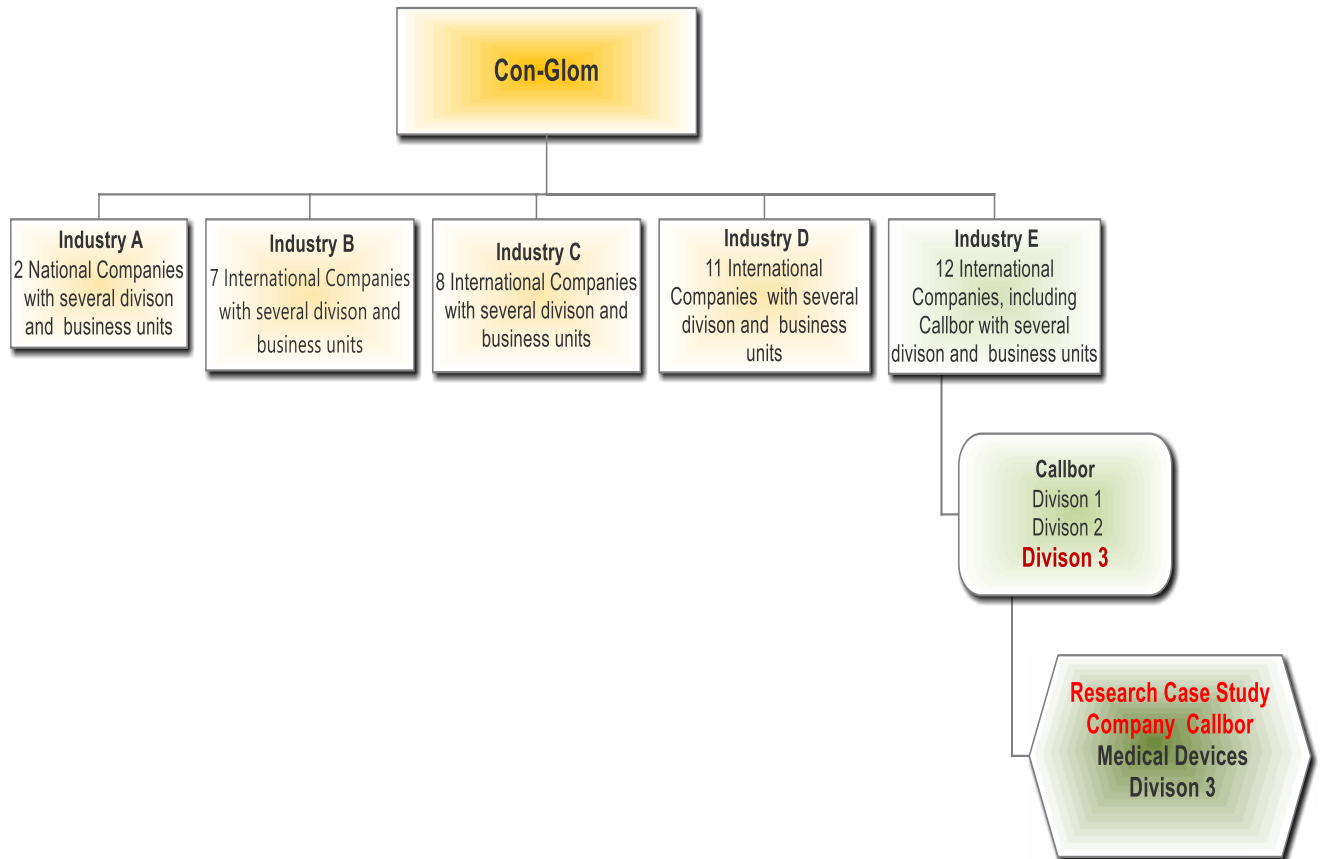
The following section provides background on the transnational conglomerate, as well as the case company, its business unit and the subsidiaries and distributors who participated in this research project. This is followed by a description of the structure of Callbor's medical-device division.

The transnational conglomerate

The case company is a segment of a multidivisional, highly diversified transnational conglomerate, which in this thesis is called Con-Glom. The company has an "M-form" structure and strategic control system (Hitt, Hoskisson & Ireland 1990): it operates within five unrelated industries. Each company is a semi-autonomous organisation with its own brand, company name and structure. However, the companies are under the central financial control of the conglomerate. Con-Glom was started in the late 1970s by two partners acquiring two national mechanical manufacturing companies; this was followed by the acquisition of an international mechanical manufacturing plant. After almost a quarter of a century in the manufacturing business, the company ventured into the technically sophisticated medical-equipment industry.

The diagram below illustrates Con-Glom's structure, as well as how the case-study company Callbor fits into the whole.

Diagram 2: Basic company structure



The diagram illustrates the five industries in which Con-Glom operates. In each industry, Con-Glom owns between two and 12 companies. Each of the companies has multiple divisions and business units. Callbor and its three divisions are highlighted in green. The darker green box in the bottom right corner indicates the case company.

Con-Glom builds its business via acquisitions. As mentioned previously, any business Con-Glom acquires maintains some autonomy. How this is achieved will be explained later. Con-Glom invests in the companies to build and strengthen the individual corporations. While some profits are channelled back to the conglomerate, a substantial part of the profits the companies generate is reinvested into the companies. Today, Con-Glom operates in 125 countries, and in 2014 it generated about \$20 billion in revenue. While individual companies operate as semi-autonomous entities, every company follows Con-Glom's Business System (CBS). CBS is described below.

CBS and its strategy tools

In the 1980s the company developed the Con-Glom Business System. CBS is an operating system with tools, such as lean manufacturing, policy deployments, kaizen and KPI's, that direct Con-Glom's strategy. "Kaizen" is a Japanese expression meaning "continuous improvement". Kaizen seeks to continuously improve current working methods with the aim of eliminating waste and to achieving "leanness". Further, kaizen provides guidance on how the business should move forward (Morrison 2003; Liker & Meier 2006). Con-Glom says on its website:

CBS guides what the organisation does, it measures the implementation, and creates options for improvement – including CBS itself.

(Source: Con-Glom website 2016)

The business system adopted the principles of Toyota production system (TPS), developed by the Japanese car manufacturer. Toyota's website explains its production system:

The practical expression of Toyota's people and customer-oriented philosophy is known as the Toyota Production System (TPS). This is not a rigid company-imposed procedure but a set of principles that have been proven in day-to-day practice over many years. Many of these ideas have been adopted and imitated all over the world.

TPS has some specific desired outcomes:

- To provide the customer with the highest quality vehicles, at lowest possible cost, in a timely manner with the shortest possible lead times.
 - To provide members with work satisfaction, job security and fair treatment.
- (Toyota 2016)

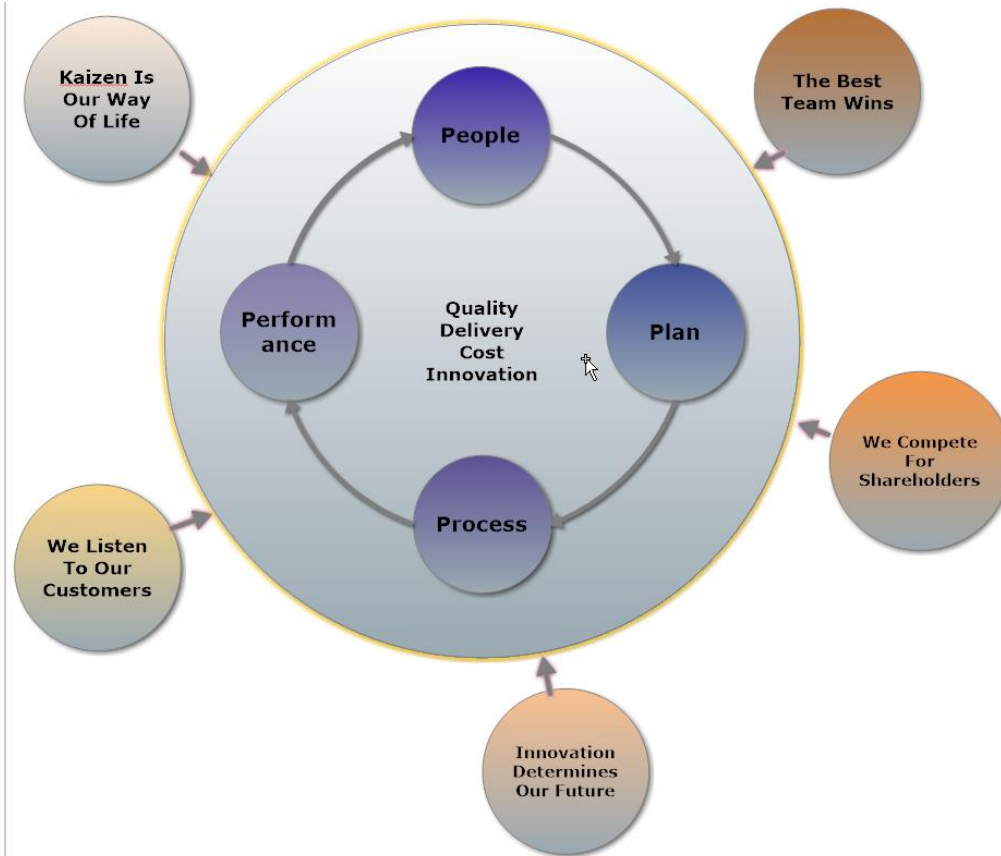
It gives the company flexibility to respond to the market, achieve profit through cost reduction activities and long-term prosperity.

TPS strives for the absolute elimination of waste, overburden and unevenness in all areas to allow members to work smoothly and efficiently. The foundations of TPS are built on standardisation to ensure a safe method of operation and a

consistent approach to quality. Toyota members seek to continually improve their standard processes and procedures in order to ensure maximum quality, improve efficiency and eliminate waste. This is known as kaizen and is applied to every sphere of the company's activities. (Toyota 2016)

TPS was originally designed to manage production plants. Comparable to the Toyota business system, Con-Glom uses CBS to set and plan strategic processes and to ensure that its organisational goals are met. Kaizen is Con-Glom's strategic tool for continuous improvement throughout its operations. In addition, Con-Glom applies key performance indicators (KPIs) to measure how well processes and objectives have been implemented and met. CBS and its tools will be discussed further in the first analytical chapter. The conglomerate's website explains graphically how CBS applies to every section of the organisation, not solely to production (Diagram 3).

Diagram 3: Con-Glom's Business System



Source: Adapted from the Con-Glom's web site.

The centre displays Con-Glom's promise to its customers to deliver high-quality, innovative products at a competitive price. The blue circle illustrates that Con-Glom achieves commitment to its customers, through dedicated people designing plans and implementing processes to seek high performance. The outer circle demonstrates Con-Glom's values: its skilled and competitive employees, its commitment to its shareholders and its focus on research and development. Further, the diagram reveals Con-Glom's two strategic tools: the kaizen being its "way of life", and the Voice of the Customer (VoC), the commitment to listen to its customers. VoC refers to the collection of ways the company listens to customers' expectations and preferences, and tries to understand their needs. More will be said about VoC later.

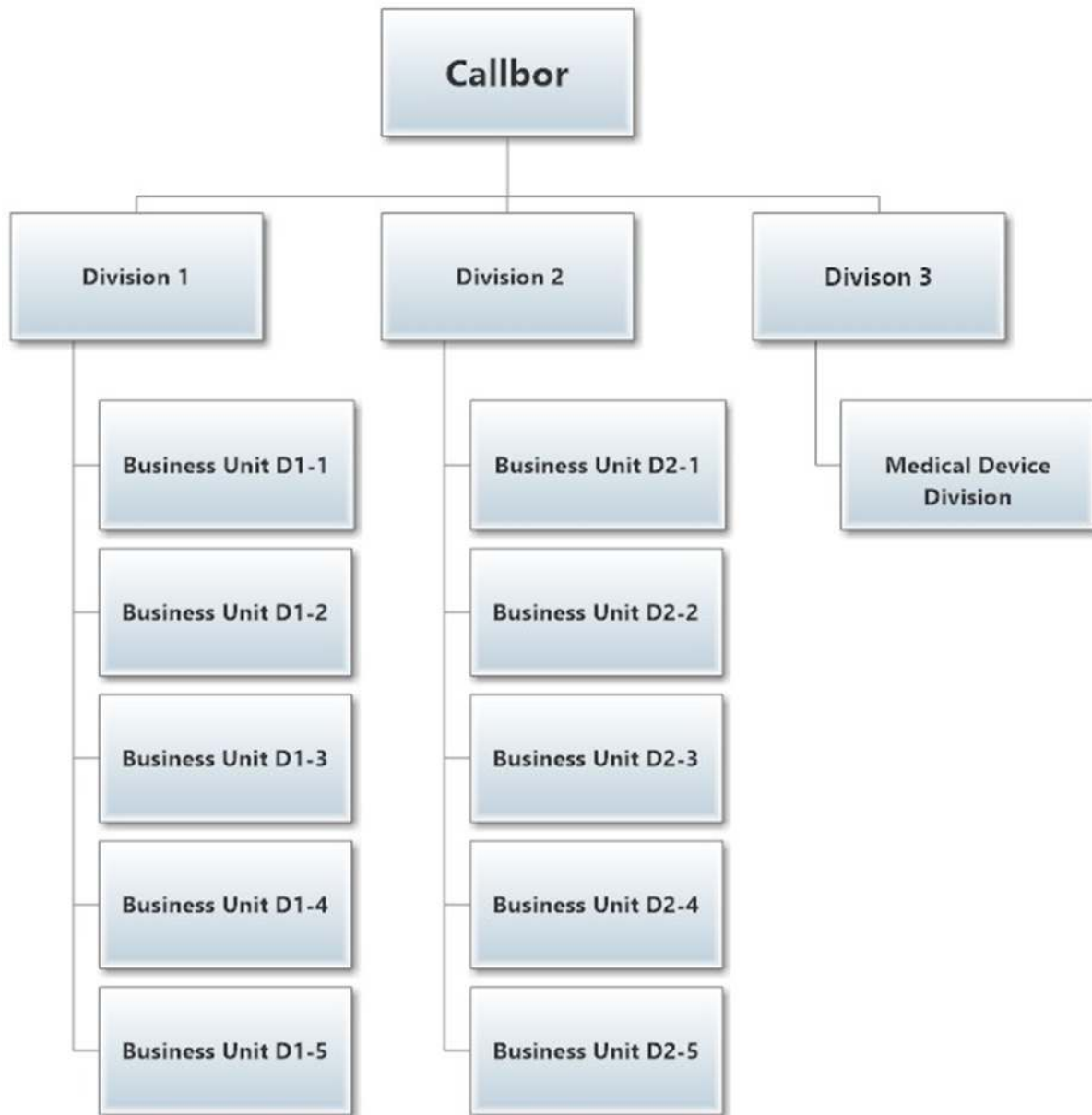
The CBS tools aim to help the company grow, excel in leadership and operate as a "lean" organisation. Lean manufacturing or production, often just called "lean", aims to reduce waste for the company, and increase value for the customer. While Con-

Glom's acquired companies devise their own strategy, they are required to incorporate the conglomerate's CBS including lean.

Summary of case company's context

Callbor's medical-device division develops, manufactures and distributes high-technology medical systems. As noted earlier, the company is owned by a large transnational conglomerate. As part of Callbor's semi-autonomy, it has a head office (parent company) as well as global subsidiaries, and distributors. Callbor's divisions are independent from each other. While the three divisions have related products, they are aimed at different markets. Callbor was established as a family business in the 19th century; it is now a global organisation. Callbor develops and manufactures high-technology systems. While divisions one and two have several business units, division three is a single business unit. This research focuses only on the division that produces the high-tech medical-device system. Diagram 4 illustrates Callbor's company structure and summarises the case-study company's context.

Diagram 4: Callbor's Company Structure

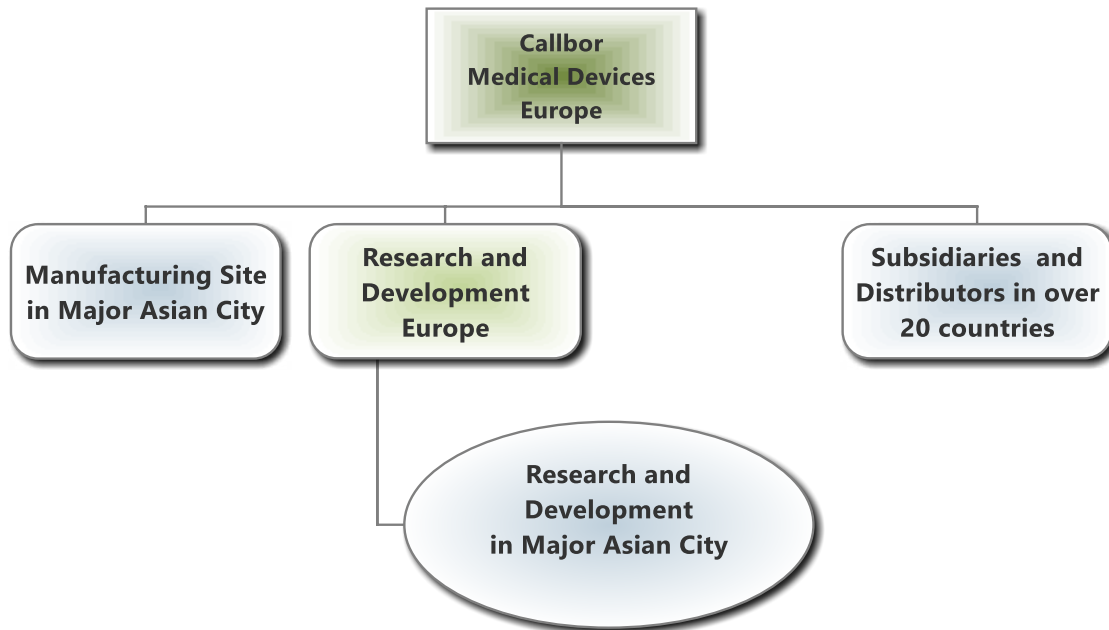


Medical-device division context

Callbor's manufacturing site is located in a major city in South East Asia. Sales and services are located in over 20 countries. The subsidiaries are often called selling units, as are the distributors who represent the company in various countries. In this research, the names "selling unit" and "subsidiary" are used interchangeably. Research and Development (R&D) is located at the parent company. A second R&D department is located at the same site and in the same major South East Asian city as manufacturing. The South East Asian R&D subsidiary is under the direction of the

parent company's R&D department. Diagram 5 shows the structure of the medical-device division.

Diagram 5: Structure of the Medical-Device Division



Callbor (parent company) designs, manufactures, and sells high-tech medical devices. The parent company is responsible for strategic planning and new product development. The researcher was told that the research and development (R&D) department is the primary driver of innovation. Product development includes analysing the strategic importance of new products, their financial impact and their likely technical feasibility. The subsidiaries are expected to provide market knowledge. Some selected subsidiaries are involved in VoC activities.

Marketing and sales department

Callbor has a marketing and sales department. The marketing manager is in charge of Callbor's general communication department and responsible for such activities as advertising, branding, public relations and designing and printing marketing flyers and brochures. The marketing department has global responsibility.

Callbor has a global sales manager; however, selling is about one-to-one communication. Thus, each individual subsidiary and distributor, as well as Callbor's home-country office, has a professional sales force, led by a local sales manager. The individual salespeople have science degrees to understand the complex medical devices, and they are professionally trained to build relationships with individual customers. They learn how to deal with the ambiguity of the individual and they analyse what motivates the customer to buy or not to buy. A professional salesperson becomes a "trusted adviser" who works with the customer. The sales approach is not based on pricing and discounts, or features and attributes; it is based on benefits (value) for the customer. Callbor's sales professionals are called account managers.

South East Asia markets

Almost all subsidiaries, including the manufacturing site, are staffed and managed by host-country nationals, not expatriates. Callbor operates in well-established markets, as well as in emerging markets. Callbor's major focuses are countries that promise the most potential market growth.

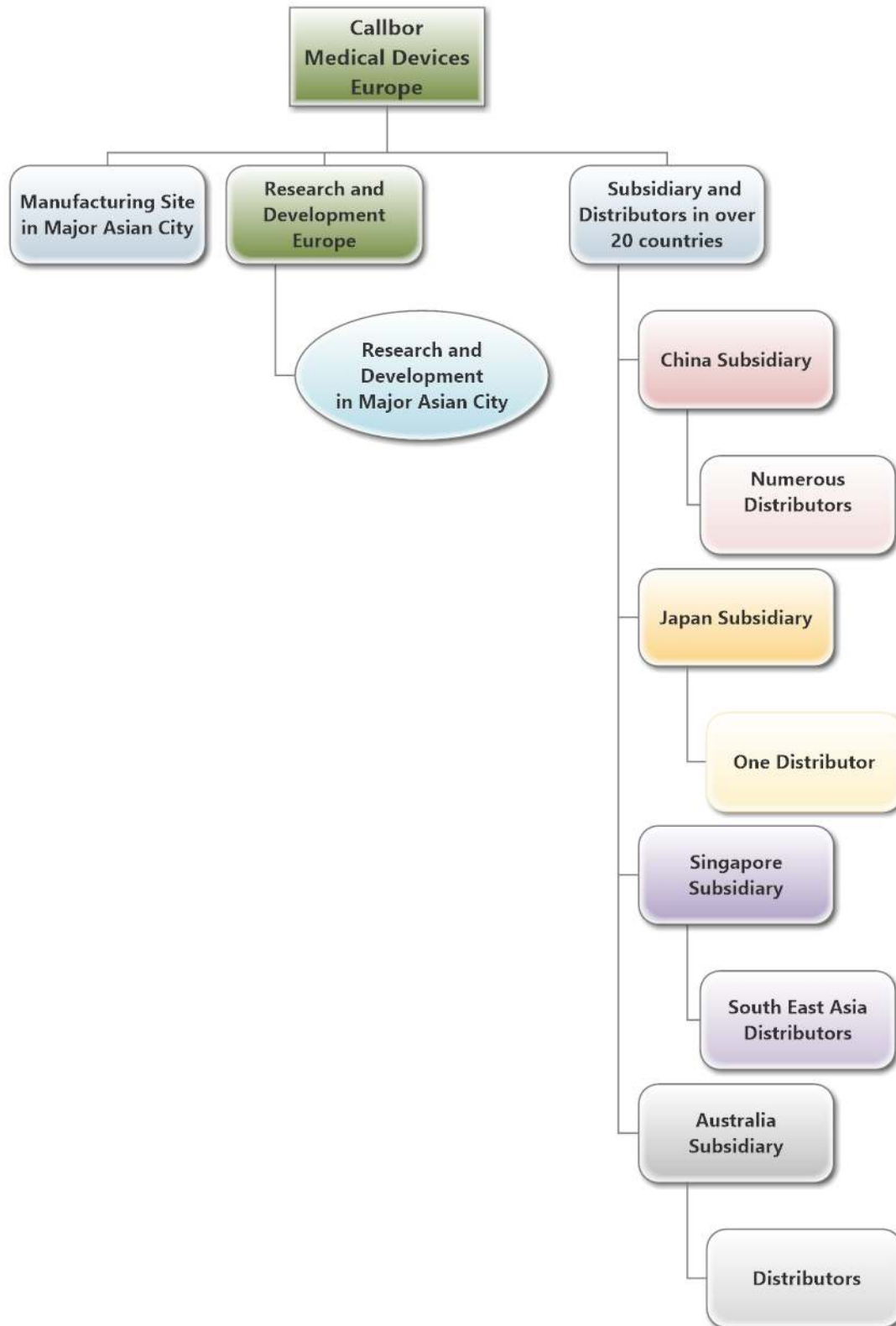
Callbor's subsidiaries/selling units

The focus of this research is Callbor and its subsidiaries in the Asian and Pacific region; hence only those companies will be described. All Callbor's subsidiaries follow the Callbor strategy, and report directly to Callbor. Callbor's subsidiaries market the entire product range for its three divisions. While Callbor's subsidiaries have some autonomy, it is mainly limited to local administration tasks and daily management.

The parent company sets the global strategy and goals, and keeps a tight control on the overall operation. As an example, the subsidiaries are not permitted to be in direct contact with the manufacturing site, or the Asian R&D subsidiary. All major decisions, such as office location and how many employees can be hired, must be approved by the parent company. Product training is provided by the parent company. Callbor's subsidiaries provide local marketing information and report customer preferences through formal and informal channels. The formal channel is the VoC process, which is managed by the parent company's R&D product managers. The informal channels

are email, verbal communication or a report to the parent company's product managers or the global sales or marketing manager. Subsidiaries are responsible for the distributors in their region. The distributor's budget is part of the subsidiary's budget. While subsidiaries and distributors follow the parent company's strategies, the subsidiary's structures and practices can vary slightly. Diagram 5 illustrates the Callbor medical-device division's structure, including the subsidiaries and distributors who contributed to the research project.

Diagram 6: Medical-Device Division's Structure, Including the Subsidiaries and Distributors



The following section briefly explains the context of the Callbor subsidiaries that were examined for this thesis.

China

China's subsidiaries have four offices plus several distributors. Due to the vastness of the country, the Chinese subsidiary offices can be a long distance from the distributors' office. In China, the subsidiary, while marketing to end users, will not sell directly to customers. With the support of the subsidiary, the distributors sell to end users and provide them with basic technical support. The subsidiary supports the marketing, gathers market intelligence and provides high-end technical product support for end users, as well as for the distributors.

Japan

Japan has one subsidiary office and one distributor to represent the medical-device division. The office works closely with the distributor, and both the distributor and the subsidiary have a sales force. Training and high-end product support are provided by the subsidiary, as are all marketing activities and marketing intelligence. However, the distributors are encouraged to contribute to all activities.

South East Asia/Singapore

The subsidiary office in Singapore is responsible for the distributors in South East Asian countries such as Indonesia, Thailand, South Korea, the Philippines, Vietnam, Taiwan and Malaysia. The distributors report to the Singapore office, and receive their direction and support from Singapore. The distributor's training and the high-end product and marketing support are provided by the subsidiary. The subsidiary office has a direct sales force to serve Singapore customers.

Australia

Australia's subsidiary is responsible for Australia, New Zealand, Fiji and Papua New Guinea. The latter two countries are also served by the New Zealand distributor. Fiji and Papua New Guinea generate very limited business, and Callbor does not consider them to be emerging markets. These markets are difficult to support because they are

not in close geographical proximity, and they are difficult and expensive to reach. Further, as developing countries, they do not have the financial resources for high-technological systems, and Callbor has minimal interest in them.

Australia is responsible for four distributors: one in New Zealand and three in Australia. The subsidiary sells directly to customers in some Australian states. All the distributors were previously employed by the subsidiary. Con-Glom changed the Australian company structure when it acquired Callbor, so as to reduce the number of direct employees. The subsidiary is responsible for the distributors, and their sales revenues are part of the subsidiary's budget.

Distributors

Distributors are companies who buy stock for resale. According to the information provided by the parent company and subsidiaries, and confirmed by distributors, Callbor appoints distributors to cover specific geographical areas or sectors of the market. The distributor is not only a reseller; it also represents the Callbor brand. Hence, Callbor is very meticulous in selecting the distributors. Some countries, such as China and Australia, have several distributors in one country, each concentrating on its own market or geographical area. Some of the distributors are small companies; others have several branches. The distributorships are privately owned and managed by the proprietor.

Callbor uses distributors for various reasons. In some countries legal rights to conduct business directly, or on behalf of the parent company, are complicated or will not be granted. In others, the customers are so dispersed that it is difficult and expensive to reach them with a directly employed sales force. For the parent company, the cost of sales is a major concern and is a deciding factor to use distributor or direct sales staff. Distributors generally aim to win business on sales rather than technical service. All the company's distributors provide some technical support, but any major technical support is provided by the parent company or the subsidiary.

Relationship between distributors and callbor

During the interviews, employees of the parent company, subsidiaries and distributors repeatedly mentioned that Callbor has an excellent relationship with employees who work in the distributor organisations. Distributor employees are invited to attend international training meetings, or visit the training centre of the parent company, though they have to pay their own expenses. Distributor employees receive further training from the local subsidiary. Distributor employees can request support or feedback from the parent company and/or from the subsidiary. Any request to the parent company is expected to be sent via the subsidiary. The same rules apply when distributor employees contact a different subsidiary or distributor. If the distributor employees contact the parent company or other subsidiaries/distributors directly, the local subsidiary must be informed of the distributor employees' direct communication.

While distributor staff receive the same product training as the subsidiary's staff, the parent company's managers mentioned that it is easier to train the subsidiary staff. Subsidiaries focus exclusively on Callbor's products, whereas the distributors usually represent several companies. It is expected that distributor employees share the training they receive with their own staff.

On rare occasions, distributor employees are involved in market research, and participate in VoC; they might also provide customer product-requirement statistics to the parent company. This could be on a voluntary, informal basis or as part of a formal, organised process; however, Callbor mainly prefers to work with the subsidiary employees.

Distributors and marketing rules

Like the subsidiary employees, distributors receive all marketing material via the subsidiary from the parent company, but they often change it slightly to suit local markets and customers. For example, they will translate the marketing material into the local language and might add some graphics, without altering the Callbor brand. The same applies to their local website. Overall, they conform to Callbor's branding guidelines.

Manufacturing

The manufacturing site is located in a major South East Asian city. The plant employs 460 people. They are responsible for manufacturing, assembling and arranging worldwide transport of Callbor's medical devices. Manufacturing collaborates with several external component companies. Callbor has an R&D department at the site. The R&D department operates like a subsidiary.

Research and Development

The main office for R&D is part of the parent company. The department includes the R&D team, as well as product managers. The product managers are integrated with the R&D team. The R&D department works closely with the subsidiary's R&D department in Asia.

Overall reporting structure

Senior Managers. Senior managers are at the very top levels of the hierarchy, and are ultimately responsible for Callbor. They have direct responsibility for the middle managers. They typically oversee the planning of the company's strategy and maintain overall control of the organisation's progress. The parent company's senior managers report to Con-Glom.

Middle Managers. The parent company's middle managers report to the senior managers in charge of a department. Middle managers might be accountable to senior managers from several different departments. Any manager from a subsidiary might report to the parent company's middle managers or to senior managers. Subsidiaries are responsible for the entire Callbor product range; hence, the subsidiaries managers are accountable to the parent company's senior management or to middle management of various departments and business units. The subsidiary managers are responsible for their first-line employees.

Callbor's middle managers are responsible for implementing the organisational plans. However, in a subsidiary this responsibility falls to the general manager. The

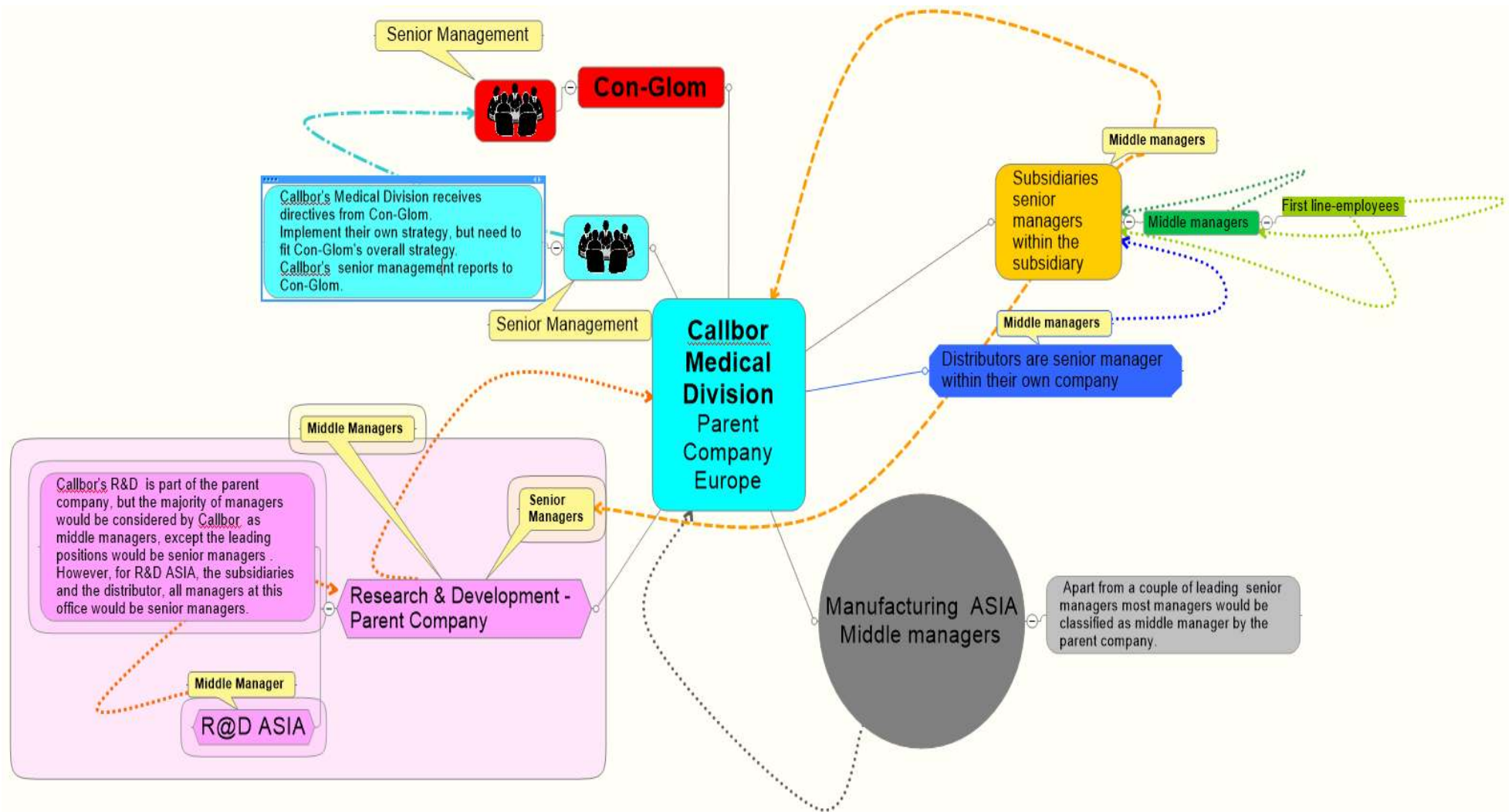
subsidiary's middle managers are responsible for implementing its goals. These goals could be the same as those of the parent company, or more locally focused.

Distributors have their hierarchical structure within their own organisation. However, their managers report to a Callbor subsidiary within their region, not to Callbor.

First-Line Employees. First-line employees are responsible for sales and have the closest contact with customers. Salespeople in Callbor are equivalent to sales representatives in other organisations. They build relationships with the customers: they explain and demonstrate the products, provide support and negotiate the price within a range specified by the sales manager and/or the company. Salespeople are usually the first contact for the customers if they have any problems or needs.

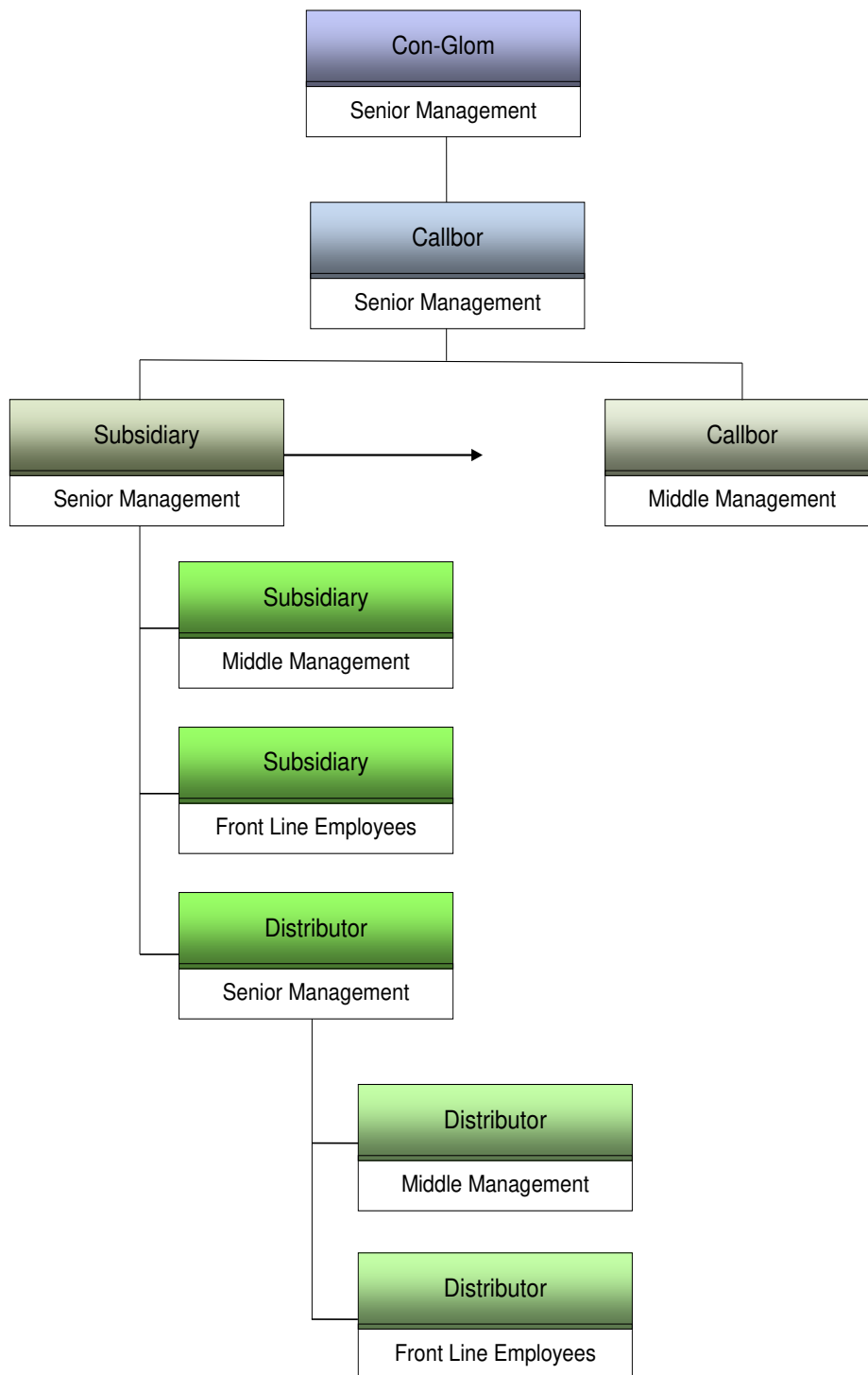
The sales staff receive feedback on the product and hear the customer's wishes, and therefore they are vital for the success of the company. They need to gain knowledge about the product and their company and transfer this knowledge to the customer. Further, they need to gain knowledge about the customer's work environment and work practices, and understand how the product would benefit the customer. For the customer, the salesperson should be a problem-solver, providing solutions for a need. The salesperson must develop the ability to ask the right questions, listen skilfully, communicate effectively and formulate good judgments. The knowledge the salesperson gains from the customer needs to be transmitted to the parent company to ensure that management understands the customer's product requirements, and the level of customer service the customer expects. Being in the field on a daily basis, the salesperson also gains knowledge about competitors and collects marketing intelligence. Gaining knowledge of local needs might lead to development and production of new products and technologies, which would be valuable for the whole organisation (Cantwell 1995; Pearce 1999; Zander 1999). The salespeople report to the company sales manager, who is part of the middle-management team. Diagram 7 illustrates the reporting structure.

Diagram 7: Callbor Reporting Structure



The diagram illustrates that the parent company Callbor reports to and receives its directives from Con-Glom. Callbor's R&D managers report to Callbor's parent company's senior managers, while the subsidiaries' R&D managers report to Callbor's R&D managers. These could be senior or middle managers. Manufacturing senior managers and the subsidiaries' senior managers report to Callbor's parent company, and to the parent company's R&D senior and middle managers. The subsidiaries' frontline employees and middle managers and Callbor's distributors report to the subsidiaries' senior managers. Diagram 8 illustrates Callbor's hierarchical structure.

Diagram 8: Hierarchical Structure



Summary

The chapter provided background on the case company. It explained the company's organisational and overall reporting structure and the company's hierarchy and background, including the relationships with Callbor's subsidiaries and distributors. It is unusual to gain full support for an extensive research project from a multinational corporation, which is a company within a multidivisional conglomerate. The researcher received in-depth access to the company's parent organisation, as well as its subsidiaries and distributors, and was provided with extensive, often sensitive company data. Describing this is itself is a contribution to the current knowledge-management literature.

The next chapter, "Prologue to the Analysis", explains how the three analysis chapters are organised and why. The chapter will outline the broad findings and lead into the three analysis chapters.

Chapter 5

Prologue to the Analysis

Introduction

The literature review discussed scholars' work using Szulanski's (1996) concept of predictors of stickiness. The various studies focused on specific stickiness characteristics, e.g. arduous relationships or organisational context. However, some scholars postulated specific stickiness characteristics do not occur in isolation. They often interacted with each other to create barriers to knowledge flow. Poor communication within organisations and between knowledge source and recipient increased stickiness (Sahriq 1999; Bonache & Zárraga-Oberty 2008; Hotho et al. 2012; Law 2014; Minbaeva et al. 2014; Cabrera-Suarez et al. 2016; Szulanski et al. 2016). As described in the methodology chapter, the thesis uses inductive methodology, and during the data analysis, communication started to emerge as a dominant concept distinct from the well-known stickiness characteristics. Exploring the data further, the analysis revealed three levels of communication as a consistent theme emerging from the data. The levels identified are based on the level of personal, "intimacy" connections (Diagram 9).

When exploring the sources that create stickiness, Kostova (1999) postulated that knowledge transfer does not occur in social isolation and that it is entrenched in situations. The broadest level of this study's findings is to recognise that communication is positively or negatively associated with sticky knowledge. Further, communication occurs at all levels, albeit at different levels of personal connections, different levels of intimacy. In this study, three levels are used as the framework to organise the outcomes of this analysis: formal, less formal and informal.

Diagram 9: Domain of three levels of communication

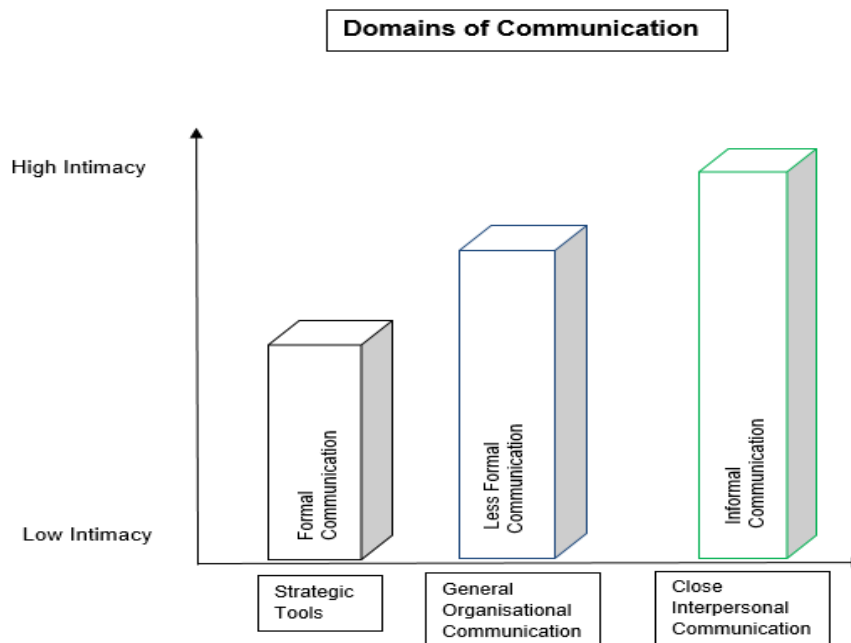


Diagram 9 shows the levels of intimacy from low to high on the left axis. The bottom axis shows the three domains. Each block represents a form of communication

The three analysis chapters are organised around these three domains. They explore, in turn:

- Domain: Low Intimacy Communication and Stickiness:
Formal Tools that Shape the Organisation's Strategy
- Domain: Medium Intimacy Communication and Stickiness:
General Organisational Communication
- Domain: High Intimacy Communication and Stickiness:
Interpersonal Relationship

Low intimacy is the first level, and the corresponding chapter is about low-intimacy communication. This is the least intimate communication, and is decided by the strategic tools that shape the organisation's strategy. In this study, these are the tools

and processes that the organisation introduced when Con-Glom acquired Callbor. The first level is based on these tools, because employees were expected to use those tools in a formal communication process, regardless of who was participating in the communication, and whether (and to what degree) they knew each other.

Medium intimacy is the next level, and the corresponding chapter covers general organisational communication. This level has to do with the general flow of communication between the parent company and the subsidiaries and distributors, regardless of the direction. At this level, in addition to the tools, each person would know the other person's role in their specific organisation, and their place in its hierarchy. The communication is less formal, and has a medium level of intimacy.

High intimacy is the most intimate level, and the corresponding chapter concerns communication between people who might know each other on personal level. This interpersonal relationship communication is influenced by the closeness of the personal relationship, the company's culture and the national culture, language and resources, such as the time each person has to cultivate relationships.

Each chapter discusses knowledge transfer from the subsidiary to the parent company and the possible barriers that would tend to create sticky knowledge. Transferring or sharing knowledge in an organisation is through communication between the parent company's senior managers and the subsidiaries' employees. While each is part of a whole, each domain also has several unique and important facets, and thus requires its own analysis; as such, each domain is treated as a separate chapter.

The first domain, "Low Intimacy Communication and Stickiness: Tools that Shape the Organisation's Strategy", relates to formal communication and knowledge transfer issues. It discusses sticky knowledge when using the Con-Glom Business System (CBS) and its strategic tools, such as "lean", policy deployment, kaizen and KPIs.

The second domain, "Medium Intimacy Communication and Stickiness: General Organisational Communication" relates to general communication and knowledge-transfer issues. It analyses the broader aspects of communication, and it explores how aspects of the company's general communication, such as managers' perception of communication with the subsidiaries and vice versa, the lack of an adequate knowledge-capturing database, and the consequences of high staff turnover, feedback-loop, and a silo mentality, affect knowledge stickiness.

The third domain, “High Intimacy Communication and Stickiness: Interpersonal Relationship”, provides a further layer by examining the effect of personal relationships and related issues on knowledge transfer. The chapter discusses personal relationships, trust and motivation, how the company and national culture influence knowledge transfer and the effects of national language and the lack of resources.

The three domain chapters have an identical structure: an introduction, followed by an analysis of the data. Each domain identifies and discusses themes and their subthemes as they emerged from the data. The themes and subthemes are analysed for emerging patterns and are discussed in relation to the knowledge-transfer literature and stickiness characteristics identified in it, as well as the wider literature. The themes provide the headings for each discussion section. Different circumstances often create similar barriers. Each is discussed in its own right, and in the wider context of previous stickiness research and relevant literature. The analysis is supported by quotations from the interviews. For the reader’s convenience, each theme has its own short conclusion. Each domain chapter ends with a summary and conclusion based on the short summaries of each of the theme sections. The final discussion summarises the findings of all three domains in relation to the current literature. The findings of new stickiness characteristics are highlighted. The characteristics previously identified by the literature are confirmed. The contributions from the stickiness literature, as well as the contributions from other areas that address the same problems, are explained and discussed.

Chapter 6

Domain: Low Intimacy Communication and Stickiness: Formal Tools that Shape the Organisation's Strategy

Introduction

As explained in the previous chapter, this first analysis chapter examines the strategic formal communication tools within the organisation, as well as how these formal tools are linked to the case company's structure and strategy. The aim of this chapter is to analyse how the company's formal strategic communication tools affect knowledge transfer from subsidiaries to the parent company. The chapter first provides a brief explanation of how the company's structure and strategy are defined in this thesis, followed by the analysis of the data. The chapter concludes by summarising the findings of the analysis. The interviewees coding used in the analysis chapters can be found in the appendix.

Definition of structure

Organisational structure in this thesis means how an organisation manages its responsibilities: this includes the allocation of its tasks among and across different units or departments, the management of control, coordination with the different units and how the organisation's vision and strategies are implemented (Bartlett & Ghoshal 2007; Pugh 1990).

Definition of strategy

According to Kiechel (2010), the word "strategy" started to be used in the western business and management literature around 1960. Since that date, there has been a large body of literature defining strategy. There is no agreement on the definition; however, they all have in common that a strategy serves as organisational guidelines to ensure the growth of the company. In this thesis, strategy refers to the

organisational direction, focus and actions that support and secure the organisation's economic goals (Mintzberg 1978; Andrews & Roland 1987; Ackoff 1990).

Identified themes and subthemes

1. Creating a lean environment
2. Policy deployment
3. Compete for shareholders – profit attracts and retains them
4. “Continuous Improvement (Kaizen) is Our Way of Life”
 - a. Trouble in paradise – kaizen does not deliver the perceived value
 - b. Lack of adequate kaizen training
 - c. “Boot camp” training might not create the optimal kaizen trainers
 - d. “It is simple – failure of the system lies with the employees”
5. “We have key performance indicators; hence we know that we are productive”
 - a. Pressure cookers achieve quick results – hope you can take the heat

1. Creating a lean environment

Callbor follows Con-Glom's Business System (CBS) of lean manufacturing principles. Organisations adapt the lean philosophy to fit their different businesses; hence lean is often described in slightly different ways. Callbor explained that Con-Glom developed its own system, and that CBS is based on the Toyota Production System (TPS). Nevertheless, its basic distinguishing feature is that lean manufacturing or production are processes that aim to eliminate waste. Lean implements continuous significant improvements to achieve higher value and profits for all stakeholders by reducing time and costs of production and product development, improving product quality, lowering inventory, meeting customers' needs and empowering employees. As mentioned previously, the process is often referred to as the “Toyota Way”, as Toyota set the benchmark with the management philosophy of the TPS. The system was developed to improve manufacturing in the car industry, and adopted around the world in many fields of production (Womack, Jones & Roos 1991; Katayama & Benett 1996; Bartezzaghi 1999). When the TPS was adopted by Western organisations, the majority of companies continued to use the Japanese terminology (Jeffrey, Liker & Meier 2006).

The business literature praises the lean management system's benefits (Chan & Wong, 1994; Waurzyniak 2005). However, criticism of lean has asserted that it might create problems if customer demand is irregular, or if the focus on eliminating waste is too high. If lean becomes a management obsession, employees might become stressed, the pressure to eliminate waste might not consider the impact on the organisation's long-term development and profits, too-low inventory might result in the company becoming inflexible and the resulting production delay affect adversely customers' satisfaction (Cusumano 1994; Nayab 2011; Shah & Ward 2003; Pavnaskar & Jambekar 2003)

The Con-Glom's aim is to implement the lean philosophy across their multi-industry organisation, including every department. The business system uses policy deployment, kaizen and key performance indicators to achieve the company's objectives. As discussed later in this thesis, it appears that at times management and staff do not have clear boundaries between the applications, and may not fully understand the differences between the formal strategic communication tools. Nevertheless, the parent company's senior management seems to agree with the business literature in praising lean. Several interviewees mentioned that CBS is based on TPS, and that Con-Glom introduced the system to Callbor. As a subsidiary general manager noted:

Con-Glom brought the operation management Toyota Production System to Callbor. [GS; Sub-5]

In the context of manufacturing improvement, the staff acknowledged the process to be successful. A Callbor's senior manager praised the achievements of Con-Glom, attributing its progress to its business model:

Manufacturing processes are driven by Con-Glom. They are outstanding; extremely successful. They follow the Toyota model. [HP; PC]

CBS is always mentioned in the context of improvements to the company's manufacturing process. A product manager in the parent company explained his role and the benefits of CBS:

We always ended up with far too many obsolete parts ... Like in TPS, my role was to implement a process that everyone could follow easily. [AR; R&D]

The Japanese TPS phrase *genchi genbutsu* stands for “go and see”, or “getting to the source”; meaning determining why a specific issue needs to be improved. It is considered to be a key principle of TPS, as well as CBS. As a Callbor's middle manager explained:

Getting to the source. In Con-Glom they call it “genchi genbutsu”. [OR; R&D]

The Callbor manager stressed that it is important to address the “source”, and to find the reason or the “facts” of the problem to ensure its successful solution. One would expect that “go and see” is important for all the managers to follow; however, that does not seem to be the case. For example, the middle manager praised a parent company's senior manager by saying:

He is a type that really gets involved, does not mind getting his hands dirty. He believes in getting to the source.... This manager walks the talk. [OR; R&D]

Judging from the middle manager's enthusiastic tone, he seemed to hold the senior manager in high esteem. His emphasis on “this manager” gives the impression that while some senior managers might verbally reinforce the policy and philosophy of CBS strategy, they might not act consistently with those guiding principles.

The same Callbor middle manager believed that most senior managers thought that if everyone follows the system, very little can go wrong. The Callbor middle manager felt the problem was different: that people do not understand the system and forget when things go wrong. Moreover, the system is not infallible and it cannot prevent human errors. As one of the senior managers acknowledged:

Even Toyota can make mistakes, but people forget quickly if anything goes wrong. [HP; PC]

This attitude seems to accept weakness in a highly praised and enforced system. He did not seem to consider why the system might not perform as well as he expected. The senior manager's focus on the process, rather than the employees, indicates that he is not aware to what extent CBS relies on its employees' knowledge. This ignorance may result in the company experiencing declines in innovation and productivity. While this senior manager accepted mistakes as a weakness of the high-quality processes, he did express concern that employees might follow CBS mindlessly and routinely, without trying to understand either their actions or the actions' consequences. He expressed his worry:

CBS is great, but there is a risk that you lose the ability to think. [HP; PC]

Senior management was not questioning how to support employees or how to improve CBS. No comments were heard about encouraging staff to actively exchange tacit knowledge. The company's guidelines state that their core values are to eliminate waste aggressively and continuously in every facet of their business processes. CBS reflects the organisation's basic principles; it guides interaction with employees and sets the organisation's expectation of its employees. The organisation states: "the Business System is our culture". Hence, CBS is supposed to drive every aspect of the corporation's culture and performance. CBS is meant to guide the company's values and create options for improvements, and the process is meant to improve itself continuously. Every business associated with Con-Glom is required to strictly abide by the business system. As a Callbor senior manager emphasised:

Everyone gets a goal and you follow the road map to reach the goal. If you do not like it, get out! [HP; PC]

He said it forcefully, implying that following CBS is of paramount importance.

The supply-chain manager agreed that Con-Glom's lean processes have improved production and manufacturing:

I like the new processes which Con-Glom has introduced. In operation, we need transparency and disciplined processes. Callbor checks the operation processes and data every day. Every day you solve a small problem, and this way we don't have a big problem at the end of the week. It requires a lot of discipline. Not everyone likes it, as there is a lot of pressure on all of us to reduce cost. The focus is always on cost reduction and customers' requirements. The intranet provides us with a lot of information. We can see which hospital has purchased what product, no matter where in the world the purchase has been made. [SR; Sub-4]

Not every department was equally concerned with lean manufacturing. The team leader of the R&D subsidiary commented:

Since Con-Glom owns Callbor, R&D has not been affected by the changes [to lean manufacturing] as much as production has changed. Production and manufacturing follow many systematic processes. They are more process-oriented than R&D. Lean has many advantages for production and manufacturing. [LR; R&D]

The term "lean" is usually associated with manufacturing and, specifically, TPS. Applying lean to improve the efficiency of production and manufacturing is supported by the literature, as well as by the comments made by Callbor's employees. R&D is where innovation and product development happen. As it differs greatly from

manufacturing, one would not expect that lean processes would be applied, but in fact, even this department is governed by lean to an extent.

At the time the interviews took place, Toyota was experiencing global recalls of cars due to poor manufacturing. This lent particular force to the following comment by a subsidiary general manager. When discussing R&D processes, he claimed that product quality was declining because of continuous cost reductions. The falling quality standard was blamed on in-house knowledge being replaced by outsourcing components to third-party R&D. Outsourcing is an accepted practice by many companies to reduce labour costs and increase focus on their core competencies. The subsidiary's general manager was concerned about the drop in Callbor's product quality:

Quality is dropping because of too much outsourcing. Con-Glom follows Toyota's business-system model. See what massive problems Toyota is in. They used to be number one car manufacture, but to get there has come at a cost. [MS; Sub-2]

Callbor used to develop and manufacture every part of their products in-house; however, the development and manufacturing of some components are now outsourced to third-party companies. The supply manager explained:

Most of the products are designed and developed by Callbor. Some parts are developed by a supplier. We had problems with a very technical part. It was too much of a challenge for the supplier. Consequently, the product was never right. It was on the market for years. We could never fix the problem. We learned that suppliers have their limitations. We no longer use them if our requirements are of very high standard; only if the technology requirements are not too high...we use a supplier. [SR; Sub-3]

The practice of outsourcing is not extensively explored in this research. However, as outsourcing might affect knowledge transfer, some attention is given to outsourcing and its possible consequences Callbor's intent might be to lower costs, as well as to focus on its core competency. One of Callbor's core competencies is the development and manufacturing of medical devices. A company's strategies usually focus on activities that are important to customers. In the case of high-tech companies such as Callbor, these tend to be based on knowledge (Quinn & Hilmer 1994). If major components of development and manufacturing are outsourced, several problems may arise. The act of outsourcing might give the internal R&D employees the impression that the parent company does not value internal knowledge, risking the possibility that the knowledge of Callbor's skilled engineers will be underused. The

engineers' tacit knowledge is an accumulation of years of experience. According to Quinn & Hilmer (1994) this knowledge is difficult to transfer to the outsourcing company. The supply manager confirmed the literature when stating:

There need[s] to be a lot of knowledge transfer between R&D and the supplier, but R&D does not have the time. [SR; Sub-3]

Further problems may arise if a company's learning and tacit knowledge sharing is not supported, as over time the in-house technologies and skills may diminish. This may decrease the capability for the company to respond to sudden changes in the market. While outsourcing may benefit companies, research has found that managers are often not aware of its hidden costs (Hendry 1995; Kippenberger 1997; Barthélemy 2003; Olszynski 2005). Apart from declines in product quality, transferring knowledge to the supplier is difficult, and consumes time and money. Extensive outsourcing of technological knowledge may have negative consequences such as increased cost, declining customer service and loss of expertise (Bettis, Bradley & Hamel 1992; Aubert, Patry & Rivard 1998). Over time, this might have a detrimental effect on the company's competitiveness, as shown by the history of the US electronics, car and IT industries (Bettis, Bradley & Hamel 1992).

To summarise, the study thus far points out that Con-Glom's CBS, with its formal strategic communication tools such as lean, might inhibit aspects of knowledge transfer. Lean processes can increase production and manufacturing efficiency. However, critiques of lean warn that if there is too much focus on eliminating waste and reducing cost, the weaknesses of the system can outweigh the benefits. The majority of Callbor's senior management accepted slight weaknesses of the system as unavoidable. They noticed that employees seemed to lose the ability to think, merely following processes without fully understanding their aims. The system's success was praised and lean philosophy was positioned as the company's culture. No questions were raised about how employees can be encouraged to exchange tacit knowledge; instead, the company structure demands following the process was considered paramount. Management's obsession with lean seemed to inhibit, rather than empower, employees. Callbor's focus on cost reduction does not seem to consider the value employees place on contributing their knowledge to the organisation. This apparent ignorance might hinder innovation and reduce productivity. Further, CBS seems to encourage outsourcing of product development

and manufacturing to the extent that product quality is compromised. As organisations adopt outsourcing as a cost reduction, it might be that their managers consider product development and manufacturing as a cost rather than a long-term investment, or return on investment. The CBS outsourcing strategy might reduce in-house knowledge sharing, as well as cause further declines in the product-development team's tacit knowledge. Over time, this might have a detrimental effect on the company's competitiveness, as demonstrated by the history of the US electronics, car and IT industries (Bettis, Bradley & Hamel 1992). Szulanski, Cohen and Leventhal (1990) and Zahra and George (2002) argue that an organisation's strong investment in its R&D improves the absorptive capacity of individual employees, and reduces stickiness in knowledge transfer. Senior management needs to understand that success depends on employees, customers and every stakeholder of the organisation. Hotho et al. (2012) found that strong social bonds, rather than an autocratic management style, contribute to successful lean manufacturing processes, increase absorptive capacity and encourage knowledge transfer. Lean, while it streamlines processes in manufacturing, might be less beneficial for some other departments.

The following diagram¹⁰ summarises the stickiness characteristics as they emerged in this theme: "Creating a lean environment"

Diagram 10: Summary of possible stickiness characteristics described in the theme “Creating a lean environment”

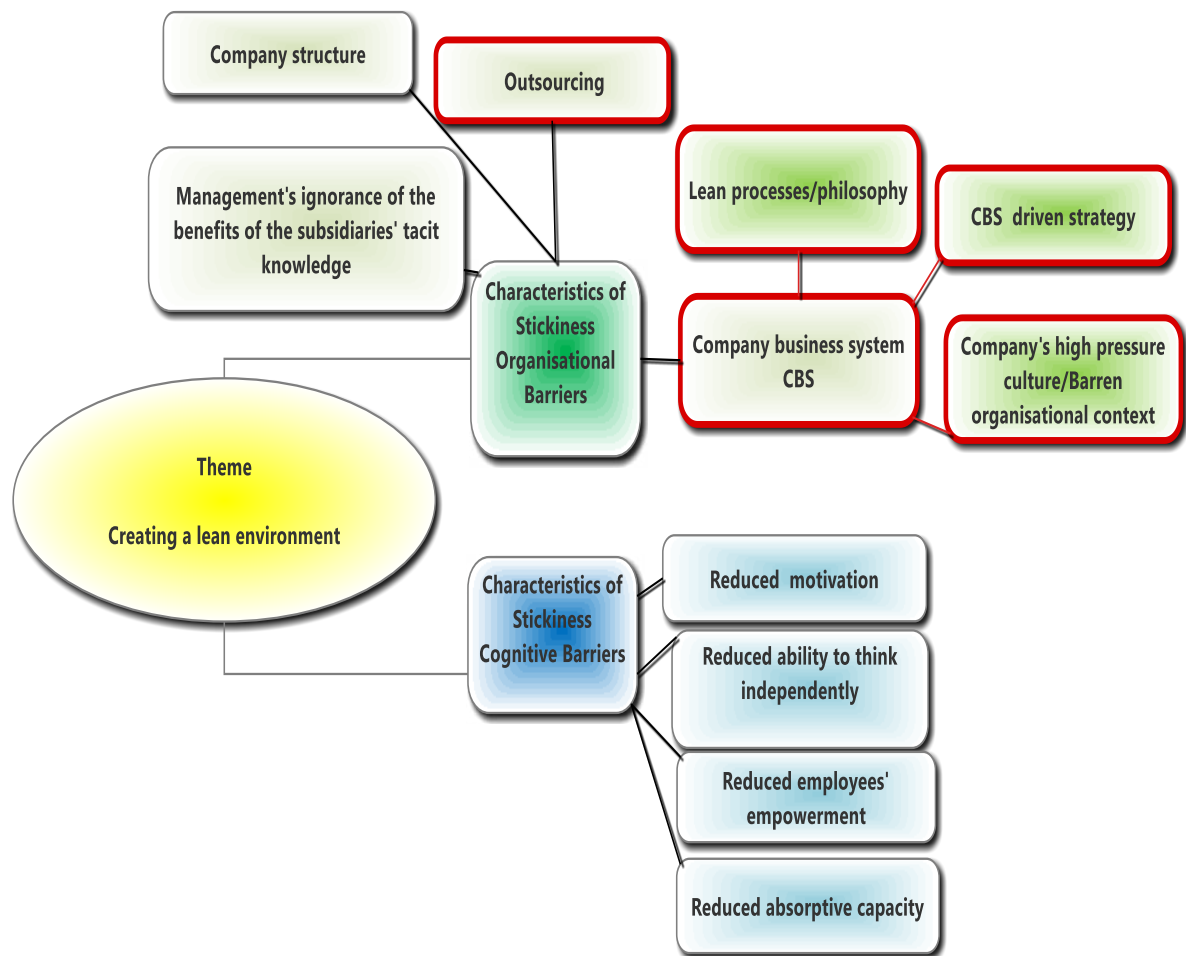


Diagram 10

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The green boxes with the red border indicate limited literature is available.

Diagram 10

It seems that lack of empowerment leads to lack of thinking and reduced absorptive capacity and motivation, which could create cognitive barriers. Company culture is a known documented stickiness characteristic. Company strategy and structure is a known stickiness characteristic; however, in this case it seems to be the business system driving the strategy that create stickiness. **There seems to be limited discussion in the knowledge- management literature that the lean manufacturing or outsourcing creates barriers to knowledge transfer.**

2. Policy deployment

Policy deployment is an important tool of Con-Glom's business system (CBS). Policy deployment was developed in Japan. The Japanese name for policy development is hoshin kanri. The English translation is: "hoshin = a course, a policy, a plan, an aim; kanri = administration, management, control, charge of, care for" (Lee & Dale 1998). As there are several translations for the Japanese word, there are various interpretations by western organisations of what policy deployment stands for. According to Lee and Dale (1998), western organisations' interest in policy deployment was mainly to use it as self-assessment tool against quality-management models, as described by Van der Wiele et al. (1996). The literature does not seem to agree on a definition of policy deployment. However, in general it is used as a strategic planning approach. It is meant to integrate everyone within the organisation in understanding the company's goals, and the values the company stands for. All the company's efforts and actions are meant to move towards implementing the organisation's vision (Newcomb 1989). The policy-deployment concept encompasses the idea of all employees being part of the planning process. It is meant to set goals in line with the organisation's strategy, track progress against those objectives and allocate the necessary resources. Policy deployment is meant to achieve long-term improvement for the organisation (Miller 2014). Management literature characterises policy deployment as valuable for companies following lean continuous-improvement strategy because it allows flexibility in light of employees' input (Dulay, Lupu, Sloman & Damianou 2001; Tennant & Roberts 2001; Oakland 2011). In contrast, some authors say lean tends to be inflexible (Cusumano 1994; Schonberger & Knod 1997). Further, lean does not consider human aspects like motivation, empowerment and respect for employees (Garrahan & Stewart 1992; Williams et al. 1992; Himes, Holweg & Rich 2004). Miller (2014) asserts that two-way communication is important if policy deployment is to be of benefit. Further, he states that not aligning lean with policy deployment may compromise the company's long-term competitiveness. The authors claim that western organisations often have limited understanding of the policy-deployment method.

Explanations of policy deployment by Callbor's senior manager, CBS manager and the employees reveals a similar inconsistency in what Callbor's policy deployment

stands for. Policy deployment is considered one of the formal strategic tools to eliminate waste and achieve continuous improvement throughout the organisation. Callbor's policy deployment is used for strategic planning and to set strategic goals. The policy-deployment process is intended to ensure that the company's objectives are effectively deployed throughout the whole company and that every employee understands the organisation's strategy and goals. The parent company's senior management team is convinced that policy deployment achieves the company's lean strategic goals. In addition, policy deployment aims to align the company's objectives with those of the subsidiaries, the employees and all actors, and to identify opportunities, as well as issues that might slow the success of the organisation. Callbor's CBS manager, responsible for developing the processes to implement the company's strategy, was previously employed by Con-Glom. Hence, the manager has extensive experience with CBS and Con-Glom's culture. The manager very enthusiastically explained the use of this system:

We have a review of the policy deployment on a regular basis. We have what we call a stretch policy where we need to reach certain figures. We look at the action that we need to take to achieve those targets. [MP; PC]

The manager was convinced that policy deployment enables the parent company to align the subsidiaries with the company's goals:

We take the corporate goal and look at the local processes. Where is the process broken, how can we improve it and how can we achieve alignment of the subsidiaries with the corporate goals? If the policy is that we want to improve sales figures, we set specific goals, like cutting down on demonstration of systems for the customer, or other ways of how we might be able to reduce waste. [MP; PC]

The manager sounded very convincing when praising policy deployment as the best formal tool for the company to achieve breakthrough objectives:

Goals are set by top management. It could be commercial goals, operational performance improvement, or margin improvement, whatever the company's strategy is following. [MP; PC]

Customer demonstrations of systems would temporarily improve the sales figures, as the cost of the demonstrations are usually deducted from the total sales margin. However, the manager did not mention if it had been considered whether the long-term consequences of fewer product demonstrations might lead to fewer systems being sold. Hence, what seems to be a financial improvement might have a negative

long-term effect. The manager continued to explain how they continuously search and work on the elimination of waste, and how the current process could be improved:

We always look at current processes being used and how they are working and how we can improve. How can we make this happen? How can we fix the current methods? [MP; PC]

The enthusiastic and convincing voice of the senior manager created an impression that policy deployment is an unsurpassed system for the company and its employees.

It seems that the focus is on immediate financial improvement. As another senior manager explained:

Financials are checked before the ink is even dry. [HP; PC]

Policy deployment is intended to be a formal tool for long-term improvement; however, it is possible that the company's focus might be on immediate short-term financial gains. If achieving the financial targets of lean is considered to define the company's success, the long-term objectives might be neglected. If the company's policy deployment does consider the company's long-term objectives, but its focus is to reduce cost, the policy deployment and lean are not aligned. Both scenarios are cited by some researchers to compromise companies' long-term competitiveness. As a subsidiary general manager commented:

Con-Glom sees everyone as its profit unit, and they do not understand or care how everyone impacts on the whole. [MS; Sub-2]

This manager did not explicitly state that the organisation's focus is only on short-term profits; however, he did emphasise that the company's high focus on profit seems to neglect the human aspects. Hence, one can assume that policy deployment and lean are not aligned. As an example, the subsidiaries were told to reduce product demonstrations to cut costs. Consonant with Callbor's top-down management style for setting goals, there was no mention of two-way communication. It seems that the subsidiaries' employees were not given the opportunity to explain how the demonstrations might improve the company's long-term profits, despite the fact that the concept of policy deployment asserts that all employees should be part of the planning process. One might expect that involving the employees would be a motivator to be proactive, while being "told" is associated with reactive, not proactive, involvement. Lack of motivation is negatively associated with knowledge stickiness (Szulanski 1996). If senior management would listen to the subsidiaries' knowledge,

they might find a solution that simultaneously reduces costs and provides long-term profits.

In conclusion for this section, policy deployment is one of CBS's formal strategic communication tools. Management does not convey the impression that they question whether the processes are always suitable for every department. They might neglect the effect of continuous improvement of the company's long-term objectives. Further, Callbor's policy deployment is meant to implement lean. However, as discussed earlier, Callbor might not consider human aspects like motivation, empowerment, absorptive capacity and respect for employees, even though the policy deployment is supposed to take these into consideration. This has been a critique of the system by several researchers (Garrahan & Stewart 1992; Williams et al. 1992; Himes, Holweg & Rich 2004). Motivation, empowerment and respect for employees are linked to absorptive capacity and a reduction in barriers to knowledge transfer and sticky knowledge (Nonaka & Takeuchi 1995; O'Dell & Grayson 1998; Szulanski 1996, 2000; Burgess 2005; Szulanski, Capetta & Jensen 2004; Jo & Joo 2011; Lin 2011). In addition, as policy deployment is closely linked with Callbor's lean philosophy, which it promotes as Callbor's culture, one might expect that policy deployment has an influence on the organisation's culture.

The following diagram 11 summarises the stickiness characteristics as they emerged in this theme: "Policy Deployment"

Diagram 11: Summary of the possible stickiness characteristics “Theme - Policy Deployment” as discussed in this section

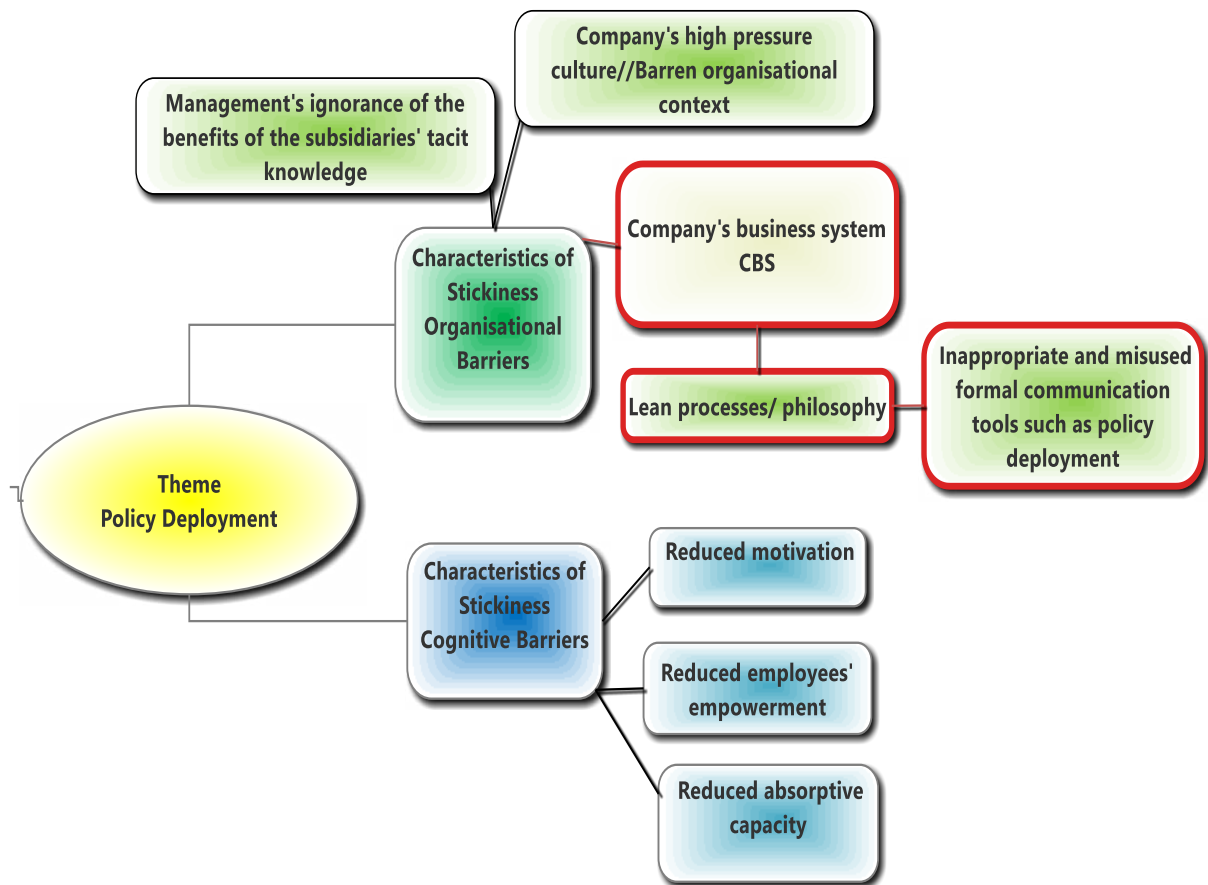


Diagram 11

The yellow oval shape displays the theme as it emerged from the data. This theme is the heading of the section just discussed. The green boxes with the light green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light blue boxes are the known stickiness characteristic due to cognitive barriers. ‘Known’ refers to stickiness characteristics that have been identified by previous research.

The green boxes with the red border indicate limited literature is available

Diagram 11

CBS includes Callbor’s lean process, as well as policy deployment. Policy deployment and lean do not seem to be aligned, and hence might not provide the long-term competitiveness the organisation seeks. The misalignment might be due to the organisation’s CBS. As mentioned in the previous section, CBS is an organisational barrier that creates stickiness. As CBS is promoted as Callbor’s culture, one can argue that the organisation’s culture creates stickiness. If the CBS’s deployment does not empower employees and negatively affects employees’ motivation, the organisational barrier might indirectly become a cognitive barrier and create the stickiness characteristic of “reduced motivation”, reduced employees’empowerment and absorptive capacity.

3. Compete for shareholders – Profit is everything!

Callbor's policy deployment aims to attract and retain shareholders. As illustrated in Callbor's CBS, it is of immense importance to compete for shareholders, as they provide the necessary investment for the organisation's development. Shareholders demand a return on their investment. Their pressure to increase profits may affect organisational strategy, resulting in a focus on short-term profits, instead of the long-term survival of the company (Narayanan 1985). Haldane and May (2011) cite lack of leadership as a problem. The majority of chief executives in the US, Canada and Asia stay with a company for a maximum of six years, and hence they are less likely to be concerned with long-term strategies. Blodget (2012) found that senior management's obsession to maximise profits is common to many companies. He blames the practice of bonuses being based on stock prices. Limited knowledge is available on how long Callbor's senior managers had been with the company at the time of data collection. Some had joined the company in recent years while others had been with Callbor several years. The company does experience high staff turnover. However, the interview did not explore whether Callbor might focus on short-term gain, nor was the reason behind possible short-term strategy examined. As mentioned in the policy deployment section, the company's focus seems to be on short-term rather than long-term financial gains. While profits are important, satisfying customers' needs drives revenues, and in the long term should increase profits and create long-term shareholders. While lean is claimed to increase profits, companies often fail to achieve the desired long-term growth of the company, as they focus on profits only, without considering the value of the individual stakeholders (Hines 1987; Nayab 2011). The previous section mentioned that when employees' needs, like empowerment or respect, are ignored, they might feel unfairly treated. Rummler (2006), Ballé & Ballé (2009) and McLeod (2013) postulate that those feelings result in employees who are less likely to be engaged and be productive. When discussing why companies driven by shareholders' demands might negatively affect the economy, Blodget (2012) wrote, "Stop maximising profits and start maximising value", pointing out how shareholders' demands can negatively affect the economy. That same could be said for how shareholders' demands can affect a company.

As mentioned in the previous section, senior management uses policy deployment as a “top down” strategic tool; a senior manager said:

Policy deployment is a top-down strategy tool. [MP; PC]

Top-down management refers to the fact that high-level management determines the organisation's objectives and sets the strategies for how the target should be accomplished. This management style provides the organisation with a high level of control. In contrast, a bottom-up strategy is developed by employing the knowledge of the entire workforce. This style empowers employees; hence they are more likely to be actively engaged in reaching the organisation's goals. However, the process is not as easily controlled (Sabatier 1986; Fraser et al. 2006). The senior manager continued to explain that Callbor's senior management applies policy deployment to improve the company's profits:

Bottom-line figures are what drives every process implemented and every tool developed.... Policy deployment determines how we want to grow annually. We always look at the financial improvement. Everything is about financial improvements. [MP; PC]

The company seems to be driven by its financial reports, as another senior manager confirmed:

Corporate monitors all the time, back and forth. There are daily measurements of the policy-deployment processes. The financials are checked before the ink is even dry. [HP; PC]

Every tool developed in the company is to increase profits. There are negative consequences if profits do not increase as expected. As senior management emphasised:

If you cannot stand the heat – get out! Excuses are not allowed! [HP; PC]

At all levels, the employees felt constant pressure to perform at a high level. Three examples provided by three subsidiaries' managers demonstrate their frustrations:

All managers follow Con-Glom's philosophy. If the numbers are good, then you are good; if the numbers are not good, then you are not good. [MS; Sub-2]

Callbor does well in squeezing their staff. Expectations are very high. [SN]

We know what we are allowed to do and what is forbidden – the processes are developed for the company not for us. [SM; Sub-2]

One of Callbor's CBS goals is to attract and retain shareholders. Policy deployment is one of Callbor's formal strategic tools to achieve this objective. If policy deployment is used properly, employees should be able to participate in goal-setting. Employees should be able to understand the benefits the goals have for them and the organisation, and how their participation fits into the whole. A company failing to meet those requirements might find that their employees become disengaged and lose motivation. Further, not knowing clearly which action leads to specific outcomes increases a company's causal ambiguity. Causal ambiguity increases knowledge stickiness, as discussed in the literature review. Additionally, as not meeting the company's objectives would have negative consequences for the organisation and its staff, it is important to set realistic goals. If the goals become unattainable, employees might become stressed and resentful. The employees' morale might decline to a point where loss of motivation might affect the company's overall productivity and performance (Long 1978; Gallo & Rinaldo 2011).

To conclude this section, currently the company's annual report proves to shareholders that the Con-Glom achieves yearly profit growth; hence one may assume that their lean-thinking strategy is successful. While most of the growth is achieved by acquisitions, there is healthy organic increase in profits. Callbors' employees agree that many of the processes implemented by the parent company have positive effects. However, employees simultaneously feel that the constant requirement to achieve the daily financial improvements and targets places too much pressure on them. When employees' needs are not taken into consideration, they might become disillusioned, stressed and less inclined to share their knowledge. Knowledge transfer depends on employees' motivation. The company's focus on shareholders, rather than on all stakeholders, seems to have a negative effect on their employees. Senior management seems to be ignorant of how their lean process and high-pressure culture might affect the employees' loyalty to the company; or that knowledge transfer depends on employees' motivation. Further, management's focus on what seems to be short-term goals with less emphasis on the long-term consequences might increase the organisation's causal ambiguity.

The following diagram 12 summarises the stickiness characteristics as they emerged in this theme: "Compete for shareholders-Profit is everything"

Diagram 12: Summary of possible stickiness characteristics “Theme - Compete for Shareholders – Profit is everything”

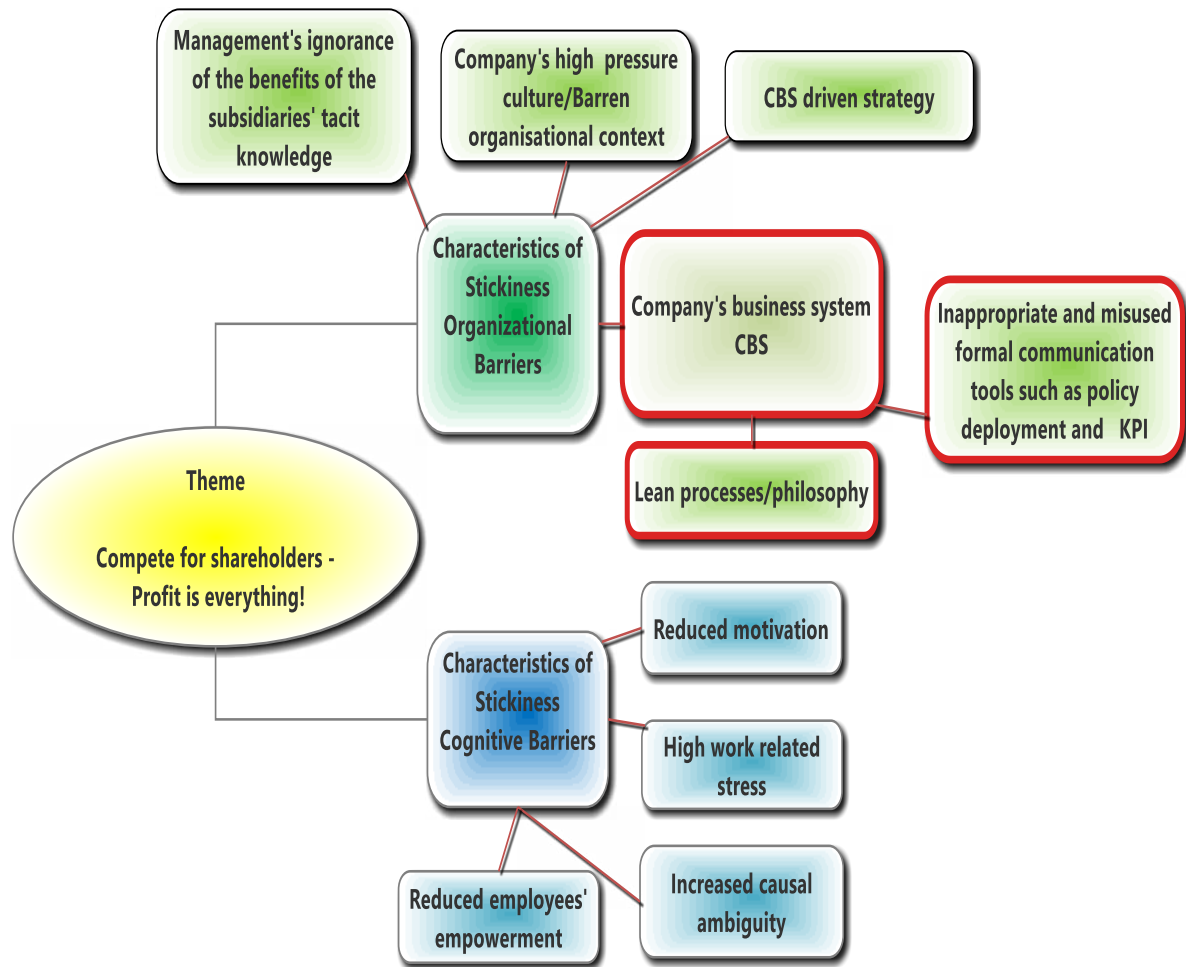


Diagram 12

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristic due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 12

Over the last three sections, a pattern has begun to emerge. The organisation’s business system is based on lean philosophy and dictates the company culture. However, the system as it is applied creates stickiness in some aspects of knowledge transfer and might increase causal ambiguity. Further, CBS with its formal tools might create stress and lower employees' motivation, which are known stickiness characteristics.

4. Continuous improvement (Kaizen) – Our way of life

In Japanese kaizen means “improvement” or “change for the better”. In the context of this study, it can be considered to mean the development and implementation of new processes for continuous improvement of all functions within an organisation. It is intended to involve every employee from senior management to front-line employees. It is meant to increase productivity by allowing people to work efficiently. Kaizen advocates claim that the process empowers employees if they are involved in improving their current work methods. Employees' ideas are meant to improve their own work practice. When their work is easier for them, productivity increases. According to Berger, (1997) the process is divided into several parts:

1. Identifying the problem and evaluating if the situation could be improved.
2. Calling for a kaizen/brainstorming to find the solution to the problem.
3. Developing a plan on how to proceed.
4. Implementing the new process and applying measurements to ensure that the new process has been sustained.

For the new process to become accepted by the employees, and to be successfully integrated in the current work practice, the kaizen process depends on successful knowledge transfer within all sections and between group members. The knowledge transfer that occurs during a kaizen is cited as displacement or creative knowledge transfer (Dobosz & Jankowicz 2002). Using kaizen to solve a problem is an inventive or analytic type of transfer that refers to the creation of a new solution. The process provides synthesis of past and current learning experiences (Haskell 2001). However, Imai (1986) and Styhre (2001) assert that it is management's responsibility to convey the benefits to the employees. Kaizen's team leader is often referred to as a “black belt”. Several commercial companies around the world offer kaizen team leader training programs, including the “International Lean Sigma Black Belt” training program. However, kaizen requires more than training for the team leader: its success depends on members being taught team skills, as well as how to participate in a kaizen and how to share and transfer their knowledge (Brunet & New 2003; Suárez-Barraza & Lingham 2008).

For Toyota, the lean process philosophy is described as being “for the benefit of others”, almost in the same way that Zen emphasises the state of meditation and the value of intuition (Jeffery, Liker & Meier 2006). Many western companies have copied the Toyota lean process, including kaizen, but they have not understood what needed to be copied, as they have encountered a whole system that relies as much on its understanding of people as it does on technology and systems. Kaizen's failure is often the lack of management support for the kaizen team (Deming 1986).

For Callbor, kaizen is the CBS tool to achieve the company's strategic plans and goals and to solve problems. A small group of employees tries to find solutions to problems or to improve current methods. Kaizen participants are selected for their expertise. They may include middle management from the parent company or one or more subsidiaries, as well as senior management, technical and/or R&D staff. The facilitator is an employee of the parent company. They all share their tacit and explicit knowledge over a few days or a week.

Senior management is convinced that kaizen is an important formal tool to implement new processes, or to improve current processes. As senior management explained:

We use kaizen if something is broken or if we want to meet corporate strategic goals. It is like climbing a mountain where you take step for step, and at the end you take big steps. As well, we look at how we can sustain the new process. [MP; PC]

The senior manager avoided answering the question of how successfully and sustainably kaizen solves problems; instead, the manager praised the process of kaizen. It seems that the manager could not identify how successfully each kaizen performs; however, when pressed, she provided some data:

Sixty percent of the kaizen work; 20% need extra help and the rest fail. [MP; PC]

The success rate of 60% seems to be an estimation. According to senior management, it is the employee's role to measure how successfully each new process is implemented and sustained:

The local team has to measure the implementation and if it falls over, they have to work out how it can get back on track. [MP; PC]

Senior management is not aware of how successfully an individual kaizen is implemented. They use financial improvement as evidence of success.

How do we measure the kaizen? We always look at the financial improvement. [MP; PC]

Senior management explains how the kaizen is used throughout the organisation in every department:

This process was first implemented in our factories, then we moved it out to the office and now we have started to improve the sales and marketing area. [MP; PC]

An example provides evidence that kaizen can be successful outside manufacturing:

After a conference, we looked at the follow-up of leads We measured the follow-up of the sales representatives, not just if they contacted the customer. We manage the success by matching the salesperson with an order. [MP; PC]

As previously noted, the CBS's formal tools – kaizen and as policy deployment – are applied throughout the company and in every department. However, this creates long-term issues. The company specialises in developing and selling very expensive high-technological medical devices. Hence, potential customers might take a long time to decide what they require and if they will ultimately purchase it. The medical-device system would be considered to be a major asset; it is not a low-cost consumable commodity. Customers' future requirements might differ from the needs they might have had at the time of a conference, or when they were first contacted by a sales representative. Medical-equipment sales might be a lengthy process. For example, building relationships with customers is often an important part of the process. However, building those relationships might require time. Further, some institutions follow a lengthy tender process to purchase medical equipment. This gives rise to the question of whether every issue in an organisation can be improved by a process that is aimed to eliminate waste. Similarly, product development follows a defined process; however, the action requires innovation, inspiration and creative people who need time to think and create, and therefore cannot always meet defined KPIs or short-term goals. Sales processes and product development depend on human interaction and relationship building (León & Farris 2011). Despite possible weaknesses inherent in using kaizen as a tool, the company's slogan is heard throughout the organisation:

Kaizen is now our way of life! [LR; R&D]

CBS is the company's culture and kaizen is its way of life.

Analysing the interviews reveals a divergence of opinions between the parent company's senior management and the subsidiaries on the effectiveness of kaizen. This is discussed in the following section.

a. Trouble in paradise – Kaizen does not deliver the perceived value

The parent company's senior management strongly espoused the view that kaizen is paramount in achieving speedy and permanent improvements. However, the parent company's middle management and front-line employees and those in the subsidiaries expressed different opinions. In their experience, kaizen does not seem to have the desired positive and sustainable outcomes. Several reasons emerged that contributed to employees' reservations about embracing kaizen with the same enthusiasm as senior management. The following quotations from the parent company's middle management and subsidiary staff highlight several weaknesses of kaizen experiences in this company. A salesperson from one subsidiary commented:

I have been involved in a kaizen. I do not think that it does anything. It might be good for top management. [SS; Sub-2]

The employee did not see the personal benefit for the subsidiary he works in, and perceived the kaizen to be a senior management tool. This perception was mentioned several times. A parent-company middle manager in technical support commented:

I have been involved with a new exercise, but the implementation is not really happening. The kaizens I was involved in, I could not really contribute [to]. They were too far away [meaning distance from the interviewee's workplace], everyone knew the key issues, but we could not really solve them. The owner does not always want to implement. It is easier for them to ignore the suggestions. [SM; Sub-1]

Neither the sender of knowledge nor the receiver (owner) sensed benefits from the knowledge sharing. Benefits could be intrinsic incentives, for example a senior manager providing feedback on the success of the kaizen and its direct benefit to the employees, or the company acknowledging the value of innovative ideas that have been implemented (Mertins, Heisig & Vorbeck 2003; Morrison 2006). The parent company's middle managers did not perceive kaizen to provide direct benefits to employees or to the company. Below is a comment typical of those made by the employees:

We have the options of kaizen, but everyone is too busy, everyone thinks, "I had better not have an input." [LR; R&D]

It was unclear whether he meant this as two comments or as one. If one, he could have meant that employees are too busy to participate in kaizen, and hence would not have an input. If it was meant as two comments, he could have meant that they are too busy and that, for other reasons than being too busy, they do not like to get involved.

Kaizens have to be escalated to very high levels before anything can be changed. Kaizen sounds good, but they have no practical benefit. [RR; R&D]

This comment was made by the R&D department. By "escalated to very high levels", he was referring to senior management. Implementing the kaizen recommendations requires the support of senior management.

Con-Glom's process is good, but how people use it can be a problem. When it was first introduced, some people treated it like a holy book. They became preachers to make themselves look good. Some processes need more resources to implement them well. As it becomes difficult, people become defocused, as too many things are running parallel. [AR; R&D]

This comment points to several reasons why employees might not participate in a kaizen: the kaizen is used for personal goals, there are not enough resources to implement suggestions and staff are too busy, with too many issues needing to be attended to at the same time. Hence it is difficult to focus on solving one problem. As mentioned before, employees are not provided with the opportunity to think and reflect.

Another middle manager at the parent company held similar views:

We did a kaizen, but it was unrealistic. People are not honest, they wanted to achieve figures that were impossible to achieve and had nothing to do with what the customer wanted. If kaizens are misused for personal goals than people feel cheated and will no longer use the tool. They are not stupid; they lose trust in the tool. [LR; R&D]

This quotation raises several points. First, the kaizen was used to achieve unrealistic financial objectives for the company, without benefitting the customers. Second, personal goals were guiding the process, rather than "change for the better" for all stakeholders. In addition, employees lost trust in the process, as well as in the participants. Trust tends to flow from senior management down in an organisation. Senior management defines the norms and values of an organisation (Kirkpatrick & Locke 1991). Not trusting the knowledge sources is cited by the literature as a cause for stickiness (Szulanski 1995). Kaizen is praised for continuous improvement of

current work practices; however, the literature suggests that when kaizen fails, the reason is often lack of management support for the kaizen team, as well as lack of support to implement the team's recommendations. Hence, senior management need to provide resources, including time, and to expect realistic improvements. In addition, senior management has to ensure that employees regard the kaizen as a benefit. If the suggested improvements are too difficult to implement or kaizen is misused for personal goals, employees lose trust in the kaizen. It is senior managers' responsibility to ensure that the kaizen's objectives will benefit all stakeholders. The literature highlights that the success of a kaizen depends on the employees' skills in working as a team and their understanding of how to participate in a kaizen. This is discussed in the next section.

b. Lack of adequate kaizen training

Callbor's employees are not trained to participate in kaizen. Participants in kaizen learn from others, who are supposed to have some experience. A subsidiary general manager, while enjoying his kaizen experiences, said he had had no prior training:

I have done a couple of kaizen and thought that they were great fun. I did one for a week. You try to get to the source of the problem, or try to find where the issue might lie. There is no training on how to conduct a kaizen, one learns from the experiences of others that have done it before. [GS; Sub-5]

Learning from others in a “master-apprentice” style is a valuable and effective learning style to transfer tacit knowledge (Nonaka 1994; Davenport & Prusak 2000). However, when the kaizen members lack team skills and do not have time to build team relationships due to the kaizen's short duration, the process might give rise to knowledge stickiness. Team members are unaware of the knowledge recipient's absorptive and retention capacity. They do not know whether the receiver of the knowledge is willing to adopt the recommendations; hence, employees consider kaizen to lack effectiveness. According to the literature, lack of team skills might heighten cognitive barriers to tacit knowledge transfer such as faulty communication between individuals, cognitive biases and miscommunication caused by language problems (Minbaeva, Pedersen, Bjorkman, Fey & Park 2003; Jensen & Szulanski 2004). While there seems to be a lack of training in how to participate in kaizen, Callbor

does train team leaders to facilitate kaizen. Selected employees participate in special training programs to obtain a “black belt” certificate. As a senior manager explained:

We call them boot camps, where they learn how to apply a process. They become special black belt trainers. [MP; PC]

While the researcher met several employees, who had obtained a black belt, details of the training were not discussed.

c. The “boot camp” training style might not guarantee optimal kaizen trainers

Trainers are taught in so-called “boot camps” how to implement new processes; they do not seem to be trained in how to guide a kaizen, as staff have the perception that the team leaders do not understand their needs. Employees feel that leaders do not lead by example. Staff are instructed in what to do, rather than consulted. As a subsidiary sales member complained,

Here it is more like, “do as I tell you, not as I do”. [SN; Sub-5]

A parent company's R&D middle manager commented,

Management needs to live the talk. Walk the talk! Management has to change before asking others to change. [LR; R&D]

The role of the leaders within an organisation is the fundamental element of sustaining the progress of lean thinking. The Japanese car manufacturer Toyota's kaizen leader is called sensei (the Japanese word for teacher or coach), and is expected to guide the less experienced group members (Liker & Meier 2006). Toyota believes that to transfer the culture down and across a company it is important to have a very experienced sensei who continuously coaches and guides those less experienced, and whose responsibility it is to spend time inculcating knowledge and values into the apprentice. The master transfers knowledge in a practical, guiding manner (Sveiby 2001). In contrast, Callbor engages in a “boot camp” to teach group leaders and trainers. One definition for “boot camp” is:

US slang: a basic training camp for new recruits to the US Navy or Marine hard physical exercise and community labour programmes. (Oxford English Dictionary, 2011)

Further, the “boot camp” participants gain “black belts”, an image taken from various Asian martial arts that suggests high-level competency. Some people associate

martial arts with sport, self-defence and discipline, others with violence, attack and aggression. Seldom is it associated with teamwork, collaboration and sharing. It is not known how Callbor trains its black belt leaders and trainers. However, Six Sigma Black Belt Academy describes its own training in this area: “Black Belt is disciplined, purposeful, and decisive, able to lead highly focused efforts aimed at improving a company’s bottom line”.

The terminology Callbor uses to train its kaizen leaders and the comments made by the staff point to an autocratic leadership style, rather than to a leader who inspires kaizen participants to share knowledge. To achieve successful knowledge transfer, the kaizen trainers need to provide purpose, direction and motivation for employees and create an environment that supports knowledge transfer between providers and receivers of knowledge. This could increase the likelihood of accomplishing the goal of creating new processes and improve profits for the organisation. The literature identifies the failure of lean thinking as concentrating on its formal tools and methodologies in preference to its philosophy (Miller 2014; Van der Wiele et al. 1996).

d. It is simple – failure of the system lies with the employees

The parent company strongly espouses kaizen as the best method to achieve quick and lasting improvements. Senior management does not seem to believe that failure might lie with the principle of the tool or with management’s method of implementing the tool, or the lack of training on how to use and implement kaizen successfully. Any failure of the system seems to be seen to lie with the employees. A parent company's senior manager acknowledged that kaizen might have a problem; however, he seemed to indicate that tougher measurements could solve the problem:

Kaizen for some people has become a religion. The process is sometimes more important than doing the business. Kaizen takes a lot of energy and even the CEO of corporate has realised that some people follow processes and do not think for themselves. We have to push back and make the “Neanderthals” understand what it is about! [HP; PC]

The manager seems to believe that the employees follow the process without understanding the concept, that they do not think. He has realised that employees obey without understanding the aim of the kaizen, though does not mention that training employees in how to participate in a kaizen or investing effort in building trust

might solve the problem. While the manager's comment was uttered in a private interview, his dismissive tone, as well as calling his staff “Neanderthals”, demonstrates a lack of respect for his employees. He was not considering the possibility that there could be other reasons for the kaizen's weakness, nor did he suggest how management could improve the employees' attitude, except to push the employees harder. A Callbor middle manager agreed that kaizen stops people from thinking and inhibits innovation:

In introducing those tools, some people have lost their creativity and flexibility. They follow the process and do no longer think outside the box. In certain conditions, the process needs to be bent. Some people misunderstood that a process does not necessarily mean that you can no longer think for yourself. They will not say anything; they just follow the rules. [AB; PC]

In contrast to the senior manager, he did not criticise the staff, instead seeming to blame management:

Management needs to live the talk. Walk the talk! Management has to change before asking others to change. [LR; R&D]

The majority of the kaizen literature praises the advantages of kaizen; however, several studies point out concerns that kaizen inhibits innovation if the process is associated with a controlling approach (Denning 1990; Buckler 1996; Bulsuk 2012). In contrast, treating employees with respect creates wellbeing at work and motivation to participate in companies' processes. Workers who feel valued and believe that their job is important have strong work engagement (Wright, Gardner & Moynihan 2003). Managers applying performance standards and performance measurements might inhibit staff from sharing knowledge for fear of breaking the rules and consequent punishment (Morgan 1993). Table 13 summarises the possible reasons why the kaizen process in this particular company might not be as successful as senior management perceives it to be.

Table 13: A summary of the kaizen’s possible weaknesses

Employees do not understand the benefits of the kaizen	Lack of management support
No benefits for all stakeholders	Kaizen leadership style too autocratic
Employees are too busy	Senior management lack the understanding of the kaizen method

Inhibits employees' thinking	Unrealistic financial objectives
Employees lack resources	Kaizen conducted to meet participants' personal goals rather than organisational goals
Employees do not trust the process	Difficult for the recommendations to be adopted and implemented
Employees not trained how to participate in a kaizen	Management's lack of respect for its employees
Lack of trust in the kaizen's process and objectives	Management's inability to be role models
Lack of an environment that encourages knowledge transfer	Company's CBS culture and structure

To conclude this section, kaizen is accepted worldwide as a beneficial tool to implement continuous improvement within an organisation. In a well-organised kaizen, tacit and explicit knowledge is exchanged rapidly. However, if kaizen is misused and inappropriately poorly designed and administered, the kaizen process might create stickiness due to lack of trust in the process, lack of retention and/or absorptive capacity and reduced motivation to exchange knowledge. These cognitive barriers are well-known stickiness characteristics. Further, the company's autocratic leadership does not create an environment encouraging knowledge transfer. A management style of "do as you are told" rather than "lead by example" might block the free transfer of knowledge. However, senior managers do not seem to acknowledge, or are ignorant of, the fact that the kaizen in the organisation might lack the expected benefits. It is management's responsibility to ensure that employees understand the benefits of kaizen and that employees are trained in how to participate. Without the support of Callbor's management team, the kaizen will not be able to provide the expected benefits for organisation. As a component of policy deployment, kaizen is part of the company's CBS culture. While kaizen is meant to encourage knowledge transfer, one can argue that in this company, kaizen might actually increase knowledge stickiness.

The following diagram 13 summarises the stickiness characteristics as they emerged in this theme: "Continuous improvement (kaizen)- Our way of life".

Diagram 13: Summary of possible stickiness characteristics “Theme - Continuous improvement (kaizen) – Our Way of Life”

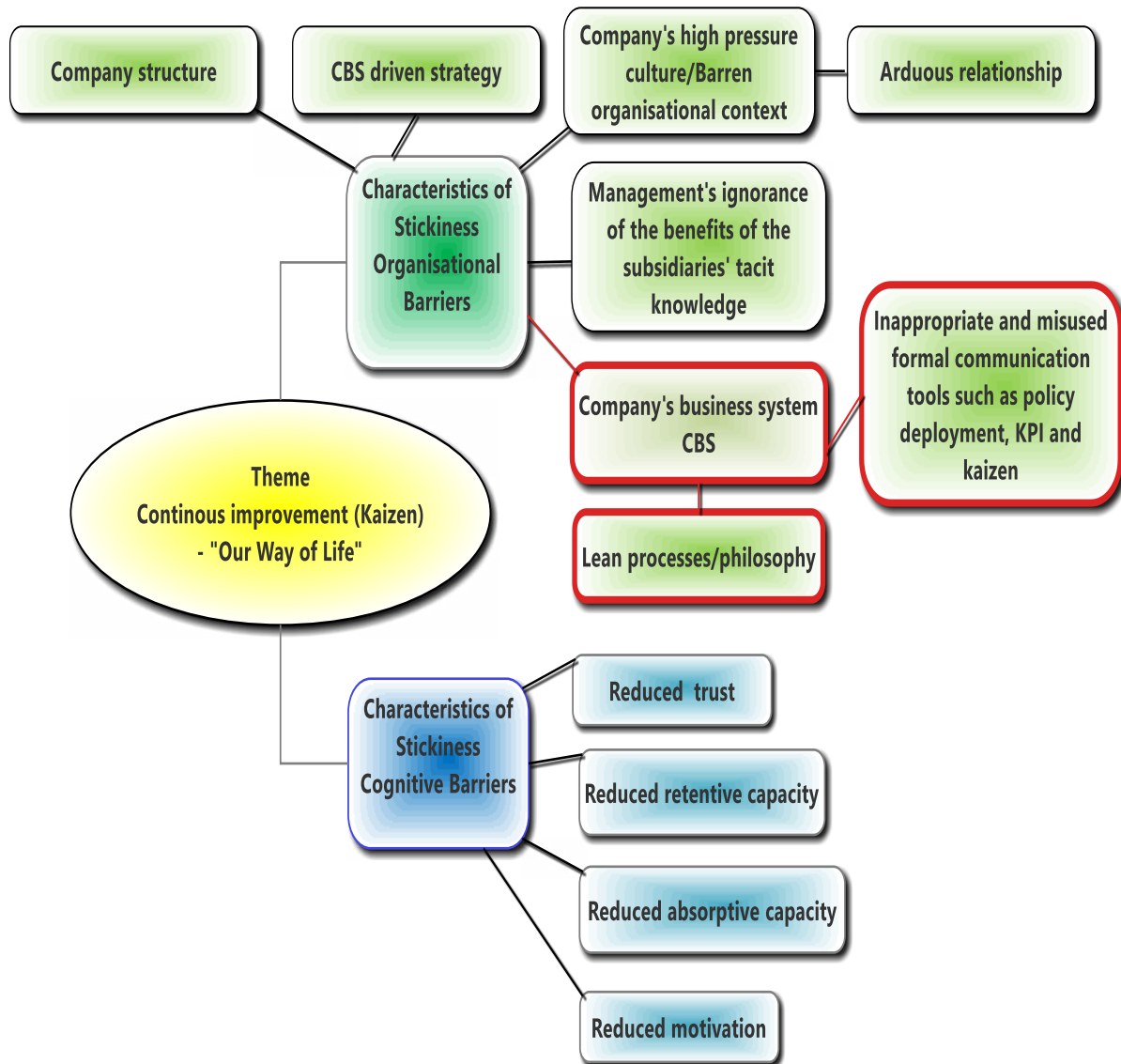


Diagram 13

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristic due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 13

Kaizen is a formal CBS tool, and it is part of the company's culture. Management is ignorant of how an inappropriately applied kaizen will lose its benefits and might not achieve the company's objectives. By creating a poor environment that does not encourage knowledge transfer, the company seems to generate organisational as well as cognitive barriers to knowledge transfer. The knowledge of the Callbor employees, including those in the subsidiaries, becomes sticky.

5. We have Key Performance Indicators (KPI) – “we know that we are productive”

Key performance indicators (KPIs) are a performance management system used by organisations to measure the success in the company's performances and outcomes. KPIs are used to ensure that the company's strategy is effective and efficient and that goals are met. They are considered essential in every business to understand whether the business is performing to expectations. KPIs can measure past, current and future events, individual or organisational goals and financial performance or activities. However, activities are difficult to measure, as unexpected events might affect the measurements. The business literature praises the power of KPIs (Duff 2010; Masayna et al. 2007; Chan & Chan 2004; Neely, Gregory & Platts 2005; Berman 2002; Grizzle 2002; Chakravarthy 1986). However, while KPIs can be of immense benefits for an organisation, they can also be a failure and result in financial loss. Beneficial KPIs are meant to empower the employees and increase communication between employees and management. However, many companies find it a challenge to use KPIs appropriately. Bouckaert and Balk (1991, p. 230) stress that while measurements need to be “accurate, conclusive, and reliable, they may also be motivating”. If senior managers set KPIs without consulting with the employees, the employees often do not understand the benefits and may thus lose motivation; this in turn could lead to a deterioration of trust in management (Bouckaert & Balk 1991; Duff 2010).

Some of the main weaknesses of KPIs are that they are designed inappropriately, or conflicting with other KPIs. For example, a KPI becomes ineffective if the process is designed to reduce stock, but does not consider that minimizing inventory of parts might delay the manufacturing process (Ammons 2002; Berman 2002; Hatry 2002). If KPIs are used to measure short-term instead of long-term improvement, they become ineffective. KPIs should be measured regularly over a long time and adjustments should be made on an ongoing basis to ensure that the KPI fits the goal. Using KPIs to measure kaizen effectiveness may be inappropriate, because KPIs arising from kaizen are often incremental improvements and do not necessarily constitute a major change. Too much focus on kaizen's KPIs might miss the subtle changes that might need to be tweaked (Bulsuk 2012). Poorly designed KPIs might not necessarily lead to the leanest performance. Further, managing too many KPIs would result in

employees becoming defocused. Generating too much data might become unmanageable. KPIs should be reserved for the most important strategic objectives and should be prioritised. Finally, KPIs need management's commitment and support (Berman 2002; Grizzle 2002; Masayna et al.; Chan & Chan 2004; Eckerson 2006; Buytendijk 2007; Cai, Liu, Xiao & Liu 2009).

Callbor applies KPI measurements to every process within the organisation. KPIs measure the kaizen's efficiency, whether a new process has been implemented successfully, and how effectively a defined goal has been achieved. Analysis of the interviews reveals some challenges associated with the KPIs. Similar discrepancies, such as those seen between senior management's and employees' implementation of kaizen, emerge when discussing key performance indicators. A senior manager explained:

We look at how we can sustain the new process. Every step, new KPIs are set in place to measure the success of the new process. [MP; PC]

A subsidiary general manager, who had been involved in several kaizens, mentioned that while he enjoyed the process of kaizen, he could not confirm if it was an improvement on the previous method:

Knowledge is transferred very rapidly, but I do not know if the implementation works, I just know that you have a high rate of communications and exchange of ideas. [GS; Sub-5]

KPI are meant to measure if knowledge transferred in a kaizen leads to improved working methods; however, the subsidiary manager enjoyed the involvement, but was not able to confirm lasting improvement. He did not elaborate why he did not know. It could be that he might have participated in the kaizen, but that he was not the "owner", and the KPI measurements were not his responsibility, and the owner might not have implemented the recommended improvements. The senior manager mentioned that new KPIs are set for every step. One could argue that the company might overuse KPIs, and suffers from data overload and/or employees becoming defocused. Poorly designed KPIs might not necessarily lead to the leanest performance. A manufacturing manager indicated that this problem seems to happen:

This year has been very bad; we could not get products. It is the first time that we sell products and have to tell the customers that we cannot deliver. Manufacturing cannot get the needed parts. There is too much outsourcing.

Callbor has lost control. These things never happened in the past. We get more and more orders and have no product we can provide. [SR; Sub-3]

This problem was confirmed by several sales staff from subsidiaries and employees from the manufacturing plant, who were complaining that they had received orders, but could not serve their customers, as the products could not be delivered:

We have sold three systems, but they cannot be delivered. Manufacturing is too slow. Manufacturing does not have enough knowledge when their products will be finished. [SP; PC]

While staff acknowledged the benefits of KPI, they felt that they did not always achieve optimised outcomes. They did not share senior management's enthusiasm for kaizen or KPIs.

a. Pressure cookers achieve quick results – hope you can take the heat

If you cannot stand the heat – get out! Excuses are not allowed! [HP; PC]

A senior manager expressed this powerful statement; he continued:

They [Con-Glom] have a very simple view: This is what you said you are doing – How you are doing it? – Oh, you have a problem – Find out how to fix it, because you said that you would do this or that. [HP; PC]

His comments confirm the autocratic “do as you are told” management style the employees criticised. Senior managers assert that keeping pressure on the employees is the key to the organisation's success. The senior manager emphasised:

They keep the pressure up to make sure everyone is performing and meets their KPIs. This behaviour brings home the bacon. It works, we have gone from sloppy and not knowing what we are doing or where we are spending the money, to productivity. [HP; PC]

A second senior manager confirmed:

I know we load our people with a lot of work, but KPIs make the processes easier; we improve productivity. [AP; PC]

Senior management's seemingly blind trust in CBS and its formal tools KPIs and kaizen might be based on a comparison with previous systems, where the company showed less productivity and accountability. A senior manager commented:

Con-Glom has taken the company Callbor in five years from a \$4 million company to being worth over a billion dollars. While a lot came from

acquisitions, a considerable amount is via organic growth. How did they achieve that? Simple, Con-Glom will not take any crap! [HP; PC]

However, while senior management confirms that the company's policies improve its performance, some senior managers acknowledge that the high-pressure environment might not always be desirable for the employees, but find that it is unavoidable in a large company:

Maybe a long time ago Callbor lived in "Happy Land". Maybe now it is too much pressure. As companies increase in size, the nature of those companies is that the human aspect often gets lost. [RP; PC]

She excuses the pressure by explaining that the previous owners did not invest and showed no real interest in Callbor, while now the company is moving forward, hence changes had to be made, and higher discipline and strict KPIs are part of the change:

Callbor had to get used to this discipline, and maybe sometimes it is too much discipline. [KP; PC]

Employees agreed that the company culture had changed from family-oriented to aggressive. A Callbor middle manager reflected:

We used to have a family-type culture. Increased process, bullying of people, focus on lean and outsourcing has allowed negativity to creep in. Job security has been lost, making people feel insecure. It has affected people emotionally. [AR; R&D]

A subsidiary manager was far more outspoken:

They don't understand that we are a high-precision and high-technology company that cannot be run by just using all their fancy tools. [MS-Sub-2]

When asked to define who "they" are, the response was:

The Con-Glom freaks! [MS-Sub-2]

Employees were finding it difficult to adapt to senior management's and the conglomerate's autocratic culture. A subsidiary general manager was concerned that the new culture had discouraged staff to exchange knowledge, and that the new culture had begun to result in lost knowledge with increased staff turnover:

We have lost many of our people. It is in your face; you know how to behave. It creates pressure and stress for the staff, who find that they no longer have time to exchange knowledge. [MS-Sub-2]

He sounded frustrated and at the same time resigned to the fact. The company's lack of interest in its employees and their frustration with the system were mentioned by employees throughout the South East Asian region. A subsidiary service manager

showed his disillusionment when he talked about the CBS system and management attitude:

CBS is a process in place, but no one tells me what it is all about. I know it exists, but I do not know anything about it. Some processes I know well; others are not clearly explained. At S (his former employer) all was very clear; your training and your future. What was expected and what you could achieve for yourself. S* management provided lots of mentoring. Every month your boss would give you 30 minutes where you could talk about your personal development. You received a lot of support from your boss; you were able to ask and talk to them any time. Here you are left alone and there is not much personal development. We know what we are allowed to do and what is forbidden – the processes are developed for the company not for us. [MG; Sub-1]*

With resignation in his voice, he added:

My boss should know how to manage people; maybe he is too tired. [MG]

In interviews, this subsidiary's team expressed similar disappointments and frustrations. The general manager from this subsidiary had previously worked for Con-Glom. He praised the CBS, and asserted that the problem lay with the employees, who did not understand the value of the system and the company's "big picture". He commented:

Con-Glom has a very good business concept... I think some people from Callbor misunderstand Con-Glom's concept... it is not that one individual is considered better than another individual, or better in what he does. It is always about how the whole company is performing, how the company is growing. [GM; Sub-1]

He continued:

If you focus too much on your individual job, you can lose the big picture. They [the employees] might focus on their own little data. They care about their own data, and do not see how the data affects the whole business. What the individual does is for everyone, not just for himself. [GM; Sub-1]

When asked if he could change something what it would be, he responded:

I like to hear every employee's ideas on how to grow the business. I would consolidate and make everyone understand that we are a team, that we grow the business together. I want everyone to understand what our strategy is. Many people cannot say in one sentence what the company stands for. [GM]

To incorporate knowledge residing within the employees does not seem to be part of his company's "big picture". While the general manager expresses his disappointment with the staff, it does not seem to occur to him that management is accountable for

communicating the company's strategy to the employees (Shaap 2012). It is management's responsibility to explain business systems, as well as the benefits the processes bring to the company and to the individual employee. Kaplan and Norton (2005) found that 95% of employees are not aware of or do not understand their company's strategy.

To conclude this section, key performance indicators are accepted business practice to measure the success of an organisation. However, as with the kaizen process, if KPIs are used inappropriately, misused or overused, or conflict with each other, the process might provide misleading outcomes. While KPIs do not contribute to stickiness, analysing the data on the application of KPIs within this company reveals an autocratic company culture where employees resent the overuse and often perceived inappropriate use of KPIs, resulting in an arduous relationship. They should be reserved for the most important strategic objectives and should be prioritised. In addition, when KPIs are set employees should be consulted, to help them understand the benefits of each KPI and how the KPIs and the employees assist the company's strategy. KPIs are meant to motivate and empower employees and boost communication. However, at Callbor these KPI requirements seem to be missing. The lack of communication highlights the gap between the perceptions of management and employees, and highlights the antagonistic company culture. An arduous company culture is a known characteristic of stickiness (Szulanski 1995; Hotsapple & Joshi 1999; Timbell, Andrews & Gable 2001; Cabrera-Suárez, De Saá-Pérez 2001; Szulanski 2003). Further, senior managers do not seem to follow their company's policy-deployment guidelines to involve employees in setting of the KPIs. Hence, the company might demotivate their staff, and diminish their trust in the processes. Not understanding management's reasons for the KPIs might increase causal ambiguity and diminish the employees' morale, which can affect their willingness to transfer or share knowledge. Further, employees might not absorb or retain knowledge needed to create new knowledge (Nonaka & Takeuchi 1991; Nonaka & Toyama 2003) for transfer to the parent company. Employees need to absorb and retain knowledge they receive. To encourage knowledge transfer and augment the effectiveness of the CBS, a democratic management style might be preferable to the current autocratic style. Knowledge stickiness is reduced if staff are empowered, trusted, and encouraged to take risks and not to be afraid to formulate decisions, and if management listens to

and, where appropriate, implements employees' advice. This approach has close links with Herzberg's motivators and Maslow's higher-order skills. It also applies to McGregor's theory Y view of workers (Herzberg, Mausner & Snyderman 2011; Maslow 1943; McGregor 1960).

The following diagram 14 summarises the stickiness characteristics as they emerged in this theme. "We have Key Performance Indicators (KPI)".

Diagram 14: Summary of possible stickiness characteristics “Theme – We have Key Performance Indicators (KPI) – we know that we are productive”

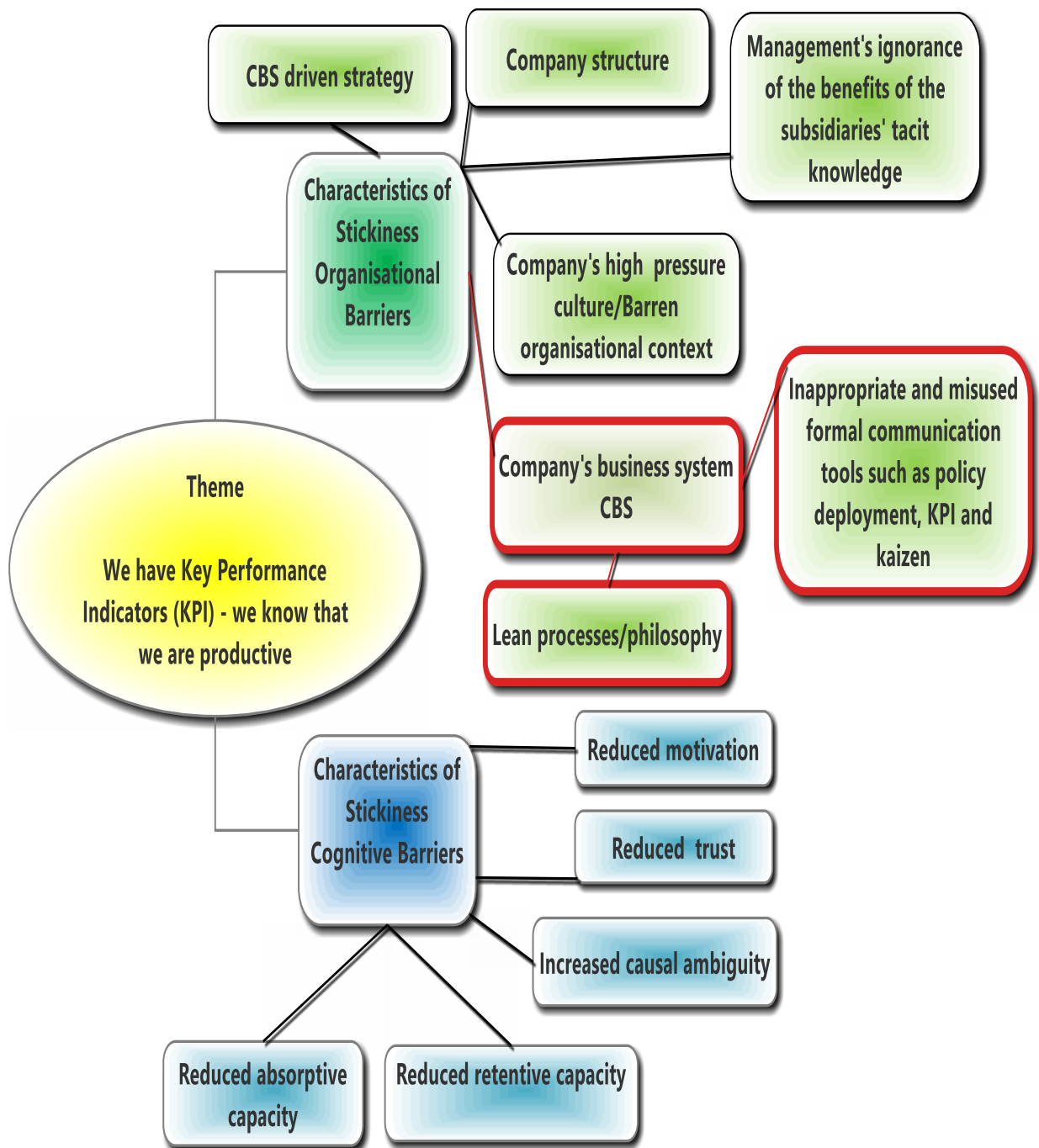


Diagram 14

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The red box seems to be a new finding.

Diagram 14

The CBS formal strategy tool of KPIs is poorly designed and used inappropriately. This seems to be a new finding not previously mentioned in the stickiness literature. Callbor's senior management seems to lack the understanding of how to design KPIs that benefit the organisation's long-term objectives, and are aligned with the organisation's strategy. As seen in previous sections, the company's autocratic culture might reduce employees' motivation, diminish their trust and inhibit knowledge transfer. Knowledge transfer from subsidiaries to the parent company might decline because of the inability of the subsidiaries' employees to create new knowledge due to lack of absorptive and retentive capacity.

Summary and conclusion

The parent company Callbor is owned by the transnational, multi-industry conglomerate Con-Glom. Callbor operates as an independent multinational company with its own management team and strategic objectives. While Callbor has to operate within Con-Glom's business system, its managers have responsibility for how they implement, and design the formal strategic tools to align with Con-Glom's strategy. The business system is designed to manage lean for eliminating waste and to attain continuous improvements in current methods and procedures within the organisation. The success of CBS relies on processes or formal tools such as policy employment, kaizen and KPIs. CBS influences the company structure and the culture. Policy deployment, kaizen and KPIs are important business processes. However, the company seems to measure the organisation's success based on the processes, and not on achieving long-term, sustainable profit. Its obsession with processes often leads to the formal strategic tools being misused and used inappropriately. Hence, the staff does not trust some of the formal tools, or feels disillusioned and disengaged.

Kaizen is meant to empower employees; however, senior management's autocratic leadership style and their inability to provide consistent messages (words and action are often conflicting) create a culture where employees mistrust senior management's intentions. Consequently, employees lose motivation, and they avoid participating in the kaizen process. Therefore, their knowledge becomes sticky, which compromises the kaizen's success. Further, while senior management is aware that employees follow a process without actually applying their tacit knowledge, they seem to ignore the negative effect of the loss of knowledge that is likely to follow. Moreover, not

providing training for the kaizen team in how to participate beneficially in a kaizen might create barriers to knowledge transfer, as participants may not be able to absorb or retain the new knowledge, nor may they trust the source of the knowledge. Absorptive and retention capacity and not trusting the source are positively related to stickiness characteristics (Cohen & Levinthal 1990; Szulanski 1996; Shaker & George 2002; Abreu et al. 2007; Hu 2012; Wu et al. 2013).

The lean principle and its policy deployment process might reduce cost in the short term, but the company does not seem to take into consideration the human values a business needs for long-term profitability. Moreover, policy deployment and its KPIs seem not to pursue the high-quality and on-time delivery Callbor used to stand previously stood for, as cost reduction seemed to be valued as a higher strategic goal.

“We lost flexibility – product quality is going down. Callbor is a well-known brand and still has a reputation for high quality but they are on the brink of losing it. Cost is driven down – [but now there are] problems with delivery and quality”. [DM Dist-6]

A focus on KPIs seems to measure short-term goals, without taking into consideration the wider impact of the methods or processes. Communicating the benefits of the processes for the employees and the company, as well as the aim of the company's strategy, seems to be lacking. Therefore, knowledge stickiness increases, as employees' frustration, stress levels and dissatisfaction increase, followed by lack of motivation and decreased company loyalty. The next chapter expands on how communication, motivation and high staff turnover affect knowledge transfer.

A business system that uses lean principles is of value if the processes are applied as in Japan, as a holistic philosophy. However, this company seems to have failed to interpret the original intent of the lean concept. Senior management needs to consider the entire impact when improving a process. Rather than looking at short-term cost reduction, the focus should be on whether it adds value for the customer. They need to understand what the process is trying to achieve – its long-term as well as its short-term implications – to reduce causal ambiguity. A change of leadership style could achieve increased productivity, trust and motivation to transfer valuable knowledge. The environment describing the kaizen training methods by referring to “boot camp” and “black belts” might be interpreted as suggesting that the focus is on “combat” and “forcefulness”, language that does not sound like an environment fostering trust. It demands conformity, which might inhibit innovation and foster an arduous culture,

which is a barrier to knowledge transfer. Management style can increase or decrease employees' absorptive and retentive capacity, which is important for subsidiaries' employees to create new knowledge (for more about new knowledge creation, see the SECL model by Nonaka in the literature review). Managers need to create an environment encouraging knowledge transfer among employees and from the subsidiaries to the parent company.

Finally, the increased outsourcing of product development and manufacturing might inhibit knowledge transfer. As Callbor's formal tools influence all the themes that emerged when analysing the interviews, the effect of CBS and its formal strategic tools will be discussed further in the next two analysis chapters.

The following diagram 15 summarises the stickiness characteristics as they emerged in Chapter 6.

Diagram 15: Summary of the stickiness characteristics discussed in Chapter 6 - Domain: Low Intimacy Communication and Stickiness: Formal Tools that Shape the Organisation's Strategy

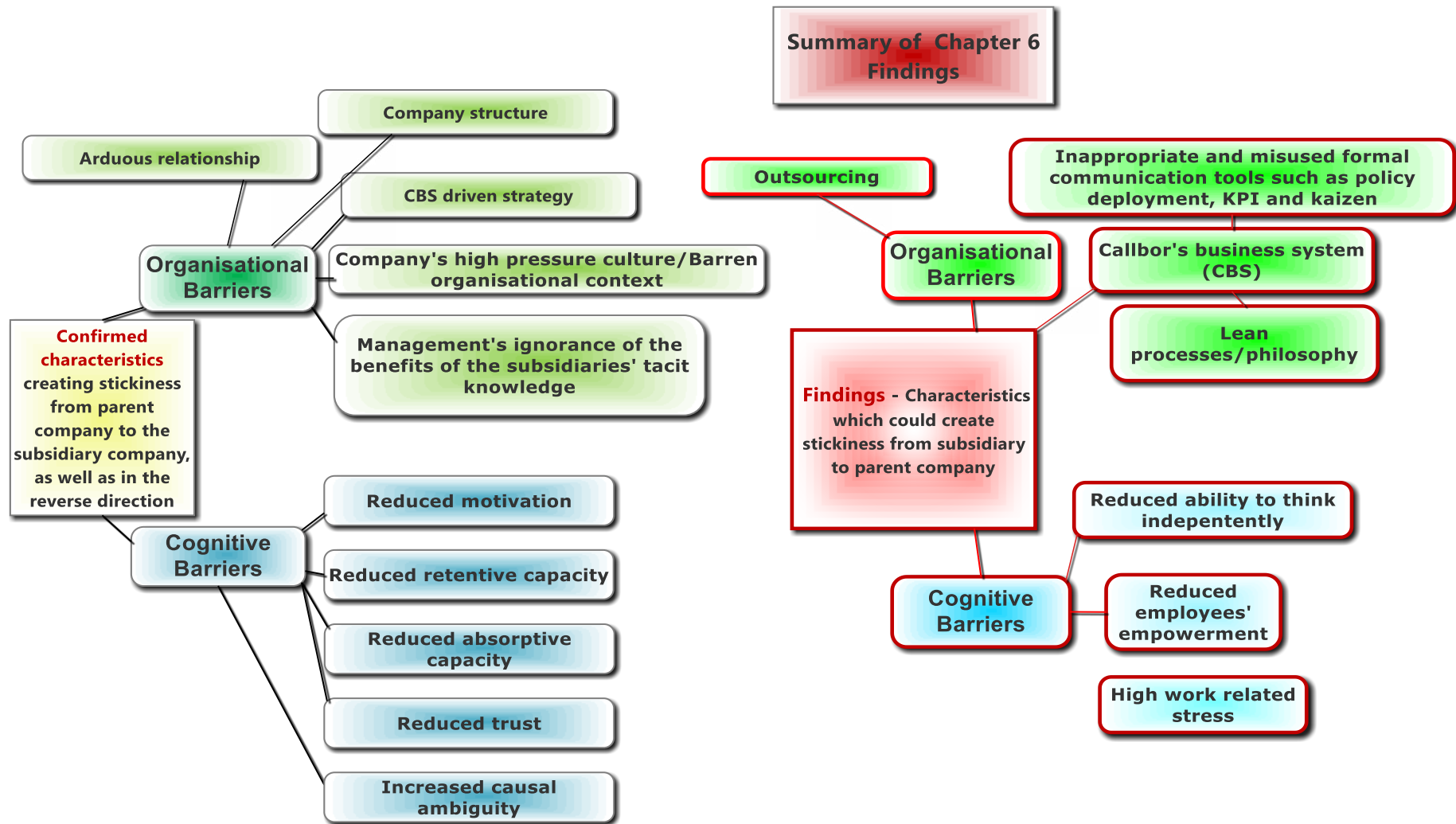


Diagram 15

This diagram is the summary and the analysis conclusion of the combined themes and subthemes of the study's findings. The boxes on the left are the stickiness characteristics identified by the stickiness literature and confirmed to be stickiness characteristics when transferring knowledge from the subsidiary to the parent company.

The boxes on the right in the brighter colours are the new stickiness characteristics that have not been previously discussed in depth in this context in the stickiness literature, and might be specific to the transfer of knowledge from a subsidiary to the parent company.

Diagram 15

An arduous company culture, lack of motivation, reduced retention and absorptive capacity, causal ambiguity and reduced trust are known stickiness characteristics when knowledge is transferred from the parent to the subsidiary, and they prove to be the same if knowledge is transferred in the reverse direction.

There seems to be limited research that identifies "lean philosophy" with poorly designed, inappropriately and misused communication processes. Tools such as policy deployment, kaizen and KPIs negatively affect knowledge transfer from the subsidiary to the parent company. The same can be said if there is stress, which reduces the ability to think, and a lack of empowerment of employees. Further, in a company where success depends on innovation and R&D activities, outsourcing R&D without considering the wider implications could create sticky knowledge.

The next chapter is the second part of the analysis. It focuses on general organisational communication, analysing the broader aspects of communication between the parent company and its subsidiaries. It discusses ease of organisational communication, its impact on knowledge sharing and the barriers that might create sticky knowledge.

Chapter 7

Domain: Medium Intimacy Communication and Stickiness: General Organisational Communication

Introduction

Callbor's strategic communication tools had negative effects on knowledge transfer at least some of the time. The interviews highlighted that the use of poorly designed, misused and inappropriately applied formal communication tools such as lean, policy deployment, kaizen and KPI can create barriers to knowledge transfer. The knowledge becomes sticky, and hence, onerous to transfer from the subsidiary to the parent company, and vice versa. The company's business operation system CBS, which drives its strategy, and the company structure influence the company culture. Conversely, the company culture bases its values on CBS, and this in turn affects internal communication. This chapter focuses on general organisational communication (medium intimacy). It discusses the ease of general organisational communication, its impact on knowledge sharing and the effect of its possible stickiness on knowledge transfer.

Definition of communication

Researchers have been debating definitions of organisational communication at least since the middle of 1945 when Mayo researched communication between managers and employees (cited in Eisenberg & Witten 1987). At a simple level, communication has been seen as a source that transmits information to the receiver; the receiver might also send information back to the sender. The receiver has to decode the information. The source, as well as the receiver, can be a person or a group/team. To exchange information various modes can be used. For example, the exchange could be in a verbal or written format, in an explicit or tacit format, by gestures and/or actions (Dainton & Zelly 2005). This chapter's focus is on knowledge transfer or sharing; hence

this chapter uses the Oxford English Dictionary definition of communication as being about conveying, sharing or transmitting information.

Definition of organisational communication

Researchers have been debating definitions of organisational communication at least since the middle of 1945 when Mayo researched communication between managers and employees (cited in Eisenberg & Witten 1987). At a simple level, communication has been seen as a source that transmits information to the receiver; the receiver might also send information back to the sender. The receiver must decode the information. The source, as well as the receiver, can be a person or a group/team. To exchange information various modes can be used. For example, the exchange could be in a verbal or written format, in an explicit or tacit format, by gestures and/or actions (Dainton & Zelly 2005). The definition by Feldner and D'Urso (2010) refers to the two-way interaction of individuals and an organisation, including communication conducted internally between different members of the organisation, and externally to other stakeholders of that organisation, including global networks. Communication may be carried out in a structured business format and by informal social interaction. Both definitions assume that communication occurs when information is transmitted from the sender to the receiver, and the receiver might also send information back to the sender (Dainton & Zelly 2005).

Organisational communication is complex. The organisation's management must navigate the organisation's politics, implement, and communicate new ideas, and coordinate the activities and interpret the communication of the people within the organisation. In short, management must find a "way of understanding organizational communication by discovering how organizational reality is generated through human interaction" (Shockley-Zablabak 2015-p 28). Management's understanding of the organisation's communication is essential, as it provides a framework to understand the life of the organisation. (Matthew Koschmann 2012). Organisational communication enables questions to be asked about issues such as "the existence of the organisation, its structure, its form of power, its guiding assumptions, its norm of operations" (Matthew Koschmann 2012, p. 5).

Organisational communication can never be unbiased, as it is shaped by the organisation's culture, structure, and management's practices (Hoogervorst, van der Flier & Koopman 2004). However, organisational communication needs to be credible and consistent, regardless of whether it is explicit or implicit, if it is to have a positive effect on employees' behaviour, trust, and motivation (Hoogervorst et al. 2004; Ghoshal and Bartlett 1997). Management needs to "walk the talk" when they say that employees are the source of the organisation's success. In particular, employees should be acknowledged as a source of knowledge and ideas (Fromm 1990). Prahalad (1995) argues that employees are the largest underutilised source of knowledge and skills in an organisation. Organisational communication influences employees' ability to solve problems, be innovative and creative, and is reflected in their ability to think (Hoogervorst et al. 2004). Culture is a form of communication because it transmits the values that are important to the organisation (Deal & Kennedy 1982; Hogan & Coote 2014). Similarly, the organisational structure controls the knowledge, philosophy for governance and the principles of the organisation's management. The structure "should match the organisational mission, vision, values and goals" (Hoogervorst et al. 2004, p. 296); hence, it is important that explicit and implicit communication are consistent and clear. This is crucial to create trust and motivation (Hoogervorst et al. 2004; Verburg et al. 2012).

The importance of consistency between organisational communication and other aspects of the organisation such as culture and structure has parallels with knowledge transfer and stickiness theory. Referring to Szulanski's model (1996), knowledge becomes sticky if the source is not considered credible or trustworthy. The source needs to be motivated to transfer knowledge and the recipients need motivation to implement the transferred knowledge. Poor communication might result in lack of absorptive and retentive capacity. An arduous relationship or barren organisational context is known to arise from poor organisational communication and creates stickiness. Further, culture, organisational structure and managers' attitudes are not only reflected in organisational communication, but also in knowledge transfer. Finally, poor organisational communication can create causal ambiguity, which is associated with stickiness.

Callbor's general communication structure

During the interviews, a wide variety of general organisational communication themes emerged. The findings are presented in the same way as in the other analysis chapters. Each theme is analysed for barriers that might create sticky knowledge transfer. Different circumstances often create the same barriers. Barriers that were discussed in the previous and subsequent chapters will be analysed further in terms how they form a pattern; that is, how similar barriers reoccur regularly under different circumstances. Previously mentioned barriers and patterns will be strengthened and new ones will emerge.

A brief illustration will explain Callbor's general communication structure. This is followed by the analysis of comments made primarily by the parent company's senior management. This is followed by analysis of comments made primarily by the subsidiaries' employees, as well as the parent company's middle management. In addition, various other themes are discussed. Most sections are divided into two parts: Part 1 shows evidence from the interviews; Part 2 discusses the theme by referring to the literature.

Management's explanation of the organisational communication flow

The description below illustrates the general organisational communication flow as it actually occurs, without evaluating how well it functions (Diagram 16). Distributors usually communicate with the subsidiary responsible for their sales performance. Staff members from the subsidiary and distributor usually pass their knowledge to the subsidiary's head office. This knowledge is based on information collected from the subsidiary's customers and the local market. For example, information collected includes customers' product needs, currently used products, problems, marketing information or other useful information. Information is derived from data, while knowledge gives information meaning. O'Dell and Grayson (1998) define the difference between information and knowledge by saying: "knowledge is information in action". Local market information combined with individuals' knowledge is transferred to the parent company.

Diagram 16: Callbor's general communication flow

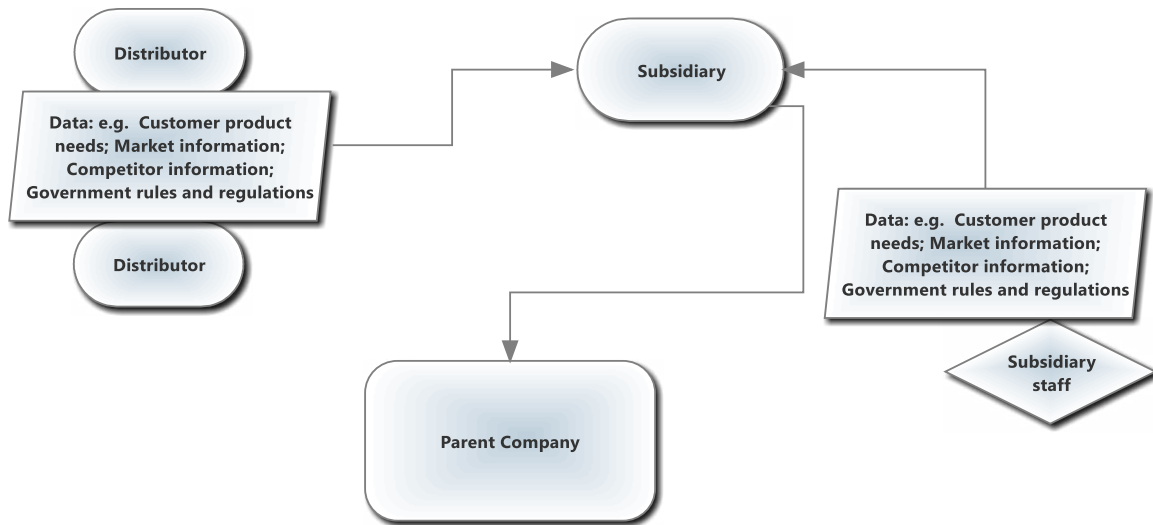


Diagram 16 illustrates that the subsidiary gathers knowledge from its staff, as well as from the distributor. The subsidiary is responsible for transferring the combined knowledge to the parent company.

The themes as they emerged from the data

1. Senior management's perception of communication with subsidiaries
 - a. The parent company's perception of "knowledge"
 - b. Senior management's perception of communication with subsidiaries
2. Subsidiaries' perception of communication with the parent company
 - a. The parent company is not listening
 - b. The parent company is not transparent
3. Poor knowledge transfer environment
4. Senior management does not support knowledge transfer
 - a. Knowledge transfer seems to rely on one person
 - b. High staff turnover might negatively affect knowledge transfer
5. Lack of feedback

6. The silo mentality creates barriers to knowledge transfer
7. Summary and conclusion

Each theme is now explained in turn.

1. Senior management's perception of communication with the subsidiaries

Communication is about making meaning and achieving clarity, as well coping with ambiguity and different interpretations. In the knowledge-transfer literature, ambiguity is a major topic; it includes content and knowledge ambiguity, as well as causal ambiguity. In the stickiness literature, the terms ambiguity, knowledge ambiguity and causal ambiguity are often used interchangeably. However, there is a slight difference, as causal ambiguity refers to the organisation's limited understanding of the variable effects tacit knowledge has on business outcomes. Law (2014) conceptualises knowledge ambiguity as component ambiguity and causal ambiguity. Component ambiguity has two aspects. The first is uncertainty about the knowledge content. As senior management is concerned with content ambiguity, this section discusses the uncertainty of knowledge content. The meaning of content can be defined as the interpretation of knowledge, or as what might have been the intention of that knowledge transfer. The second aspect of component ambiguity is uncertainty about whether the knowledge received can be trusted (Seanor & Meaton 2008). This thesis adopts Law's (2014) suggestion classifying content ambiguity as component ambiguity. The role of causal ambiguity will be addressed in the third analysis chapter (Chapter 8) when discussing the effect that high staff turnover has on knowledge stickiness. The literature review refers to knowledge ambiguity as one of the main reasons for sticky knowledge (Szulanski 1996; Mosakowski 1997; Simonin 1999a, 1999b, 2004).

Two main issues were identified from the interviews with senior management. The first is the parent company's failure to understand the different definitions of information and knowledge, and the different values assigned to them. The second is senior management's perception of their two-way communication with the subsidiaries.

a. The parent company's perception of “knowledge”

The parent company's management acknowledges that the subsidiaries' and distributors' knowledge of the local market and customers is important for the parent company. The examples below from different senior managers show that they believe that the subsidiaries' knowledge is important to the parent company:

Subsidiaries are very important to provide market information and customer feedback. [AP; PC]

It would be good if I could speak to all the sales representatives involved in gathering information from customers. [DP; PC]

It is important for people to get together and exchange information on the different [market] segments. [OR; PC]

Senior management is interested in knowledge about local markets and customers. The desire to speak personally to every salesperson is an indication that each staff member's knowledge is valued. Moreover, it suggests that senior management desires to establish a direct professional relationship between themselves and the subsidiary staff. The third comment strengthens this argument by acknowledging the importance of face-to-face interactions. Further, the definition of “exchange” is to give and receive reciprocally; this indicates that, in theory, senior management finds two-way communication important.

While senior management agrees that subsidiary knowledge is important to the parent company, there seems to be an inconsistency in their understanding of their concept of “knowledge”. Discussing knowledge flow from subsidiary to parent company, a senior manager explained his preferred knowledge-transfer process, and his interpretation of “knowledge”:

Knowledge exchange needs a structured process and to be conveyed in a consistent way. Information needs to come as a correct message, not an understood message. For example, we get different messages regarding competition and market knowledge. Everyone interprets information in a different way and delivers the message in a different way. We need a way that information can be delivered in a structured way, and not the way the information has been interpreted. [SP; PC]

The three previous comments, and especially the second and third, emphasise that he prefers to interpret the information himself and not leave the interpretation to the subsidiary employees.

Oral communication is usually an informal process and cannot always be associated with or conform to a structured process. Instances of oral communication, like individual reports, differ slightly and cannot be completely consistent. This manager seems to believe that personal information interpreted by individuals cannot deliver correct market knowledge, or might be susceptible to content ambiguity.

As senior management does not trust personal interpretations, information and data detailed in spreadsheets are the main company's official communication tool to gather subsidiaries' local knowledge. The parent company has the naive view that spreadsheet information is "knowledge" they can trust. Every month the subsidiaries provide the senior manager with a forecast. Forecasting is a decision-making tool to help with allocating resources, devising, and estimating the company's future growth. Senior management sees spreadsheet numbers as the most important information in which the parent company is interested. DP from the parent company commented:

The forecast is the main reference. Every month we look at the forecast until the year-end. In January, we do a 12-month forecast. Every month the spreadsheets are adjusted according to what is happening in the subsidiaries. [DP; PC]

It was not possible to confirm that the company considers forecasts to be equal to knowledge; however, the discussion was related to knowledge transfer. Hence, it is worrying for the senior manager to talk about forecasting, as by definition a "forecast" is an estimation about future events or trends, which are unknowable in any firm way. In contrast, knowledge is based on understanding and comprehension of information and related conditions of the company, both past and present. Despite the parent company's managers articulating that the subsidiaries' tacit knowledge was very important, they reverted to a focus on explicit data. One reason could be that financial reporting is seen as more important than general market knowledge, or they do not perceive tacit knowledge as trustworthy. However, spreadsheets – pure numbers – have minimal context, and hence provide limited guidance for formulating beneficial organisational decisions. Nevertheless, senior management seems to believe that this information has higher value for the company, as "spreadsheet" information cannot be falsified by personal interpretations. Either management does not seem to understand the difference between explicit and tacit interpreted knowledge, or they do not recognise the value of tacit knowledge. Alternatively, their comments, as in the first three quotes above regarding personal communication, could be an expression of

what the managers think would be useful, but see no real hope of ever getting, or they were just saying what they thought they should be saying.

These difficulties have been discussed in the literature. Spreadsheets are useful for reporting financial information. Spreadsheet information is derived from data. Information or data often misses context and needs knowledge that is unspoken, less visible, interpreted, qualitative and tacit to give the information meaning for appropriate action (Powell & Swart 2005; Ford 1990; Dyer & Nobeoka 2000). Spreadsheet information is explicit knowledge, which Brown & Duguid (1998) refer to as “know-what”. Explicit knowledge can only capture information. Swart (2000) calls it “knowing what to do”. It lacks the tacit knowledge, or what Brown & Duguid (1998) call the “know-how”, knowing how apply the “know-what” in a meaningful way. Tacit knowledge depends on variables such as the multiple professional relationships an individual may have with customers and lawmakers, as well as an understanding of the internal and external political environment. Even skills like persuasiveness, charm and language-based reasoning influence the quality of tacit knowledge (Bhaskar & Simon, 1977; Chi et al. 1981).

However, while senior management seems to place a higher value on explicit knowledge over tacit knowledge, there is some awareness of the weakness inherent in this perception. Some senior managers’ comments reveal awareness that the over-reliance on spreadsheet information might create problems for the organisation. Further questioning of management elicited interesting and contradictory responses, as these quotes demonstrate:

*Excel fetishism, spreadsheet focus and collecting too much data.
Inexperienced people cannot see the forest for all the trees. [AR; R&D]*

A second senior manager commented:

Filling in spreadsheets without getting involved is useless. [SP; PC]

When discussing forecast figures, he continued:

An unexpected opportunity arises and situations change. [SP; PC]

Senior management stresses the importance for the parent company to receive subsidiaries’ knowledge. However, spreadsheet data is falsely accepted as knowledge, despite an awareness of the limited value of spreadsheets. One interpretation of the conflicting responses by senior management could be that the

parent company does not fully understand the necessity to capture tacit knowledge, nor do they seem to understand the difference between explicit and tacit knowledge and the role of tacit knowledge in gathering market intelligence. Another interpretation could be that senior management does not trust the subsidiaries' tacit knowledge. As Szulanski (2003) points out, not trusting the source or unproven knowledge is a characteristic of stickiness.

The following section provides evidence from the literature to support the argument that senior management does not understand the value tacit knowledge provides for the company's market intelligence, and consequently its benefit for the organisation's competitiveness.

As early as 1988, Eric von Hippel established that the majority of innovative ideas come from customers and understanding the market. Market knowledge consists of a high degree of tacit knowledge (Hackley 1999; Simonin 2004), which is subject to personal interpretation by the sender and receiver. Knowledge about an organisation's market is partially built on intuitive ability and sensitivity to market changes. Knowledge about competitors and the organisation's market might vary from one source to another. Empirical practice by Japanese companies has proven that using employees' tacit knowledge, even if it is subjective, creates true valuable knowledge (Dyer & Nobeoka 2000). Due to the nature of tacit knowledge, the interpretation can be ambiguous. Hence, when transferring knowledge, the receiver might find it difficult to interpret that knowledge. However, this should not prevent the parent company from trusting the subsidiary's tacit knowledge. As early as 1989, researchers provided evidence that subsidiaries' knowledge increases multinational companies' competition and sustainable profits (Cantwell 1989, 1992, 1995; Dunning 1994, 1995; Florida 1997; Shan & Song 1997; Kuemmerle 1999; Rugman & D'Cruz 2000; Ghoshal & Bartlett 1992).

The analysis demonstrates that senior management's focus on reducing content ambiguity shows that it has difficulties interpreting the subsidiaries' tacit knowledge. This inability and difficulty distorts the parent company's skill to judge what type of knowledge is important, and what type of knowledge creates competitive advantage. Not knowing can have a detrimental effect on innovative product development and competitive advantage (Ciabuschi, Forsgren & Martin 2012).

It is common for the parent company to see its role as knowledge distributor instead of knowledge receiver (Mintzberg 1990; Tsoukas 1996); therefore, organisations are often ignorant and unaware of what they do not know (Goodwall & Roberts 2003). Further, one could argue that by focusing on reducing content ambiguity, the organisation increases causal ambiguity. Causal ambiguity is described by the management literature as having limited understanding of the variable effects tacit knowledge has on business outcomes (Peteraf 1993). This might be caused by the company “not knowing what they do not know” (O’Dell & Grayson 1998). Alternatively, it might be caused by a western-management ideology that places profoundly high value on quantifiable knowledge. Many first-world companies believe that data and codified procedures will increase productivity, reduce costs and increase profits (Reichheld & Thomas 2001; Nonaka & Takeuchi 1995). Causal ambiguity is a known stickiness characteristic (Szulanski 1996), and will be discussed further in Section 4.

b. Senior management's perception of communication with the subsidiaries

Communication is perceived by senior management to flow easily between them and staff. As shown by the comments below, senior management stress that they work very closely with the subsidiaries, and value their contributions.

It is important for people to get together and exchange information on different [market] segments. [DP; PC]

R&D and subsidiaries are involved right from the beginning. They all get involved in the process of product development right from the start, from the customer and back to the customer. [HP; PC]

Selling units are not at arm’s length from the business unit, they are working close together. [HP; PC]

These responses provide several examples that seem to demonstrate good communication between subsidiaries and the parent company. However, some senior managers’ comments seem to contradict the previous comments; an example is the view expressed by a parent-company product manager. He seemed to imply that as a product manager his skills in extracting knowledge from customers were superior to those of a salesperson:

I personally find gaining the knowledge from the clinical specialists is usually easy. However, subsidiaries' salespeople can be more of a problem, as they do not know how to act in front of customers. [AR; R&D]

It was not clear why he would suggest that a clinical specialist would share his knowledge more easily with a product manager than with a sales professional. He certainly did not give the impression that he worked closely with the subsidiary's sales professional. However, Callbor's sales force are trained professionals and usually spend considerably more time with a customer than a manager. They often build close customer relationships and relay the customers' needs to the organisation. Sales staff act on behalf of the customer, as well as the company. One would expect the sales staff to be able to gather valuable customer knowledge for the parent company.

For senior management, open and personal communication with the subsidiary and the parent company's middle management is expected to be a priority. However, email seems to be the major communication tool, unless they communicate with other senior managers. As a senior manager admitted:

Talking from manager to manager is easier. [JR; R&D]

On further inquiry, the same person replied:

Especially emails can cause problems in language communication. It is not always the best communication channel... Video conferencing is a good communication tool. The team uses it at least once a week. I only use it about once a month. Most of the times I do use email, and only occasionally will I pick up the phone to get clarification. [JR; R&D]

Despite the fact that management finds that emails can create communication problems, it is a preferred method of communication. Only occasionally are problems using emails clarified. He did not elucidate whether he only occasionally receives an ambiguous message, or whether he finds it difficult to communicate with his subordinates. Email is a common medium used in organisations, as it is a quick and task-orientated communication tool. Managers are often not concerned about relationship building; they prefer to choose a communication medium that limits ambiguity (Carlson & Zmud 1994; Daft & Lengel 1986). Another senior manager assured the interviewer that he was interested in the subsidiary's knowledge:

We do ask the selling unit. [RP; PC]

However, in his next sentence he contradicted himself:

I only communicate with the selling unit – sometimes – it is really very seldom. I mainly communicate with corporate. Sometimes I contact salespeople directly, but as I said, it is very seldom. [RP; PC]

When asked with whom, how and about what he communicates at subsidiary level, he continued:

I contacted them in regards of packaging before we changed our packaging to see what they prefer. My communication with the selling unit is via the parent company's manager journal. [RP; PC]

In other words, he does not communicate with the subsidiary directly. He talks to the manager within the parent company or the conglomerate. If at all, he contacts the subsidiary via the parent company's staff newsletter. When questioned about this contradiction in their perception, senior managers blamed the conglomerate:

Anyway, the guidelines come from Con-Glom; we just pass them on. [RP; PC]

Everything is decided by Con-Glom. They do have a big impact, even if each division is independent. [KP; PC]

Some senior managers were aware that it is not always easy for the subsidiary to communicate with the parent company. Senior managers seemed to distance themselves from the problem, abdicating personal responsibility and shifting the blame onto Con-Glom's directives.

Senior management comments on communication are inconsistent. Three stories emerged from interviews with senior management about their communication with the subsidiaries. The first is that senior managers have a positive two-way communication with the subsidiaries. When inquiring further, the second story contradicts the first: senior managers do not communicate closely with the subsidiaries, because they prefer to communicate with senior managers or with Con-Glom. When questioning senior management about the contradiction of their comments, the third story emerged: senior management denied all responsibility for their poor communication and blamed Con-Glom's processes. It could be argued that senior management's perception that they have a beneficial two-way communication with the subsidiaries prevents them from being aware of any communication difficulties the organisation might have. Further, their inability to take responsibility for addressing poor communication might lead to internal sticky knowledge. These arguments are further explored in the next section, when discussing the subsidiaries' perceptions.

Several researchers have explored the perception gap between parent companies and their subsidiaries. The parent company usually determines the strategic roles of its subsidiaries (Bartlett & Ghoshal 1989; Prahalad & Doz 1981). Often the parent company and subsidiaries might differ in their perceptions of those roles. When a subsidiary overestimates its importance, and demands higher autonomy, these perception differences might lead to tension and less cooperation from the subsidiary (Asakawa 2000; Birkinshaw et al. 2000). Asakawa (2000) compared the perception gap between the parent company and its subsidiary's R&D. Tension increased when R&D perceived that the parent company did not provide sufficient information for R&D to fulfil its expected role. Chini, Ambos and Wehle (2005) concluded that the parent company and the subsidiaries had different perceptions about how important specific information is. If information or knowledge is perceived to be of no value or not trustworthy, the absorptive capacity is reduced. Hence, Chini, Ambos & Wehle (2005) concluded that perception gaps might reduce the benefit of the knowledge that flows from the subsidiary to the parent company. While the research differs in focus, there is consensus that the parent company's perceptions can reduce the subsidiary's willingness and ability to collaborate. Further, the perception gap negatively affects interrelationships, leading to tension between the parent company and subsidiaries, which might lead to disillusionment and to reduced trust in the parent company's intentions.

Despite some research into perception gaps, it seems that the knowledge-management literature has not wholly explored the conflicting perception of communication quality between the parent company's senior management and subsidiaries' employees. Chini, Ambos and Wehle (2005) recommend further research into "which strategic environments bear a potential for perception gaps" (p. 151). This thesis explores whether and how knowledge is transferred from a subsidiary to the parent company and how barriers can result in sticky knowledge. One can argue that a pattern has emerged that might provide an answer to Ambos' question, "Which type of strategic environments bear a potential for perception gaps?" This is further explored when analysing the subsidiaries' perceptions of Callbor's structure and formal communication tools.

To summarise this section, this research suggests that the parent company finds knowledge transfer difficult to manage. Research into tacit knowledge transfer and

stickiness has provided a wealth of insight into the problems of transferring tacit knowledge within organisations (Hovland & Weiss 1951; Nelson & Winter 1982; Kogut & Zander 1992; Szulanski 1996). However, researchers agree that tacit knowledge provides a competitive advantage, as it is difficult to replicate (Lippman & Rumelt 1982; Kogut & Zander 1993; Teece, Pisano & Shuen 1997; Teece 1998). Senior management's mistrust of tacit knowledge might decrease the company's knowledge, while increasing causal ambiguity. In addition, company structure and culture, as set by the conglomerate, might influence senior management's communication style. However, while Callbor is required to follow the CBS, the system's implementation with its formal strategic tools is Callbor's responsibility. Ambiguity, lack of trust, ignorance, perceptions of the source as unreliable, as well as company structure and culture are all known characteristics of stickiness when transferring knowledge from the parent company to the subsidiary. This research confirms that the same stickiness characteristics apply in reverse. Finally, this research adds a further contribution with the finding that management's perception of their general communication style with the subsidiary might lead to sticky knowledge.

The following diagram 17 is the summary of possible stickiness characteristics in the theme "Senior management's perception of communication with the subsidiaries".

Diagram 17: Summary of the stickiness characteristics “Theme – Senior management’s perception of communication with the subsidiaries”

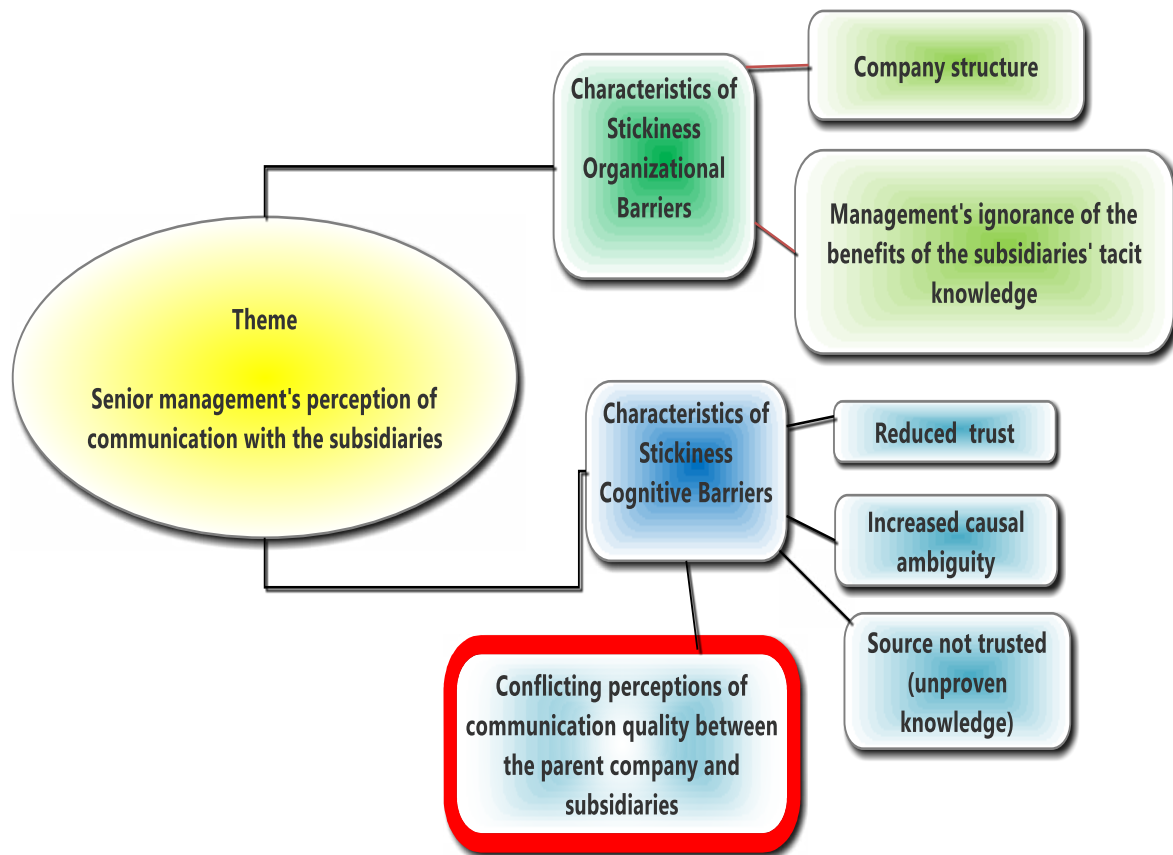


Diagram 17

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The shaded blue box with the red rim is a stickiness characteristic that has not been previously mentioned in this context.

Diagram 17

This analysis confirms that the known characteristics of stickiness, such as company culture, structure, and management's ignorance, as well as reduced trust and increased causal ambiguity are the same whether knowledge is transferred from the parent company to the subsidiary or the reverse.

The graded blue colour with a red rim highlights the conflicting perceptions of communication quality between the parent company and subsidiaries. The stickiness literature cites limited research exploring conflicting perception creating barriers when transferring knowledge from subsidiaries to the parent company.

2. Subsidiaries' perceptions of their communication with the parent company

This section analyses how the subsidiaries perceive the general communication with the parent company, as well as how their perception differs from the opinions of senior management. As mentioned in the previous section, the stickiness literature neglects perception differences between senior management and subsidiary staff. This segment is divided into two parts: Part A discusses the subsidiaries' perception that the parent company is not listening and does not seem to hear the employees, and Part B examines the claim that the parent company lacks transparency, and consequently that senior management's communication is not perceived to be clear and open.

a. The parent company is not listening

While senior management perceives that they have good two-way communication with the subsidiaries and that they value their knowledge, the subsidiaries' perception is the opposite. Senior management presented examples of positive two-way communication; however, these examples were not confirmed by the subsidiaries, or by the parent company's middle management. The majority of staff hold the perception that they are being told rather than having a two-way communication. A middle manager from the parent company's research and development department suggested:

I would change communication at grass-root level. Not just being told what to do, or saying that you have to do it this way... They need to explain why you have to do it that way. [CR; R&D]

Staff members feel that the parent company is not listening. This feeling was almost uniformly expressed by subsidiaries' staff members. The comments below were made by middle management of a subsidiary and a distributor from two different countries.

We get a product and are told to sell it. This is regardless if it fits our market or not.... They think if we do many demonstrations that we can sell, but if we do not have these customers, we have no one to demo to. [SN; Sub-5]

We have asked for it a few times in the last years, but never anything is happening. They do not hear us. [KD; Dist-4]

We have asked the company for at least 15 years to increase the size of the equipment wheels, as they are always being stuck in the elevator. It is difficult getting the equipment into the surgery. Our competition has nice big wheels and we have these stupid little ones. How difficult would it be to replace them with big wheels? They just do not listen to us. [CN; Sub-5]

One could argue that, by not listening to the subsidiary's staff, the company might not be listening to the customers, as usually the subsidiary staff conveys the “voice of the customer” to the parent company. Senior management is aware that the subsidiaries might perceive the communication differently to management. As the global sales manager remarked:

Subsidiaries are being listened to..., however they feel that we do not always listen to their reasons why they are not meeting targets or to specific problems they might have. [DP; PC]

The senior manager's comment seems to indicate that the subsidiaries have a false perception. Another interpretation could be that the parent company does not listen to excuses the subsidiary might bring forward. Two-way communication requires both sides to listen, as well as to keep everyone informed. However, according to the subsidiaries, this is not the practice. Lack of communication affects customer service. For example, products are repeatedly not available. Subsidiaries are not notified when the product will be available or why it is not available. A salesperson complained:

We have constant supply problems, and they do not keep us informed, despite us telling them that we need to know. It is difficult when you are at the front line. [SG; Sub-1]

A middle manager from the parent company confirmed that senior management is not listening when subsidiary reports faults with a product:

We have product problems; people complain... We should listen or hear the opinion of more people. We do not react quickly enough to take products off the market. [RR; R&D]

Not listening to their staff and ignoring product faults could negatively influence the company's future sales and market share. Further, the subsidiaries complain that they have no decision power. A number of staff members expressed comments similar to the one below:

Knowledge only goes one way despite the subsidiary understanding the markets better. No one at the parent company ever asks me to have a look at the product; no one wants to know what I think. We would have valuable knowledge, but they are not interested. [PH; Sub-5]

Listening to the subsidiaries' discussion about the lack of positive two-way communication between parent company and the subsidiaries, the researcher sensed frustration, disappointment and/or resignation in their voices. While they never mentioned that it would reduce their work performance, the literature identifies lack of

motivation as barrier to knowledge transfer (Adrichvilli, Page & Wentling 2003; Silmsen, Roth & Balasubramanian 2008; Gegenfurtner 2011).

While the parent company does not seem to listen to the subsidiaries, there are exceptions: it seems to listen to the staff and customers in Japan and China, where it considers there to be the highest potential market growth, and thus where most of its market and product research is conducted. As a manager from China commented:

Everyone in the company is listening to China. We are such a big and growing market. It has not always been like this, but now they can see the potential growth. [MG; Sub1]

While the manager from China made his comment proudly, the majority of subsidiaries felt that the parent company should consult and listen to all countries to ensure that R&D product development decisions are based on broader customer knowledge. As a middle manager remarked:

I think that the company focuses too much on one or two countries. They should be listening to all voices, pool it, and see what comes out. [CN; Sub-5]

Further, subsidiaries felt that the parent company listening to countries which they consider to have communication issues would limit the company's product development. Comments like this were repeatedly made by the subsidiaries:

The Asians never say a word. It is against their culture. The people who never speak up are used for market feedback to build the next product. How can you find the truth if all you get is head nodding? Japan is bad in communicating with their customers. The surgeon is seen as an authority person and cannot be contradicted. They are not able to stand their ground and explain a product well. Again, the company builds their future products on the knowledge of these people. People who are not capable of talking freely to their customers. [CN; Sub-5]

Concerns that culture might create communication issues were confirmed by senior management:

Japan has a very small communication channel. Only the marketing manager speaks English, which makes it quite restricted. A lot of information is getting lost, as it is difficult to get to the end user. The culture is very much built on respect. To build a relationship one has to follow a very complicated process.... The information flow back to us is usually via the dealer and it is a long flow back, as customers can usually not be contacted directly.... By the time, it reaches you, it is quite filtered. [RR; R&D]

These quotes support the subsidiaries' perception that senior management is not listening to the majority of their subsidiaries, and consequently that the parent company is not listening to the customers. Further, the employees feel that if the company only listens to a couple of selected subsidiaries, the knowledge from those subsidiaries might be filtered and incomplete due to language and culture barriers.

Subsidiaries' concerns that product development is based on too limited market research might have merits. While the advantages of product standardisation have been well documented (Jain 1989; Davison 1983; Freeman 1995), Wells and Gubar (1996) pointed out that a problem can arise if the sample of market research is too small and the information too narrow. Conversely, they found that a too large collection of knowledge could also be a problem. On the other hand, Andersson, Bjokman and Forsgen (2005) emphasised that subsidiaries have varying importance to multinational companies. If Andersson, Bjokman and Forsgen are right, one can argue that the company is following the best market research policy for product development.

Subsidiaries' concern that the parent company is only listening to subsidiaries whose knowledge might be filtered and incomplete due to language and culture barriers is supported by some researchers. Johanson and Vahlne, (1977) and Rosenbloom and Larsen (2003) claimed that "psychic distance", which results from differences in country culture, language, business practice, and local customs and practices, can have a negative effect on knowledge transfer. However, the majority of researchers found that administrative distance had a greater negative effect on knowledge transfer than geographical distance. Limited language skills are known to create barriers (Harzing 2002; Harzing & Feely 2004, 2008, 2009, 2002). This is magnified if the customer's knowledge is passed along a chain of people until it reaches the person who has to transfer that knowledge to the parent company. At each stage of the knowledge transfer, the information needs to be encoded by the sender and decoded by the receiver. Each person might interpret and absorb the knowledge differently (Harzing & Feely 2004; Harzing 2002). Success in transferring knowledge depends on how well the receiver can absorb the knowledge. (Cohen & Levinthal 1990; Zahra & George 2002; Abreu 2007). This is not to say that Japanese market research might not be superior to large-scale western market surveys. Indeed, Johansson and Nonaka (1987) argued that "the Japanese have a sense of knowing their customers' needs". If Johansson and Nonaka are correct, then their claim supports the argument

that the company is wise to listen to China and Japan. Nevertheless, conflict can arise between parent and subsidiaries due to different viewpoints (Das 1987; Nowakowski 1982; Reynolds 1978; Sim 1977).

In this case study, it appears that the subsidiaries' complaint might not be that product development is being compromised by only asking China and Japan to contribute. Rather, they are disappointed that not all are permitted to contribute to product development. They feel that not all voices are being heard. Further, they believe that not only their knowledge, but that of their customers, is not valued by the parent company. Pozin (2012) wrote on his blog that people who do not feel valued lose motivation and passion, resulting in high staff turnover and reduced productivity. Lack of motivation can influence the employee's desire or willingness to transfer tacit knowledge (Martín-Cruz, Martín Pérez & Cantero 2009).

b. The parent company is not transparent

The previous section discussed the subsidiaries' perception that the parent company does not listen. Not being heard can evoke feelings of frustration, desolation and resentment. Further, employees feel that they are not valued. These feelings can lead to lack of motivation to transfer knowledge. This section discusses the subsidiaries' perception that the parent company is not transparent. Transparency can be defined as how easily actions that are performed can be seen. Transparency is used in different settings. For example, the word might be used in the context of countering corruption or to provide clear understandings of government policies (Ball 2009). In this thesis, transparency relates to two definitions cited in the Webster's College Dictionary: "easily understood; manifest; obvious", as well as "candid; frank; open". The business literature defines transparency as messages by leaders that are honest and clear, with no hidden agendas, and further, that exchange of information and communication is open and honest (Covey 1992). This thesis uses the definition for transparency as described in the business literature.

During the interviews, employees of the parent company as well as the staff of the subsidiaries expressed their dissatisfaction about lack of transparency regarding the company's procedures and intent. Comments like this were expressed in various ways:

The company needs to understand the importance to pass on information. We need more transparency that is honest. Senior Manager DP understands the importance and provides confidential information, he trusts us. This trust factor needs to be developed and extended by all the managers. That trust needs to go through the subsidiaries and everyone within. [CN; Sub-5]

Transparency and trust are often mentioned within the same conversation, sometimes even the same sentence. The literature on barriers to knowledge transfer says that trust has a major impact on knowledge transfer; this will be discussed in more detail in the next chapter. The lack of transparency was felt throughout the company by the majority of staff members, who made comments like these:

The parent company needs to understand the importance to pass on information honestly. We need more transparency. [SG; Sub-1]

I would improve the communication. Within the company, it is difficult to know what they are doing, there is no transparency. [JM; Dist-7]

Staff likes management to clearly communicate the reasons behind processes. They like to understand why what they are doing is important, and the effect it has on the company. Subsidiary staff would repeatedly say:

We do not know why we are doing what we are doing. Do not understand the idea behind the process ... I like to see communication regarding all the changes. Communication at grass-root level and not just, "You have to do it this way". Explain why you have to do it that way. [CR; Sub-3]

One senior manager felt that transparency had improved:

We have improved personal communication with the subsidiaries. It is better than as it used to be in the past, and we have more transparency. [HP; PC]

However, a minute later he continued:

Subsidiaries do not have visibility of the OP [operation cost]. They have transfer prices because of local tax systems. If the subsidiary would know the manufacturing cost, then we would have arguments about bigger discounts. The way we operate is the best way to operate, but it does create tension. [HP; PC]

The senior manager assumes that the subsidiaries cannot be trusted with knowing manufacturing costs. Providing explanations to the subsidiary might ease communication tension, and might not, in fact, result in the demand for discounts. Anecdotal evidence suggests that not being aware of product manufacturing or landing cost might restrict negotiation processes with customers. Further, senior management's lack of trust can be seen as a lack of respect towards their subsidiary.

Senior managers do not seem to understand that transparency might overcome tension between subsidiaries and the parent company, and would allow the subsidiary to be more successful in expanding the business. However, some senior managers understood that transparency is important and felt that it should be upheld throughout the company:

Misunderstandings? We have many discussions, and many misunderstandings! Everyone has to understand the market; it is no good if just one side has the understanding. We have business units, operation units, and subsidiaries. Unless everyone understands the company's goals and understands what everyone contributes, we have a problem. Company goals need to be clear to everyone. Clear communication allows us to strive towards the company's goals and not the individual goals. We have to understand what everyone does. You need to be able to put yourself in the other one's shoes. Understand the common goals and march in the same direction. The daily management should be left to each subsidiary. [OR; R&D]

Another senior manager explained:

I have found that if we talk openly to people and involve them in the design then there is not a different demand between the different countries. [RP; PC]

The 2010 Deloitte LLP Ethics and Workplace Survey found that lack of trust and transparency was the highest reason quoted for staff turnover. Sixty-five percent of workers did not trust the company, and 48% found that management communication lacked transparency. Ninety-two percent of management agreed that transparent communication is the most important requirement to gain workers trust and 83% agreed that it is the responsibility of the board to build employees' trust. The survey concluded that management needs to make it a priority to build a transparent culture that gains employees' trust. Transparency and trust are considered to be of greatest importance for the success of a company (Bennis 1989; Drucker 1992; Kochan 2003; Williams 2005; Bandsuch, Pate & Thies 2008).

Transparency has been described in leadership literature as a high priority in motivating employees (Richter & Vettel 1995; Lyles & Salk 1996; Larsson et al. 1998; Albino et al. 1999; Matson, Dyer & Nobeoka 2000; Subramaniam & Venkatraman 2001; Patiath & Shavers 2003). While Komai, Stegman and Hermalin (2002) advised that there are circumstances where centralised information is of benefit, the reasons for the decisions to keep specific information contained within head office need to be explained in a transparent manner by management. If the employees find that their

superiors' demands are fair, they would be more likely to accept decisions and trust management (Martin, Giacomine & Singer 2002). A transparent organisational culture that encourages cooperation and collaboration furthers knowledge transfer. However, lack of transparency and lack of trust create barriers to knowledge transfer (Bartlett, Ghoshal & Birkinshaw 2004; Nonaka & Takeuchi 1995; Krogh & Ross 1996). Subsidiaries' knowledge has the potential to benefit the cooperation, and it should be used throughout the company. While Birkinshaw and Hood (1998) accepted that subsidiaries might have different roles and responsibilities, they warned that if subsidiaries' knowledge and capabilities are not fully used, it can lead to inactivity and eventually withdrawal of the subsidiary, which decreases the value of the parent company.

The analysis found that the senior management of the parent company and the staffs of the subsidiaries had different perceptions regarding two-way communication processes. While senior management's impression was that the parent company has beneficial two-way communication and that the subsidiaries participate in decision-making, the subsidiaries perceived that there is a lack of two-way communication. They felt that their voices are not valued by senior management, and that they are "told what to do" rather than being involved in decision-making. While senior management assumed that the employees understood the company's goals, the subsidiaries complained that Callbor does not clearly explain the company's objectives, and the "idea behind" those objectives, or why they are important. Callbor's lack of transparency and failure to listen to the employees affects customer service and creates frustration, desolation and resentment in employees. The perception-conflict phenomenon does not seem to have been addressed in the vast knowledge-management literature. However, there is some research into how the parent company perceives the subsidiaries' role.

One could argue that employees' perceptions need to be carefully managed when implementing knowledge-transfer strategies. In a study not related to knowledge management, Clarke (2007) recommended that employees' perceptions should be taken into account when designing a redundancy strategy. The same considerations might be applied when trying to minimise tacit knowledge stickiness. Moorman found (1991) that employees' perceptions influenced their feelings towards work; for example, if employees felt that management treated them fairly, employees had a

more positive attitude towards their work, which was reflected in their work outcomes. Equity theory argues that perceptions can have a negative or positive impact on job performance and personal relationships. An important implication of perception differences is that they influence trust and relationships (Adams 1965; Greenberger & Strasser 1986; Greenberg 1988a, 1989; Backhaus 2003). The two aspects are known influences on the willingness to share tacit knowledge. Trust is a recurring pattern that first emerged in communications at the lowest intimacy level (Chapter 6); it gains importance in this chapter on mid-level intimacy. Moreover, the role of trust is gaining increased importance; it will be further discussed in Chapter 8, which concerns the highest intimacy level.

Senior management might not know that there is a conflicting perception of communication quality between the parent company and the subsidiaries; instead, they might be convinced that Callbor has a positive two-way communication with its subsidiaries. Alternatively, the perceptions of the senior manager's subsidiaries might be built on how the communication is conducted in reality. In other words, senior management might be deluding themselves. The company culture inhibits the creation of a transparent, trusting environment that motivates employees to transfer knowledge.

Senior management's reluctance to listen to all the subsidiaries and the company's lack of transparency suggest an organisational culture or subculture where management seems to be detached from the feelings and needs of their employees. Company culture affects trust, motivation and willingness to transfer knowledge. Company culture or subculture can reduce or increase stickiness; this is discussed further in Chapter 8.

The following diagram 18 is the summary of possible stickiness characteristics in the theme "The subsidiaries' perception of communication with the parent company senior managers"

Diagram 18: Summary of the stickiness characteristics “Theme - The subsidiaries' Perception”

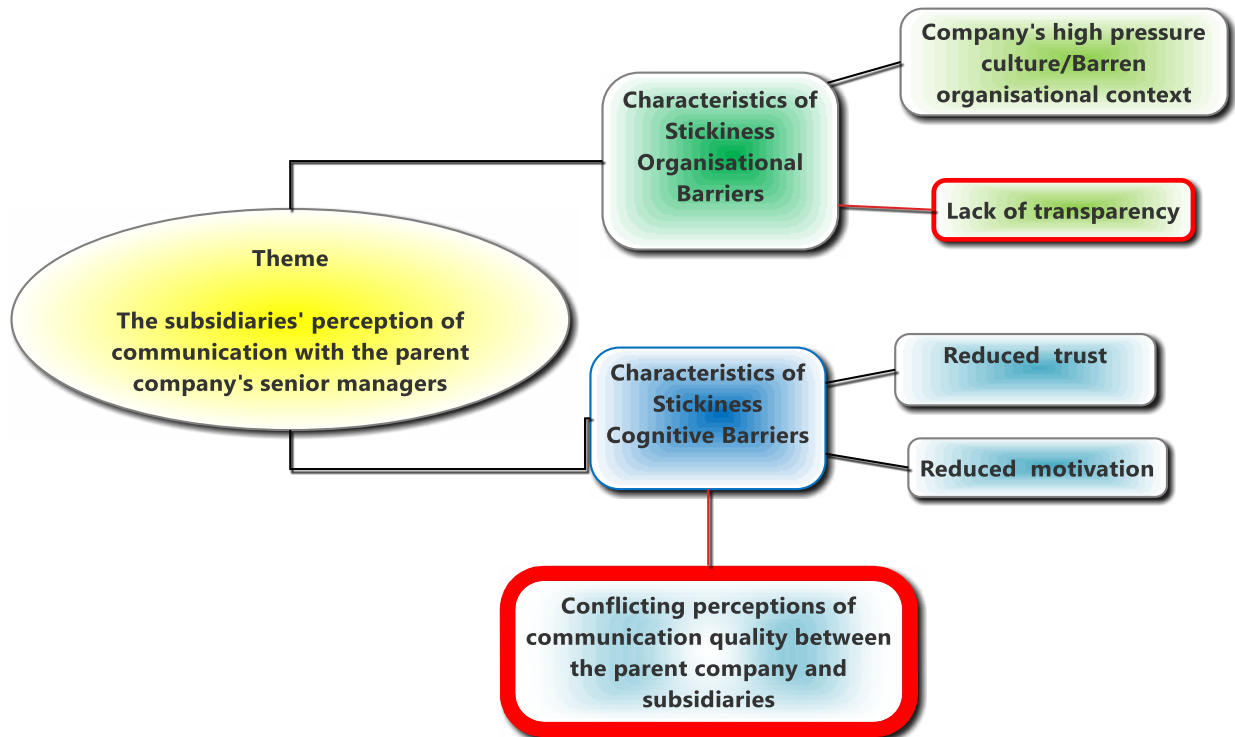


Diagram 18

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The green boxes with a red border indicate topics on which limited literature is available

The shaded blue box with a red border is a stickiness characteristic that has not previously been mentioned in this context.

Diagram 18

The literature has explored the perception gap around the subsidiary’s role. This research broadens the understanding of perception differences between the parent company and the subsidiary. The Conflicting perceptions of communication quality between the parent company and subsidiaries between senior management and employees seems to be due to a strategic environment and culture that do not encourage transparency and positive two-way communication. **The impact of lack of transparency on stickiness does not seem to have been discussed much in the literature. One could consider it to be part of the organisational culture, but as it seems such an important factor, it should be mentioned separately. Further, due to the conflicts in perceptions about communication quality, subsidiaries lose motivation and trust and are less likely to transfer their knowledge to the parent company.**

3. Poor knowledge transfer environment

The previous section discussed the importance for organisations of creating a work environment that positively encourages knowledge transfer from the subsidiary to the parent company.

Senior management needs to realise the value of tacit knowledge; as well, they need to be aware where within the organisation the knowledge might reside. Explicit knowledge is as important as tacit knowledge, and both need to be harvested, stored, exchanged, and built upon (Li, Roberts, Yan & Tan 2014). Tacit knowledge is embedded within individuals and not easily accessible (Kogut & Zander 1992, 1993, 1995; Leonard-Barton 1992; Brewster et al. 2014). Codifying tacit knowledge is not a simple matter, even in the best of circumstances. However, there is value in making it easily accessible to every employee. Codifying a large part of employees' and customers' tacit knowledge provides the platform to share and gain knowledge, as well as to create new knowledge for the company (O'Dell & Grayson 1998). Interviews revealed that staff prefer to transfer their knowledge verbally. The first assumption might be that subsidiary staff members do not trust committing their ideas and knowledge in writing, for fear of being held accountable. However, only one distributor mentioned this perception. The assumption that staff are fearful of transferring knowledge in a written format could not be confirmed.

Interviews revealed that staff prefer to transfer their knowledge verbally. The first assumption might be that subsidiary staff members do not trust committing their ideas and knowledge in writing, for fear of being held accountable. However, only one distributor mentioned this perception. The assumption that staff are fearful of transferring knowledge in a written format could not be confirmed.

Much evidence emerged confirming that employees prefer oral knowledge transfer. There seems to be no clear definition when senior management or employees talk about "process", "system" or "database". Therefore, there are misunderstandings or misinterpretations; what one person might understand as a process, others might call a database and vice versa. The following quotes demonstrate the confusion: senior managers claimed that the company has sophisticated processes and databases, and that staff refused to use them:

We have two systems in place, but despite us repeatedly telling people, “Look, you have the system – here it is – and you should use it”, nobody ever does. [OR; R&D]

He provided explanations for why he thinks that the software is not used:

I think that the software is too complicated. Or they do not want to use the computer, as they prefer to tell someone. [OR; R&D]

However, comments from the subsidiaries' employees revealed in a different perception. Subsidiaries' employees and the parent company's middle manager insisted that there is no appropriate software, and no process in place:

We have no official process we can follow and provide feedback. There is software for complaints if there is a non-compliance problem with a product. It is a FDA requirement.... I am not aware of any other software. [SN; Sub-5]

A general manager from a subsidiary commented:

I always talk to the parent company's global sales manager. I am not aware of any clear process that collects customer feedback or any knowledge we might have. There is only a process when they conduct a specific market research. [GS; Sub-5]

He continued:

When we tell the global sales manager something, we have to rely on him to take it back to the parent company. [GS; Sub-5]

These two perceptions could be due to senior management being under the impression that adequate processes and databases are in place, but the staff refuse to use what is available, or might find the software is not user-friendly. Alternatively, the processes and databases may not be what the employees might consider appropriate. Another explanation could be that staff is not aware of a database. The following quotes explore the reasons for oral rather than documented knowledge transfer. A parent company's product manager explained that processes exist; however, they are not well maintained and are unknown, and their benefits are not explained to employees:

We have many processes, but many are not fully maintained and they suffer. Often the process is unknown ... we should encourage people to use good processes. We need to explain the reason for the process and its benefits. [LR; R&D]

He suggested using encouragement or extrinsic rewards for employees to use existing systems:

We should reward people to start using them, for example, have little competitions. We should try anything that might encourage people wanting to use the process. [LR; R&D]

He explained that a general complaint process exists, but it is not used, as no one is responsible for the process:

No-one drives the process; people forget that the process exists. ... No-one gives clear instructions what to do with these tools. [LR; R&D]

The lack of a well-defined process or database to capture subsidiary and customer knowledge was a concern to the parent company's quality and after-sales service manager:

Our after-sales service is a horror story. It is too fragmented! Customers do not even get a complaint number that would help us to track the product and the problem. [LR; R&D]

He also said that they have no process in place to handle product failures.

Product and customer problems are not being recorded, and a returned product is difficult to track:

We have no database to log problems and solutions, no troubleshooting database. [LR; R&D]

One would assume that the lack of a database reduces productivity, as employees search for the returned products and spend time solving problems that had been solved in the past. Any tacit knowledge is lost when employees leave the company, as it is not captured and recorded as explicit knowledge:

If a service person leaves the company, then the new person cannot just press a button and get all the previous problems and answers. [LR; R&D]

While everyone agreed that something needs to be done, according to middle management from the parent company, several kaizens had failed:

We have had kaizens about it, but it has made no difference. [LR; R&D]

Ironically, he added:

If we have nothing in the computer, it looks good. Without a system, we have no problems. [LR; R&D]

Despite kaizen to deal with broken processes or implement new processes, the tool has not been able to create a process to capture and/or store knowledge. Further, the parent company's middle manager indicated that senior management might not be

interested in providing a database for political reasons. Beer, Russell and Eisenstat (2000) found that implementing company strategy often fails as managers might try to avoid potential embarrassment by hiding unpleasant facts or situations.

Furthermore, time pressure seems to be an additional factor making staff prefer verbal knowledge transfer. Writing takes time, and staff felt that they were under constant performance pressure. A subsidiary middle manager said:

Take some pressure off the sales staff and me. Every year we are asked for more and more and the pressure gets worse and worse. People should be able to enjoy their work. It is better for their morale and company loyalty. Sometimes I cannot sleep. On average, I work 12 hours per day, I travel a lot and do not get any time to relax. It is too much for the sales staff and me. Everyone is busy, busy, and busy and has no time to pass on valuable knowledge. [SG; Sub-1]

His comment indicates that time pressure reduces any form of knowledge transfer. The previous section suggested that subsidiaries perceive senior management to not value their knowledge; hence, one could argue that employees might feel that they are wasting time if they transfer their knowledge in writing. Nevertheless, when a senior manager showed personal interest in the knowledge of an employee, this subsidiary staff member, for the first time, was willing to share his knowledge in writing. During a company dinner, a subsidiary employee was conversing with a parent company's senior manager. The employee recalled with excitement in his voice:

I never put my requests in writing, but I am writing a long email now. Senior manager M. from the parent company asked me over dinner to tell him about our market. He is interested in what I thought about the products and what we need. [CN; Sub-5]

The perception that the senior manager seemed to value his opinion energised and motivated the account manager to share his market and product knowledge. Employees' feeling that they contribute to the organisation creates satisfaction and belonging; employees feel valued (Shaffer et al.1996). Table 14 summarises the possible reasons why employees prefer oral knowledge transfer.

Table 14: Possible reasons for oral rather than documented knowledge transfer

- Confusion about what is considered to be a process, system or database
- Confusion about whether a system/process or database exists
- No official process and/or database in place
- Software is not user-friendly
- Employees are not aware of a system or process
- Systems or processes are not well maintained
- Employees are not encouraged or rewarded to use a system or process
- There are no clear instructions how to use a system
- No benefits are explained
- No person takes responsibility for a system and/or process
- Employees forget to use the system
- There is no after-service database
- Senior management might try to avoid embarrassment
- Time constraints limit the opportunity to transfer knowledge
- Employees feel that their knowledge is not being valued
- It is more difficult to pin blame on someone if something goes wrong

There are several possible reasons why employees prefer oral knowledge transfer. In some circumstances, Melnik and Maurer (2004) argue, oral knowledge transfer is more effective when the knowledge is complex and needs cognitive interpretation. Further, oral tacit knowledge transferred in an informal setting, for example in a conversation, is important and valuable. However, the company should be aware that oral knowledge transfer has limitations and that valuable knowledge might be lost if knowledge is not captured and stored (Kimble 2013). The evidence from the quotes supports the idea that the lack of an adequate database and/or knowledge-capturing system or process causes knowledge stickiness in this organisation. Further, one can conclude that senior management does not seem to be aware of the reasons why employees have limited opportunities to transfer their knowledge. Another reason could be that the parent company is not prepared to invest financially to implement a knowledge-capturing system. As one parent company employee sarcastically commented, there would be no immediate financial gain associated with such a system:

We do not need it, as there is no straightaway revenue attached. [LR; R&D]

A short-term investment to create a workable database could create long-term benefits and increase profit for the company, although it appears unlikely that the company would commit to such a system.

It is important for the company to capture the subsidiaries' tacit knowledge and for the organisation to codify and store this knowledge. Callbor focuses on explicit knowledge, such as spreadsheets, over tacit knowledge. One could argue that kaizen uses tacit knowledge to solve problems; however, it does not codify any new knowledge that might have been created during a successful kaizen. Codified knowledge is less sticky and easier to transfer, although that does not imply that tacit knowledge is of less value to organisations (Johnson, Lorenz & Lundvall 2002). Polanyi first discussed the differences between explicit and tacit knowledge in 1958, and concluded in 1966 that explicit and tacit knowledge were not divided; they were part of total knowledge. Further, he claimed, tacit knowledge is required to interpret explicit knowledge.

Researchers have argued that codified knowledge can be transferred globally, while tacit knowledge can only be transferred locally, as it needs to be transferred from person to person (Asheim 1999; Gertler 2003). In contrast to this, R&D departments use customers' tacit knowledge and accumulate codified knowledge. By brainstorming, discussing all aspects of the accumulated knowledge and further codifying new gained knowledge, R&D creates new products (Nonaka & Takeuchi 1995; Lawson & Lorenz 1999; Bathelt, Malmberg & Maskell 2004). Chapter 8 will discuss in depth the transfer of tacit knowledge within the R&D department.

Codifying tacit knowledge, which is inherently sticky (Szulanski 1995), might be challenging, though it is not impossible to capture a large part of tacit knowledge if knowledge-capturing systems, such as databases, are in place. Staff exchange knowledge on a daily basis in organisations by talking to each other, exchanging ideas, learning from each other and reading information distributed throughout the company. How this information is absorbed will differ from person to person, depending on their rate of learning, but new knowledge will be formed. Some of this newly formed knowledge, a combination of explicit and tacit knowledge, could be entered into a database or knowledge-capturing system (Howells 2001).

As early as 1998 Davenport and Klahr stressed the point that knowledge-capturing technology improves customer support and that high customer support increases profits. However, Callbor's technical service department does not have a database to capture product faults. Nor can they search a system for previous solutions. However, empirical studies have shown that companies benefit if some of the tacit knowledge within the company is captured in a codified system. Below are examples where the transfer of tacit knowledge, despite distance, was made less sticky and was largely codified.

Zack (1999) advocates the importance of “appropriately explicating tacit knowledge so it can be efficiently and meaningfully shared and reapplied, especially outside the originating community” (p. 47). He explored how two global companies captured and codified tacit knowledge and shared this knowledge within the organisation. The companies implemented a cost-effective system by taking advantage of technology such as databases. They made the system easy to operate. To make tacit knowledge explicit might result in losing some of the context, hence management must decide when to leave “when to leave inarticulable knowledge in its "native" form, respecting both the inherent strengths and limits of tacit know-ledge” p.47) The companies captured explicit knowledge, views and “know-how” from all employees and customers. Implementing such systems needs organisational and social interventions as much as technical ones. These companies understood that the organisation had to have a culture and a structure to support their knowledge-management strategy. With management’s commitment to the system, sharing tacit knowledge and converting the knowledge and experiences as much as possible into explicit knowledge became a habit and practice for every employee and provided true competitive advantage, which could not be copied.

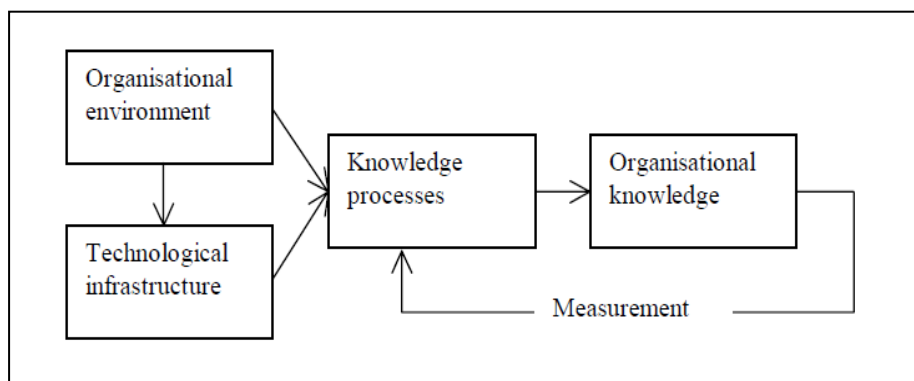
Another company successfully implemented a system to encourage employees to transfer their tacit knowledge (Koudsi 2000), called the Intellectual Assets Network. It consisted of a database that contained every employee’s expertise and contacts, projects worked at and how they were managed and how problems had been solved. The software allowed posting questions and requests for solving problems. For the process to work, the company employed one person to be responsible for its operation and to manage the database. The person ensured that it was not being clogged with outdated information, information was consistent and the software was user-friendly.

To encourage employees to use the system, the company paid a quarterly bonus based on employees' contributions. Employees contributed to and accepted the database when they experienced the benefits of the process. Referring to the previous interview section, employees had suggested that senior management should adopt policies as described in the above examples. However, Callbor lacks a system that captures or stores tacit knowledge. Their culture and structure does not support a knowledge-transfer strategy.

For employees to transfer their knowledge, the majority of employees need encouragement and rewards from both the company as a whole and their managers (Droege & Hoobler 2003). Szulanski (1996, 2003, 2006) classifies “barren organisational context” as one of the main reason for stickiness. Barren organisational context refers to a difficult company environment for knowledge transfer; e.g., where structure, management attitude, company culture or strategy do not encourage tacit knowledge transfer within the organisation (Burgelman 1983; Ghoshal & Barlett 1994).

The knowledge-management literature and the literature on barriers to knowledge transfer have discussed the importance for parent companies to manage knowledge transfer by implementing knowledge structures and strategies (e.g. Hedlund 1986; Bartlett & Ghoshal 1986, 1989, 2002; Birkinshaw 1996; Gupta & Govindarajan 1991, 2000; Holm & Pedersen 2000a; Foss & Pedersen 2003). Diagram 19 illustrates Oliver, Handzic and Toorn’s (2003) model of the management of knowledge processes within an organisation.

Diagram 19: Model by Oliver, Handzic and Toorn (2003) of overcoming barriers to knowledge transfer



Adapted from Handzic (2001).

Diagram 19 illustrates that overcoming barriers to knowledge transfer requires an organisational environment with a culture and leadership that encourages knowledge transfer; technical infrastructure such as databases and repositories that underpin knowledge processes; and a feedback loop where the success of the knowledge transfer can be assessed in ways that can be used to improve knowledge processes.

The lack of a knowledge-capturing database or system is surprising in an organisation driven by formal processes and lean philosophy. However, it is in line with the findings by O'Dell and Grayson (1998) that highly result-driven strategies might discourage knowledge sharing. Hence, the company's CBS might exacerbate stickiness.

The results of the current study show evidence that the organisation lacks processes or platforms to effectively harvest, store, share and codify subsidiaries' tacit knowledge, customer knowledge or the tacit knowledge residing within the parent company. The company's structure and CBS do not include a database to capture tacit knowledge. The company culture seems not to be committed to knowledge transfer; specifically, it does not reward or encourage the codification of tacit knowledge transfer. A deficiency in knowledge-management strategy creates stickiness that hinders the transfer of tacit knowledge from subsidiary to parent company.

The following diagram 20 is the summary of possible stickiness characteristics in the theme "Poor knowledge transfer environment".

Diagram 20: Summary of the stickiness characteristics “Theme - Poor knowledge transfer environment”.

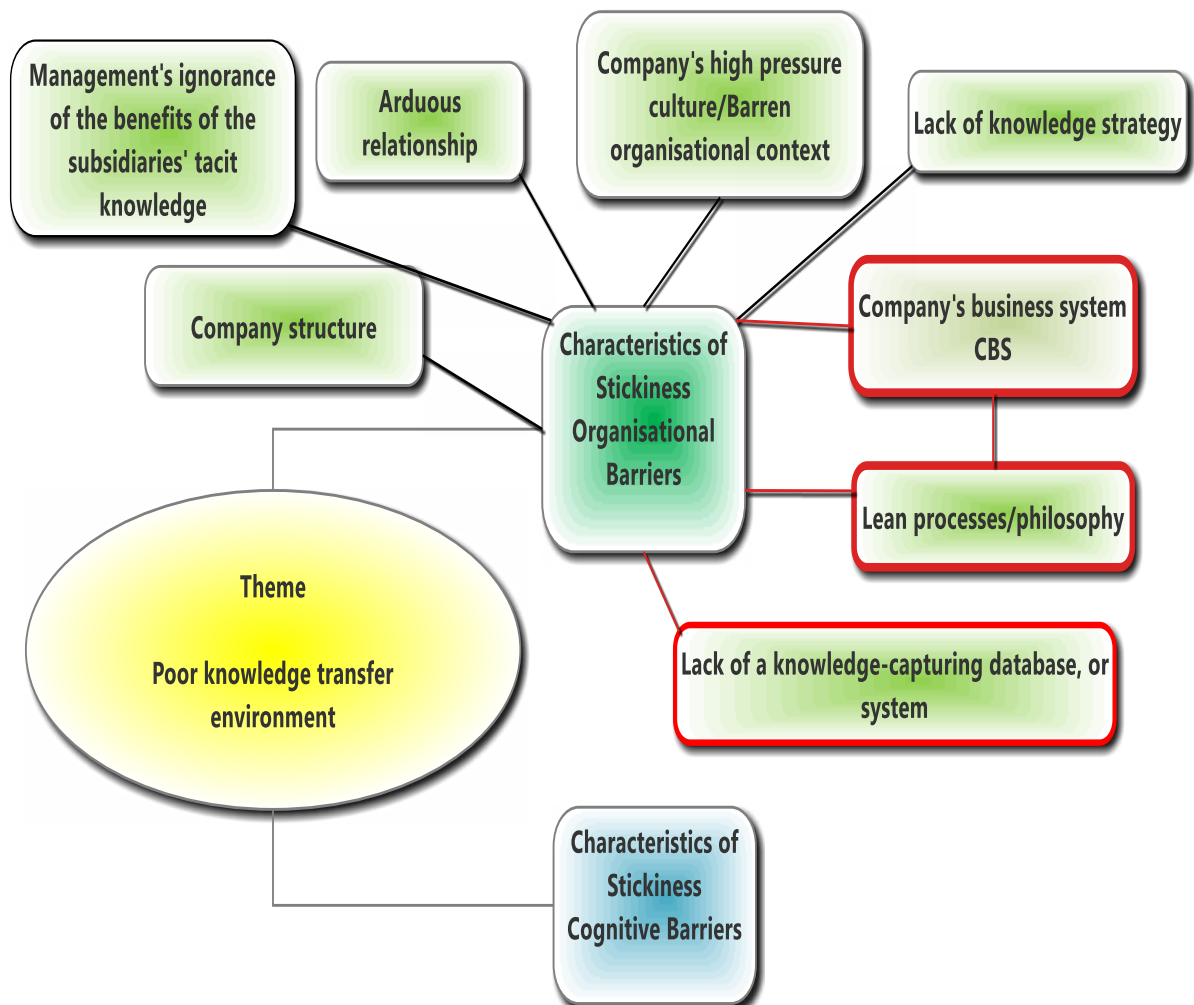


Diagram 20

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The green boxes with a red border indicate topics on which limited literature is available.

Diagram 20

Callbor's structure lacks a database or a system that adequately captures employees' knowledge. The company does not seem to have a knowledge strategy, nor does the culture support an environment that sufficiently captures employees' and customers' knowledge. Their CBS with its lean philosophy might exacerbate stickiness. Knowledge, unless it can be codified, might be lost and is of limited value. Hence, Callbor's long-term competitiveness might be compromised.

7. Senior management does not support knowledge transfer

The previous section discussed how the lack of knowledge-capturing systems and inadequate processes, as well as a lack of knowledge strategy, result in sticky knowledge transfer. O'Dell and Grayson (1998) stressed that managing knowledge successfully means that “companies must create an environment where the four enablers of information technologies, culture, measurement systems, and organizational infrastructure, are supportive” (p. 21). However, knowledge transfer is difficult and becomes sticky without the support of senior management (Burgelman 1983; Ghoshal & Barlett 1994; Szulanski 2003). This section expands on the lack of senior management support and/or understanding of the value of tacit knowledge. It broadens the analysis into loss of tacit knowledge, if knowledge is not being captured or being filtered, as well as knowledge loss when employees leave the organisation.

The section is divided into two sections. The first will discuss the finding that knowledge transfer seems to rely on one person, and the possible knowledge loss and consequences for knowledge transfer if this person leaves the company. The second discusses knowledge loss due to the company's high staff turnover. The analysis will discuss stickiness by using evidence from the literature about the wider implications of staff turnover.

a. Knowledge transfer seems to rely on one person

The following quotes reveal that the company relies largely on one senior manager to collect knowledge from the Asia-Pacific subsidiaries. It became apparent that subsidiary and distributor staff find it easier to entrust their knowledge to one specific person. This senior manager is responsible for collecting and transfers that knowledge to the parent company. Staff from the subsidiaries repeatedly mentioned that the main contact with the parent company is via the parent company's Asia-Pacific marketing manager. As a subsidiary country manager explained:

Most of our communication is with senior manager DP, the marketing manager for A/P [the Asia-Pacific subsidiaries]. He is our voice and transfers our knowledge to the service department, logistics, sales or whoever needs the information. [WN; Sub-2]

The Asia-Pacific senior manager confirmed:

I talk to customers, sales managers, and local product managers. I gather information from tenders.... I am the person gathering all the information for the parent-company meetings, where all the information is discussed, as well as deciding which project has priority. [DP; PC]

The subsidiary staff felt comfortable communicating with the Asia-Pacific senior manager and fully trusted him to convey their knowledge to the appropriate person(s) within the parent company. In the context of how knowledge moves through the company, one subsidiary manager noted that he trusted and saw this senior manager as a good friend, and therefore he was open in the amount and quality of knowledge he gave him. This trusted person visited the region every couple of months. The subsidiaries transferred their knowledge verbally and they received immediate feedback. He had a personal and positive relationship with the employees of the subsidiaries and distributors. While anyone could contact him, he mainly conversed with the various managers, such as country managers, or sales and marketing managers. The knowledge from customers was passed from the salesperson to the sales manager or marketing manager, who in turn passed the knowledge to the country manager; the technical staff followed the same procedures. The Asia-Pacific senior manager relayed the marketing and customer knowledge from the subsidiaries/distributors to the parent company. It is surprising that a highly process-driven company would rely on a single person to verbally gather organisational valuable knowledge from a vast area like the Asia-Pacific.

This one highly trusted and knowledgeable person left six months after the interview. Apparently, this senior manager was frustrated by the company's culture. He is now employed by a smaller Asian company. Since the interviews took place, several managers in subsidiaries and the parent company have left the company, despite high remuneration. Their reasons were disillusionment with the company's culture as well as the constant pressure of the Callbor's CBS, with its unrealistic demands and poorly designed KPIs.

The organisation depends on a single person to gather market and customer knowledge from all subsidiaries and distributors of the Asia-Pacific, including Japan. There is a high risk that it would be physically difficult for one person to absorb all the knowledge that is being transmitted verbally. The person would not fully understand

many implications for the network; hence he might misinterpret some of the knowledge he is meant to pass on. One could argue that the knowledge he accumulates from the subsidiaries becomes sticky and difficult to transfer to the parent company. Further, it is impossible to assess how much of this knowledge might have been filtered by that person's limited viewpoint or misinterpretation, or lost due to absorption overload. Filters are mentioned in the communication-technologies literature and might have a positive effect, as when ensuring that only so-called relevant knowledge is entered into companies' databases (O'Leary 1998; Mertins, Heisig & Vorbeck 2003; Maier 2004). Andrews and Delahaye (2000) discuss psychological filters, where the sender decides how much knowledge they are willing to transfer, in what manner, and to whom.

One could argue that the company has the VoC process to collect customer information to guide product innovation. However, that process is only conducted in selected countries at a specific time by one R&D product manager, and usually it is for a specific project. The VoC is praised by employees; however, it only captures a small sample of specific customers, not the full breadth of subsidiaries' knowledge of customers. The literature does not mention that if the bulk of employees' and customer tacit knowledge is transferred to a single person, this might create stickiness. Nevertheless, one would expect this to be a possible source of knowledge stickiness. Definitely, the possibility of knowledge loss if the person leaves the company should be a concern for the organisation.

"Knowledge loss" is usually discussed in acquisition research (Norman 2000), whereas knowledge misinterpretations, as well as absorptive capabilities creating stickiness, are usually discussed in the literature studying organisations' learning processes. (e.g. Lam 1997; Dhanaraj et al. 2004; Szulanski 2003; Albino & Garavelli 2004). Nevertheless, one would expect the same applies if one person were responsible for capturing most of the subsidiaries' tacit knowledge for the organisation. As described previously under the heading "Poor knowledge transfer environment", this issue highlights that knowledge is mainly transferred verbally. For the company to capture valuable subsidiary knowledge by relying on one person seems to show that its management does not comprehend the possible wider consequences of this for the organisation.

4. High staff turnover might negatively affect knowledge transfer

This raises the second point: that companies' high staff turnover is a source of knowledge-transfer stickiness. Bijlsman and Koopman (2003a) quoted Kramer and Tyler's (1995) findings that trust in management and the organisation had a significant impact on turnover. If the actions and decisions taken by the leaders of the organisation were not understood and perceived as trustworthy, staff were more likely to seek a change of workplace.

In the highly competitive commercial environment, tacit knowledge is the most valued intangible asset a company can own, as knowledge cannot be copied as products can (Lundvall et al. 2002; Kacmar et al. 2006). An organisation's long-term success depends on the value of each of its employees. However, if managers leave, employees who had a close bond with that manager might follow, as their commitment was to their manager, not the organisation (Mueller & Price 1989; Kacmar et al. 2006). Kacmar et al. observed that high staff or management turnover results in loss of tacit and explicit knowledge. While explicit knowledge stays within the firm, if an employee leaves, the tacit knowledge – the “know-how” – leaves the company along with the employee. Furthermore, while explicit knowledge stays within the company when the employee leaves, the explicit knowledge was usually created from tacit knowledge; hence the creation of explicit knowledge might be reduced, at least temporarily (Spender 1996; Fahey & Prusak 1998).

The knowledge-management literature stresses the point that knowledge is a company asset that needs to be shared and used to optimise the organisation's potential (Kogut & Zander 1993; Nonaka & Takeuchi 1995; Argote 2012; Bartlett & Ghoshal 2004; Athukorala 2004; Hu et al. 2009). An organisation's knowledge is usually contained within individuals (Jarvenpaa & Stables 2000), who use their knowledge while following their daily work activities (Lam 2000). If this knowledge is not shared or captured, the company loses a valuable asset when an individual leaves the organisation (Gupta & Govindarajan 2000; Taylor & Weiss 1969a, 1969b).

The previous two sections draw attention to knowledge stickiness due to the Asia-Pacific subsidiaries' knowledge mainly captured by one person, as well as high staff turnover. High staff turnover is negatively related to trust in an organisation, while the knowledge sender trusting in one specific person is positively related to stickiness: if too much knowledge is verbally transmitted to one person, knowledge might become

sticky due to misinterpretation, lack of absorptive capabilities and possible inappropriate filtering of the knowledge.

Management may create a corporate culture to achieve specific strategic goals (Needle 2010); however, this may not necessarily result in an environment fostering trust. Lack of trust reduces willingness to share knowledge, or to codify tacit knowledge. Further, lack of trust due to the organisation's company culture is often cited as the reason employees to leave an organisation (Sheridan 1992; Mainiero 1993). Consequently, the corporate culture may lead to tacit knowledge loss. High staff turnover is usually cited in the literature as knowledge loss rather than as knowledge stickiness. However, should the trusted manager leave the company, as in Callbor's case, the employees' knowledge might become sticky, as they trusted this manager and not the company, or the employees might be reluctant to share their knowledge with the new manager.

The culture reflects the vision of the corporation (Kotter & Heskett 1992). Callbor's senior management enforces Con-Glom's culture, which guides the employees to implement the corporate philosophy and values. Chandler (1962) argued that structure always follows corporate strategy, while Hall and Saias (1980) claimed that a company's strategy and structure are interdependent. Either way, in this case study, CBS and its formal strategic tools shape the strategy and vision. Lean drives the structure and is reflected in the organisation's culture. Starbuck and Hedberg (1977) mentioned that senior managers decide what structure is needed to support what they perceive as important. It seems that Callbor's CBS takes higher priority than encouraging knowledge transfer within the parent company.

Further, one can argue that senior management is ignorant of the knowledge value that resides within individual employees of the company and their subsidiaries, and that this might give rise to causal ambiguity, which is defined by senior management's ignorance and lack of understanding of how knowledge influences the company's competitiveness and organisational success (Lippman & Rumelt 1982). This generates causal ambiguity and thus raises barriers to knowledge transfer. Furthermore, as the corporate vision and philosophy influences the company culture, one can conclude that the organisation's misused and inappropriate formal communication tools for shaping its strategy, structure and culture lead to lack of trust,

as well as high staff turnover. Therefore, knowledge within the company and the knowledge transfer from subsidiary to parent company become sticky.

The following diagram 21 is the summary of possible stickiness characteristics in the theme “Senior management does not support knowledge transfer”.

Diagram 21: Summary of the stickiness characteristics “Theme - Senior management does not support knowledge transfer”.

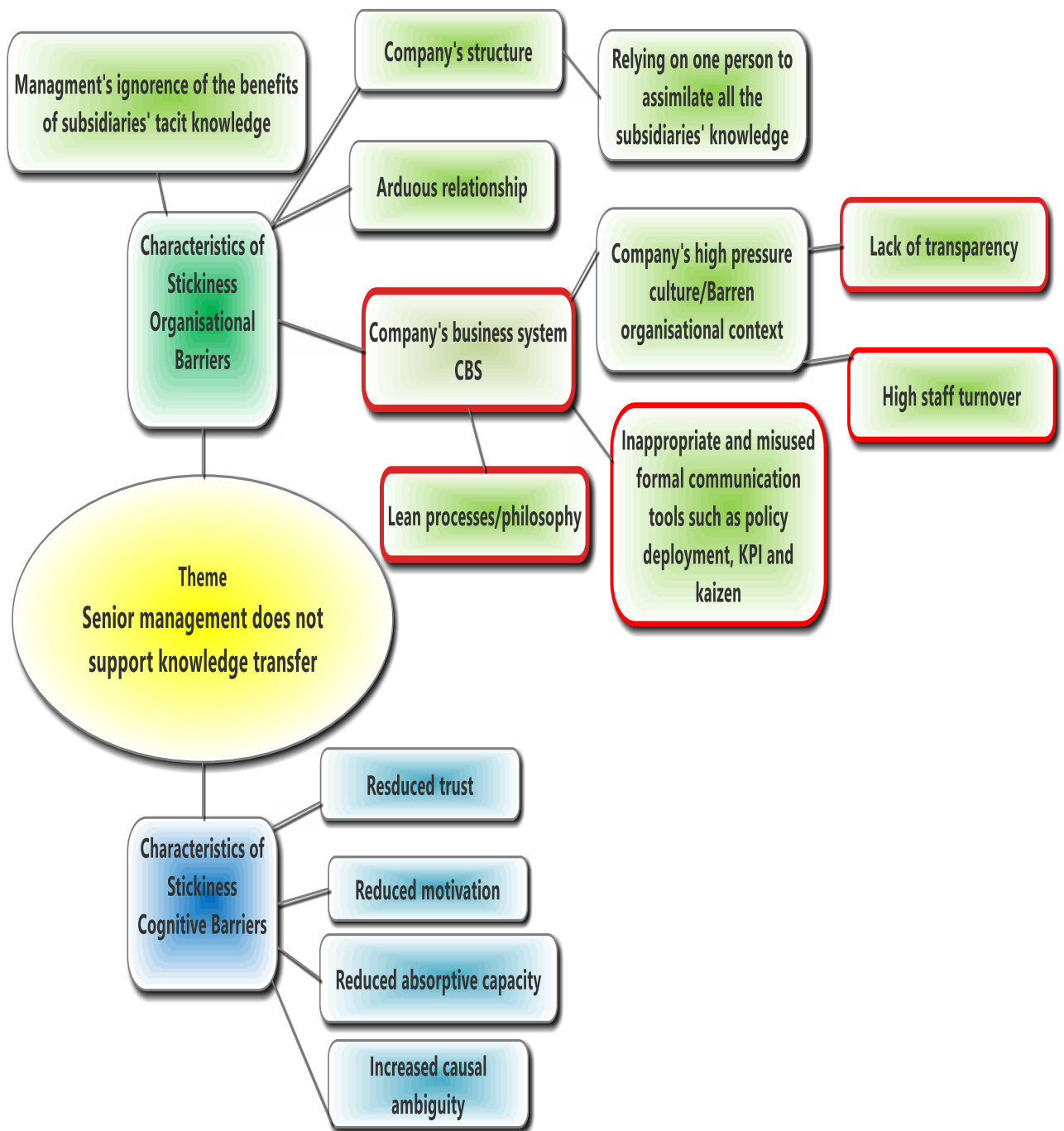


Diagram 21

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The green boxes with a red border indicate a topic on which limited literature is available

Diagram 21

The above section discussed the possible consequences for Callbor to rely on one person collecting the breadth of subsidiaries' knowledge. The subsidiaries' knowledge might become sticky due to this one person's absorptive capacity. Further, misinterpretation of the subsidiary's knowledge would create stickiness. The organisation's lack of transparency frustrates the subsidiaries' employees and might create sticky knowledge. The stickiness characteristics CBS, structure and the company's culture are recurring patterns; of reduced trust and reduced motivation. Additionally, the causal-ambiguity stickiness characteristics have crystallised that senior management seems to have limited understanding of what influences the company's long-term competitiveness.

Lack of feedback

According to the employees, senior management seldom provides feedback regarding the knowledge the employees transfer to the parent company. This section briefly explains the feedback loop, the importance of feedback and the possible consequences for knowledge transfer if feedback is not provided. One could argue that "lack of feedback" is a common feature of an arduous relationship. However, the importance of feedback requires a detailed stickiness analysis, rather than being absorbed in the broad stickiness characteristics of arduous relationship. The section concludes by discussing how feedback influences knowledge stickiness. Subsidiaries do not know if the knowledge they transfer to the parent company reaches the relevant person. Despite management agreeing that they needed the subsidiaries' knowledge, they did not seem to provide adequate feedback; for example, by telling staff that they have received the knowledge or that the knowledge was of value, nor how the knowledge might benefit the company. Lack of feedback seems to be a major concern for employees. The knowledge-management and knowledge-transfer literature does not seem to focus on the impact feedback might have on knowledge transfer. However, any feedback from the parent company on received knowledge influences employees' motivation to transfer knowledge, helps to interpret the knowledge and provides guidance on the type of knowledge the parent company requires. The feedback loop can be positive or negative, but either way, something comes back (in action, verbally or written format) to something that was sent or done. This analysis defines feedback as part of a cause-and-effect loop, where information about something can influence behaviour in the future (Sternan 2000). Diagram 22 illustrates the company's feedback loop.

Diagram 22: Company's feedback loop

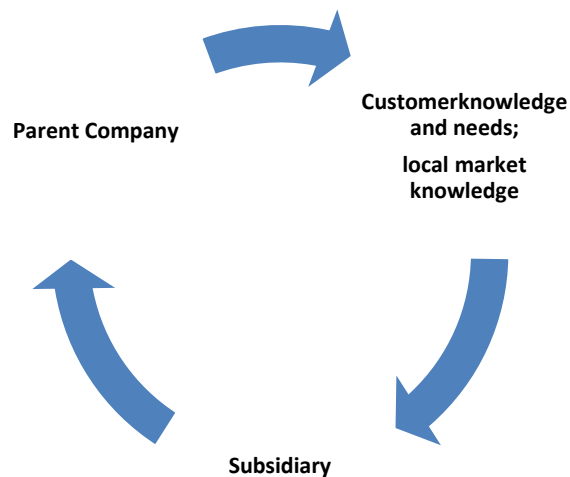


Diagram 22 illustrates that the subsidiary receives knowledge from the customer and the local market and transfers its tacit knowledge to the parent company. The parent company provides feedback on the knowledge they have received, which influences any future knowledge the subsidiary transfers.

For the knowledge transfer to be effective, a two-way communication channel should exist. The sender needs to know if the message has been received and fully understood, as this would have a positive or negative impact on subsequent knowledge being transferred. Staff members indicated that they do not know if their knowledge has been received, understood or acted on by the parent company:

I do hope that someone will get that information to parent company, but I have never received any feedback. [PH; R&D]

The two-way communication is a response to the transfer of knowledge, ideas and feelings; feedback allows for guidance, commands and requests for specific action. The comment below indicates that the limited information flow from the parent is criticised by the subsidiaries:

They only let you know little bits they think are necessary for you to know. [JM; Dist-7]

According to Chen et al. (2012), feedback becomes a dialogue between the sender and receiver of knowledge, and allows knowledge to be shared and enhanced. The lack of feedback makes it difficult to clarify misunderstandings, and can be the cause of disappointment and frustration. If there is no emotional reward or return, staff might

become demotivated. It is in this context of disillusionment that knowledge transfer might be minimised. The next section discusses the importance of senior management providing feedback to the subsidiaries about the knowledge they receive.

b.

a. The importance of feedback

Senior management's feedback or lack of feedback could influence employees' motivation to transfer knowledge, as well as the quality of knowledge the parent company would receive. McLeod (2015) refers to the experiments by B.F. Skinner exploring the idea of "operant conditioning". In 1938 Skinner found that individuals modify their behaviour as a consequence of the type of feedback they received. He found that feedback could reinforce negative or positive behaviour. One might argue that receiving no feedback as part of knowledge transfer might reinforce in the mind of the sender that the knowledge is not reaching the appropriate manager and/or that the knowledge might not be important or is not appreciated. A subsidiary technical and sales staff member felt that the knowledge he provided to solve a customer's problems might get lost, as he never received any feedback:

I think that the solution I provide to solve customers' problems gets lost. Well, I never get any feedback. [PH; R&D]

Eventually this employee might stop providing knowledge out of disappointment and frustration. Reinforcement or punishment results in specific behaviour that is visible in everyday life. For example, in early childhood if the consequence of a child's specific behaviour is positive, the child will be motivated to repeat that behaviour to obtain the positive consequence. On the other hand, if it is a negative experience, then motivation will be lost and the behaviour cease. If there is no consequence to a specific behaviour – for example, if there is no feedback as part of knowledge transfers – then the transfer might happen less frequently and might eventually stop (McLeod 2007). Immediate feedback is considered to have the best effect on the ability to learn a behaviour; however, the feedback needs to be consistent or the effect is reduced (Miltenberger 2008). As staff commented, they felt that they were wasting time when they made the effort to transfer information:

We are asked to provide monthly reports on how products are performing, technical problems etc. They are a waste of time. We never hear back. I do not know if anyone is looking at the reports. Feedback would help. ... I have

to keep doing it, but it would be good to know what we do is beneficial. [DM; Dist-6]

Samuels and Wu (2003) found that feedback motivates students and provides information, which allows learning to be corrected or improved. For example, if employees provide important knowledge to the parent company and receive immediate feedback, they might be able to clarify, correct, improve or withdraw the transferred knowledge. If the feedback confirms that the provided knowledge is of value, it can motivate the employees to gather and provide more knowledge, and perhaps to add additional meaning to the transferred knowledge. On the other hand, having to wait for a long time for feedback or not receiving it at all might result in staff feeling disillusioned:

It can take months before I get any replies from head office. Maybe they think that my question is not important; I never get an answer. [JM; Sub-5]

[My] previous company was very clear in what they needed to know.... Every month you had 30 minutes with your boss where we talked.... You got lots of support from your boss; you could ask and talk anytime. Here you are alone. [SM; Sub1]

SM sounds disillusioned, as he received feedback every month in his previous company, and could request to receive it immediately. Not being able to receive feedback makes him feel lonely. The feeling of not being listened to or not being important as an individual that could result from not being able to receive even small amounts of feedback from senior management might reduce motivation to pass on knowledge.

Senior management complained that subsidiaries' tacit knowledge is based too much on personal interpretation, and often provides little value. However, one can argue that if senior management would provide feedback – for example, what kind of knowledge is beneficial – the subsidiaries might provide tacit knowledge of greater value. An employee confirmed that he did not share his knowledge with the parent company, as his manager did not advocate feedback:

I have info on all my customers. It is my own personal information; it is not on company records. Our general manager does not encourage providing feedback; everyone has their role. [SM; Sub-1]

In the context of the interview, the employee deplored that senior management does not consider a service manager to have market knowledge or to understand the customers' product needs. His voice expressed disappointment in his manager's attitude. The subsidiary manager was trained by Con-Glom; he is entrenched in the Con-Glom culture. This culture does not seem to encourage providing feedback. Hence, the feedback loop is defective (Eggen & Kauchak 2004). Epstein, Lazarus & Matthews (2002) found that receiving the feedback at different times provides different benefits. For example, if complex knowledge is transferred, immediate feedback is of greater benefit than when minor knowledge is transferred. If there is no feedback at all, even a long time after having transferred the knowledge, the sender can feel frustrated or even insulted, and might lose confidence in the knowledge they pass on:

I do use the proper channels. Everything is carbon copied to various people. However, I do not really know who reads it and where the info ends up. [DM; Sub-6]

I send the update reports by phone or email.... I do not know where it goes from there. I guess it goes up the ladder. We never get feedback. [SN]

We do let R&D know if there are shortcomings with a product, but we never get feedback. [SN; Sub-5]

We only pass the knowledge on to the business units. What they do with it I do not know. [KD-Dist-4]

McLeod (2007) argues that the sender would experience similar feelings if there were late or no feedback. The sender does not know if their knowledge is heard or read, if anyone is taking any notice, if it is considered of value, or if they are wasting their time. Not receiving any kind of feedback can be emotionally draining, as the sender might feel that they are not considered important or valued (Jones & Jordan 1998).

Staff might feel a lack of control. Behaviour might become passive, resulting in loss of productivity and innovation. Motivation is reduced or even lost when the thought "What is the point?" starts to set in. The sender might lose the sense of their role or position within the company, and question how they fit into the company's structure. Staff cuts and "letting people go" would emphasise this feeling. Even an automatic computer response like "Thank you for your information. We appreciate your input" would be better than no feedback at all (Matinko & Gardner 1982; Cherniss 1980; Blauner 1964; Argyris 1957). However, staff cuts seem to worsen the feedback problem, as a subsidiary manager commented:

Staff cuts [have] caused problems. Good people are gone and they lost a lot of knowledge by letting people go. Now they take a long time to respond.... Everyone is too busy. [SG; Sub-1]

He sounded disappointed and frustrated.

Employees feeling positive and optimistic have better job performance (Abraham 1999; & Goleman 1998). Further, Wong and Law (2002) found that if employees feel positive they have higher commitment towards their work, and are less likely to search for a new job with a different company; in other words, turnover intention is reduced. Wong and Law (2002) argued that feedback can strengthen the positive relationship between the sender and receiver, and a positive relationship between sender and receiver can encourage feedback. A positive relationship makes it easier for the receiver to interpret and understand the knowledge received, and the sender is more likely to know what knowledge the receiver needs.

To conclude, the present results indicate that lack of feedback is a barrier to knowledge transfer and creates sticky knowledge. This important finding seems to have been neglected in previous knowledge-transfer research into knowledge stickiness. The current study's classification of lack of feedback as a characteristic of stickiness is an important contribution to the stickiness literature.

The following diagram 23 is the summary of possible stickiness characteristics in the theme "The feedback issue".

Diagram 23: Summary of the stickiness characteristics “Theme – The feedback issue”

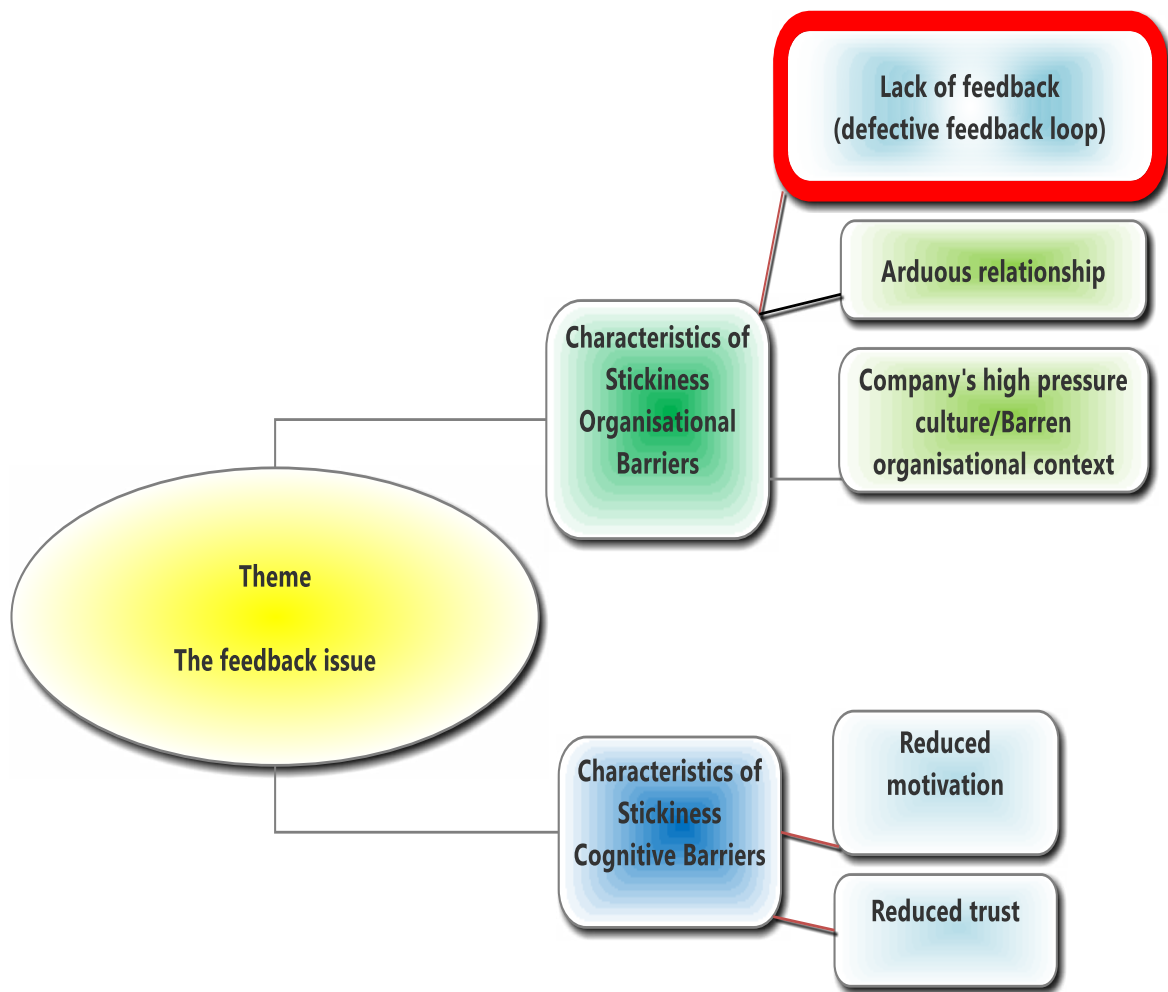


Diagram 23

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

The shaded blue box with a red rim indicates a stickiness characteristic that has not been previously been mentioned in this context.

Diagram 23

Callbor's culture does not foster an environment that provides feedback on the knowledge it receives from the subsidiaries. This lack of feedback results in disillusionment, which affects the subsidiaries' motivation to provide knowledge to the parent company. Further, it reduces the trust the sender of the knowledge feels towards the receiver (in this case, Callbor). It seems that feedback as a stickiness characteristic has not been previously addressed in the literature.

5. The silo mentality creates barriers to knowledge transfer

The expression “silo mentality” is usually associated with companies having departments working independently of each other, with each having separate goals and possibly conflicting KPIs. As each “silo” is only focused on its departmental interest, it is less likely to share knowledge with members of other departments. The lack of knowledge and information sharing across various departments within an organisation can lead to companies’ overall delivery failures, and reduce competitive advantage (Bundred 2006). Foroohr (2014) claimed that some of the biggest corporate disasters in recent years have been linked to the company’s information silos. Innovation does not always have to be something new; it could be alteration or variation. Innovation can be achieved by combining capabilities, knowledge and existing processes, products and ideas. However, this can only be achieved if the opportunities are known and can be accessed.

This section analyses the organisational silo mentality of the employees in the study. As discussed in Chapter 4, Callbor has three divisions. This research focuses on Callbor's third division, the medical-device unit. However, the subsidiaries are responsible for the products of all three divisions. When discussing possible silo issues with the staff of Callbor's medical-device division, the silo mentality across all Callbor's divisions was discussed, but in general terms, not in regards to a specific division. When discussing if Callbor might have a silo problem, management mentioned that Callbor has a matrix structure. Matrix management developed in the late 1970s and has been used by several large US companies. A matrix structure dismantles information silos (Barlett & Ghoshal 1990), encouraging communication across departments, sharing resources and providing access to a broader range of skills, and is meant to increase flexibility. A matrix should simplify the management of a company's multi-divisional structure. However, using a matrix that does not have clear connections and fails to consider all aspects of a process, such as ensuring quality for the customer, affects the company’s profits. While a company can see the benefit of using matrices, they need to be well designed and implemented. The following section discusses how well Callbor has designed the company's matrices, and why they have not eased the company's silo issue.

This is the only section in this chapter where senior management and subordinates shared the same perception. The organisation's employees admitted that the silo

mentality causes conflicts, reduces knowledge transfer and has negative effects on the organisation's business. Silo mentality is a known stickiness characteristic (Offsey 1997; Goh 2002; Bundred 2006; Gulati 2007).

Employees, including senior management, commented that a silo mentality existed within the organisation. Subsidiaries are responsible for marketing the products of all the parent company's divisions, and each division is an independent entity with its own marketing strategy, budget, goals and KPIs. As a middle manager from the parent company explained:

The company has created silos. Sales are measured on product selling time and operation on stock value etc. It is all very fragmented. [LR; R&D]

The divisions do not communicate with each other:

They are very independent – they are definitely silos. They are different businesses within one company and have nothing to do with each other. [VD; Dist-3]

The subsidiaries considered serving those various divisions difficult. They felt torn and pushed by each division's personal objectives. To have one manager responsible for all divisions was seen as a preferred reporting system. The divisions sell different products, often into a different market. However, they all would have the same objectives, such as customer satisfaction and overall profit growth for the benefit of all stakeholders. Middle managers of the parent company commented that the current matrix structures are very difficult to understand. A product manager revealed that there are several matrix structures, and that they are complicated, with conflicting KPI's, which create problems such as product delivery and quality:

We used to have a very simple matrix, now it is very complicated. We do not have enough intelligent people for our matrix. It is important to get the targets right and to reach a common goal instead of separating it all. It just creates confusion.... Some are measured by minimal cost, minimal stock, excellent delivery; all individual targets that work against each other. LR; R&D]

He tried to elucidate how complicated the matrix is, and the researcher had problems following his explanation; however, it was obvious that it was of great concern to this manager. The distaste in his voice showed that he was not in favour of this company system. He continued:

No one asks, "Is this what the customer wants?" Quality is in another matrix; how can you leave out of a matrix what the customer needs? Salespeople

will enter an earlier delivery day to be on the safe side. All the conflicting matrixes cause problems! [LR; R&D]

This company perceives that any process will be an improvement without considering that all processes need to be carefully integrated and maintained so that complexity is not a barrier but a solvable issue. This is indicative of the company's attitude (noted in previous chapters) towards formal processes such as the overuse of KPIs and Excel spreadsheets. Furthermore, the structure seems to be compromised, with employees accusing senior management of deliberately creating a competitive environment inside the organisation:

Senior management is intelligent enough to know that objectives are conflicting. They think that they can squeeze a bit more out of the workers. [LR; R&D]

The conglomerate tries to use it as a tool to create competition between workers. [LR; R&D]

Senior management felt that they do not differ from the majority of organisations, and that the silo mentality is due to differing priorities. Only one senior manager acknowledged that due to silos the company manages knowledge poorly:

We have silos; knowledge is not shared between divisions. Each division operates very independently. [SP; PC]

He felt that it should be possible to improve knowledge sharing within the company. However, he is concerned that the company lacks the required communication skills:

Knowledge management is very important and very critical. Some things need to be kept confidential. In the company, we have a mixture of web-technology and one-to-one meetings, but we are not very good in sharing knowledge. We have the know-how. We know it is there, but we cannot get to it. We do not have the communication required for getting to this knowledge. All companies have the same problems, though we are a small company and we should do better. We have small teams but we are missing many opportunities. [SP; PC]

Several factors seem to contribute to the silo mentality. For example, the company structures are rigid and built around lean manufacturing processes. These processes hinder interdepartmental co-operational efforts. It seems that the matrix management structure is poorly designed, or that senior management has poor awareness of possible matrix-structure problems. According to senior management, the company used to have one manager responsible for all divisions, and the work environment used to be less fragmented. Staff considered the one-manager policy to be an easier

and more effective way of communication. A one-manager policy did not create a mismatch, as does the current existing multi-management system.

A culture that works across divisions by sharing knowledge and experiences and solving problems as a team provides benefits for every division. Divisions often have similar problems to solve and have staff with similar responsibilities and knowledge (Currie & Suhomlinova 2006; Dougherty 2004). Currently the company employees feel that the company purposely tries to create competition, to increase productivity. However, O'Hara et al. (2002) found that if all divisions and departments work together that staff want to impress other staff members even more than to impress their manager, which results in increased productivity. Company culture needs to provide encouragement, where every division feels part of the whole organisation, and to communicate and reward appropriate staff behaviour and thought processes. If the company would focus on customer satisfaction rather than product solutions, this would help to break down silos and create a culture of trust, knowledge transfer, collective problem-solving, innovation and true solutions (Gulati 2007). The company as a whole would benefit, achieving higher competitiveness and profits. Further, the company's lean philosophy should include a collective responsibility whereby each division is not only responsible for its own success, but equally responsible for that of other divisions.

In conclusion, the silo mentality creates interdepartmental knowledge stickiness, and is a known stickiness characteristic in knowledge transferred from parent companies to subsidiaries. This analysis confirms that the same applies in reverse.

The following is the summary of possible stickiness characteristics in the theme "The silo mentality creates barriers to knowledge transfer".

Diagram 24: Summary of the stickiness characteristics “Theme - The silo mentality creates barriers to knowledge transfer”

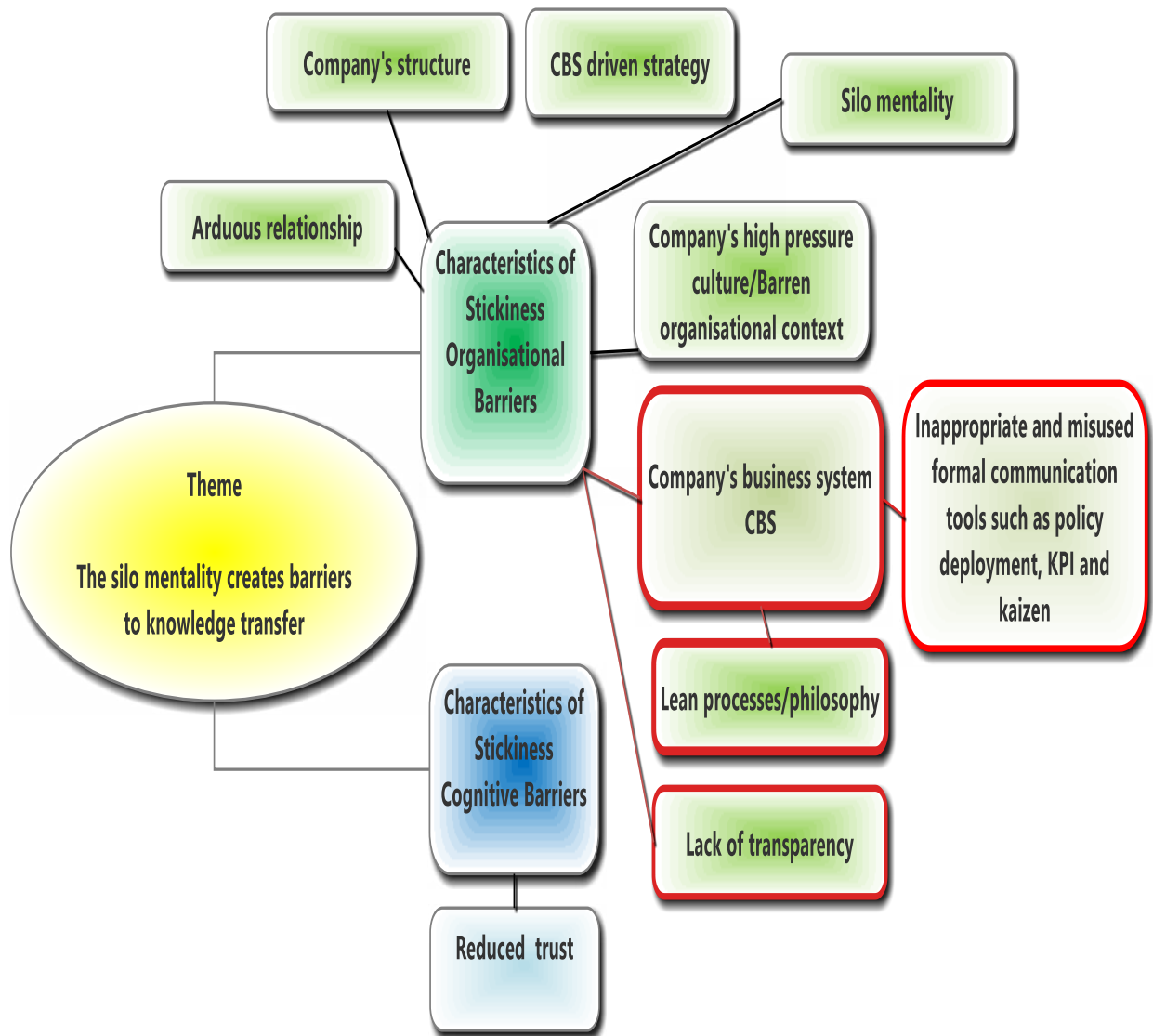


Diagram 24

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 24

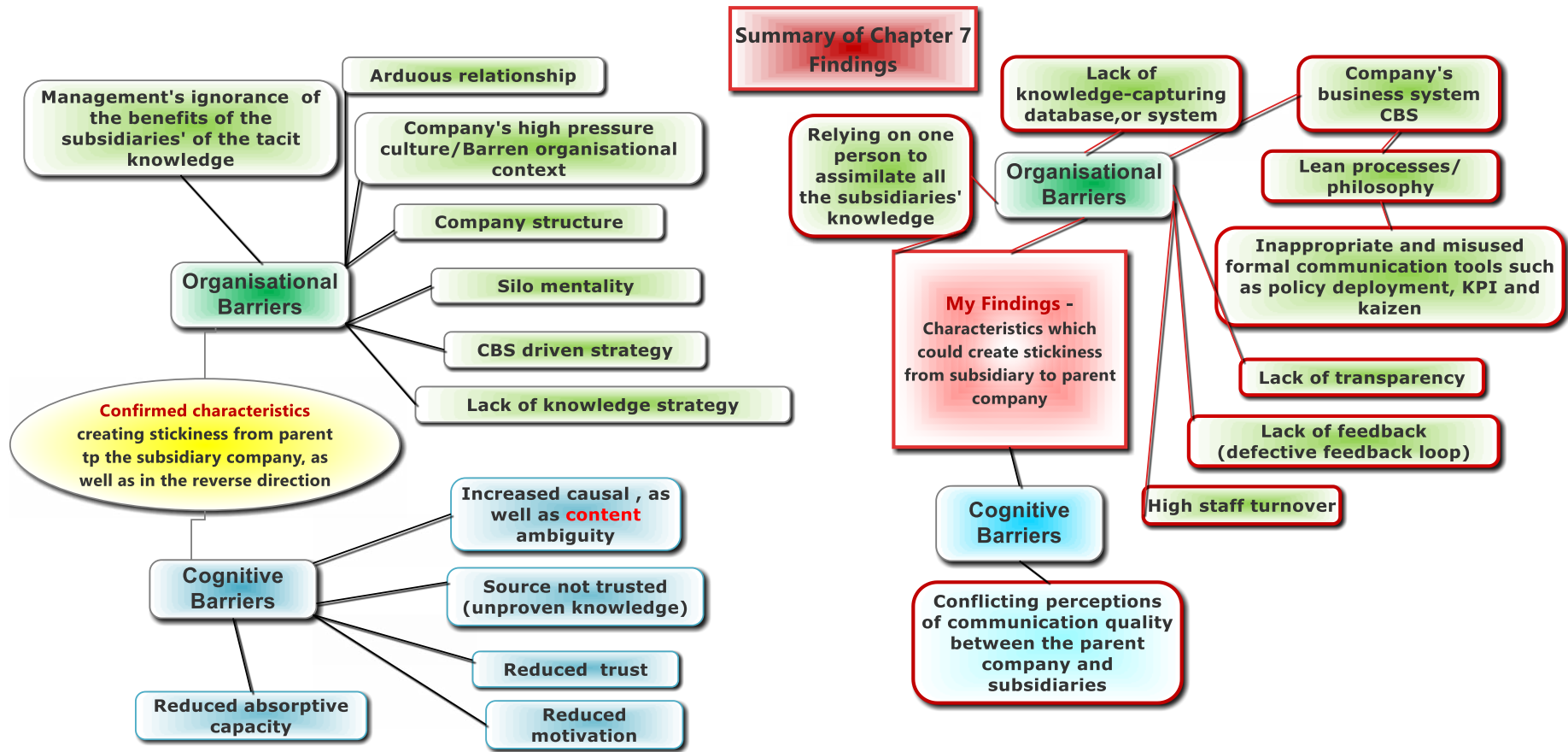
The company culture, CBS, and structure are responsible for the stickiness characteristics of silo mentality. This is a well-known stickiness characteristic when transferring knowledge from the parent company to the subsidiary. The same applies when knowledge is transferred in the reverse direction.

7. Summary and conclusion

Communication issues within a global company might always influence stickiness of knowledge transfer from subsidiaries to the parent company; however, to improve competitive advantage, the parent company needs to create a learning and knowledge-sharing environment. While some employees are inclined to share their knowledge, the majority need processes to know that the parent company values their tacit knowledge. The organisation requires a culture of trust where management rewards and encourages tacit knowledge transfer. Further, it needs to create comprehensive and user-friendly, well-maintained databases and processes to capture and codify tacit knowledge. As noted in the previous chapter, the parent company's CBS seems to create a structure and culture inhibiting knowledge transfer from subsidiaries to the parent company.

This chapter has identified 12 major barriers that contribute to making knowledge sticky. These barriers often influence each other. Five organisational and five cognitive barriers have previously been identified as stickiness characteristics when transferring knowledge from the parent company to the subsidiary. Lack of feedback and the impact of opposing perceptions have not been previously discussed in the stickiness literature. The two newly identified stickiness characteristics might only apply when transferring knowledge from the subsidiary to the parent company, or might have not been previously identified due to using different methods. The following table summarises the stickiness characteristics as they emerged in this chapter.

Diagram 25: A summary of the stickiness characteristics discussed in Chapter 7 – Domain: Medium Intimacy Communication and Stickiness: General Organisational Communication



This diagram 25 is the summary and the analysis conclusion of the combined themes and subthemes of this study's findings. The boxes on the left are the stickiness characteristics identified by the stickiness literature and confirmed to be stickiness characteristics when transferring knowledge from the subsidiary to the parent company. The boxes on the right in the brighter colours are the new stickiness characteristics that have not been previously identified in this context in the stickiness literature, and might be specific to situations where knowledge is transferred from the subsidiary to the parent company. The shaded blue and green boxes with a red border indicate stickiness characteristics on which limited literature is available in this context.

The Domain: General Organisational Communication (Medium Intimacy)

The analysis identified six organisational and five cognitive barriers that create stickiness when knowledge is transferred from the subsidiary to the parent company. Previous research has found them to be stickiness characteristics when knowledge is transferred from the parent company to the subsidiary.

Findings that add to limited previous research in this context

Previous publications have discussed that organisational structure and strategy might negatively affect knowledge transfer. However, limited research has been done on how **“lean philosophy” and poorly developed and implemented formal strategic tools can create sticky knowledge. Or how the lack of knowledge capturing database and high staff turnover might not only result in loss of knowledge, but contribute to knowledge stickiness as well.**

New Finding No. 1

The analysis shows that lack of feedback by the parent company to the subsidiary that their knowledge has been received and is valued or acted on, or the parent does not explain the benefit of the subsidiary knowledge, creates stickiness.

Lack of feedback creates sticky knowledge.

New Finding No. 2

The analysis shows that a barren organisational context creates a conflict between the perceptions of the parent company and those of its subsidiaries. The employees are likely to lose trust and motivation to transfer their knowledge to the parent company.

Conflicting perceptions of communication quality between the parent company and subsidiaries increases the risk to create sticky knowledge.

The following chapter deals with the third domain, interpersonal relationships communication (high intimacy). It provides a further layer by examining the effect of interpersonal relationship communication on stickiness. It also further explores employees' trust and motivation, and the parent company's provision of limited resources and support. Further, national language differences and the differences between company culture and national culture will be discussed in the narrow context of stickiness.

Chapter 8

Domain: High Intimacy Communication and Stickiness: Interpersonal Relationship

Introduction

Chapter 7's findings confirmed five organisational and five cognitive known stickiness characteristics when knowledge is transferred from subsidiaries to the parent company. Further, two new characteristics were identified when transferring knowledge from subsidiaries to the parent company: A) the parent company not providing feedback to the subsidiaries' employees on whether their knowledge is beneficial to the organisation; and B) Conflicting perceptions of communication quality between the parent company's senior managers and the subsidiaries' employees.

This chapter focuses on close interpersonal relationships. This case study defines these as colleagues having an agreeable working relationship; they are on friendly terms and are working effectively together. The research explores the impact of interpersonal such relationships on tacit knowledge transfer. While the previous chapter analysed general organisational communication effects on stickiness, this chapter explores communication at a close, personal-relationship level, its impact on knowledge sharing and the degree to which it may create stickiness in knowledge transfer. This last analysis chapter confirms numerous patterns that had emerged in the two previous chapters. This might present the impression that this chapter is repeating previous discussed observations and stickiness characteristics. However, the observations are discussed within a different context.

The chapter is divided into five sections. Each section's heading is a known stickiness characteristic. The first section analyses the impact of personal relationships on stickiness. The second section discusses trust and motivation; these were discussed in the two previous chapters, but, as they are an integrated part of interpersonal relationships, they are revisited here. Section 3 focuses on the company's culture, followed by country culture and language. The themes build on each other, as does the last theme, "too busy – lack of resources". Analysis is supported by citing examples from the interviews. Finally, as in the previous chapters, each section concludes with

a short summary, as well as a table outlining the stickiness characteristics. The chapter closes by summarising the findings of the analysis.

Themes as they emerged from the data

1. Interpersonal relationships (Knowing people personally)
2. Trust and motivation
3. Company culture
4. National culture & language
5. Too busy – lack of resources

Each theme is now explained in turn.

1. Knowing people personally

Based on past research, interpersonal relationships reduce barriers to knowledge transfer (Koghut & Zander 1996). Interpersonal relationships decrease sticky knowledge, as well as improve knowledge sharing between colleagues, groups and departments (Szulanski 1996; Uzzi 1997; Hansen 1999; Edwards & Kidd 2003; Nie et al. 2010). This section analyses how knowing someone personally – that is, at a higher social intimacy level than interpersonal relationships – affects knowledge transfer. “Personally” refers to knowing each other face-to-face, sharing personal experiences and information. This section analyses the findings as they emerged during the interviews.

The following section cites interviewees’ quotes showing that employees in the parent company’s R&D department and the Asian subsidiary’s R&D department have a trusting and friendly working relationship. Tacit knowledge is transferred with ease. Employees know each other on a personal level. They communicate freely and openly. They ensure that everyone has the relevant information and resources to fulfil their job activities. The majority of employees, including the parent company’s senior management, consider a close personal relationship important for knowledge transfer between colleagues. Employees consider trust, friendship, good teamwork and open and constant communication essential for product development. A parent-company R&D product manager commented:

A product can only be as good as the project team works together. Professional friendship is essential! If you are friends, you can do almost anything, regardless if the process is not perfect. If some of the team is placed in Asia, it might be a little more difficult because of different time zones, language and not being close together, but if you work like friends, then all that makes no difference. [AR; R&D]

He spoke very passionately about the importance of close personal relationships. The word “friend” usually applies to an emotionally stronger bond than an interpersonal work relationship. Some people might use the word “friend” only for contacts with someone especially close (Laumann 1966; Burt 1990). However, because the product manager mentioned professional friendships, one can assume that the definition of “friend” can indicate a close interpersonal work relationship. While the phrase a layperson often uses to express “friendship” refers to the strength of a relationship, Reagans and McEvily (2003) wrote that while the definitions for “friend” and “interpersonal work relationship” are different, in a working environment both expressions are often used interchangeably and are of equal strength.

Several studies have concluded that strong ties in a relationship – for example, how well colleagues know each other on a personal level, how often they communicate, as well as how freely they can converse – affects how easily they share tacit knowledge (Szulanski 1996; Uzzi 1997; Hansen 1999). A strong relationship seems to increase motivation to share tacit knowledge (Granovetter et al. 1982). The motivation seems to be driven by trust. Employees who had formed a close personal relationship with their colleagues mentioned that they communicated well, and exchanged knowledge, as they trusted each other. There is a strong correlation between communication and trust in a close professional relationship, which the comment by the parent company’s R&D project manager below demonstrates:

We all know each other well. It does make it easier, as everyone trusts each other, you get things done quicker, you share your knowledge, and there is no personal blame. [RH; R&D]

In general, when one shares experiences and builds a positive relationship, one expects the other person to act honourably (Lewicki & Bunker 1996). If one trusts the other person, one is prepared to share knowledge; hence one could reasonably argue that productivity increases. A positive relationship and trust appear to be mutually inclusive. Close relationships seem to build trust, and that trust strengthens the relationship.

In the context of sharing knowledge, employees consider knowing each other well as very important. R&D employees from the parent company and the subsidiary have good relationships, and communication flows easily between them, as shown by some typical quotations:

We have no misunderstanding between us during the project, because we all know each other really well. Communication is very important. We know each other's strengths and weaknesses. [SR; Sub-3]

Most of the time manager talks to manager, engineer to engineer. However, as well we have a lot of cross-communication. We all socialise with each other, as it is very important for communication. We always find the time to socialise. We use the time to get to know each other better. We talk about our families and about our self [sic]. [SR; Sub-3]

Misunderstandings are reduced, as the employees and managers know each other well. Further, knowing each other well and trusting each other allows them to be honest with each other:

It is difficult to explain the concept and early brainstorming over long distance. Hence, it is important to build relationships, go out together, share a beer etc.

It helps that the team has time to socialise. We get to know each other and become friends. Sometimes discussions can get quite heated and tense, but knowing that we are friends, means we can say what we think and be honest with each other. [CR; Sub-3]

Tacit knowledge, unlike explicit knowledge, is based on the individual's personal knowledge and experiences; hence, it is not always easy to communicate (Brown & Duguid 1991; Nonaka 1994; Tyre & van Hippel 1997). Therefore, the receiver's ability to accept tacit knowledge depends on a trusting relationship between the sender and the receiver (Simonin 1999).

Senior management agreed that knowing each other well is important:

Problems are reduced once a team starts thinking the same way, which happens after working together for a long time: everyone knows each other well and their different ways. [SP; PC]

Management acknowledged the benefits of positive relationships among employees. However, as shown in the previous chapter, the parent company did not seem to be concerned about knowledge loss due to employees leaving the company, despite management's comment that building positive relationships needs time. Chapter 7

discussed the organisation's high staff turnover problems (for example, "We lose good people with a lot of knowledge because they cannot take it anymore" [SN]*). High staff turnover would not provide time to build close and positive relationships. On the other hand, one can argue that senior management might not practice what they claim to support.

The communication senior manager is responsible for training programs. He has found that learning as in a team will form interpersonal relationships, which consequently will benefit knowledge, transfer. He highlighted:

If you know someone very well, it will open doors and overcome culture differences; you are not afraid to share your knowledge. [AP; PC]

Personal contact is very important. Personal relationship is best face-to-face, as you can see the other person's face. You can watch their body language. [AP; PC]

* Since the interviews the researcher has spoken a few times to some of the employees and they said that the drain of long-term employees is continuing. The researcher spoke to an ex-GM who said that most people interviewed in this research are no longer with the company. However, the "die-hards" (as he called them) accept any policy, and the "yes" people are still with the company. The researcher is aware that in the Australian office all the staff have changed since the interviews were conducted.

The first quote highlights three aspects: A) the term "open doors" usually refers to the creation of opportunities or possibilities that might otherwise not exist, and of which one might not be aware: B) knowing someone well overcomes culture differences, a point that staff members mentioned repeatedly; and C) not being afraid of sharing knowledge equates with trusting the other(s). The second quote explains why this employee found personal face-to-face contact important. Seeing someone's face and observing their body language provides visual clues to build the crucial trust necessary for knowledge sharing (Roberts 2000). Albino et al. (1998) postulated that the kind of communication media used to transfer tacit knowledge is vital to the success of the transfer. Personal face-to-face communication is considered to be a rich medium, in contrast to impersonal media such as electronic communication. Personal contact and body language provide immediate feedback and reduce ambiguity (Daft & Lengel 1983; Albino et al. 1999; Bolisani & Scarso 2000; Cavusgil, Calanlone & Zaho 2003).

The same senior manager mentioned that in a social setting knowledge is often shared through storytelling:

We found that people share many stories during lunchtime or over a beer. Sharing stories is the best way to transfer knowledge. [AP; PC]

Storytelling is an unstructured way to exchange knowledge. It is usually in a social, non-threatening environment. It allows participants to be relaxed and build trust while exchanging experiences. In ancient times and among many tribal cultures, storytelling has been used by elders to pass on their wisdom and experiences to younger generations. Today there is growing research evidence that considers storytelling a powerful tool to transmit tacit knowledge (Sole & Wilson 2002; Prusak date 2009 cited in Denning 2001; 2002; Brown 1982). Further, Szulanski (1996) and Damasio (2000) emphasised that the emotional involvement in storytelling helps to retrieve the knowledge easily at a later stage. However, for the company to take advantage of personal relationship benefits, as well as using storytelling as a vehicle to transfer knowledge, management needs to be aware of those concepts. As early as 1998, Fahey and Prusak (1998) commented that one of the “deadliest sins”, in regards to knowledge management, is for managers not to recognise the importance of tacit knowledge in creating valuable explicit knowledge. This problem was raised in Chapter 7. Several of Callbor's senior managers were concerned about content ambiguity, which they tried to solve through the use of number-based information such as spreadsheets. By over-focusing on information, Callbor does not seem to recognise the value of tacit knowledge within the subsidiaries, and thus would not be aware that storytelling and personal relationships are inversely linked to sticky knowledge – as storytelling and relationships go up, stickiness goes down.

However, the parent company's R&D and the subsidiary R&D are an exception, as they do form close personal relationships, which aids their knowledge sharing. Despite physical distance, the R&D staff members meet face to face. Employees from the parent company have worked at the subsidiary for a while and vice versa. A parent-company R&D member explained:

Having lived there for two years did help. ... It does make it easier as everyone trusts each other, you get things done quicker, and there is no personal blame. [RH; R&D]

A subsidiary engineer commented:

I have visited them; I know them all personally.... I find knowing people personally is very important and very helpful. [SM; Sub-1]

An R&D subsidiary manager provided further information how R&D works closely with the parent company's R&D department and how knowledge exchange is guided by getting to know each other personally and communicating face to face:

When we start a new project the engineers and a team from here will spend about three to four weeks with the parent R&D to brainstorm the new project and to understand the concept. At the early stage of a new project, it is important to be close together. Brainstorming can be difficult over long distance. Being at the parent R&D helps building relationships; we go out together, share a beer etc. [SB; Sub-3]

He continued:

The constant communication between the teams continues by using video conferencing once a week. Video cannot test the system, as it has no three-dimensional properties. To overcome this limitation, the product manager and key designer will visit on a regular basis. Everyone working on the project is communicating with everyone. Communication goes in every direction and is not restricted by a process format, such as report[ing] to a person who then reports to someone else etc. [SB; Sub-3]

These remarks emphasise three important points. One is the importance of knowing each other personally to improve knowledge sharing. The second point is that, while the preferred method of communication would be in person, the next best solution is by using visual methods such as video. Third, the communication is not restricted by formal processes, and the knowledge is transferred and shared between all team members, rather than going only in one direction, such as parent to subsidiary.

Empirical studies found that when employees share similar work values, knowledge and craft skills, as well as knowing each other personally, knowledge transfer increases despite barriers of physical distance, culture and language (Boutellier et al. 1998; Albion et al. 1998; Roberts 2000). The innovation environment of R&D would require a high level of knowledge sharing. While senior managers found it difficult to manage the uncertainty of the subsidiaries' tacit knowledge, they did acknowledge the importance of personal relationships between R&D staff, and seemed to support those interactions.

While storytelling, socialising, knowing each other well, feeling safe and building trust are important components of knowledge transfer, one can argue that some employees

have no problem transferring knowledge, and therefore that they are always inclined to do so. As one R&D middle manager explained:

Dealings and communication with R&D depends on the individual's personality and commitment; what type of person they are. Everyone is knowledgeable in his competency. It comes down to motivation, their mindset towards the job. [LR; R&D]

His comment regarding personality, “different type of person” or “their mindset” having an impact on tacit knowledge transfer is strengthened by a comment made by a subsidiary middle manager at a distributor office:

I seek knowledge and enjoy passing it on. It is important for me to have [a] relationship with everyone within the business unit. I build networks with other sales and marketing managers, but it is my own initiative. It is not driven by head office.... I have no problems forming relationships, and to get the knowledge I need. I am always sharing the knowledge I have. I feel that it is up to me to make connection and build relationships. [VD; Dist-3]

The above comments might indicate simple personal preferences as a likely motivational driver to transfer knowledge. The manager was probably not referring to “personality” as it is defined in the five-factor model (Costa & Widiger 1994) or some other academic view of personality. Nevertheless, it is worth noting that very limited research has been conducted on the impact of personality on knowledge transfer. The limited research agrees that personality might have an impact on knowledge sharing; however, the studies do not agree on the type of personality that might be the driver for positive knowledge transfer (Cabrera & Cabrera 2005; Mooradian et al. 2006; Matzler et al. 2008; Matzler et al. 2011). Management should be aware that, for whatever reason, some employees are more likely to transfer knowledge because it is in line with their personal preferences. Management should take advantage of this by placing those employees into positions where they most benefit the company or department (Matzler et al. 2011).

Some subsidiaries' employees transfer knowledge to the parent company; however, unless they have a personal relationship with someone within another subsidiary or distributorship, they very seldom do so. In contrast, if subsidiary employees have a positive relationship with employees from a different subsidiary, they are inclined to share or seek knowledge. Apart from not knowing the other person, they might not be aware of the knowledge residing in the other subsidiaries or, as in Callbor's case, the parent company might discourage such communication. The following quotations

provide some explanations. The communication senior manager found that during the training sessions, as employees became familiar with others in the training group, they realised that knowledge can be sourced from subsidiaries outside their own, regardless of physical distance:

They have realised that there is knowledge in other parts of the world, not just in their own business unit or with the parent company. [AP; PC]

However, it seems that the parent company discourages the practice of contacting knowledge sources other than the parent company. Despite the rule not to contact a unit outside the parent company, some employees will go directly to the knowledge source. Subsidiary staff members commented:

We are not allowed to go direct. Since I know them personally, I do contact them. It is very easy to pick up the phone because some speak Chinese. I find it very beneficial to contact them directly. We can give them quick beneficial feedback. [SM; Sub-1]

Meeting people from other selling units is very beneficial. It is good to hear that they often have the same problems. It forms kinship. Sometimes I contact Japan or Singapore to get advice. I contact them, as I have built a relationship. I do not ring the others, as I do not know them that well. [SG; Sub1]

The subsidiary employee SM knew the company rule not to contact other subsidiaries directly; however, he ignored the rule in favour of the benefits of direct contact. Speaking the same language increases the ease of knowledge sharing. SG expressed similar reasons for contacting another subsidiary. After having met someone personally, it is easier to communicate. Having similar problems creates an understanding and trust, which encourages knowledge sharing to solve problems. He sought knowledge from other subsidiaries, regardless of distance, language, or culture difference because he had met them face-to face. He would only contact subsidiaries where he had met staff members previously. His saying “I do not know them that well” suggests that he might have had limited contact via electronic contact. Gupta and Govindarajan (2000) and Meloche and Hasan (2014) found that the parent company encouraging socialisation between subsidiaries increases knowledge transfer between subsidiaries as well as to the parent company.

Why the company does not allow employees to contact other subsidiaries directly is not clear. In the context of the interview, it was suggested that the parent company prefers to maintain control. Some mentioned that it was permissible to contact others

by email, as long as the parent company's manager was included in the communication. As a distributor explains:

I use proper channels – everything is “cc”. [DM; Dist-1]

Foss and Mahnke (2003) and Mudambi and Navarra (2004) said that subsidiary knowledge transfer is limited due to subsidiary managers protecting their knowledge to maintain their status over other subsidiary managers. However, Mahnke, Pedersen and Venzin (2006) concluded that while the tacitness of knowledge might be an impediment, the main reason is the lack of the parent company providing the adequate medium to transfer knowledge. Chapter 7 discussed the importance of a user-friendly and adequate database to capture and codify tacit knowledge. Face-to-face meeting, while it would be the most desirable medium, is the most expensive option. Nevertheless, senior managers should consider increased use of media such as teleconferencing or videoconferences between subsidiaries and the parent company, as well as between subsidiaries and distributors. While the role of information and communication technology might never be as intimate as face-to-face communication, it does create an environment inversely related to knowledge stickiness (Albino et al. 1998; Roberts 2000; Bolisani 2000). Even if none of the above technology is available, when senior managers acknowledge the value of subsidiaries' knowledge and encourage tacit knowledge sharing, employees are inclined to transfer knowledge to the parent company and other subsidiaries. In the case-study company, limited inter-subsidary knowledge transfer occurs; one might argue that one of the reasons might be that the parent company discourages the communication. However, when employees know each other well, they ignore the parent company's rule. Furthermore, the inter subsidiary communication promotes closeness, and this closeness, in turn, promotes further communication:

“[i]t forms kinship” (SB, Sub-1)

Employees were asked if they thought that knowing someone well could have a negative impact on knowledge transfer. All employees felt that the benefits would outweigh any possible negative impact. For example:

No, I think that building close relationships with the team is essential and a big help. Personal relationship outweighs any other cost. [RH; R&D]

That could create a problem, as that person would limit the source of valuable knowledge, but I really think that the pros are a lot bigger than the cons. [OR; R&D]

Despite employees and the parent company agreeing that interpersonal relationship is valuable and a positive predictor of knowledge sharing, the parent company seems to discourage building personal relationships. Employees complain that they no longer have time to get to know each other well; that the company has lost some of its humanity. Some employees expressed their frustrations openly:

Callbor is not into family feeling or any personal feelings. Though I think relationships are vital. [MS; Sub-2]

Callbor has a saying: "Great Fellowship". I say to them, "Create Fellowship!" Relationships provide feedback, provide solutions. They just don't understand. [AR; R&D]

The employees do not believe that senior management understand the value of personal relationships. The last quotation is very powerful and demonstrates the employee's frustration with the parent company. His feelings are in contrast to the impression senior management are trying to convey. They are aware that personal relationships motivate staff to share tacit knowledge; however, they need to provide the culture that fosters building personal relationships. The analysis suggests that personal relationships are discouraged in favour of a controlled knowledge-transfer process, for example the kaizen. However, as mentioned in the two previous chapters, kaizen at Callbor does not provide the platform where employees feel safe and willing to share their knowledge. As quoted in Chapter 6, staff members do not trust the formal tool and feel that some managers use the kaizen to increase their personal power. A well-designed kaizen is meant to encourage knowledge transfer, and to empower employees. Many of the kaizen participants meet face-to-face while trying to solve a problem; hence, a well organised and managed kaizen should lend itself to building personal relationships. This is not the case at Callbor. The company's preference for kaizen as a platform to transfer knowledge could be due to following Con-Glom's CBS, and to company culture. Based on Cameron and Quinn's typology (2006), the parent company follows a hierarchical structure; this type of company culture focuses on internal rules and processes. Stock et al. (2010) found that a hierarchical company culture inhibits tacit knowledge transfer.

In this case study, staff members consider personal relationships to be a high motivator for knowledge sharing and transferring. Ma and Yuen (2011) found that

humans instinctively seek relationships, as they have a need to belong, and to be socially connected. While face-to-face interaction is the preferred communication method, employees found that geographical distance is not a hindrance. They suggested that relationships can be built and maintained by keeping emails informal and by exchanging social comments. This supports the study by Ma and Yuen (2011); personal relationships have a positive effect on knowledge-sharing behaviour regardless whether it is online or face-to-face. Further, as demonstrated in the R&D departments examined in this study, personal relationships at work increase job satisfaction, resulting in a positive effect on innovation and motivation to share knowledge (Kuo 2013).

To summarise, one can conclude that personal relationships are positively related to the transfer of tacit knowledge sharing from the subsidiary to the parent company, as well as from subsidiary to subsidiary. Further, trust is vital to building personal relationships, and personal relationships can increase trust. The following section analyses trust and motivation.

The following diagram 26 is the summary of possible stickiness characteristics in the theme “Personal relationships”.

Diagram 26: Summary of the stickiness characteristics “Theme – Personal Relationships”

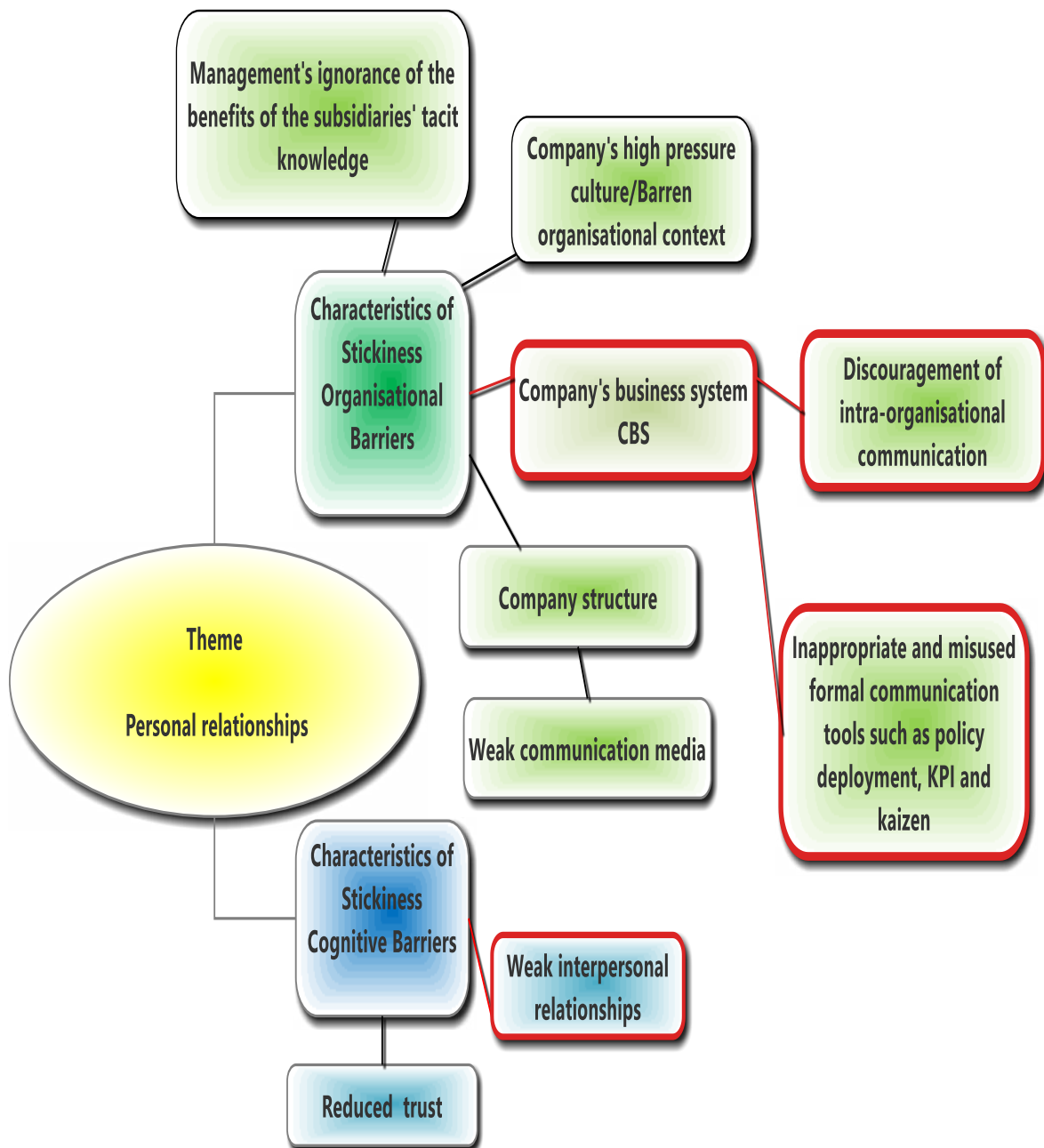


Diagram 26

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 26

This analysis confirms that the known characteristics of stickiness such as company culture, structure, and management's ignorance, as well as reduced trust, are the same whether knowledge is transferred from the parent company to the subsidiary or the reverse. Callbor's culture and structure influence the weak communication media and weak interpersonal relationships, creating sticky knowledge transfer between subsidiaries as well as to the parent company.

2. Trust and motivation

Trust and motivation are a vast, complex research area, most of which is beyond the scope of this research. This study investigates the possible cause of sticky knowledge transfer from the subsidiary to the parent company; it analyses trust and motivation in this limited context as the themes emerged during the interviews at Callbor's parent company and its subsidiaries. Further, trust is a motivator to transfer or share knowledge (Adler & Kwon 2002; Park 2006), and as such will be discussed in the same section.

a. Definition of trust

Trust in regards to knowledge transfer has been extensively researched, resulting in a multitude of theoretical models (e.g. Polanyi 1966; Nonka 1994; Ghoshal et al. 1994; Zander & Kogut 1995; Szulanski 1996; Zaheer et al. 1998; Hansen 1999; Edwards & Kidd 2003). The definition of "trust" most commonly found in the knowledge-transfer literature relates to employees accepting the knowledge they receive as truth, without the giver having to provide evidence. The receiver believes the source to be reliable. Further, they feel safe that the trusted person has their best interests in mind. There might be an expectation that the receiver will value their trust and might reciprocate. The giver of trust is confident that the receiver will not exploit the trust for personal gain.

b. Definition of motivation

Motivation can be extrinsic or intrinsic. Extrinsic motivation is driven by external rewards, such as money, promotion or praise, in contrast to intrinsic motivation, which

is driven by self-satisfaction and personal feelings (Osterloh & Frey 2000; Gagne 2009). Ghoshal and Moran (1996) postulated that intrinsic motivation is closely linked to identifying with the company's culture and goals, which fosters a sense of purpose and achievement. It is in this sense that motivation is discussed in the following section.

The previous section found that trust is an integral part of interpersonal relationships. Trust is considered to be an important precondition for knowledge transfer, confirming the study by Evans et al. (2013), who found trust to be the most important aspect of knowledge transfer and sharing. Evans conceptualised that trust has a positive effect on willingness to transfer knowledge, as well as accepting knowledge. It improves communication, and consequently encourages relationship building. Employees need to feel confident that the information they receive can be trusted, and that they receive all the necessary information. However, a subsidiary salesperson complained:

[The] parent company is a bit tight-lipped regarding the weaknesses of a product. We never get the whole truth. It makes it very difficult when you try to sell a product. It often makes us look like fools or liars in front of our customers. If we knew the full truth, we could sell accordingly. However, they hide the truth all the time. I do not know if it is a policy. [CN; Sub-5]

His complaint was not a single incident:

We were going to launch a new product, [and] we had three customers to attend the launch. But then we were informed by R&D that we had to change the date due to a minor problem. They did not say what the problem was, they never do, they just provided us with another day, and without explanations, that day had to be changed again. It is very difficult to work under such conditions. [KD Dist-4]

Further, KD found that if she had a question, the information provided was usually very limited:

They always reply, but the information is too narrow. It does not add to the knowledge I had before I asked the question. [KD Dist-4]

The employees showed frustration at not receiving the necessary information from the parent company. The interviews did not reveal why senior managers do not provide all information to employees. One reason could be, as was raised in Chapter 6, that senior managers might be worried about the loss of personal power. A second reason could be that the parent company does not trust the subsidiaries' employees to manage the truth, as senior management assume that it might be too complex for the salespeople. However, when all the weaknesses of a product are not disclosed, the

employees feel that the truth regarding the quality and capability of a product is hidden. The salesperson might not be able to sell the product as effectively as if they knew the weakness of a product. A similar situation was discussed in Chapter 7, where costing of products was not shared with the subsidiaries, as management felt that the subsidiaries could not be trusted with comprehensive, complex issues like profit margins. However, the perception of not being trusted, or not being able to trust the information provided, results in the receiver not being able to transfer the knowledge received. It reduces the receiver's ability to perform to their best productive ability; to "sell accordingly". Furthermore, CN felt that customers might see him as a fool or a liar. He worried that customers might consider his personal character to be untrustworthy. Both CN and KD felt that they could lose credibility as professionals, and as such might feel stressed. Not being trusted would reduce the capability to build close relationships with customers, further reducing productivity and, in turn, resulting in loss of revenues for the company. As mentioned in Chapter 7, if employees become stressed they are less inclined to share their knowledge.

Trust and working towards the same goal is considered by some researchers to be a main driver for employees to share knowledge (Ruggles 1998; Bouthilier & Shearer 2002; Evans 2013). Striving towards the same goal motivates employees to achieve success. A parent company project manager's commented:

As we moved forward in the process, more and more people could see that we [would] make it. They started to trust the project. [RH; R&D]

His words indicated that when management showed trust in the employees and supported the project, the employees reciprocated by trusting management, colleagues and the team, as well as the project. This trust strengthened their motivation. However, more generally, employees' motivation seems to be reduced. As a parent company's middle manager complained:

Motivation of people is down, because [there is] too much restructuring. They feel that people...no longer count. Individuals have to be motivated. Managers really need to motivate their people. [RH; R&D]

This manager raised several points. A) Staff motivation is reduced because of too much restructuring, leaving people to feel that they no longer count, they have no value. Cascio (2005) theorised that if companies treat employees like a commodity that can easily be replaced, employees feel powerless. The atmosphere of uncertainty

negatively affects staff morale. Employees lose trust in management, followed by loss of motivation. B) Staff need to be motivated. In other words, the company should not rely on employees' self-motivational personal drive. Management seems to build on the fundamental human desire that humans like to learn and to share their knowledge; as Aristotle wrote, "All men by nature desire to know". C) While most employees are motivated intrinsically by the interesting nature of their jobs, which entails an interest in ongoing learning, it is the role of management to provide a stable and trusting environment. Management needs to create a culture that motivates employees.

The following comment by a senior manager strengthens the importance of management's responsibility to maintain an environment of trust:

Trust must grow. It is always a process. I think that we always think it just has to be there, but it isn't. [KP; PC]

Trust and motivation are closely linked, and are positive catalysts for the transfer of tacit knowledge within an organisation. Trust motivates knowledge transfer within a company, from parent to subsidiary, as well as the reverse. When employees feel that they own a process and are empowered, this can lead to staff retention and increase productivity, while lack of motivation reduces knowledge transfer and might have a negative impact on productivity (Organ & Ryan 1995; Podsakoff, Blume & Podsakoff 2009). Further, while some personalities might be more inclined to share knowledge, the company should not entirely rely on self-motivation. A company culture of barren organisational context is unproductive and creates sticky tacit knowledge. To conclude, motivation to transfer knowledge depends on the company's ability to create an environment of informal communication flow that allows employees to form close personal relationships (Holtshouse 1998; De Long & Fahey 2000).

The following diagram 27 is the summary of possible stickiness characteristics in the theme "Trust and motivation".

Diagram 27: Summary of the stickiness characteristics “Theme – Trust and Motivation”

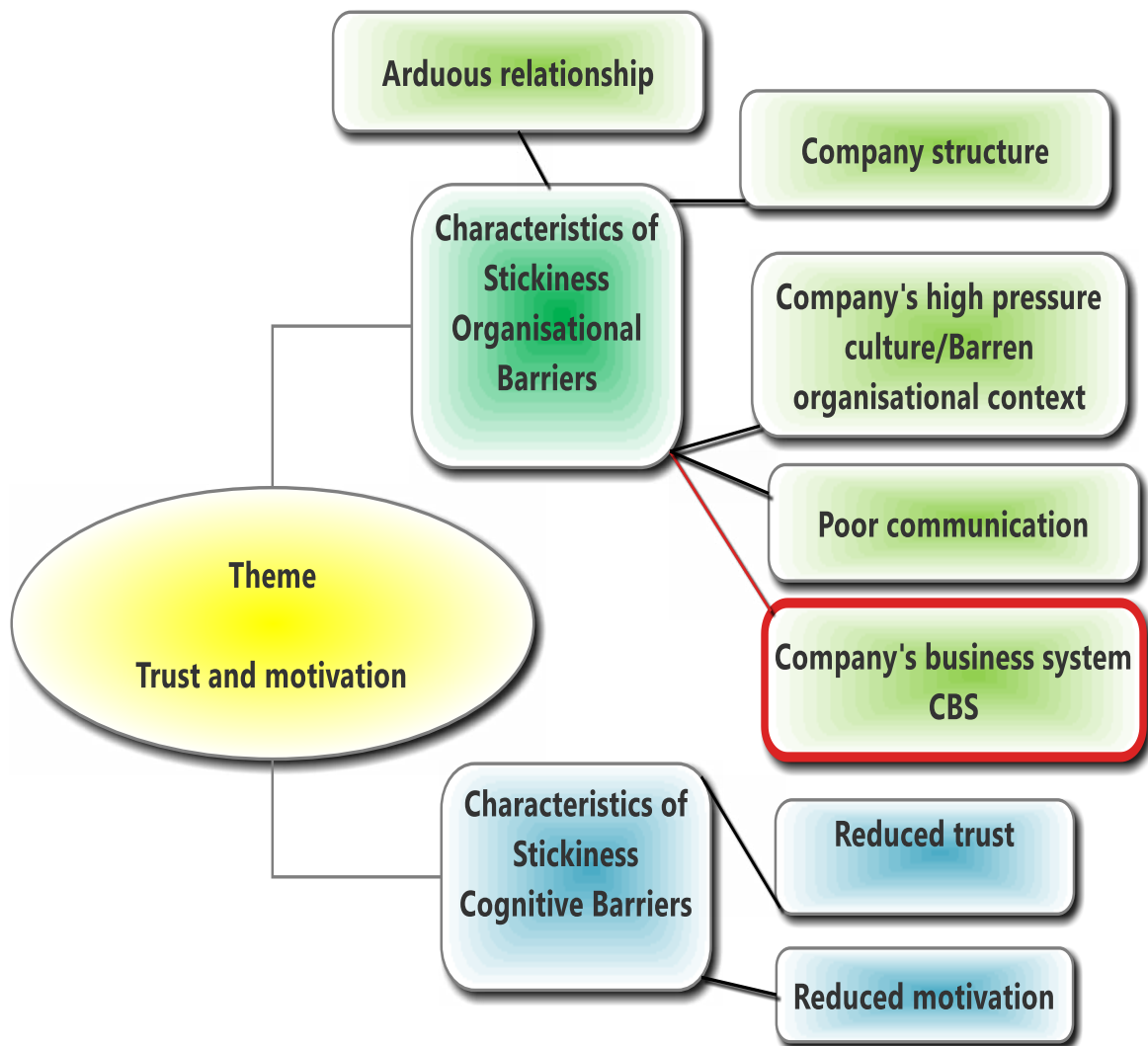


Diagram 27

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 27

This analysis confirms that the known characteristics of stickiness such as company culture, structure, reduced trust, reduced motivation, and poor communication negatively influence knowledge transfer.

3. Corporate culture and company culture

An extended analysis of company culture is not in the scope of this research. However, the unstructured interviews provide sufficient data to analyse the case company's culture in the context of this investigation. Szulanski (1996) uses the agriculture metaphor "barren organisational context" to describe an organisation where knowledge transfer does not flourish. "Barren organisational context" always refers to an organisation discouraging knowledge transfer or knowledge sharing. This analysis will use Szulanski's expression, and will define organisational culture as described below. As discussed in previous chapters, the corporate culture influences employees' behaviour and governs the company's processes and rules. This thesis argues, without exploring company culture in all its diversity, that the company's philosophy creates a company culture, which affects knowledge transfer from subsidiaries to the parent company.

a. Definition of organisational culture

Organisational culture, with its multiple diverse concepts, has been discussed extensively in the literature. Often organisational culture is defined by the values and beliefs the organisation tries to communicate to its employees (Ouchi 1981). Alternatively, it encompasses how the organisation would like their employees to behave, what is expected of employees to adhere to and what kind of behaviour is not acceptable (Cabrera & Bonache 1999). Organisations usually align their organisational culture with their strategy. The culture is meant to achieve organisational strategic goals (Rousseau 1990; Johnson 1992). Early research categorised organisational cultures as strong or weak. A culture is strong when the organisation's management the employees understand and commit themselves to the organisation's core values, and consistently apply them to achieve the company's goals and competitive advantage (Deal & Kennedy 1982; Ouchi 1981; Pacanowsky & O'Donnell-Trujillo 1982). In companies with a strong culture, the strategy is the culture, or as Smircich (1983) stated in a paper presented at the ICA/SA conference, "A culture is not something an organization has; a culture is something an organization is" (Smircich 1983, p. 249).

In contrast, a company with a weak culture has not been able to clearly communicate its core values to its employees, or its employees have not accepted the culture (Waldman & Yammarino 1999, Jaskyte 2004). A strong culture is frequently associated with a successful strategy and competitive advantage; however, it is now argued that this is not necessarily the case. While a strong culture might be beneficial for one company, it might be a failure for a different organisation, depending on the situation and the culture (Miller 1993, Cabrera & Bonache 1999). Organisational culture may have positive or negative effects on an organisation (Alas & Vadi 2006).

A subculture is defined by Rousseau (1990) as a culture where a group of individuals identify with each other and where the group, while associated with the organisational main culture, holds different values and beliefs, and might have goals that are specifically of interest to that group (Egan 2008). An organisation might have several subcultures such as departments or groups that are responsible for similar tasks or have similar skills. Employees' commitment can differ between an organisational culture and the subculture (Brown 1995; Martin 1992). Lok and John (1999) postulated that innovative and supportive subcultures have a higher commitment from the employees.

Con-Glom sets Callbor's organisational culture. The CBS implemented numerous new processes, including Con-Glom's lean process. Employees perceive several of those processes as positive. Conversely, employees feel that the parent company's culture hinders communication, relationships, trust, motivation and ultimately the ability to transfer knowledge. Employees and several senior managers expressed concerns that the human aspect seems no longer to be of importance to the parent company. A senior manager recommended:

*...to make people feel a little bit more that they belong to the company. To have a bond with the company helps the culture. In the end it is a benefit to the organisation, if their company culture strengthens the human aspects....
The strength of a company lies within the human aspects. [AP; PC]*

The concern that the human aspect is being compromised in the pursuit of leaner processes was echoed throughout the company. A general manager of a large subsidiary summarised those concerns:

When we integrated the company, everyone had to change to the conglomerate culture. Anything else is being crushed. We had a family culture before and that is getting lost.... Now we are seen as [a] profit unit.

They do not care how the units make up a whole. All managers follow the conglomerate's philosophy. If the numbers are good, then you are good. If the numbers are bad, then you are bad. There is no room for any social bases; however, staff is [sic] socially driven. It is up to the local manager to maintain the social aspects. The conglomerate is ruthless and hard. Anybody, any manager can be like that. I do not think that is anything to be proud of and I think it is poor management. [MS; Sub-2]

The subsidiary general manager expressed frustration and anger. He raised several points: A) "When we integrated the company, everyone had to change to the conglomerate culture." As seen in the two previous chapters, Con-Glom's CBS is its culture and Callbor has enforced the culture by expecting the employees to obey the rules. B) "Anything else is being crushed"; the culture is enforced. Employees have to obey or, as noted in Chapter 6, there "will be consequences". As Cabrera and Bonache (1999) wrote, companies decide what type of culture is essential to gain competitive advantage. It might be flexible or, as in this case, require compliance with rules. C) "All managers follow the conglomerate's philosophy. If the numbers are good, then you are good. If the numbers are bad, then you are bad". Callbor's managers follow Con-Glom's philosophy, and thus they are driven by numbers. The human aspect seems to be of little importance. However, job satisfaction is positively related to an organisation's long-term financial success and competitive advantage. Job satisfaction is associated with a sense of belonging (Alas & Vadi 2006). D) "The conglomerate is ruthless and hard". Employees who are positively acknowledged, respected and valued are more likely to trust their managers and are willing to give (Alas & Vadi 2006). E) "They do not care how the units make up a whole"; and in a similar context, "there is no room for any social bases; however, staff is [sic] socially driven". Human beings have the emotional need to belong; they are not just solitary individuals (Baumeister & Leary 1995). A culture that ignores this fundamental need might suffer the consequences of employees being less engaged, less innovative and less likely to share their knowledge. As mentioned in Chapter 6, "employees are less likely to think". F) "It is up to the local manager to maintain the social aspects". A supportive culture and a leadership style that empowers employees increases job satisfaction and commitment from the employees to support the organisation in achieve strategic goals and profitability (Lok & Crawford 1999; Luthans & Youssef 2007). Further, Martins and Terblanche (2003) concluded that a supportive culture that encourages learning and knowledge sharing results in employees who are more creative and innovative and reduces causal ambiguity within the organisation

(Elashmawi 2000). Without the parent company's support, it would be a stressful task for the subsidiary general manager to maintain the morale of the subsidiary's employees. His final comment was, "Anybody, any manager can be like that; I do not think that is anything to be proud of and I think it is poor management". The subsidiary manager concluded that Callbor's management style is poor and does not display management skills.

A senior subsidiary manager who used to work for the conglomerate has an opposing view to MS:

They [Con-Glom] have a disciplined way to run business with very good processes. Our cultural approach is to communicate who we are and how we communicate that. People identify with a strong company culture ... It is always about how the whole company is growing. We ask, "Is what the individual doing to the benefit of the company?" [DP; PC]

It seems that Con-Glom understands the value a strong company culture might provide; however, senior management seems to lack the ability to implement the positive aspects of a strong culture. They perceive a strong culture as one that focuses only on immediate financial gain. They do not seem to realise that enforcing a culture that ignores employees' needs is very likely to be counter-productive and increases causal ambiguity within the organisation which is not to the benefit of the organisation (Martin-de-Castro et al. 2006). A positive organisational culture cannot be enforced by processes. A culture encouraging trust and social relationships and providing resources for social interactions is the foundation for knowledge sharing. Tacit knowledge provides the competitive advantage that Con-Glom is seeking (Al-Adaile & Al-Atawi 2011; Wang, Su & Yang 2011; Casimir, Lee & Loon 2012). A positive company culture encourages employees to be active company members who desire to work for the organisation (Beaudan & Smith 2000).

The analysis supports the argument that the company's culture, which seems to be driven by the lean philosophy, affects knowledge transfer within the organisation. A barren organisational context is a characteristic of stickiness regardless of the direction in which the knowledge flows.

The following diagram 28 is the summary of possible stickiness characteristics in the theme "Company culture".

Diagram 28: Summary of the stickiness characteristics “Theme – Company Culture”

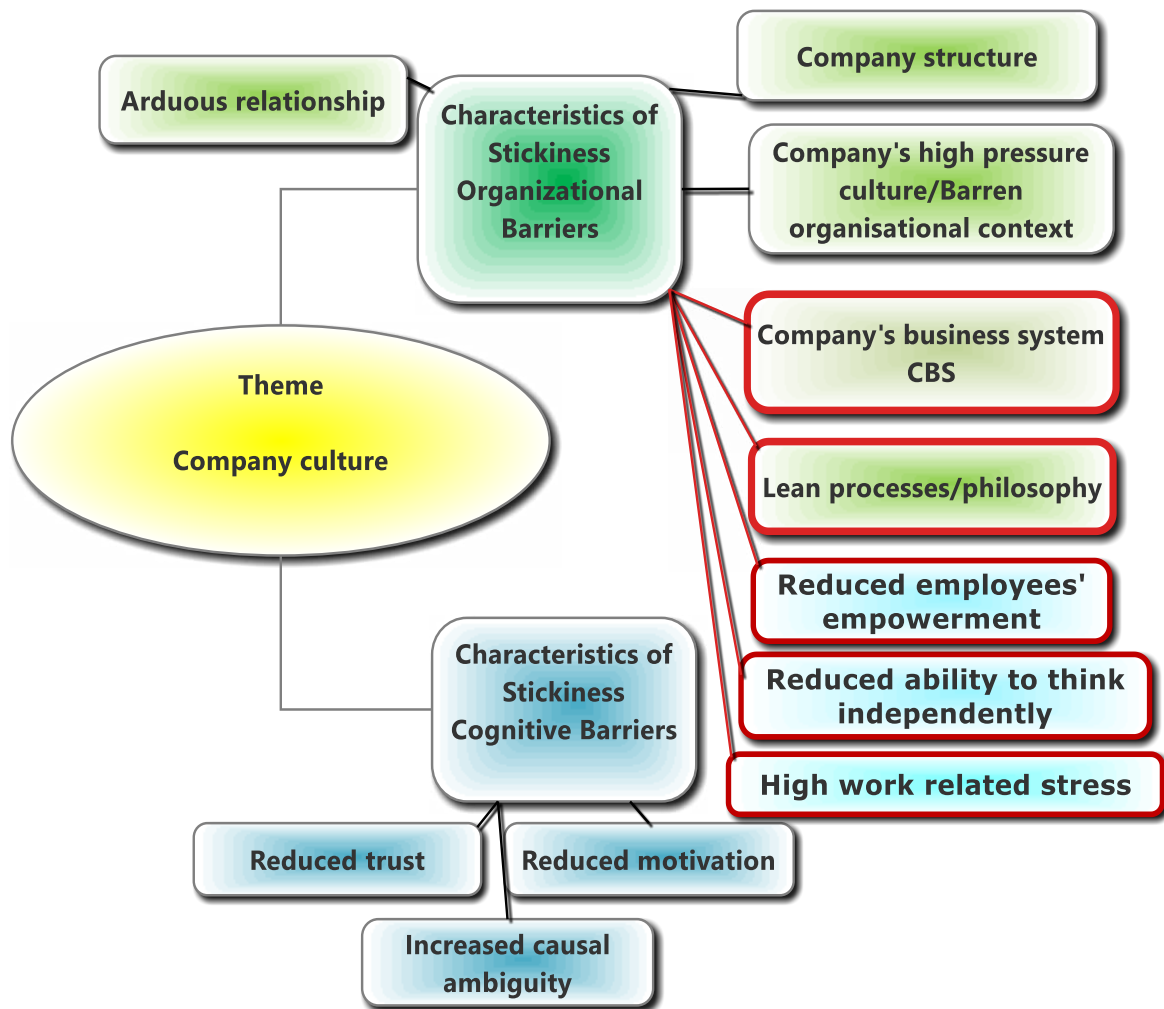


Diagram 28

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 28

This analysis confirms that the known characteristics of stickiness, such as a company culture of barren organisational context, reduced trust and motivation to transfer knowledge. Callbor’s culture is its company lean processes. The structure, culture and CBS negatively affect the subsidiaries’ tacit knowledge transfer to the parent company.

4. National culture and language

Employees often mentioned language within the same context as national culture; hence, both topics will be discussed within the same setting.

National culture has been discussed extensively in the knowledge-management literature (Gerhart 2008; Harzing 2002; Ang & Massingham 2007; Taras, Kirkman & Steel 2010; Shafei, et al. 2011). A full treatment of national culture is beyond the scope of this study. However, aspects of national culture will be briefly discussed to clarify related issues in the transfer of knowledge from subsidiaries to the parent company.

a. Definition of national culture

Hofstede's (1980; 1986) model of national culture might be the most cited. It describes national culture using four dimensions: individualism versus collectivism; masculinity versus femininity, or the values of heroism, assertiveness, and material rewards versus values of caring for others and quality of life. The power distance index measures the extent to which a society is hierarchical versus a society where authority is questioned and power are more equally distributed. The fourth dimension is the uncertainty avoidance index which measures the extent to which a society imposes strict behaviour and laws. Since Hofstede, several models have been developed (e.g. Laurent 1986; Ghemawat & Reiche 2011). This thesis frames culture in the broad manner of the beliefs, values, behaviours and interactions of a country's societies. It explores how organisational culture and national culture interact and influence knowledge transfer (De Long & Fahey 2000; Bhagat et al. 2002; Gerhart 2008; Vaara et al. 2012).

b. Definition of language

According to the Merriam-Webster dictionary, language is defined as "the system of words or signs that people use to express thoughts and feelings to each other or the words, their pronunciation, and the methods of combining them used and understood by a community". In the context of knowledge transfer within a multinational company, different languages may have a positive or negative effect on workplace communication and knowledge transfer. It will depend on the organisation's ability to

absorb the knowledge that enters via its subsidiaries (Peltokorpi & Vaara 2014), and on the circumstances whether standardisation or adaptation manages national culture and language barriers (Perlmutter 1969; Bartlett & Ghoshal 1999; Bartlett, Ghoshal & Birkinshaw 2004; Ang & Massingham 2007).

The following analysis focuses on Callbor's communication between the parent company and its subsidiaries and the host country's customers, and the training of the subsidiaries' employees. National culture and language are explored in the context of the interviews and the relevant literature.

Employees viewed the impacts of national culture and language barriers with regard to knowledge transfer differently depending on circumstances. The majority of employees did not associate different cultures with arduous knowledge transfer; rather, they believed that external barriers were to blame, as a subsidiary manager expressed:

Priorities get in the way, not culture or language. Priorities are getting in the way to transfer knowledge and even to find the knowledge. [GS; Sub-5]

Personal relationships and trust seem to be an important driver to combat culture and language differences. As discussed earlier, trust and personal relationships are vital for knowledge transfer between the subsidiary and the parent company. Native culture and language seem to be of less importance. A subsidiary R&D manager noted:

It was different in the early days, as the parent company's R&D department did not trust us. They were worried that they would lose their jobs. Personalities make the difference, not nationalities. We have problems with individuals, regardless of nationality. It is the individual person, not the department, the language or the division. [CR; Sub-3]

This implies that the parent company's R&D employees did not trust the subsidiary R&D staff because of perceived job insecurity, rather than because of national culture. When establishing the subsidiary R&D department, trust between the parent company's R&D and the subsidiary might have been low due to the new and unknown situation. Trust in the sender and receiver of knowledge, as well as their respective attitudes, can minimise possible negative effects of national culture (Moller & Svahn 2004). CR implied that external factors such as personalities were a concern rather than national culture.

To strengthen the importance of trust and personal relationships, a project manager from the parent company emphasised that trust neutralises national culture and language:

They all speak English. I have never found culture a real problem.... We know each other. It does make it easier as everyone trusts each other, you get things done quicker, and there is no personal blame. [RH; R&D]

Personal relationships reduce the negative effect of culture differences, even in a country with a divergent culture to the parent company. As a subsidiary manager said:

Becoming friends [and] developing personal relationships overcomes country culture.... If we open our doors to conduct better business, it is like opening your house. People are happy to enter, but if your door is closed, you turn them away. [SG; Sub-1]

Personal relationships seem to be vital in overcoming communication issues. However, when gathering local market knowledge, it is important to demonstrate local culture awareness and sensitivity, so as to augment the development of trust. Ang & Massingham (2007) theorise that parent companies' information-gathering documents should be adapted to the particular country's culture.

There is overall agreement that in dealing with the local population, national culture needs to be respected and accommodated. The company adapts the customer questionnaires (VoC) according to national culture. A Chinese employee pointed out:

In the Western world, you can ask very direct questions; however, in China you have to be more careful and modify those questions to get the answers we need. For example, in Chinese culture we cannot refuse an answer like you can do in the West; hence, you have to ask the question that they are able to answer. You have to respect feelings and respect people, even if you do not like them. [SG; Sub-1]

The manager of the South East Asian distributors made similar observations:

Dealing with the distributors in the various Asian countries you have to be very culture-sensitive, you have to know their customs. I have travelled and lived in Asia for a long time; it comes to me naturally to be sensitive to local customs. If you ignore it, you get a brick wall of friendly smiles. If you respect their culture, then they respect you. There are small little things one should observe. It can make a difference in communication, and each country has their customs. [WN; Sub-2]

When questioning the effect of national culture or language on knowledge sharing during training sessions, the answer depended on the situation. For example, by combining employees of several countries when training staff, the parent company's

communication manager raised the positive affect of developing personal relationships to overcome national culture differences:

I found if we mix countries in the training session, they get to know each other and they start sharing. If you know someone personally, it will open doors and overcomes culture. You can explain to a person your problem or ask them what is happening. [AP; PC]

Personal relationships and trust seem to ease knowledge sharing during a learning phase. Personal relationships might be developed between individuals or in small groups and could have a positive effect on learning. A parent company's manager noticed that in some cultures employees are more likely to ask questions when trained in small groups. He commented:

If the product manager from the parent company provides product training [or] presentations or conducts a workshop, he will always ask: "Have you understood, has anyone a question?" But no one ever has a question or admits that they had not fully understood. It is a culture problem. If they are not spoken to in a group, the situation is better. On an individual basis or in a very small group people are more inclined to ask questions. [SR; Sub-3]

His example acknowledges cultural differences, and suggests a solution. While the possibility to train in a mixed-culture environment is not mentioned and might not always be feasible, he did remark that training small groups or individuals would ease the culture differences. Training sessions could easily be adopted to suit the national culture. Hofstede (1986) conceptualised that knowledge transfer in a learning situation needs flexibility from both the sender and receiver of knowledge. However, Migliore (2011) proposed that Hofstede's original findings are no longer as valid, as times have changed. One could assume that since Hofstede's findings, internet communication and globalisation have raised awareness of national cultures, and hence have minimised cultural differences. However, in a global sense, being more aware of culture differences does not necessarily equal the understanding and acceptance of different cultures. Hence, Hofstede's original findings might be as valid today as they were in 1986.

English is the organisation's common language. However, the majority of subsidiaries' native language is not English. Some countries' population consists of several different cultures and languages; all groups use English to communicate. Further, some countries find it easier than others to learn English. However, not all subsidiaries find

it easy to speak or understand English. The general manager from Korea admitted that there are language barriers:

There is a knowledge problem, as our people do not learn very well by themselves and often do not fully understand the information they have been sent by brochures, flyers and on CDs et cetera; they just do not fully understand the information. [KD; Dist-4]

Similar comments that language can be a problem during product training were made by several subsidiaries; for example:

They [parent company's product trainers] are not aware that there is a language problem. They think that it is the culture difference. They speak too fast. Their training is just not effective. [MS; Sub-2]

According to Sirmon and Lane (2004), language barriers increase knowledge stickiness. If the parent company transfers knowledge, the receiver might not be able to absorb the knowledge, or the subsidiary sender might not be able to express their tacit knowledge, or knowledge might not be identified or implemented.

It seems that the organisation uses cultural adaptation when dealing with local customers and when gathering local market knowledge. However, standardisation is applied to knowledge sharing between subsidiaries and the parent company. As mentioned previously, while the company culture seems to have a negative effect on knowledge transfer, national culture seems to be managed well, and might not affect knowledge transfer negatively. A manager from a South East Asian subsidiary concluded:

In general, I do not think country cultures are a problem ... If people are Callbor's people [senior manager from the parent company], or belief in the conglomerate's way, then the company culture is stronger than the country culture. [VD; Dist-3]

In summary, the analysis adds to the existing literature by confirming that national culture's effect on knowledge transfer depends on the circumstances. Table 15 summarises six national-culture circumstances that increase or reduce stickiness.

Table 15: Six national culture circumstances that increase or reduce stickiness.

1. Gathering market knowledge and being conversant with customers' needs must be adapted according to national culture to reduce stickiness.
2. Depending on the national culture, in a teaching/learning situation adaptation might be required to reduce stickiness.
3. Knowledge transfer between subsidiaries and parent company or vice versa does not seem to be affected by national culture. No need for adaptation. Standardisation would not create stickiness.
4. Company culture can reduce or increase possible negative effects of national culture.
5. Language barrier may increase stickiness.
6. Trust and interpersonal relationships weaken stickiness that may be due to national culture.

This analysis supports the findings by Ang and Messingham (2007) that managing knowledge transfer in different national cultures requires different management approaches. Depending on the circumstances, it might be adaptation or standardisation. Overall, the findings confirm the studies that have found that national culture has no major negative effect on knowledge transfer (Simonin 1999; Gupta & Govindarajan 2000; Jensen & Szulanski 2004). However, language differences increase the risk of creating stickiness. While previous studies analysed language barriers in knowledge transfer from parent to subsidiaries, this study concludes that the same stickiness characteristic applies when knowledge is transferred from subsidiary to parent.

The following diagram 29 is the summary of possible stickiness characteristics in the theme – “National Culture and Language”.

Diagram 29: Summary of the stickiness characteristics “Theme – National Culture and Language”

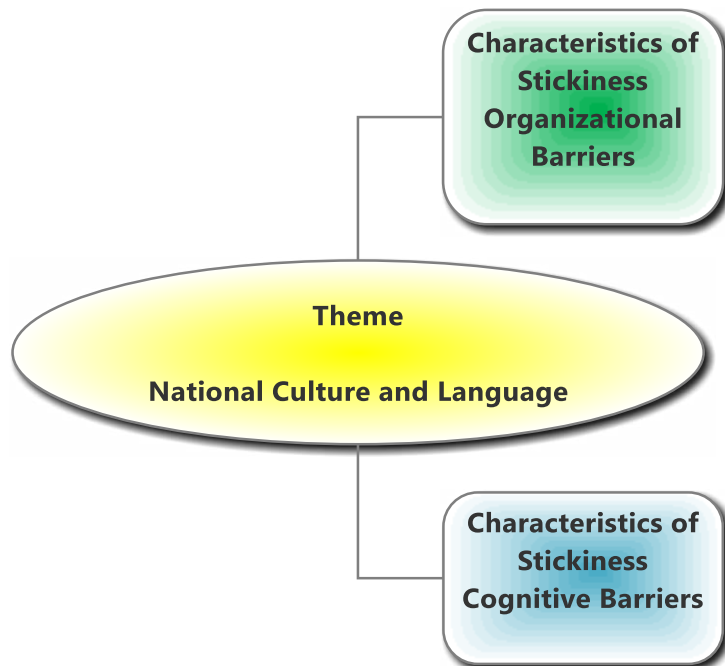


Diagram 29

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 29

This analysis confirms the studies that found national culture not to have any major negative effect on knowledge transfer. Language differences might increase the risk of creating stickiness. This study concludes that language is not a barrier to knowledge transfer if the organisation is aware of the problem language might create and manages it accordingly. This study concludes that in this company if staff have a good relationship, national culture and language do not negatively affect knowledge transferr from subsidiary to parent.

5. Too busy – lack of resources

The section discusses how Callbor provides resources such as the source of supply, time or people, and the effect on knowledge transfer. Employees repeatedly cited lack of resources such as time and tools to implement the corporate company's expected processes as constraints to their productivity and the ability to transfer knowledge. Szulanski (1996, 2004) conceptualised that knowledge transfer requires personal time and organisational resources. Comments like this by a subsidiary manager were common:

Everyone is busy, busy, and busy and has no time to pass on valuable knowledge. [SG; Sub-1]

Factors in knowledge-management failure are extensively discussed in the literature. The studies cite time constraints as a common failure factor in knowledge transfer (Guptara 1999; Riege 2005; Frost 2014). The lack of time strengthens the pattern that employees might not reflect on their tasks or understand Callbor's expectations. Employees lack the knowledge to understand why their activities are important or what they are meant to achieve. Apart from not having time to transfer knowledge, the lack of time to absorb any new knowledge would hinder the employee in deepening his current knowledge. Piaget (1972) postulated that new knowledge is formed by linking the existing with the newly learned knowledge. A subsidiary R&D product manager explained:

[The] pace is too fast, everyone is in a hurry. We have no time to reflect. We do not know why we are doing what we are doing, do not understand the idea behind the process. We have no resources. Just a lot of changes, but everyone is too busy to find out why we are doing what we are doing. [CR; Sub-3]

“Just a lot of changes” refers to the processes Con-Glom expects Callbor to implement. CR was not saying that the changes are negative, he just implied that employees have no time to reflect and understand those changes. Apart from lack of time, he used the phrase “no resources”. This might relate to lack of time or he might have been referring to support needed to fulfil the expected work requirements.

A parent company's R&D project manager, while he expressed the same concerns, added another explanation that the lack of time is due to targets being too high,

and that Callbor's performance expectations are difficult to achieve:

Our targets are set very high. We are very busy and we do not have enough resources. It is difficult to pass on knowledge if you do not have time. [RH; R&D]

A subsidiary manager mentioned similar concerns, and he expanded on the previous quotes by specifically mentioning that report writing seems to take preference over other duties:

We are all getting more and more responsibilities. Everyone is getting too busy ... Knowledge is not transferred because everyone is too busy and has other priorities.... People cannot get hold of people, as they have to write reports after reports. [GS; Sub-5]

Chapter 6 concluded that Callbor's mismanagement of its formal strategic tools leads to stickiness. The same can be said about excessive report writing. Prabhu (1999) established that companies who follow a lean philosophy often have less time and resources to transfer knowledge. He calls it "corporate anorexia". Employees are being driven until they suffer negative stress; they "burn out", and often leave the company. As mentioned in Chapter 7, negative stress affects employees' attitude to their company's loyalty, their motivation and their ability to accept change, and their output loses efficiency and effectiveness (Chusmir & Franks 1988; Vakola & Nikolaou 2005; Shaikh et al. 2013). The following four complaints are examples of concerns raised by the parent company's management and the subsidiaries. Those concerns highlight the negative influences that lack of resources has on stickiness and, consequently, the company's performance. A subsidiary's sales professional complained that the company does not have enough staff to cover Callbor's performance demands, to the point that it negatively affects employees' performance and possibly reduces the company's profitability:

We need more people on the ground or distribution channels. However, it would cost too much money. I often do not see customers for a week.... We used to serve our customers better, used to have time for relationship building. Now we have to cover too many products. We have to remember too much knowledge; it is not possible. [SS; Sub-2]

The employee assumed that reducing costs is why Callbor will not employ enough staff. The reduced staff numbers mean less time with customers, less time to build the important customer relationship and less time to absorb the knowledge required to successfully sell the products.

Similar complaints were expressed by another subsidiary sales professional:

I try to answer urgent calls and at the same time, I am rushing from training room to training room. Concurrent sessions mean that I cannot attend everything. I suffer information overload; I am not able to retain that much information delivered in such a short time ... Singapore processes are good, as we have good management, but corporate requests too much reporting. Forecasts [are] expected weekly. Over-reporting, not enough time for sales, not enough time with customers. [MG; Sub-1]

He added to the previous quote by explaining that lack of time to attend all the training sessions, the overlapping training sessions and trying to understand the knowledge within a short time results in an overload of new knowledge to be absorbed. His experiences refer to knowledge transfer from the parent to the subsidiary; however, not being able to absorb the knowledge prevents application or transfer of the newly gained knowledge (Szukanski 2003). Consequently, this would negatively affect his knowledge transfer to customers and eventually limit his knowledge transfer to the parent company. The literature often refers to retentive capacity if knowledge is maintained, reapplied and recreated as new knowledge (Druckman & Bjork 1991; Kostova 1999). The literature associates lack of retention with stickiness (Sheridan 1992; Larkin, Burgess 2013; Schmitt, Borzillo & Probst 2011). The complaint about lack of time and too-high performance demands was not only expressed by the subsidiaries; a parent-company senior manager had similar concerns:

It would help if [Callbor] would take stress away. Many managers are on duty 24 hours. Somebody suggested once that we should have as a company give-away a nice [Con-Glom] watch with the [Con-Glom] logo, but with a 15-hour watch face instead of the 24-hour one. People are struggling with their tasks. [KP; PC]

The above complaints highlighted several characteristics that increase knowledge stickiness. Every employee commented about the lack of resources, be it time, lack of staff or senior management financial or operational support. Employees felt pressured and under stress. This can lead to reduced customer relationships, and an inability to focus on customers' needs or build the important company-customer relationship to exchange knowledge; this will eventually lead to reduced profitability. Work-related stress is associated with serious health problems, such as depression and cardiac arrest. Further, stress increases absenteeism, staff turnover and loss of productivity.

(Karasek 1979; Karasek 1980; Matterson & Ivancevich 1987). Based on these findings, one can argue that stress would weaken knowledge transfer.

According to the R&D department, lack of resources has a negative impact on innovation, as a R&D product manager pointed out:

Increase resources. There are many great ideas, but not enough resources to make it happen. In today's highly competitive environment, new products should be created. The ideas are there; the innovation cannot be realised because of lack of resources. People will listen to innovative ideas, but if there are very limited resources, nothing can be done about it. One always has to stay with the most important tasks. [AH; R&D]

AH explained that the company does not lack ideas to develop new products, which are essential to gain and maintain competitive advantage. However, it seems that lack of resources prevents those products from being developed. He did not elaborate on the type of necessary resources. However, his comment "One always has to stay with the most important tasks" indicates a lack of time. Further, "The ideas are there, the innovation cannot be realised because of lack of resources" might refer to the issue mentioned by a number of senior managers:

Some personalities have a lot of power and the product manager has no time to check what a true VoC is, nor do they have time [to do] it themselves. [MT; PC]

This quote seems to indicate that a VoC conducted by a subsidiary might influence the custom VoC for their own benefits, and the R&D product managers do not have enough time to check the validity of the VoC. An R&D project manager made a similar comment, though he raised further points such as being too busy to learn and too busy to conduct a good VoC, and that the subsidiary's staff were too busy asking the customers what they need:

Everyone is very busy, too busy to learn everything. [The] product manager should know how to conduct a good VoC. However, everyone is too busy. People at the selling unit are too busy to ask customers for new ideas or vision. [RR; R&D]

Not having time to interact with customers has a negative impact on innovation. The company's CBS driven strategy and structure needs to include customer focus to allow knowledge to flow from the customer to the company to guide product development

(Guptara 1999). Senior management is aware of the problem, though there seems to be little opportunity for change. A senior manager commented:

We would like to have more exposure to customers. Like to give staff more opportunity; however, we are too busy. The time is not always there. We have to have the right tools enabling us to use company's processes To use them better we need resources. [JR; R&D]

Apart from the lack of time to see and communicate with customers, he mentioned the lack of tools to use the company's processes; however, he did not say what kind of resources he was referring to. A subsidiary's marketing manager went as far as saying that they are prevented from seeing customers:

We are prevented [from] seeing customers to build the necessary customer relationships, to gain the necessary knowledge. [SN; Sub-5]

Daft and Lengel (1983) postulated that visiting and seeing customers face-to-face provides immediate feedback on customers' needs. The advantage of face-to-face communication was discussed in the section "Knowing someone personally". The same would apply when trying to build relationships with customers. As formal written reports are impersonal and feedback is slow, the customers might not articulate their needs. Consequently, the organisation might lose competitive advantage, as they will not understand the customer or the market's needs and trends.

When asking employees what they would like to change, they made similar comments to those below. A R&D product manager commented:

We are driven by operations, but have no resources to implement them. [LR; R&D]

Not being able to see customers indicates that Callbor is operations-driven, rather than customer-driven; in other words, that the company focus is on inflexible rules and guidelines, processes that need to be followed, rather than on customer needs (Naumann & Shannon 1992). However, LR was not complaining that Callbor seems to be operations driven; his concern was that Callbor does not provide the resources to implement those processes. Similarly:

We need more resources to implement processes well ... We have too many operation systems [AH; R&D]

While senior management acknowledges that the parent company's management responsibility is to encourage knowledge transfer in both directions, one senior

manager placed the responsibility solely on the subsidiary management. He acknowledged that subsidiaries have knowledge and that he was interested in receiving the knowledge. However, he felt that the responsibility to transfer the knowledge lies with the subsidiary's manager, and he blamed the subsidiary's managers for prioritising their objectives over knowledge transfer. According to the senior manager, the subsidiary's manager is the barrier to transfer knowledge to the parent company. He explained:

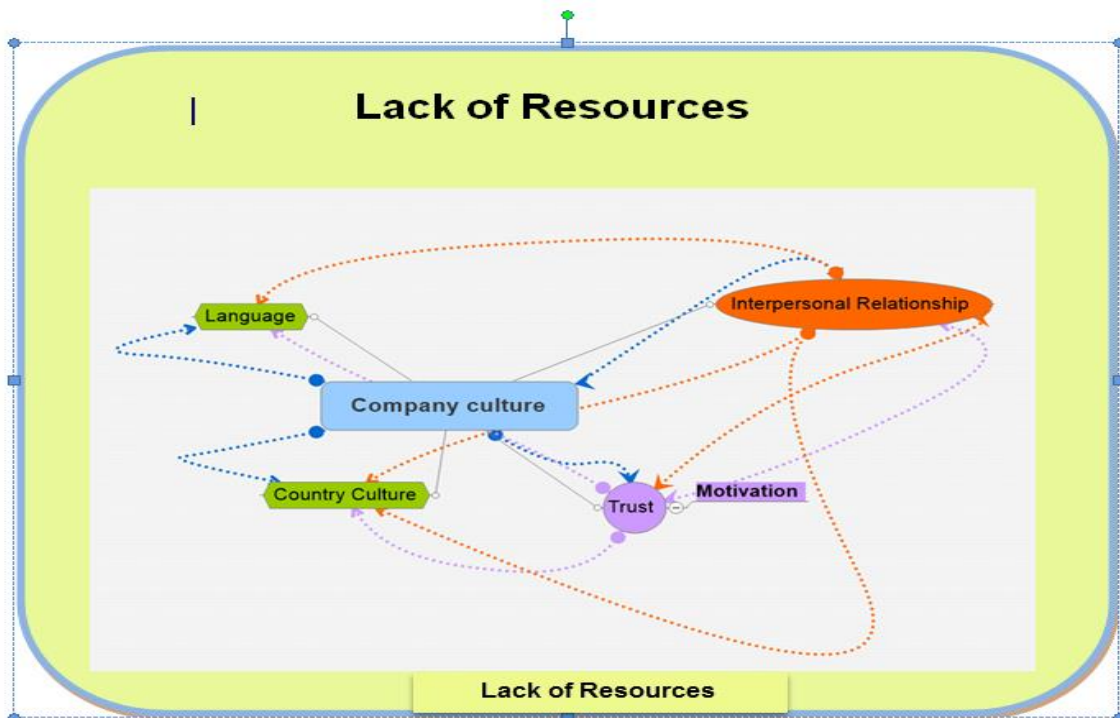
All subsidiary staff has knowledge, but some have more than others. The knowledge I am most interested in is their knowledge about customers and markets. It depends on their management, if they encourage sharing their knowledge – how easy management makes it for the unit to pass on information. Most of the knowledge that is passed on comes from individuals, but often their information is not passed on, it gets lost in the subsidiary. It really depends how much [the] management of the selling unit allows the knowledge to be passed on and if they provide resources. Most of the time, they are only interested in their own objectives. It is not just about communication; as well, it is about how management conditions their staff.
[LR; R&D]

LR might have a valid point by stating that subsidiaries' managers might not pass on knowledge to the parent company due to self-interest. According to the literature, subsidiaries might be reluctant to transfer knowledge to the parent company or other subsidiaries because they do not receive compensation for their efforts, which is not in their interest (Szulanski 1996; Forsgren et al. 2000; Andersson et al. 2001; Anderson et al. 2002). However, Gupta and Govindarajan (2000) and Björkman and Barner-Rasmussen (2004) found that parent companies that engage in socialisation practices across their network benefit from subsidiaries sharing knowledge between subsidiaries and the parent company. Further, However, as discussed in the first section of this chapter, Callbor's parent company's managers discourage subsidiary-to-subsidary knowledge transfer. Further, poorly managed social context and resources increases causal ambiguity. LR blamed the subsidiaries' managers for not providing resources to transfer knowledge; however, it did not seem to occur to him that the parent company might need to provide resources, nor did he seem to question the role and responsibility of the parent company in enabling subsidiaries to transfer knowledge.

To summarise, this chapter explicated the stickiness characteristics that had emerged in the two previous analysis chapters. One can argue that the lean philosophy reduces

resources to transfer knowledge. The lack of resources creates knowledge-transfer barriers, which affect internal relationship building, as well as customer relations. Lack of resources seems to undermine the very processes that are meant to achieve continuous improvement, as well as innovation. Employees of the parent company as well as the subsidiaries lose focus, and cannot find, absorb or retain knowledge. They do not have the time or motivation to share or seek knowledge. Arnold et al. (1995) and Vakola and Nikolaou (2005) postulated that lack of resources compromises loyalty and creates possible knowledge loss. Further, it exacerbates negative work stress, and conflict of objectives negatively affects the attitude and feelings people have towards their environment, consequently increasing knowledge stickiness. A knowledge strategy needs to be as much a part of the parent company as the lean philosophy. Knowledge transfer cannot be the sole responsibility of subsidiaries and/or individual departments. Lack of resources negatively influences every theme within this chapter, as shown in Diagram 30.

Diagram 30: Themes associated with lack of resources influencing each other



Interpersonal relationships influence national culture and language, as well as trust, and vice versa. Trust neutralises the impact of national culture, as well as interpersonal relationships. Further, they are positive motivators. The company culture, which one can argue allocates the resources, influences all the above factors.

Lack of resources has a negative effect on all aspects of knowledge transfer, regardless of the direction of knowledge flow. The consequences might contribute to declining productivity and profits.

The following diagram 31 is the summary of possible stickiness characteristics in the “Theme – Too Busy – Lack of Resources”.

Diagram 31: Summary of the stickiness characteristics “Theme – Too Busy – Lack of Resources”

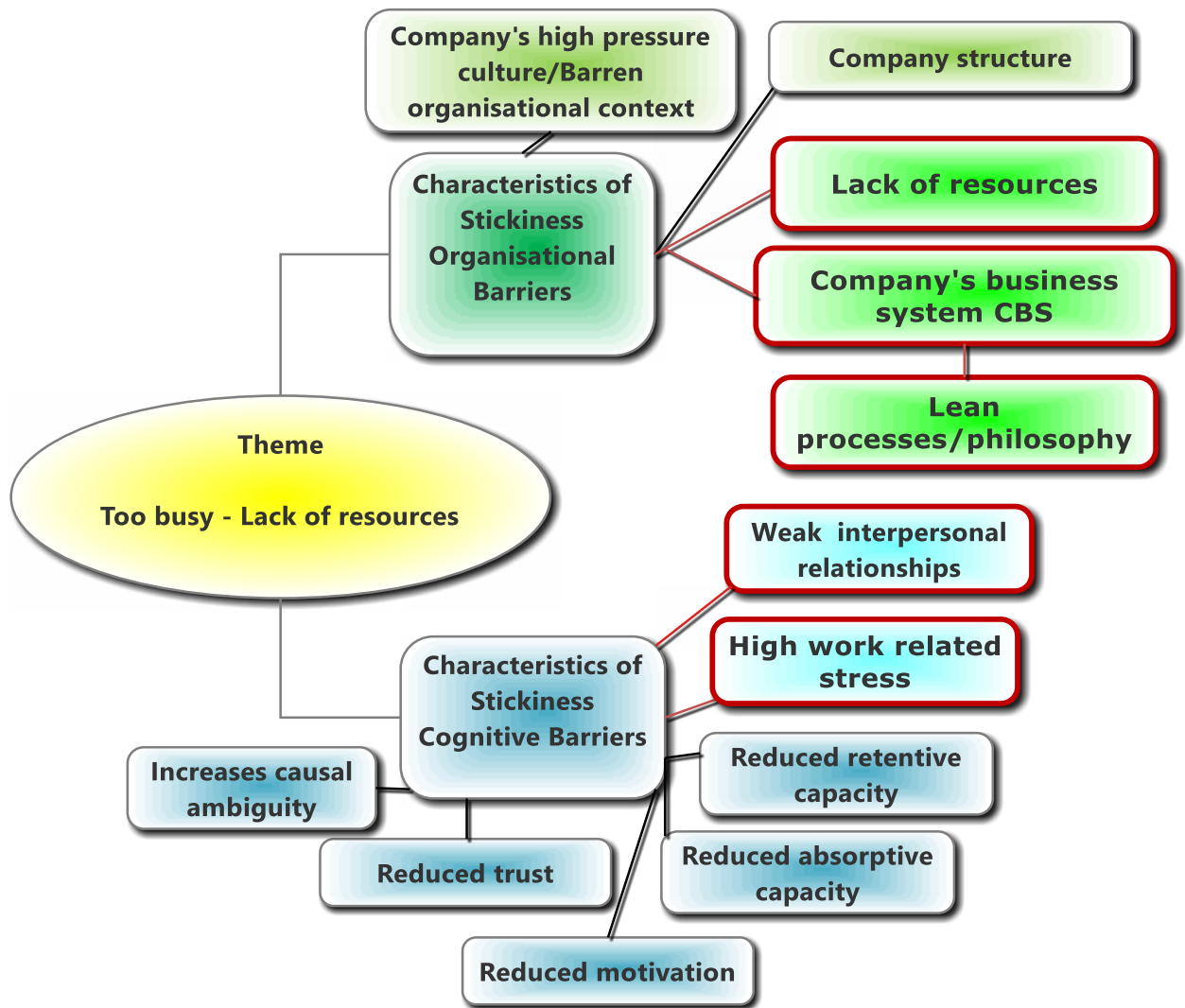


Diagram 31

The yellow oval shape displays the theme as it emerged from the data. The green boxes with the light-green boxes are the known stickiness characteristics due to organisational barriers.

The blue boxes with the light-blue boxes are the known stickiness characteristics due to cognitive barriers. “Known” refers to stickiness characteristics that have been identified by previous research.

Diagram 31

The analysis concludes that lack of resources has a negative effect on knowledge transfer from the subsidiary to the parent company, as well as from subsidiary to subsidiary. Lack of resources, e.g. lack of time or being too busy, is responsible for a wide range of barriers such as not being able to build personal relationships with other employees and customers, and to retain or absorb knowledge; this results in reduced motivation and trust due to stress. Callbor’s culture, structure and CBS seem to be responsible for the lack of resources.

Summary and conclusion

This chapter was divided into five themes, which build on each other. The themes emerged from the interview data, and identical stickiness characteristics emerged within the different themes. The stickiness characteristics often influenced each other.

The company's culture is driven by its business system. Part of this system is Con-Glom's lean philosophy. The company's culture is process-driven. Process-driven organisations are known to place less emphasis on the individual or human aspects than on the processes. Such company cultures tend to set the interest of the corporation above the interest of the individual employee; hence they usually have a hierarchical structure. The arduous company culture emerged as a stickiness characteristic in each theme. Ideally, a company's culture sets the foundation for communication, positive relationships, trust and motivation. In this study, Callbor's R&D department displayed a culture that fosters personal relationships and an active close communication where knowledge flows in every direction and with low stickiness. However, that environment did not seem to apply to other areas within Callbor. Overall, the company's culture seems to discourage building interpersonal relationships, despite the parent company's senior management acknowledging that if teams have personal relationships they are more likely to work harmoniously and productively. Arduous company cultures and structures, which are often referred to as a "barren organisational context" (Sulanski 1996; Cabrera-Suárez & De Saá-Pérez 2001; Elwyn, Taubert & Kowalczyk 2007; Sekerka, Comer & Godwin 2014), are known to create stickiness. Further, one can argue that senior management is not aware of the knowledge-transfer failure factors and their implications. Management ignorance is a recognised stickiness characteristic.

Trust is the foundation for motivation, relationship building and ultimately knowledge transfer. Trust, motivation and interpersonal relationships depend on each other. Further, they seem to minimise what might have been the inhibiting effects of national culture and language. National culture does not seem to be negatively associated with sticky knowledge. Stickiness characteristics associated with language depend on circumstances; however, skilled management may reduce the stickiness of knowledge that can be attributed to language barriers.

Lack of resources emerged as the main stickiness characteristic, negatively affecting all five themes. While lack of time and resources has been mentioned in previous research to negatively affect knowledge transfer, this research contributes to existing literature by its findings that lack of resources has a far wider negative impact than found in earlier studies. This analysis identifies that the lack of resources restricts forming personal relationships with other employees, as well as with customers. Further, it does not provide the necessary time to build trust, which is vital for customer relations, or to engage in innovation. Lack of resources reduces the creation and maintenance of knowledge. Retentive as well as absorptive capacities are stickiness characteristics quoted in the literature when knowledge is transferred from the parent company to a subsidiary. Absorptive and retention stickiness characteristics were identified when employees lack resources, are under time constraints and feel stressed.

The following table summarises the stickiness characteristics as they emerged in this chapter 8.

Diagram 32: A summary of the stickiness characteristics discussed in Chapter 8 – Domain: High Intimacy Communication and Stickiness: Interpersonal Relationship

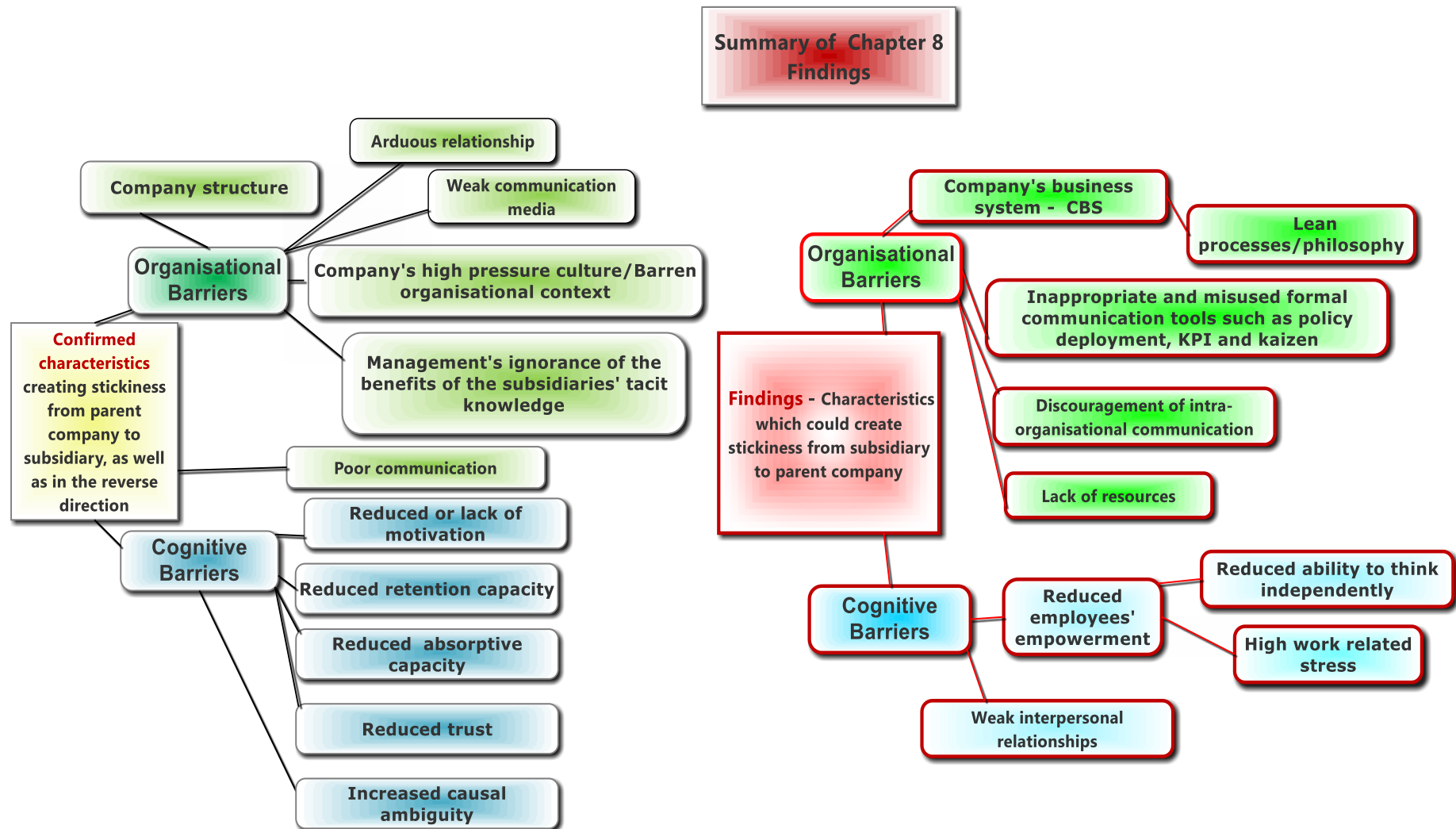


Diagram 32

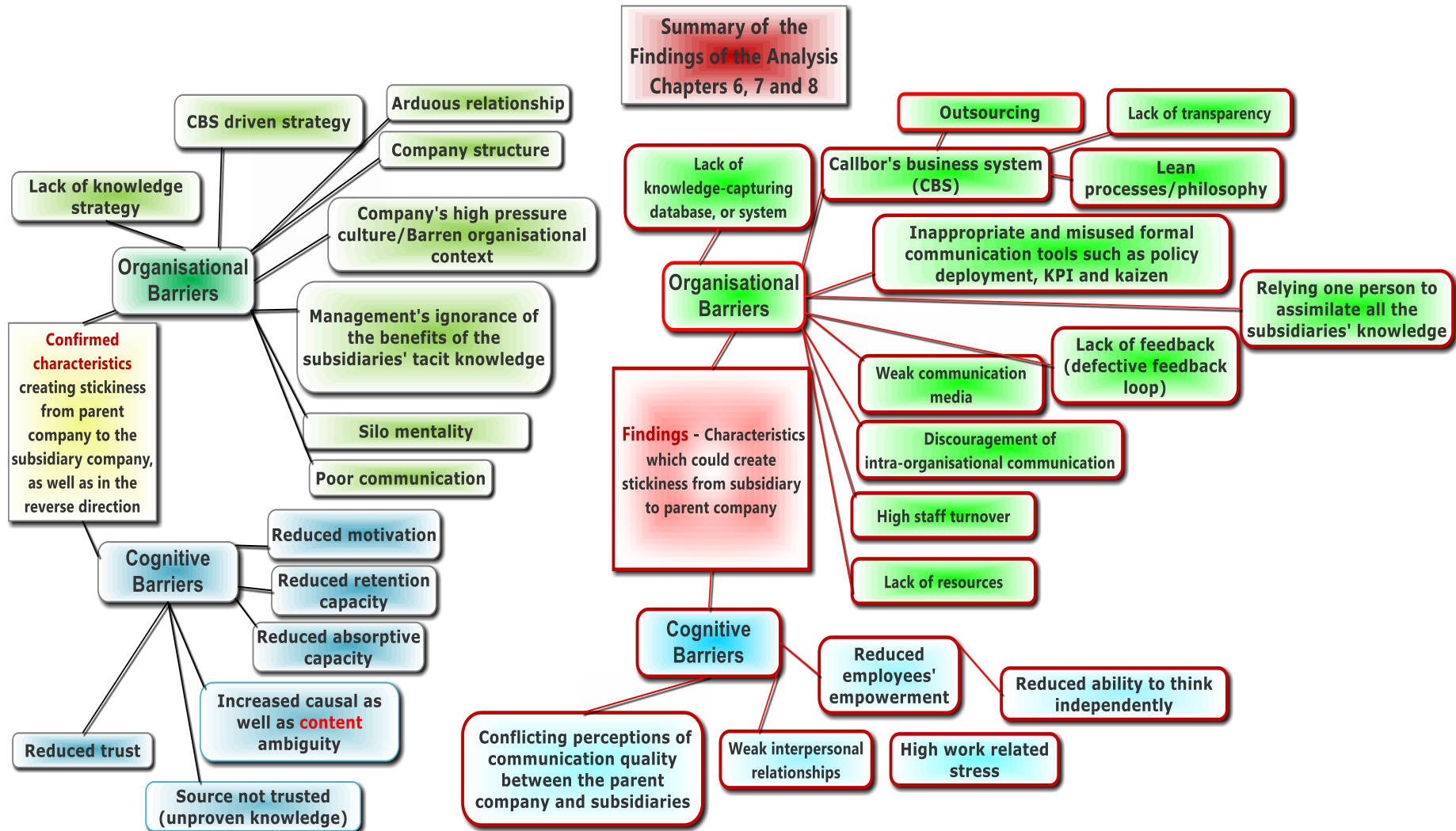
The summary and the analysis conclusion of the combined themes and subthemes of this study's findings. The boxes on the left are the stickiness characteristics identified by the stickiness literature and confirmed to be stickiness characteristics when transferring knowledge from the subsidiary to the parent company. The boxes on the right in the brighter colours are the new stickiness characteristics that have not been previously identified in this context in the stickiness literature, and might be specific to situations where knowledge is transferred from the subsidiary to the parent company. The shaded blue and green boxes with a red border indicate stickiness characteristics on which limited literature is available in this context.

Diagram 32

This diagram is the summary and the analysis conclusion of the combined themes of this study's findings. The barriers have been identified in the literature as stickiness characteristics when knowledge is transferred from the parent company to the subsidiaries. This analysis confirms that comparable barriers create stickiness when knowledge is transferred from the subsidiary to the parent company. Lack of resources negatively influences every theme within this chapter. Lack of resources has been previously identified as a stickiness characteristic; however, it seems to be of higher importance than identified in previous literature. Further, limited studies have been done on "lean manufacturing/philosophy" and how different employees personalities might affect knowledge transfer.

The following diagram 33 summarises the stickiness characteristics as they emerged in the combined analysis of Chapter 6, 7 and 8.

Diagram 33: Summary of the stickiness characteristics as they emerged in the combined analysis of Chapter 6, 7 and 8



The next chapter summarises the conclusions of the three Domains: Structure, Communication, and Interpersonal Relationships. The thesis discussion and final conclusion is based on those summaries.

Chapter 9

Discussion and Conclusions

Introduction

The aim of this thesis was to explore possible barriers to subsidiaries' knowledge transfer to the parent company. Most previous research has explored knowledge transfer from parent company to the subsidiary. In the last few years research studies to explore reverse knowledge transfer have increased, but they are still relatively few in number; this research has tried to fill that gap. Moreover, most research has been based on surveys rather than interviews, and data has mainly been drawn from the ranks of parent-company management rather than employees. Further, the focus has often been on specific issues such as whether employee motivation affects knowledge transfer. The present research involved interviews with a range of employees from the parent company, as well as its subsidiaries dispersed over a wide geographical area. It addressed several questions such as: How do subsidiaries of a multinational company transfer their local knowledge to the product development, marketing and sales departments of the parent company? What prevents subsidiaries from transferring knowledge across national borders? To what extent does the parent company encourage and enable knowledge transfer from its subsidiaries? Why does subsidiaries' knowledge become sticky? Are subsidiaries involved in transferring their knowledge to other subsidiaries, and if so, how do they do this?

Findings revealed, first, that there are limited answers to the last question, as the distributors report to the subsidiaries and not the parent company, and the parent company discourages communication between subsidiaries. Second, as shown in table 16, it became apparent that the same various characteristics which are predictors of stickiness often emerged at all three intimacy levels of communication.

Table 16 displays the predictors of stickiness that emerged during the analysis, where they occurred in the three communication domains. Only those predictors are included in the table that arose from the interview in that specific domain. The limitation of the

table is that various predictors of stickiness characteristics affect each other and thus cannot be evaluated in isolation. A table cannot show this. Later discussion relates these findings to the existing literature, where possible. This is followed by the conclusion, contributions and implications of the research, as well as its limitations. The chapter concludes with recommendations for further research.

Table 16: Predictors of stickiness in the three domains of communication

	Predictors of stickiness	Low Intimacy Domain: Communication Formal tools that shape the organisation's strategy	Medium Intimacy Domain: General organisational communication	High Intimacy Domain: Communication among people in close personal relationships
	Organisational-level barriers to knowledge transfer			
1	Company business system, - CBS	X	X	X
2	Lean processes and philosophy	X	X	X
3	Inappropriate and misused formal communication tools such as policy deployment, KPI, and kaizen	X	X	X
4	Company's high pressure culture/Barren organisational context, which discourages knowledge transfer	X	X	X
5	Arduous relationship	X	X	X
6	Company structure	X	X	X
7	CBS driven strategy	X	X	
8	Management's ignorance of the benefits of the subsidiaries' tacit knowledge and the effect negative CBS has on knowledge transfer	X	X	X
9	Relying on one person to assimilate all the subsidiaries' knowledge		X	
10	High staff turnover		X	
11	Lack of transparency		X	
12	Parent company failure to give appropriate feedback to the subsidiaries (Lack of feedback or defective feedback loop)		X	
13	Lack of a database or other system that adequately captures parent company, subsidiary employee, and		X	

	customer knowledge (Lack of knowledge-capturing database, or system)			
14	Weak communication media			X
15	Poor communication between the parent company and its subsidiaries			X
16	Discouragement of intra organisational communication			X
17	Lack of resources, such as time, financial support, staff			X
18	Outsourcing	X		
19	Silo mentality		X	
20	Lack of knowledge strategy		X	
	Cognitive barriers to knowledge transfer			
1	Reduced motivation	X	X	X
2	Reduced trust	X	X	X
3	Weak interpersonal relationships Few employees have time to form close relationships and/or the closeness of their personal relationships is reduced			X
4	Increased causal, as well as content ambiguity	X	X	X
5	Source not trusted, the knowledge is considered to be unproven knowledge		X	
6	Reduced retention capacity	X		X
7	Reduced absorptive capacity	X	X	X
8	Reduced employees' empowerment	X		X
9	Reduced ability to think independently	X		X
10	High work-related employee stress	X		X
11	Conflicting perceptions of communication quality between the parent company and subsidiaries		X	
	Other possible barriers to knowledge transfer			
	National language differences			
	National culture			

As shown in Table 16, eleven predictors of stickiness create barriers across all three intimacy levels of communication. They include Company business system, - CBS; lean processes and philosophy; inappropriate and misused formal communication tools such as policy deployment, KPI, and kaizen; company's high pressure culture/Barren organisational context, which discourages knowledge transfer; arduous relationship; company structure; management's ignorance of the benefits of the subsidiaries' tacit knowledge and the effect negative CBS has on knowledge transfer; reduced motivation; reduced trust; increased causal, as well as content ambiguity; reduced absorptive capacity. Others, such as silo mentality, relying on one person to assimilate all the subsidiaries' knowledge; high staff turnover; lack of transparency; parent company failure to give appropriate feedback to the subsidiaries (Lack of feedback or defective feedback loop; lack of a database or other system that adequately captures parent company, subsidiary employee, and customer knowledge (Lack of knowledge-capturing database, or system); weak communication media; poor communication between the parent company and its subsidiaries; discouragement of intra organisational communication; lack of resources, such as time, financial support, staff; outsourcing; lack of knowledge strategy; weak interpersonal relationships (Few employees have time to form close relationships and/or the closeness of their personal relationships is reduced); source not trusted, the knowledge is considered to be unproven knowledge; reduced retention capacity; reduced employees' empowerment; high work related employee stress; conflicting perceptions of communication quality between the parent company and subsidiaries were not apparent when exploring the low-intimacy communication tools. Finally, national culture and language had limited or no impact on stickiness.

National language and national culture had limited or no impact on stickiness

The study found that national culture did not create stickiness at Callbor. Similar findings have been reported by previous research (Ang & Massingham 2007; Simonin 1999; Gupta & Govindarajan 2000; Jensen & Szulanski 2004). Senior management and staff within the organisation were aware of culture diversity. When dealing with customers they respected differences in national customs. Within the organisation,

staff identified with the company's culture, and close personal relationships created trust between employees from different cultures. The study also found that the different national languages spoken by the various subsidiaries' employees created minimal, if any, stickiness. This is consistent with previous literature; for example, Hass and Cummings (2015), Liu et al. (2015), and Luring and Klitmoller (2015). Some employees mentioned that dealing with different languages can create some stickiness; however, close personal relationships seemed to overcome these potential problems. Further, as the manager responsible for training sessions highlighted, stickiness due to language differences can be minimised or avoided if management is aware of the potential problems and ensures that learning takes place in teams whose members know each other well. These findings are consistent with previous literature such as Leonardi and Meyer (2015), Mudambi et al. (2014) and Minbaeva (2013).

Most prominent predictors of subsidiary-to-parent stickiness

The next section discusses the most prominent predictors of subsidiary-to-parent stickiness, including organisational-level predictors and cognitive predictors, and ways these forms of stickiness could be overcome.

8. Organisational-level predictors of stickiness

The most salient organisational stickiness predictors that emerged in Callbor were its business system, which greatly influences its high pressure organisational culture and structure, and arduous relationships between the managers of the parent company and the subsidiaries' employees, which leads to barren organisational context. These predictors recur in low-, medium- and high-intimacy communication settings and are major barriers to knowledge transfer both from the subsidiaries to the parent company and within the parent company. These predictors have been identified in previous research as creators of stickiness when knowledge is transferred from the parent company to the subsidiary (Szulanski 1996; Stock et al. 2010; Levin & Cross 2004; Walker et al. 2007; Elwyn et al. 2007).

Callbor is a “process-driven” organisation that sets strategic goals to be achieved by means of strict guidelines and processes to eliminate waste of time and money and to reduce the influence of human bias. The benefits of a “process-driven” organisation is that its processes can be easily replicated around the world without having to be adapted to different cultures or high staff turnover. The ultimate goal of the guidelines and processes is to satisfy the company’s stakeholders (Zairi & Hutton 1995). However, the way Callbor’s business system is used suggests that only Callbor shareholders are considered to be stakeholders, not the organisation’s employees. Callbor has a hierarchical management structure. This is commonly found in process-driven organisations, as it is easier to control processes than people (Bidram & Davoudi 2012). However, the analysis suggests that Callbor’s obsession with processes and their “do as you are told” management style contribute to an arduous relationship between the parent company’s managers and the subsidiaries’ employees. The study found that arduous relationships and barren organisational context often affect each other, supporting Kostov’s (1999) findings that knowledge transfer does not occur in social isolation. Callbor does not seem to have a formal knowledge-transfer strategy. This might be because management does not understand the value of tacit knowledge, particularly the tacit knowledge that resides within the subsidiaries. While “people-driven” organisations seek knowledge from their employees, “process-driven” companies usually search for knowledge within the business system (Ardianto 2014). This might explain Callbor’s dependence on spreadsheet information, rather than tacit knowledge. Callbor’s management naively perceives data and information to be knowledge. This assumption seems to lead to short-term strategic decisions, such as focusing on reducing inventory without adequately considering their customers’ needs. One could argue that Callbor’s “Voice of the Customer” (VoC) collects knowledge from the customer. However, as discussed in the analysis, “VoC” has limitations, as it is mainly driven by the parent company’s product managers. The time limits under which the product managers work and the constraints of their individual competence restrict their ability to gather knowledge from customers and subsidiaries.

As a result, the knowledge the parent company can access is incomplete. Not involving all subsidiaries in “VoC” and Callbor’s failure to understand the value of subsidiaries’ tacit knowledge increase cognitive stickiness characteristics such as

reduced trust and reduced motivation. The success of “process-driven” organisations depends on the organisation being highly transparent (Steger 2000; Leitner & Warden 2004). Callbor’s lack of transparency undermines employees’ trust in the parent company’s management and reduces their motivation to transfer knowledge to the parent company.

9. Cognitive stickiness characteristics

This study found that the most salient causes of cognitive stickiness are reduced trust and reduced motivation, lack of empowerment leading to stress, and reduced ability to think as independent individuals. Requiring employees to follow strict guidelines without understanding what they are meant to achieve or whether the processes have positive outcomes shows Callbor’s managers’ lack of respect for the capabilities of subsidiary and parent company employees. This in turn results in employees losing trust in Callbor’s management and questioning management’s motives, and increases stress, which reduces employees’ innovative thinking and confidence in their own tacit knowledge. In addition, the employees’ high stress levels, driven by Callbor’s demands for high performance, reduce their retention and absorptive capacity. All this reduces subsidiaries’ motivation to transfer knowledge to the parent company. While reduced trust and reduced motivation have been previously cited as causes of stickiness, little attention has been paid to the way lack of empowerment increases sticky knowledge.

10. Reduced retention, reduced absorptive capacity and causal ambiguity

Reduced retention and absorptive capacity, as well as causal ambiguity, are well known causes of stickiness when knowledge is transferred from the parent company to the subsidiary. This study found the same when knowledge is transferred from the subsidiary to the parent company. Absorptive capacity is reduced in all three communication domains, and reduced retentive capacity is seen in low- and medium-intimacy communication. However, reduced retentive capacity in this context has different negative consequences compared to when knowledge is transferred from parent to subsidiary. While in both cases it creates sticky knowledge, if the parent company transfers knowledge to the subsidiary, lack of retentive capacity on the part

of the subsidiary means that the knowledge is implemented only for a short time and often not at all. The subsidiary will not be able to recreate the knowledge it has received and transfer this back to the parent company.

Causal ambiguity is a predictor of stickiness regardless of the direction of knowledge transfer. Callbor's managers do not trust unproven tacit knowledge, as they see it as prone to causal ambiguity; instead, they prefer spreadsheet data and information. However, action taken based on that knowledge would reflect little understanding about what leads to specific outcomes. Callbor is trying to avoid causal ambiguity, but this avoidance, combined with managers' ignorance of the value of subsidiaries' knowledge, actually creates causal ambiguity. As discussed in the chapter on high-intimacy interpersonal relationships communication, some cognitive-stickiness characteristics were reduced when employees had a close personal relationship.

11. Close interpersonal relationships

Relationships where the participants knew each other as people encouraged knowledge transfer from the subsidiaries to the parent company. Close relationships are noticeable in the R&D department, where people know each other well, and socialise with and trust each other. Lack of time to socialise and get to know each other negatively affects knowledge transfer, both from subsidiary to parent company and in general. The way a positive relationship between source and recipient reduces stickiness has been regularly confirmed in the stickiness literature since Szulanski first described predictors of stickiness in 1996.

Lack of resources causes a cascade of stickiness factors. Lack of resources driven by Callbor's business system emerged as a major stickiness factor. Lack of time, staff and financial support results in loss of trust and loss of transparency, as no-one has time to explain or question processes; employees become stressed, and lose motivation. Callbor's lack of a database system to adequately capture parent, subsidiary and customer knowledge can also be traced to a lack of resources, which in turn might be due to Callbor's management focus on individual processes and not on the benefits of the process as a whole, or it might be because Callbor's management focuses on short-term gains. (An employee commented that such a database would not generate immediate financial gain.) Then again, it might be a

combination of all these factors. Whatever the reason, the lack of a knowledge-capturing system increases stickiness and puts upward pressure on employees. Having repeatedly to search for knowledge reduces time for other tasks and increases the cognitive-stickiness characteristics discussed earlier.

Outsourcing creates another domino effect that increases stickiness. Outsourcing as a predictor of stickiness is seldom mentioned in the literature. However, this research found that outsourcing increases stickiness within the parent company and when transferring knowledge to the parent company. While outsourcing might affect stickiness more within the parent company, the reduced product quality that results from outsourcing affects the subsidiaries' customers, adds to the stress on subsidiary employees and increases cognitive stickiness in transferring knowledge to the parent company. Previous research suggests that outsourcing might also be a reason for higher staff turnover, which is a major reason for reduced trust and motivation to transfer knowledge. Specifically, if major components of development and manufacturing are outsourced, internal R&D employees such as engineers may get the impression that the parent company does not value internal knowledge, and may consequently be more likely to leave the firm. Engineers' tacit knowledge accumulates from years of experience, and, according to Quinn and Hilmer (1994), such knowledge is difficult to transfer to an outsourcing company. In Callbor, staff often suggested that outsourcing is starting to have these consequences.

In theory, a process-driven organisation should not be unduly affected by high staff turnover, as the organisation's processes should facilitate transfer of process knowledge to new employees. Callbor's business system is based on "lean manufacturing", or rather "lean philosophy", since this approach is applied across all departments. Callbor's use of "lean" often appeared heavy-handed: it was over-used and elements of it were not implemented well. This is consistent with Hotho et al.'s (2012) assertion that the implementation and management of processes, including "lean" processes, can diminish absorptive and retentive capacity.

The previous section discussed predictors of stickiness from the parent company to the subsidiary, where there is at least some literature available. The findings of the current research confirmed that those stickiness characteristics also apply when knowledge is transferred from the subsidiary to the parent company. The next section

discusses findings of the study that have not previously been mentioned in the literature.

New findings

This section discusses contributions in the form of findings about predictors of stickiness that have not previously been reported in the stickiness literature. They include inappropriate and misused formal communication tools, the parent company's failure to give appropriate feedback to the subsidiaries ("defective feedback loop") and conflicting perceptions of the quality of communication between the parent company and its subsidiaries.

12. First new finding: Inappropriate and misused communication formal tools that shape the organisation's strategy

The first new finding is that inappropriate and misused formal communication tools contribute to stickiness. As discussed earlier, Callbor's business system is based on "lean philosophy", which creates stickiness when transferring knowledge from the subsidiary to the parent company and elsewhere. The lean philosophy is used by many companies, and academic and practical management research shows that it has many benefits if its processes are managed well. However, as Hotho et al. (2012) found, it is not the lean philosophy itself but its implementation that can create stickiness. In the case of Callbor, formal strategic tools such as kaizen and KPIs that are used to implement "lean" processes are often inappropriate and misused. Kaizen is Callbor's "way of life", but very early in the research several problems became apparent. Members of a kaizen are not trained in how to participate in them, and the process is highly dependent on two people: the team leader, who is often referred to as a "black belt", and the employee who will be responsible for implementing the new or improved process, who is referred to as the person "owning the problem". A successful kaizen is intended to encourage speedy knowledge transfer and sharing of innovative ideas. However, lack of member training, lack of employees' understanding of the aim of the kaizen and its benefits to them or the organisation, perceptions that kaizen are used for personal motives and lack of management support all mean that employees do not trust the formal tool. When they are compelled to participate, they

are not always motivated to share their knowledge. Management perceives this lack of engagement as inability to think and not as a problem with the knowledge transfer process. Szulanski (2000) provides guidelines on the process of knowledge transfer including how to manage transfer problems. However, Callbor's management is not aware that knowledge transfer might not take place within the organisation due to something more fundamental: the lack of a knowledge transfer strategy.

KPIs are a strategic tool used by many organisations to measure company performance. However, like kaizen, KPIs should not be used inappropriately and misused. The management literature praises their benefits, but also warns about the importance of designing them properly. They are meant to empower and motivate employees and build trust in management, all of which reduce stickiness. However, at Callbor KPIs are misused. Management's focus is on the KPI process and collecting quantitative data, rather than on more subtle changes and improvement that result from subsidiaries' tacit knowledge. Lack of clarity about who benefits from KPIs and why, and lack of information from the parent company about how the subsidiary has contributed to the success of a KPI, means employees become stressed and lose motivation to transfer knowledge.

13. Second new finding: Parent company fails to give appropriate feedback to the subsidiaries (defective feedback loop)

The second new finding about stickiness is the lack of feedback the parent company provides to the employees of their subsidiaries. Employees do not receive feedback from Callbor's managers about whether and how the knowledge they transfer is beneficial. Often, they do not know if the knowledge is seen by the appropriate person and acted on, and how they might improve the type of knowledge they transfer. Possible misunderstandings are not clarified. This "broken feedback loop" results in feelings of frustration, loneliness and even insult, and a perception that the parent company is not interested in the customer's viewpoint. All this results in lack of motivation to transfer knowledge from subsidiaries to parent company.

14. Third new finding: Conflicting perceptions between the parent company and its subsidiaries about the quality of communication

The third new finding concerns conflicting perceptions of communication quality between Callbor's management team and the subsidiary employees. During the interviews, it became apparent that the two groups had very different perceptions about their communication. These differences were seen in all three levels of communication intimacy. Callbor's managers believed they had a good communication relationship with their subsidiaries and that the business system, with its "lean philosophy" processes including the formal strategic tools, was working well and driving the organisation's success. Managers agreed with employees' perception of a "silo mentality", but nevertheless perceived that they (managers) encouraged communication. They often said that subsidiary knowledge was important to them. However, interviews with subsidiary and parent-company employees revealed a different perception: these employees provided many examples of how communication between themselves and management was discouraged. While subsidiary and parent-company employees felt that poor-quality communication strongly increased stickiness, Callbor's managers perceived the problem to be no worse than in other companies of similar size, hence not a major problem. This might be because Callbor's management is unaware of how much valuable knowledge they are not receiving from subsidiaries. Previous literature has discussed stickiness arising from differences in management and subsidiary perceptions about their respective tasks and roles. The finding that conflicting perceptions of communication quality increase stickiness has not been reported previously. They may be particularly characteristic of stickiness in knowledge transfer from the subsidiary to the parent company.

Contributions, practical implications, limitations and future research

The present research has provided much needed empirical data about how various predictors of stickiness characteristics affect each other and thus cannot be evaluated in isolation. For example, arduous relationships often affect barren organisational context and vice versa. This affects trust, which affects motivation, and motivation in

turn affects trust. Previous studies have alluded to this. For example, Minbaeva (2007) and Szulanski and Cappetta (2003) argued that stickiness characteristics influence each other. Bonache and Zárraga Oberty (2008) found that different situations influence stickiness characteristics, and Siemsen et al. (2007) discussed complementary factors that vary depending on situations and problems. The converse also applies: positive relationships, clear communication and effective training positively influence each other and reduce stickiness (Cabrera-Suarez et al. 2016). However, a limitation of previous research is that the studies usually focus on only a few specific stickiness characteristics. In contrast, by examining the perspectives of both managers and staff, this study allowed a wide range of stickiness characteristics to emerge, allowing a more comprehensive understanding of hindrances to knowledge transfer.

This study thus responds to the call made by, among others, Minbaeva et al. (2003; 2014); Hotho et al. (2012), Abreu et al. (2008), Jansen et al. (2005) and Lane et al. (2006) that future studies widen the search for possible drivers of stickiness, and examine whether knowledge transfer from the subsidiary to the parent company has different drivers and consequences for knowledge transfer to those where knowledge is transferred from parent to subsidiary. They also recommended that subsidiaries from a wider range of countries be studied. Still other studies stress that more research is required to understand the role of individual motivation and close interpersonal relationships in transferring knowledge (Mäkelä & Brewster 2009; Reiche, Harzing & Kraimer 2009; Wang et.al. 2009). This study has also risen to both those challenges.

15. Practical implications

The researcher's depth of access to the organisation and the high level of support from all organisational levels and areas were rare opportunities that allowed rich data to be gathered. Moreover, the wide range of the study's data sources led to several findings that have practical implications. The first concerns the conflicting perceptions between senior managers and employees about the quality of knowledge transfer in the organisation. As demonstrated earlier, senior managers would be unaware of "what they do not know" to an extent that could be harmful to the organisation's global competitiveness. A second implication arises from the parent company's senior

managers not providing adequate feedback to their employees. This research suggests that the organisation's feedback loop is broken. The value of regular feedback can be seen in the R&D departments, where knowledge transfer and creation is high and stickiness is low due to trust formed through close personal relationships. Third, there are practical implications flowing from the finding about the parent company's senior managers' over-reliance on the organisation's "lean" processes, particularly a tendency to create dysfunctional performance indicators and the misuse of kaizen. Between 50 and 95% of all "lean" initiatives fail due to management issues, financial constraints, low employee skills and incompatible organisational culture (Othman 2016; Kalling 2003; Kwan & Cheung 2006; Theten 2014; Dora et al. 2013). This study supports Othman's view that poor implementation of "lean philosophy" can create stickiness.

CEOs and senior managers should take advantage of the knowledge produced in this study. For example, an organisation can best benefit from following "lean philosophy" by allowing employees to build personal relationships, empowering those employees and providing resources for sound communication. This would reduce stickiness and help CEOs make better-informed decisions. Finally, the study suggests that senior managers should evaluate their own perceptions against those of employees to become aware of how well processes are really working. The financial gain from one process might not last and might negatively affect other processes.

16. Limitations of this research

This research explored only one multinational organisation, and within it, only the subsidiaries and distributors of the Asia-Pacific region. Further, the case company is a segment of a multidivisional, highly diversified transnational conglomerate. The company has an "M-form" structure and strategic control system (Hitt, Hoskisson & Ireland 1990): it operates within five unrelated industries. Each company is a semi-autonomous organisation with its own brand, company name and structure. However, the companies are under the central financial control of the conglomerate. While the case company has autonomy, they must follow the conglomerate's business system, Callbor. They might not reflect other companies within the conglomerate's organisation. However, as the business system with its lean philosophy is such an

integrated part of the organisation's structure, strategy, and culture, it is likely that the same stickiness of knowledge transfer from the subsidiaries to their parent company applies throughout the conglomerate's multiple companies and divisions. Further, the case company does not necessarily reflect other global organisations. However, it is likely that any organisation with similar culture, structures, and management style would experience similar knowledge-transfer issues.

In addition, using video recordings instead of audio recordings might have captured more details such as the mood and the tone of the interviewees. However, aside from the greater logistical complexity this would have imposed, interviewees might have felt intimidated and not provided such frank answers. Instead, the researcher described moods, voice tone or specific situations in the diary.

Further, this thesis tried to explore how knowledge was transferred between subsidiaries and/or distributors. This question is not fully answered, because the distributors reported to the subsidiary responsible for their area, and hence they seldom transferred their knowledge to the parent company, and because the parent company discouraged knowledge transfer between subsidiaries. Nevertheless, subsidiary employees exchanged knowledge if individual employees knew each other well.

17. Suggestions for future research

This study, being of an exploratory and interpretive nature, provides potential for future research, both in relation to theory expansion and validation, and in providing supportive data for practitioners and organisations to improve their competitive edge. In particular, the findings for Callbor should be compared with those for other organisations with a similar philosophy, and those that do not follow a "lean" orientation. While there are multiple studies on the inappropriate use of KPIs, it would be of benefit to confirm via further research whether inappropriate and misuse of KPIs is a stickiness factor in knowledge transfer, or whether it is better understood as related to causal ambiguity. Further, as this study was not able to provide in-depth information on knowledge transfer between subsidiaries and between distributors and subsidiaries, it would be of value to examine these relationships. Finally, the current study only briefly mentioned the possibility that a different type of personality or

mindset might affect stickiness. Very limited research has been conducted on the impact of personality on knowledge transfer, and studies that have addressed the topic do not agree on the type of personality required to increase knowledge transfer (Cabrera & Cabrera 2005; Mooradian et al. 2006; Matzler et al. 2008; Matzler et al. 2011). Further work on this issue would also be valuable.

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Appendix

Coding used in the analysis chapters

Below are the codes used to identify the employees who are quoted from time to time. For privacy reasons, arbitrary initials are used instead of the employee's name or real initials. The locations identify whether the speaker is from a subsidiary, a distributor or the parent company. At times the speaker's location and organisational level are mentioned at the time of the quotation.

Interviewee Coding

Interview number	Interviewee's name	Interviewee's Location Subsidiary, Distributor or Parent Company
1	GM	(Subsidiary) Sub-1
2	MG	Sub-1
3	SG	Sub-1
4	SM	Sub-1
5	MS	Sub-2
6	WN	Sub- 2
7	SS	Sub- 2
8	CR	Sub- 3
9	SR	Sub- 3

10	SB	Sub- 3
11	SR	Sub- 4
12	MJ	Sub- 4
13	GS	Sub- 5
14	SN	Sub- 5
15	CN	Sub- 5
16	PH	Sub- 5
17	DM	(Distributor) Dist-1
18	JM	Dist- 2
19	VD	Dist-3
20+1*	KD	Dist- 4
21+1*	PD	Dist- 5
22	DM	Dist- 6
23	JM	Dist- 7
24	MT	(Parent Company) PC
25	SP	PC
26	DP	PC
27	AB	PC
28	HP	PC
29	KP	PC
30	MP	PC
31	AP	PC

32	DB	PC
33	RP	PC
34	JR	R&D
35	AR	R&D
36	LR	R&D
37	OR	R&D
38	RR	R&D
39	RH	R&D
40	AH	R&D

* Due to language difficulty, two people were interviewed at the same time and provided answers as a team.