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The Use of Management Control Systems for Controlling Intraorganizational Knowledge Transfer from Change Projects

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Abstract

Title: *The Use of Management Control Systems for Controlling Intraorganizational Knowledge Transfer from Change Projects.*
Key words: Management control systems, Knowledge transfer, Change projects

Problem Background: Appropriate management of knowledge transfer is crucial for successful implementation of change. The use of management controls for controlling the transfer has been investigated, however mainly in knowledge intensive firms (KIFs) performing project-to-project or unit-to-unit transfer. Thereby an investigation of knowledge transfer in other organizational forms performing project-to-intraorganizational knowledge transfer can contribute to existing research.

Purpose: The purpose of the study is to investigate how management control systems are used to control intraorganizational knowledge transfer from change projects.

Frame of Reference: The concepts of knowledge and knowledge transfer are explored in a change project setting, to thereafter be put into the context of management control in order to investigate how management control systems (MCSs) can be used to control transfer of knowledge.

Methodology: For the aim of the study, the method is based on qualitative interviews. The sample consists of four organizations wherein change projects have been conducted. The data generated has been transcribed and codified, to thereafter be analyzed through a cross-case analysis. Finally, reliability and validity have been tested to ensure the quality of the study.

Findings and Conclusion: It is possible to conclude that intraorganizational knowledge transfer from change projects requires a combination of MCSs, although the combination varies between change projects. Potential differences in the use of MCSs have been noted in regard to different project scales and project types. The most prominent controls are action planning and organizational structure and design, which are used in relation to all change projects. Moreover, tacit and explicit knowledge are controlled differently to some extent.

Contribution: The study contributes in various ways to the research fields of management control, knowledge management and change management. For management control, MCSs are important for knowledge transfer and new sub-categories could be added to the MCS package. The knowledge transfer concept and scale and type categorizations increase the understanding of change management. The finding that explicit and tacit knowledge being managed differently develops knowledge management, and the project- to intraorganizational context contributes to the combined body of knowledge.

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1. Introduction

The introductory chapter consists of a problem background discussion related to the area of research, which thereafter leads to the purpose of the study. Additionally, the disposition and content of the report are summarized in a figure.

1.1. Problem Background

How are management controls used when controlling knowledge transfer to achieve change in organizations? In order to advance the thinking and understanding of management of change, Balogun and Jenkins (2003) argue that change should be re-conceived as a process of knowledge generation, this since change requires creation of new knowledge related to interaction and to how operational activities are conducted. Argote and Ingram (2000) use a more comprehensive term, knowledge transfer, which implies transfer of existing knowledge, thereby resulting in the creation of new knowledge. This term will be used in the report henceforth due to its inclusiveness of several interrelated terms. Furthermore, there are multiple studies demonstrating the usefulness of management controls as a means of controlling transfer of knowledge (Bihmani & Roberts 2004; Ditillo 2012). Similarly, management controls are often used within organizations, both to control the daily business and to ensure that organizational changes are implemented successfully (Nahmias & Crawford 2003). Thus, adopting a perspective of change as a process of knowledge transfer can contribute to valuable and innovative insights into the use of management controls for achieving change.

Organizational changes are commonly conducted through organizational change projects (Nahmias & Crawford 2008), involving changes such as cultural change, strategic change, framework change, structural change and changes to systems, policies and processes (Balogun & Jenkins 2003; Nahmias & Crawford 2008); all calling for people within the organization to change the way they conduct their everyday work. A change project can be said to constitute a social system (Senaratne & Sexton 2008), thereby indicating that an organization can be considered as a social system in itself, since it is the setting for the organizational change projects. Management controls are used to direct the behavior of employees in a desired direction (Chenhall 2002; Malmi & Brown 2008), thereby making it an efficient tool for handling changes requiring transformation of behavior within an organizational social setting. Moreover, Smith (2001) argues that almost all tasks in an organization depend upon knowledge, which makes knowledge an essential aspect to consider when implementing changes affecting the work in an organization. Knowledge in a change project context could be used for example for creating an understanding of why the change is implemented and thereby create engagement and acceptance, for solving problems that may arise during the change project and for establishing new ways of working that are required due to the change. Senaratne and Sexton (2008) discuss that during change

processes, knowledge needs to pass from the change project to the organizational level and then to subsequent projects. However, as it is seemingly most common to investigate the knowledge passing from project to project, instead examining the first step, namely the knowledge passing from the project to the organization, might result in additional insights within the research field. This is also supported by Ditillo (2012) who states that project-to-project and unit-to-unit transfer of knowledge are the most frequently occurring themes in prior research.

Research indicates that appropriate management of knowledge transfer is crucial in order to successfully implement change projects and initiatives, this since knowledge transfer is an important process for organizational outperformance of competitors. Thus, insufficiencies in the process of knowledge transfer could instead hinder project success (Argote & Ingram 2001; By 2007; Ditillo 2012; Hanisch, Lindner, Mueller & Wald 2009; Massaro et al. 2013). The use of management controls as vehicles for knowledge transfer has been investigated by for example Ditillo (2012) through a case study of a KIF (knowledge intensive firm) in the UK. He explains that research on the use of management controls as knowledge management mechanisms has previously greatly revolved around investigating this subject on a project-to-project basis. Ditillo (2012) therefore instead chooses to investigate the knowledge transfer between organizational units and can conclude that management controls have a supporting role in regard to transfer of knowledge in many firms. In addition, he contends that different types of management controls are useful for transferring different types of knowledge. In order to deepen the understanding of how management controls are being used to handle knowledge transfer it is of interest to investigate other contexts, such as in other types of organizational forms or settings.

As discussed, there are several aspects indicating that research on the use of management controls for knowledge transfer from change projects would contribute to the research field. There seems to be consensus among researchers that knowledge transfer and change somehow need to be managed (Argote & Ingram 2001; Hanisch et al. 2009; Massaro et al. 2013) in order for the intended change outcomes to be achieved. Management controls are demonstrated to have an important supporting role as a means of fulfilling this (Ditillo 2012). However, research on the role of management control in relation to knowledge transfer and change is insufficient, which poses a need for further investigation on the subject.

1.2. Purpose

The problem background leads to the purpose of this study, which is to *investigate how management control systems are used for controlling intraorganizational knowledge transfer from change projects.*

1.3. Disposition

The content and the disposition of the report is illustrated in figure 1 below.

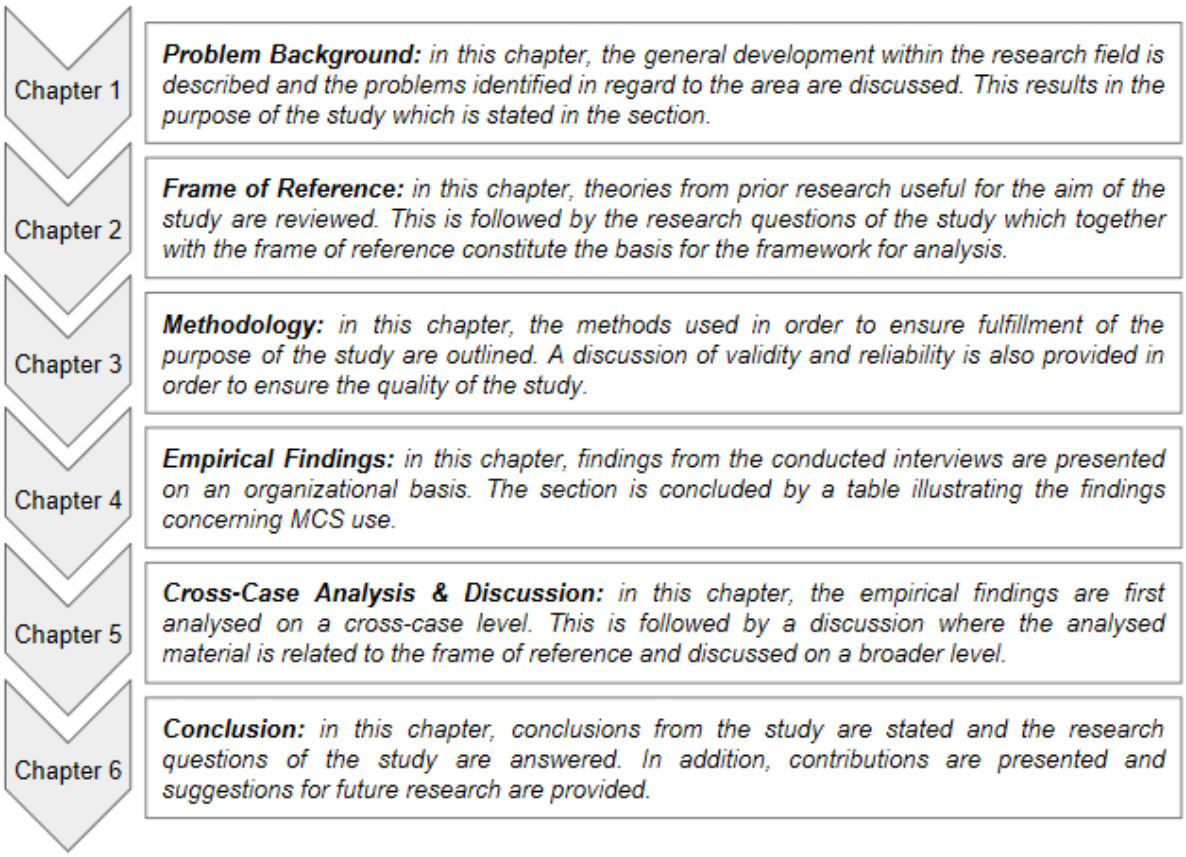

Figure 1. Disposition and content.

2. Frame of Reference

The frame of reference includes theories, concepts and discussions from the academic research relevant for fulfilling the purpose of the study. Firstly, various project characteristics are outlined. This is followed by a presentation of the concepts knowledge and knowledge transfer, leading to a discussion revolving around how knowledge can be managed. Thereafter, management control systems and the possible relation to knowledge is discussed. Lastly, the relevance of the different areas is discussed and summarized, leading to the research questions that the study aims to answer which finally is followed by the framework for analysis.

2.1. Change Project Characteristics

There are numerous ways of defining and dividing change projects into both types and categories, something that may also require different management approaches. Thus, it is imperative to establish a foundational understanding of this through reviewing previous research on the subject. This is presented in the ensuing sections.

2.1.1. Types

A project is work conducted in accordance with a predetermined plan, intended to result in fulfillment of a specific objective (NE 2018b). Svensson and von Otter (2009) argue that projects, as a working form, can be used to achieve changes. In addition to this, Sahlin (1996) states that projects can have many other functions, such as give management access to information. Due to the ambiguousness regarding the project definition, it is deemed important to specify the projects aimed at achieving change as *change projects*. This form of work can be used within organizations to implement a variety of changes. Nahmias and Crawford (2003) explain that changes regarding an organizations' culture or strategy are types of changes commonly made through projects. Smith (2002) and Balogun and Jenkins (2003) agree with the declaration of cultural and strategic changes being changes frequently made within organizations. Smith (2002) explains that cultural changes aim at changing the behaviour among employees and exemplifies this by describing a development towards a more customer-oriented organization as a change requiring cultural adjustments. Smith (2002) also argues that various measures, such as reward programs or empowerment to encourage certain behaviours, can be taken to achieve desired changes in an organizational culture. Nahmias and Crawford (2003) claim that most organizational changes require behavioural changes, which thus suggests that cultural changes are commonly involved in the implementation of other types of changes as well. Strategic changes, which refer to strengthening or completely changing the strategic direction of an organization, are according to Smith (2002) also often interlinked with other types of changes.

In addition to cultural and strategic changes, Smith (2002) and Balogun and Jenkins (2003) mention corporate restructuring and mergers as other potential change projects, both of which involve changes in the structure of an organization. Corporate restructuring refers to the rearrangement of organizational units or workforce and is described by Smith (2002) as the type of change with the highest success rate. A merger on the other hand, is defined as combining or merging two or more organizations into one organization, which implies changing and coordinating the ownership and resources of the organizations (NE 2018a; Smith 2002). Besides the changes discussed above, there are a variety of other types of changes such as changes that can be implemented separately or in combination with other categories of changes (Smith 2002; Balogun & Jenkins 2003; Nahmias & Crawford 2003). However, it is not deemed relevant to discuss additional project types further within the scope of this study.

2.1.2. Categorization

In addition to the occurrence and description of different types of change projects, there are also various ways of categorizing change projects, for example based on the scale of the change (By 2015; Dunphy & Stace 1993; Senior & Swailes 2010). Dunphy and Stace (1993) contend that the changing and turbulent environment requires different responses in order to achieve an optimal alignment and fit with the environmental context. They argue that the *scale of change* is one critical factor which differentiates possible responses. Scale as a categorization of change has been investigated by different researchers, however the benefit of the views of Dunphy and Stace is that their model includes detailed descriptions of each scale type (Senior & Swailes 2010). Scale of change is according to Dunphy and Stace (1993) linked to the radicalness of a change initiative, wherein *incremental change* includes minor changes and *transformational change* embodies major changes. As seen in table 1 below, the categories regarding incremental and transformational change can be divided into subcategories. Fine tuning and incremental adjustment are different kinds of incremental change, whereas modular and organizational transformation are transformational change subcategories.

Scale of change			
Incremental change		Transformational change	
Fine tuning	Incremental adjustment	Modular transformation	Organizational transformation

Table 1. Scale of change (based on Dunphy and Stace 1993).

Fine tuning, which is an ongoing change process, aims at adjusting the fit between the processes, people, structure and strategy within the organization (Dunphy & Stace 1993). Examples of such change efforts, which typically occur on divisional and/or departmental levels, are refinement of policies and procedures, development of individual and group commitment to the company's mission, promotion of employee confidence in norms, beliefs and myths, clarification of organizational roles and resource allocation mechanisms as well as

improvement of fit between personnel and strategy for example through tailoring award systems to align with the strategy (Dunphy & Stace 1993). A slightly more profound category of organizational change involves incremental adjustment, meaning that distinct but not radical modifications are made to business strategies, management processes and structures (Dunphy & Stace 1993). Examples of such changes are modification of organizational structures across or within divisional boundaries aimed at achieving better links in product/service delivery and articulation of a modified mission statement to employees (Dunphy & Stace 1993).

Furthermore, *modular transformation* is a radical type of change aimed at realigning departments and divisions in a major way, focusing on one or more departments and/or divisions rather than comprising the entire organization, making it the second most radical change category (Dunphy & Stace 1993). Modular transformation can for example be carried out in the form of major restructuring of organizational divisions and/or departments, reformation of goals for divisions/departments, changes in key executives and/or other managerial roles and introduction of new process technologies that affect key divisions/departments (Dunphy & Stace 1993). The final and most radical change category is *corporate transformation* which is characterized by radical and revolutionary corporate-wide changes which substantially alter the business strategy. This type of holistic transformation often involves reorganization resulting in major structural changes as well as changes in procedures and systems, reformation of the organization's core mission and values, changed interaction patterns due to new procedures, changed work flows and changed decision-making and communication networks (Dunphy & Stace 1993).

2.2. What is Knowledge?

The term knowledge is according to Nickols (2000) perceived as important to define or clarify when taking an approach in research where knowledge is assumed to be controllable. Moreover, Smith (2001) argues that 99 % of the work in organizations requires knowledge, which therefore makes an understanding of the term valuable. However, various perceptions and definitions of knowledge exist in practice, which indicates that the term is difficult to define and understand (Smith 2001). One example is Ditillo (2012), who categorizes knowledge as process-related, outcome-related, technology-related and opportunities-related, for example mentioning that process-related knowledge is more easily articulated and understandable than for example technology-related knowledge, which is harder to specify and has a more tacit nature.

Since many knowledge discussions have been too focused on defining the term (Ruggles 1998), it is considered to be of more importance to work on establishing a shared context relating to knowledge. A common approach to understand knowledge in organizational settings is to view knowledge from two different perspectives that have emerged in knowledge-related research. The former perspective is a more traditional perception of knowledge wherein knowledge is assumed to be able to be captured and stored (Empson 2001; Gasik 2011). This perspective has according to Empson (2001) been criticized by many

researchers, which has resulted in the emergence of a perspective where knowledge instead is perceived as a process. Swan, Newell, Scarbrough and Hislop (1999) argue that the traditional perspective of knowledge disregards crucial aspects like organizational structures, norms and cultures, which are considered when understanding knowledge as a process. From this perspective, knowledge is considered by Swan et al. (1999) and Empson (2001) to be constructed, transferred and maintained through processes of social interaction. In line with this way of thinking, Ruggles (1998) also applies a process-oriented perspective on knowledge in order to identify different categories of activities that are linked to the management of knowledge, one of which revolves around transfer of existing knowledge to other parts of the organization.

Furthermore, Alvesson (2011) argues that it may not be suitable to perceive knowledge as being either capturable or as a process due to the uncertainty and ambiguity that he considers to be linked to the concept of knowledge. He thereby criticizes researchers stating that knowledge is difficult to define, while still treating the definitions being used as robust and reliable concepts. It is thereby important to keep in mind that the attempts of defining knowledge are merely simplifications of the truth, however one could still argue that the definitions are useful in exploring the subject. For example, the classification of knowledge into the two forms explicit and tacit knowledge may aid in verbalizing and classifying knowledge even though the borders between the two forms of knowledge might not be clear and precise in reality. However, in this study a discussion revolving around the definition of the ambiguous concept of knowledge is deemed important rather as an expression of a subjective reality than as a clarification of an objective reality, this since such an approach is argued to be a suitable way of adding to qualitative management accounting theory (Ahrens & Chapman 2006).

The distinction of knowledge into explicit and tacit knowledge is commonly used to facilitate research exploring how knowledge is managed and controlled in various organizational contexts. Explicit knowledge is often described as formal and systematic and this type of knowledge is possible to codify in words or numbers in order to store the knowledge in the form of for example procedures and formulas (Baker, Barker, Thorne & Dutnell 1997; Smith 2001), thereby demonstrating similarities with the traditional perspective of knowledge being possible to capture and store. Smith (2001) adds to this view by describing formal education as an essential component in understanding the communication and sharing of explicit knowledge which is often enabled through technical means. Tacit knowledge on the other hand, is according to Baker et al. (1997) characterized by an intangible nature where knowledge consists of values, mental models, judgements and beliefs which makes this type of knowledge more difficult to manage and store, thus supporting the importance of social processes. Although a large extent of the knowledge in organizations is tacit, Smith (2001) claims that this type of knowledge is underutilized in organizations. She thereby contends that managers need to recognize improvisations and other inventive ways in which the organizational members get things done so that the tacit knowledge does not get lost during the process of change. Tacit and explicit knowledge in combination with the two perspectives

on knowledge can be perceived to constitute a comprehensive basis for understanding knowledge as a concept.

2.3. Knowledge Transfer

Smith (2001) argues that when organizations reorganize, merge, downsize or change their organizational culture, important knowledge can get lost or buried under new information. She also mentions that there is a risk of losing crucial knowledge, resources, experiences and skills when employees decide to leave the organization. Furthermore, employees who decide to stay might on the other hand be assigned to new organizational roles and thereby be unable to use their accumulated wealth of knowledge. In order to mitigate the risk of this happening, knowledge transfer is required. The intra-organizational flow of knowledge from change projects, projects in general as well as from other parts of the organization has been described and defined in multiple ways. Although, some articles investigating knowledge seem to avoid defining their keywords altogether, perhaps as an attempt to refrain from the ambiguity that according to Alvesson (2011) is linked to the concept of knowledge in general. One example of this is Ditillo's (2012) research, in which the term knowledge transfer is used, however with arguable lack of definition. In order to make sense of the different concepts, different definitions of knowledge flow are presented below, thereafter followed by the understanding of the concept that will henceforth be adopted in this study.

As mentioned in the introduction, Balogun and Jenkins (2003) argue that change should be re-conceived as a process of *knowledge generation* due to knowledge being related to the way operational activities are conducted, which requires new knowledge to be created. However, not all change projects necessarily require new knowledge to be created. Instead, as mentioned above, the knowledge might in some cases only be required to flow between units and through this be redistributed within the organization. Thereby, change will in this study instead be analyzed in terms of being a process linked to the flow of knowledge, which will be further explored and defined below.

Knowledge dissemination following a project change process, i.e. a process within a project in which the project team manages change situations, has been discussed by Senaratne and Sexton (2008), who consider dissemination to take place when the knowledge that has been created through the change processes is *codified and transmitted to the social system*, i.e. the networks of project participants. The dissemination is thereby considered to help feed the knowledge that has been created forward and through this enable effective change management. In the project change process context discussed by Senaratne and Sexton (2008) the importance of transmitting knowledge to inter-project social systems is emphasized, however one might argue that similar importance can be put on the transmission of knowledge from a change project to the social system or intraorganizational network, which constitutes the rest of the organization since the organization in itself is the setting for possible future projects.

Knowledge integration is discussed by Lampel, Scarbrough and Macmillan (2008) who explain that a project must go beyond just attempting to achieve project specific outputs such as new products and technologies in order to ensure that knowledge is long-lastingly integrated in the organization. They state that this outcome can be fulfilled if the *combination of knowledge* that occurs in a project can successfully *break down the boundaries between previously isolated segments of knowledge* so that the combined knowledge can be integrated between subunits within the organization. They also argue that projects are suitable for enabling this since projects create portals through which organizational knowledge can be accessed and transformed. Furthermore, they explain bureaucracies as causing the opposite effect to projects, namely to lock the knowledge up in functional silos, making it difficult to access and connect. Even though a change project is not designed to produce an output from the project itself but rather to evoke a change in the organization, Lampel, Scarbrough and Macmillan's (2008) explanation could be of importance due to that such a change still ought to call for a long-term knowledge combination. Their definition could be argued to add to the knowledge dissemination definition by Senaratne and Sexton (2008), through not only encompassing the networks of project participants but instead the entire organization down to subunit level.

Knowledge transfer within organizations in general, i.e. not from a project, is defined by Argote and Ingram (2000) as *"the process through which one unit (e.g. group, department, or division) is affected by the experience of another"*. Although, this definition could possibly also be applied as project-to-intraorganizational knowledge transfer if projects are to be viewed as units. Argote and Ingram (2000) further argue that it is possible to measure whether knowledge has been successfully transferred or not through assessment of *changes in knowledge of the recipients*. The authors thereby take their definition to an even more detailed level than the previous definitions mentioned, through discussing the individual recipients rather than just the organization or sub-units within the organization. However, Argote and Ingram (2000) admit that measurement of change in recipients can be difficult, especially in regard to measuring tacit knowledge, which according to Nonaka (1991) is difficult to articulate and therefore also difficult to verbalize. They therefore suggest that performance measures are a more suitable way of capturing tacit knowledge when attempting to review the transfer. The idea of being able to evaluate the success of knowledge transfer can be considered as an implication towards knowledge being the final result of a process, of which Foss, Husted and Michailova (2010) identify some indications in their review of keywords used in knowledge sharing literature. In those cases, "knowledge transfer" is seen as the final product of a process of "knowledge sharing". Although, Foss, Husted and Michailova (2010) also find that it has been common to use the keywords "knowledge transfer", "knowledge sharing" and "knowledge exchange" interchangeably, which indicates ambiguity concerning the concept boundaries.

Drawing from these different definitions, the understanding of the concept that is applied and investigated in this study will henceforth be referred to as *knowledge transfer*, which is understood as *the process through which knowledge is transmitted from a change project to*

the intraorganizational social system, thus affecting the knowledge in recipients by breaking down knowledge boundaries, thereby resulting in change.

2.4. Managing Knowledge

The approach where implementation of change is perceived as a process of knowledge transfer entails a need to manage this knowledge. In order to be competitive, management of knowledge is emphasized as an important process as it can result in outperformance of competitors (Hanisch et al. 2009; Massaro, Bardy & Zanin. 2013). The centrality in managing knowledge is also highlighted by Kasvi, Vartiainen and Hailikari (2003). They argue that managing knowledge systematically is essential in order to ensure learning, meaning that results and knowledge generated in one project are extracted and transferred to other projects or organizational settings.

Based on the perspectives where knowledge is seen as capturable or as a process, two different models of how to manage knowledge have emerged. When assuming that knowledge can be captured, organizations should according to Gasik (2011) operate in line with the cognitive model, while the model used for managing knowledge as a process is referred to as the community model. The cognitive perspective of knowledge management focuses on the knowledge flow within an organization where technical systems enable transfer of knowledge by capturing and processing existing knowledge within the organization (Swan et al. 1999; Bresnen et al. 2003; Gasik 2011). Thus, one assumes that all knowledge can be codified into explicit knowledge which can be transferred via technical mechanisms. However, Swan et al. (1999) argue that tacit knowledge is difficult to convert into explicit knowledge as it is personal and context-specific and also mean that difficulties in codifying knowledge inhibit the creation of new knowledge. Hence, Swan et al. (1999) introduce the community model wherein management of knowledge should be perceived from a social perspective where social networks form a structure that enables knowledge to be created and transferred within the organization. The importance of social factors is also supported by Bresnen et al. (2003) who argue that the capturing and transferring of knowledge is influenced by social structures and communities. Communities of practice are informal groups of people in an organization that share the same expertise or interest in a topic or issue and thus interact regularly (Johansson, Moehler & Vahidi 2012; Smith 2001). Swan et al. (1999) and Smith (2001) emphasize the importance of continuously re-creating and renewing knowledge through social interactions and relationships in order to maintain the knowledge.

In the cognitive model, codification is used as a strategy for transferring knowledge, usually in written form (Hansen, Nohria & Tierney 1999; Johansson, Moehler & Vahidi 2012). Thus, this is mainly associated with explicit knowledge as this knowledge can be codified or articulated (Hansen, Nohria & Tierney 1999; Senaratne & Sexton 2008; Johansson, Moehler & Vahidi 2012). As for the community model, transfer of knowledge is enabled through social interaction, thereby mainly resulting in transfer of tacit knowledge (Hansen, Nohria & Tierney 1999; Smith 2001; Senaratne & Sexton 2008; Johansson, Moehler & Vahidi 2012).

Socialization is according to Johansson, Moehler and Vahidi (2012) useful for managing tacit knowledge as the nature of this type of knowledge makes codifying difficult. Codification of tacit knowledge is by Senaratne and Sexton (2008) argued to be almost impossible due to this knowledge being personal. Hence, they emphasize the importance of recognizing and strengthening social networks and allow for personal meetings among individuals in the organization as this will enhance the transfer of knowledge and reduce the knowledge loss which may arise if trying to codify tacit knowledge.

Johansson, Moehler and Vahidi (2012) argue that codification and socialization can be affected by factors like processes, technology and organizational culture. Processes within an organization are designed to direct the behaviour of employees in a desired direction. The sharing of knowledge between employees, which will result in knowledge to be transferred can further be supported (or hindered) by technology (Johansson, Moehler & Vahidi 2012). The third factor, organizational culture is by Johansson, Moehler & Vahidi (2012, p. 299) defined as *"shared beliefs, values and practices of a group or groups within the organization"* and can contribute to knowledge transfer by influencing norms within an organization (Johansson, Moehler & Vahidi 2012). Smith (2001) also indicates that culture has an important role by arguing that knowledge transformation and transfer is facilitated by cooperation and trust which can be perceived as cultural characteristics. Further, she adds that the use of rewards and recognition can be effective for influencing the culture of an organization. Rewards related to, for example, business goals are advantageously used to facilitate transfer of explicit knowledge, while non-monetary rewards or recognition for being creative and innovative are useful for transferring tacit knowledge (Smith 2001). Moreover, Smith (2001) explains that learning communities, job rotations or experienced people directly teaching less experienced people will lead to efficient management and transfer of tacit knowledge.

2.5. Management Control Systems

Some of the concepts discussed in relation to management of knowledge, such as culture, rewards and procedures, are concepts which can also be associated with management control systems (MCSs). The usefulness of management controls in managing knowledge as well as in implementing organizational change makes it an adequate tool for the aim of the study. Baxter and Chua (2003) argue that MCSs can assist in the adoption of change through providing a basis for controlling the new initiatives brought on by the change process. Moreover, the use of MCSs in other project contexts than change projects has been examined in several studies demonstrating the usefulness of MCSs in project environments (e.g. Korhonen, Laine & Martinsuo 2014).

There is an increasing interest in the perspective where management control is perceived as a package of controls. MCSs are defined as systems intended to direct employee behavior in order to ensure that desired behaviors are achieved within organizations (Chenhall 2003; Malmi & Brown 2008). The management controls included in the systems are according to Malmi and Brown (2008, p. 290) comprised of different *"systems, rules, practices, values*

and other activities" that are introduced by management. Some researchers (e.g. Grabner & Moers 2013) examines the controls as individual mechanisms, however this is argued by others (Malmi & Brown 2008; Otley 1994; Dent 1990) to be an inappropriate approach due to the interconnectedness that the different controls are subject to. Thus, studying only one control may result in deficient results since the context in which said control is situated is not considered (Malmi & Brown 2008; Chenhall 2003; Fisher 1998). In order to prevent this, MCSs as a package is considered as a more appropriate perspective for which Malmi & Brown (2008) have presented a clarified framework, which includes multiple types of controls and control systems. Malmi & Brown (2008) argue that the management controls should be referred to as MCSs if they are comprised of more than one single rule, thereby amounting to complete systems. Also, due to the fact that not all control systems are introduced to the organization simultaneously, they find it suitable to perceive them as a package of control systems rather than as one MCS. Included in their management control package are five different controls; planning, cybernetic controls, rewards and compensations, administrative controls and cultural controls (Malmi & Brown 2008).

The first control included in the package, *planning*, is by Malmi & Brown (2008) divided into long-term planning and action planning, where the former has a longer time horizon focusing more on strategic issues and the latter relates to goals and activities for the immediate future. They argue that planning should count as a control if it involves efforts that attempt to build employee commitment to the organizational plans. Moreover, planning activities involve setting goals which call for imminent and/or more long-term actions and are in addition part in achieving goal congruence throughout the organization (Gschwantner & Hiebl 2016; Bedford & Malmi 2008). This can be achieved for example by involving people from different functional areas in said planning activities, making them more involved and willing to execute the plans. This can in turn can help direct behaviors and efforts towards the desired actions, through which control over actions and activities on both group and individual level can be ensured (Malmi & Brown 2008; Flamholtz, Das & Tsui 1985).

Furthermore, *cybernetic controls* are a way of quantifying phenomena which enables measurement of the phenomena, making delivery of feedback on performance possible. The controls can be involved in target-setting followed by evaluation of target completion which further might result in revision of the targets (Malmi & Brown 2008). Examples of cybernetic controls are financial and non-financial measures, hybrids containing both financial and non-financial measures and budgets (Malmi & Brown 2008). These types of controls are similar to measurement, which according Bedford and Malmi (2015) is a control related to measurement of behaviour and performance, which further can affect the accountability. Malmi and Brown (2008) states that targets that are intended to affect the behaviour and thereby the accountability, should be defined as an MCS.

Rewards and compensations as controls are used for motivational and performance-enhancing purposes in regard to the behavior of both groups and individuals (Malmi & Brown 2008; Bonner & Sprinkle 2002). Compensations can according to Bedford and Malmi (2015) be used both to encourage a certain behaviour through creating compliance between

organizational and individual goals, and as a means for compensating past behaviour by rewarding outcomes which also is supported by Flamholtz, Das and Tsui (1985). Rewards and compensations are often attached to the fulfillment of certain goals, through which the intensity, duration and direction of the effort put into the task-achievement by the employees can be increased. Such goals are often linked to cybernetic controls but can also be based on other controls and situations. Some examples are group rewards related to cultural controls as well as rewards associated with retaining employees (Malmi & Brown 2008).

Administrative controls can be categorized into three subcategories of controls that are used to direct behaviour; the organizational design and structure, the governance structures in the organization and finally the policies and procedures being applied. The choice of using a specific design and structure for the organization can be a way of encouraging certain types of contact among people within the organization, thereby controlling behavior. Governance structure on the other hand, is linked to how the board and different project and management teams are put together and the ways in which these groups organize their activities and are held accountable to each other (Malmi & Brown 2008). The final administrative control which is policies and procedures, is according to Bedford and Malmi (2015) used as a means to provide specifications on how to perform, or how not to perform, activities.

Finally, *culture controls* are social controls related to values, norms and beliefs that are shared among the members of an organization and through this can have an impact on the actions and thoughts of the organizational members (Malmi & Brown 2008; Flamholtz, Das & Tsui 1985; Bedford & Malmi 2015). Ways in which management, according to Malmi and Brown (2008), can use culture as a means of control are for example when communicating the values through the organizational vision and mission, when choosing people to recruit based on their values and beliefs in order for them to be a match to the organization's, when specific dress codes are required as a part of the culture or when the offices and work spaces are set up in a certain way in order to encourage certain behavior. Additionally, clan controls, which are different values and beliefs that are established within a specific subunit or group of individuals within an organization, are also mentioned as being an element of culture controls. Such groups are characterized by boundaries existing between them and the rest of the organization (Malmi & Brown 2008).

2.6. Management Control and Knowledge

Management or accounting controls have been considered as useful tools contributing to acquisition and transfer of knowledge (e.g. Bihmani & Roberts 2004; Ditillo 2012). Bihmani and Roberts (2004) argue that accounting controls allow activities to be classified consistently, making knowledge controllable. However, Ditillo (2012) also argues that accounting can be seen as problematic for knowledge transfer as not all activities can be made visible. Despite this, he contends that MCSs are crucial for knowledge transfer, however in addition suggests that accounting controls should be supported by further controls in order to improve knowledge transfer which thereby supports the view of considering

MCSs as a package rather than as separate controls as MCSs do not solely include accounting-based controls.

Walsh and Ungson (1991) argue that knowledge is stored in repositories within the organization from which knowledge can be accessed and transferred. They discuss five different repositories, namely individuals, organizational culture, formalized systems and procedures comprising information on past transformations, organizational structure and roles as well as the physical structure of the workplace, thereby making management controls appropriate for managing knowledge due to the possibility of MCSs to affect and control these organizational aspects referred to as knowledge repositories. A concept similar to knowledge repositories is that of "knowledge silos", which refers to knowledge being created and maintained in isolated systems such as text repositories, document management servers and intranet servers (Offsey 1997). This knowledge is described as specified and functional for certain units or workgroups, thereby making it difficult to transfer between different units or groups.

However, Ruggles (1998) states that knowledge is difficult to manage. His study of 431 European and U.S. companies indicates that company executives agree with this, stating that the greatest obstacle to successful knowledge transfer is culture and the difficulty associated with changing people's behavior (56% of respondents), while other barriers include organizational structure (28%) and incentive systems (19%). The difficulty in changing the organizational culture is also highlighted by McElroy (1996). He argues that implementation of changes goes hand in hand with changes in the culture of the organization. However, changing the culture is also what he describes as the greatest obstacle when attempting to implement changes in an organization. He further argues that aspects like stories and myths, status symbols and power structures have an influential role in regard to culture. In addition, he states that culture can be influenced by formal elements such as routines and procedures, reward and control systems and organisational structure, which was described by Ruggles (1998) as a further challenge in many companies. Balogun and Jenkins (2003) agree with Ruggles (1998) that the structure of an organization often constitutes a barrier to organizational change. However, their study demonstrates that when change is conceived as knowledge, it is of great importance to operate within a context where knowledge transfer is enabled. Balogun and Jenkins (2003) argue that this can be achieved through a proper design of the organizational structure which consequently stresses the need for administrative controls.

The use of MCSs can be perceived as a means of managing the elements or challenges discussed by Ruggles (1998) and McElroy (1996), thus indicating that an appropriate design of the MCSs can ease the transfer of knowledge while a lack of consideration to, for example, culture and organizational structures instead may hinder the transfer process. This is supported by Massaro, Pitts, Zanin and Bardy (2014), who underline that it is essential to design MCSs properly in order to enhance knowledge transfer. Otherwise, they claim that there is a risk that the use of MCSs rather inhibits the knowledge transfer process. The centrality in designing MCSs correctly is also emphasized by Ditillo (2012). He argues that

MCSs contribute positively to knowledge transfer if controls are designed to promote mobilization of individuals and multiplicity of roles and accountabilities as this results in knowledge transfer among individuals across different organizational functions. Moreover, enforceability of manuals and procedures together with scalability of reviews and decisions are highlighted as important. The study conducted by Ditillo (2012) examines the use of management controls as vehicles for knowledge transfer in KIFs. Ditillo (2012) suggests that various management control mechanisms are appropriate for transferring different types of knowledge since they activate different types of relations between individuals. In addition, he contends that different projects may require context-specific types of knowledge to be transferred, thus demonstrating the need for exploring how MCSs are used in project contexts other than KIFs.

2.7. Summary

In this section, the body of theory from the previous section will be summarized and illustrated, in order to finally reach the research question formulation and framework for analysis. This summarizing section is deemed important in order to clarify the link between the quite extensive frame of reference and the subsequent sections in the report.

2.7.1. Summary of Frame of Reference

In order to ensure a general understanding of the change project as a unit of analysis, the frame of reference begins with a discussion of various types of change projects, which can be initiated in organizations. These types include projects involving cultural change, strategic change, organizational change and corporate change involving mergers. The different projects can also be of different scale in relation to the size of the organization, ranging from the small-scale initiatives fine tuning and incremental adjustment, which are incremental changes, to more extensive modular and organizational changes (see figure 2). Fine tuning involves only a small part of the organization (light grey inner circle in figure 2), while organizational changes generally encompass practically the entire organization (dark grey, organization-spanning circle in figure 2). The definition of different project types is thus followed by a description of these different scale categories. The change process initiated in the change project can be defined as knowledge transfer, which is the approach taken in this study. In order to break down the concept of knowledge transfer one must first grasp the abstract term knowledge, aimed at being transferred. Different ways of defining knowledge are therefore extensively explored, including tacit and explicit knowledge as well as opposing perspectives of understanding knowledge. Thus, a definition of knowledge transfer is facilitated. This study investigates knowledge transfer from a management control perspective, however the prior research on this specific theme is limited, requiring a step back from the concept through a review of how knowledge, in particular the transfer of knowledge, can be managed. Thenceforth, the review focuses particularly on management control systems, establishing an understanding of the chosen perspective of viewing MCSs as a package, as well as the connection between MCSs and knowledge.

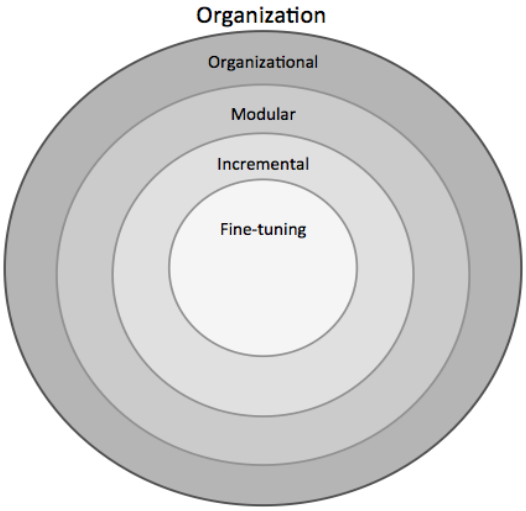

Figure 2. Project scale model.

Figure 3 depicts how all parts of the frame of reference are interrelated. The starting point is the center of the model, namely the change project from which the change process, which entails transfer of knowledge to the rest of the organization, originates. The transfer of knowledge can be managed using management control systems. In order to explain the MCSs in an illustrative fashion, the MCSs included in the MCS package can be perceived as different tools in a toolbox, from which the management can choose the tools they consider useful in controlling the transfer of knowledge. None, a few, many or all tools might be used. For example, some tools might be needed in order for others to work and in some cases the transfer might even occur without a need of controlling through use of the tools. However, this study only aims at investigating ways in which the tools are actually used to manage the transfer, which is why knowledge transfer as depicted in the model only goes through the different MCSs. Different types of knowledge, namely explicit and tacit knowledge, might also require different tool sets. The knowledge transfer is considered complete when the knowledge reaches the rest of the organization including its members.

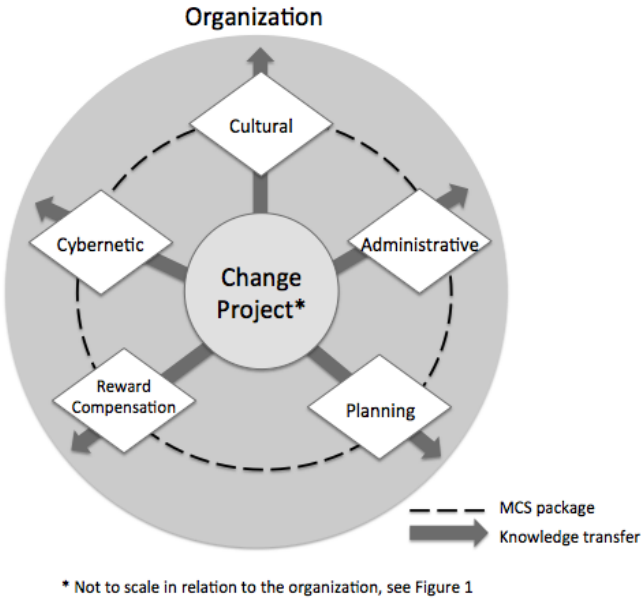

Figure 3. Summarizing knowledge transfer model.

2.7.2. Research Questions

Based on the concepts reviewed in the frame of reference, the research questions for fulfilling the purpose of the study have been formulated as follows;

- How are MCSs used to control intraorganizational knowledge transfer from change projects?
    - Which different management controls are used?
    - Are different types of knowledge controlled differently?

The main research question will aid in fulfilling the purpose through investigating *how* the MCSs are used for managing knowledge transfer in a practical setting, this in order to explore the underlying motivations, issues and actions that might be linked to the practical use. The following sub questions will facilitate in answering the first question through breaking it down. This might lead to conclusions regarding whether some MCSs are more commonly used to handle certain types of projects or whether some MCSs are particularly frequent in regard to management of certain types of knowledge, thus deepening the understanding of the concepts covered in the first research question.

2.7.3. Framework for Analysis

In order to fulfill the purpose of the study and to answer the research questions presented above, a framework for analysis consisting of table 2 and table 3 below, has been constructed based on the frame of reference. Table 2 is intended to aid in answering research sub question number one, whereas table 3 will constitute a framework for answering research sub question number two. Both table 2 and 3 are based on the Malmi and Brown (2008) MCS package framework. Due to all MCS package controls being interrelated (Malmi & Brown 2008), it is deemed necessary to include all controls in the framework, thus ensuring that all controls are included in the analysis. Table 2 will be used to analyze the specific units of analysis, namely the change projects, in order to investigate the use of different MCSs for controlling knowledge transfer. Table 3 will comprise an analysis that will span over all investigated units of analysis so that possible differences in control of the knowledge types, i.e. tacit and explicit knowledge, can be detected and further analyzed.

MCS \ Change project		
Planning	Long-range planning	
	Action planning	
Cybernetic controls	Financial measures	
	Non-financial measures	
	Hybrid measures	
	Budgets	
Rewards & Compensations		
Administrative controls	Organizational structure & design	
	Governance structure	
	Policies & procedures	
Cultural controls	Values	
	Symbols	
	Clans	

Table 2. Framework for MCS use.

Management control system \ Knowledge type		**Explicit**	**Tacit**
Planning	Long-range planning		
	Action planning		
Cybernetic controls	Financial measures		
	Non-financial measures		
	Hybrid measures		
	Budgets		
Rewards & Compensations			
Administrative controls	Organizational structure & design		
	Governance structure		
	Policies & procedures		
Cultural controls	Values		
	Symbols		
	Clans		

Table 3. Framework for control of knowledge types.

3. Methodology

The methodology section presents the research approach as well as the approach for selecting respondents and for collecting and processing data. This is further followed by a discussion regarding the quality of the study.

3.1. Research Approach

The purpose of the study, which is to examine the role of MCSs for controlling knowledge transfer from change projects, has constituted the basis for the design of the research approach, which is presented below.

3.1.1 Qualitative Approach

For the aim of the study, a qualitative approach is deemed appropriate for collecting and analyzing data as this approach according to Collis and Hussey (2014) contributes to a deeper understanding of the investigated research area. To gain in-depth knowledge about the use of management control with the aim of controlling knowledge transfer from change projects it is considered essential to answer the research questions, which requires a comprehensive understanding of the interrelatedness between management control and implementation of change. The interpretative method case study is used to contribute to a research environment that allows for a deeper understanding of the phenomenon under study. Collis and Hussey (2014) explain that a case study is used when a specific phenomenon is investigated in its natural context, which thus will contribute to an improved understanding of the investigated area. To further enhance the understanding of the explored phenomenon, this study includes multiple cases where the management control practices of four organizations in which change projects have been realized are examined. Furthermore, the use of a multiple-case design instead of a single case study is chosen as it, according to Yin (2014), increases the quality of the research since inclusion of multiple cases limits the influence of case-specific conditions. To limit the study to one case would make the findings difficult to generalize, multiple cases will however increase the opportunity of making the findings somewhat generalizable.

3.1.2 Exploratory and Confirmatory Research

Few studies of the use of MCSs in practice to manage knowledge transfer makes it appropriate for the purpose of this study to be exploratory in nature as this approach according to Collis and Hussey (2014) is preferable when there are few previous studies and when the aim is to investigate patterns and/or ideas, or, as explained by Yin (2014), when exploring a phenomenon that lacks a clear and predefined outcome. By (2005) argues that there is a need for exploratory studies examining how change is being managed in practice, which further supports the nature of this study where the use of management control in change processes will be explored. The intended outcome of exploratory research is to provide the researcher with ideas for future research, rather than to provide conclusive and

generalizable answers (Yin 2014) and to contribute with insights prior to a more extensive investigation (Collis & Hussey 2014). Commonly applied research methodologies for exploratory studies are different qualitative techniques, such as structured interviews and document/archival record analysis (Shields & Tajlli 2006). However, since there are some previous studies that have investigated the management of knowledge transfer, subsequently resulting in different themes emerging in the research field, it is not deemed sufficient to only conduct the study through conducting exploratory analysis. Instead a combination of exploratory and confirmatory data analysis will be conducted in order to incorporate and investigate the previously discovered themes, this in the form of a cross-case analysis. According to Onwuegbuzie and Teddlie (2003) it is beneficial to combine the two methods, even though confirmatory research is not traditionally associated with qualitative research. This since both confirmatory and exploratory questions can be answered, which according to them can increase the credibility of the study. Furthermore, a cross-case analysis can be applied in qualitative research when performing both exploratory and confirmatory data analysis (Onwuegbuzie & Teddlie 2003).

Consequently, this study will involve a mix of exploratory research and confirmatory research in order to both put the previous theoretical propositions to the test and explore additional research directions. This will be ensured through the establishment of the model of analysis (presented in section 2.7.2.) based on the prior research, which will be used as a basis for analysis and discussion.

3.2. Data Collection

The method used for collection of data during the data collection process of this study is interviews. This is described by Collis and Hussey (2014) as a relevant method of data collection that can be utilized within the context of case studies. They argue that interviews as a method is useful as this enables an in-depth examination of the phenomenon by investigating the respondents' experiences and views on the phenomenon. To get an in-depth understanding of how management controls are used to transfer knowledge from change projects is essential for contributing to the purpose of the study. The interviews will be conducted face-to-face, since this can facilitate the possibility to ask complex questions and ensure that comprehensive data can be collected (Collis & Hussey 2014). Data collected through interviews is classified as primary data, since it is generated from an original source (Collis & Hussey 2014).

The interviews conducted will be semi-structured in nature, mainly since this is a more time-efficient interview type than unstructured interviews (Collis & Hussey 2014), which might otherwise have been a suitable choice based on the partly exploratory research approach. Through semi-structured interviews some flexibility can still be ensured, since it involves the possibility of asking follow-up and additional questions when needed as well as rearranging the order in which the questions are asked (Bryman & Bell 2015). The interviews were initiated with questions regarding permission for audio recording and questions on whether or not the respondents wished to be anonymous as well as an overall presentation of the purpose

of the study. Informing the respondents about purpose and confidentiality is considered suitable according to Brinkmann and Kvale (2015). Thereafter, some overall questions regarding the respondent, the organization and the change project were asked, followed by more detailed questions on the subjects of knowledge, knowledge transfer and management control system use in regard to knowledge transfer, all focusing on an intraorganizational setting. In order to avoid misconceptions regarding the concepts investigated, the respondents were informed about the adopted definition of knowledge transfer as well as of the fact that MCSs are considered to be a package (see Appendix 1). The questions asked during the interviews were open in nature in order to objectively capture the respondents' statements.

The respondents were all interviewed at their own organizations' premises. In order to ensure maximum understanding for both interviewers and respondents the interviews were conducted in Swedish, since it is the native language for all parties. The interview guide (Appendix 1) was also translated to Swedish prior to the interviews. The duration of the interviews amounted to approximately one hour per respondent. Both authors of the study were present and actively asked questions and follow-up questions during all interviews, this in order to ensure that no important questions or possible directions for inquiry were overlooked. After being granted permission to do so by the respondents, all interviews were recorded on two computers in order to ensure that at least one audio file would be usable in case of technical error or bad sound quality. Recording interviews is considered suitable in order to be able to fully concentrate on the subject and the dynamics of the interview (Brinkmann & Kvale 2015).

3.3. Selection of Respondents

The aim of exploring how MCSs are used to manage knowledge transfer from change projects has formed the basis for the selection and evaluation of respondents. To ensure that the purpose is achieved, the search for organizations and respondents was conducted based on some predetermined criteria, which are listed below.

1. The organization has realized one of the types of changes described in section 2.1.1.
2. Relatively new changes initiated maximum six years ago.
3. The change project should be completed or near completion.
4. The change project should fall within one of the project scale categories listed in section 2.1.2.

The search for organizations was conducted through online searches for change projects and processes in different organizational contexts, due to the fact that information of that kind is not listed in company databases such as for example financial information. The choice was made not to limit the search to one specific type of organization or type of project in order to not unnecessarily limit the access to possible respondents. In addition, the partly exploratory nature of the study makes it useful to include various types of change projects as this may capture potential differences regarding the use of management control for transferring knowledge from change projects. Thus, the first criterion for selection was the various types

of change projects discussed in section 2.1.1. In order to facilitate the search for appropriate respondents, it was considered necessary to base the search on some predetermined types of projects. The selected types are projects commonly realized in organizations which led to a wide range of potential respondents.

The second criterion, to only include relatively recent changes, was formulated in order to ensure that the parties involved in the change activities still work in the organization and that actions which have been taken towards the change are still fresh in the minds of the respondents. If inclusion of projects completed before the now predetermined time limit would have been included, there would have been an imminent risk of essential information for the purpose of the study getting lost, which would impact the reliability of the findings negatively. Initially, the chosen time limit was set to 5 years, however, during the selection process one unit of analysis turned out to have been initiated 6 years ago. This was considered close enough in time to still be included, particularly since the change project constituting said unit of analysis fulfilled the other criteria. The third criterion was formulated since there might be difficulties in obtaining extensive information if the changes have not yet been initiated. The final criterion, related to the categories of change projects, was established due to potential differences in the use of MCSs for transferring knowledge depending on the size of a change project. The selected organizations, which have implemented the change projects constituting the units of analysis, are categorized by project scale in table 4 below.

Scale	Sub-scale	Organization	Role	Name
Incremental change	Fine-tuning	Alpha*	CFO	Respondent A**
	Incremental adjustment	ICA Business Services	Head of Change	Gisela Stockhaus
Transformational change	Modular transformation	Beta*	CFO	Respondent B1**
			Budgeting Manager	Respondent B2**
	Organizational transformation	The Church of Sweden in Gothenburg	Executive Director	Cissi Hammer

* Fictional organizational name
** Fictional name

Table 4. Selected respondents.

As for the scale categorization, one project of each subscale was included in the study. Alpha's merger change project was categorized as a fine-tuning change since it implied limited impact on the organizational operations and interactions due to the two merged organization being closely interrelated beforehand, thus requiring only minor changes to be implemented. ICA Business Services' strategic and cultural change was categorized as an incremental adjustment due to the inclusion of multiple departments and groups in the change project work, while still being of relatively limited scale. Beta's reorganization change was deemed appropriate to categorize as a modular transformation since it encompasses a major

restructuring initiative regarding the municipal boards, while not affecting the entire organization. When categorizing the Church of Sweden in Gothenburg's (the CSG's) corporate transformation, it was considered appropriate to place it in the corporate transformation category due to practically the entire organization being included in the change initiative.

In order to get in touch with suitable respondents, e-mails including a basic description of the purpose of the study were sent to the organizations. In some cases, specific contact persons were listed for the change initiatives, otherwise contact was enabled through more general forms and e-mail addresses listed for the organizations. The received responses included contact information for possible respondents, which were then contacted directly. This interaction involved a more detailed description of the research and correspondence regarding interview appointments. Some respondents also gave ideas for further possible respondents or departments where possible respondents could be recruited. Such a selection method is known as snowball sampling (Halvorsen 1992). A few days prior to the interview appointments, the interview guide (appendix 1) was sent to the respondents in order to allow for them to be properly informed and prepared for the interviews.

Furthermore, the method for selecting respondents can be described as non-probability sampling, which according Bryman and Bell (2015) is a sampling method that is not based on probability principles. Thus, the probability for organizations meeting the predetermined criteria to be selected to participate in this study were not equal for all organizations. Rather, organizations that are publicly listed or more visible in the media have been contacted to a greater extent as these organizations are easier to find due to more information being presented online compared to many smaller or private organizations for which external communication may not be considered equally important. Moreover, Bryman and Bell (2015) argue that availability is an essential factor affecting the sample when a study is based on non-probability sampling. This implies that persons in organizations that are available, or possible to get in contact with, constitute the sample of the study. A large number of people within various organizations have been contacted during the phase of selecting respondents. However, many of the contacted persons did not respond or were unable to participate in the study for various reasons. Hence, the selected respondents are people in organizations that were available at the time of contact.

3.4. Data Processing and Analysis

When the interviews had been conducted they were transcribed from audio to written text. Transcription is a somewhat challenging step of the data processing, which can even be likened with translating from one language to another (Bryman & Bell 2015). In order to minimize difficulties that might arise, common rules and guidelines were established regarding how to express the spoken language in writing prior to starting the transcription phase. In this study the processing also actually involves translation from one language to another, since the interviews are conducted in Swedish while this report is written in English. Therefore, all respondent quotes that occur throughout the report have been translated from

Swedish to English. Care has been taken to adequately capture all meanings, both from audio and Swedish, however there is still a risk that some expressions may get lost in translation.

After the transcription has been completed the continued processing and analysis can be approached in multiple ways, one of which includes coding of the data. To code the empirical material into different themes is mentioned by Bryman and Bell (2015) as a suitable starting-point for the analysis. A way of moving forward from there is through making a matrix of different categories and themes in which the evidence is placed in order to put it in a preliminary order (Yin 2014). Both coding and thematizing through the use of matrixes will be incorporated in the design of this study. Thereafter, the theoretical propositions from the frame of reference on which the interview questions are based are used to organize and define different explanations to be examined. This is mentioned by Yin (2014) as a common and often preferred way of analyzing empirical data.

3.5. Research Quality

The quality of the research is evaluated by testing the reliability and the validity of the study. Yin (2014) contends that these tests are relevant for establishing the quality of case studies, thereby making these tests useful for this study.

Reliability refers to the repeatability of a study (Collis & Hussey 2014; Creswell 2014; Yin 2014) and the same findings and conclusions should thus be obtained if repeating the study. This is ensured by accurately presenting the methodological procedures of the study, such as how the data has been collected and processed. The risk of a negative impact on reliability has further been reduced by using a semi-structured interview guide, as opposed to an entirely unstructured approach. However, the openness of some of the interview questions and the possibility of adding questions during the interview could reduce the reliability to some extent since it cannot be ensured that identical follow-up questions are asked during a potential reproduction of the study. To compensate for these shortcomings, the formulation of objective questions in combination with a carefully prepared order of the interview questions have been emphasized. Further aspects that according to Yin (2014) may reduce the reliability of a study are the occurrence of errors and biases. Thus, this has been carefully considered during the study and both researchers of this study have been present during the interviews. To reduce the risk of subjective interpretations, all interviews have also been recorded, transcribed and repeatedly followed up when analyzing the empirical findings.

As mentioned, validity is also an essential aspect in evaluating the quality of the study. Validity is described as the extent to which the study examines what is intended to be examined (Bryman & Bell 2015; Collis & Hussey 2014; Yin 2014). In order to strengthen the validity of the study, it was essential to formulate the purpose of the study early on as this enabled the purpose to be considered during all stages of the research procedure. The purpose subsequently formed the basis for the literature review, which was of importance for creating a framework for data collection and data analysis. A further aspect positively affecting the validity is the interview procedure wherein a semi-structured interview guide was used, thus

enabling follow-up questions to be asked which contributes to relevant data collection in line with the purpose of the study.

Validity can further be divided into external and internal validity (Yin 2014; Collis & Hussey 2014), however Yin (2014) states that internal validity is inapplicable for exploratory case studies, thus making a test of the internal validity irrelevant due to the partly exploratory nature of this study. External validity is however considered essential to establish the quality of the research. This term refers to the generalizability of the study, which relates to the applicability of the findings beyond the boundaries of the study (Yin 2014). A qualitative case study can be considered to have a limited generalizability due to the sample cases included constituting a limited amount, as opposed to in quantitative research. Therefore, multiple cases have been included in the study in order to ensure that the bias is reduced in comparison to instead having used a single case study. In addition to these two types of validity, Yin (2014) also adds a third category, namely construct validity. Construct validity can be defined as *"the degree to which the measure of a construct sufficiently measures the intended concept"* (O'Leary-Kelly & Vokurka 1998, p. 387). One example from this study in which this has been considered is in regard to the construct of knowledge and thereby also knowledge transfer. Meticulous care has been put into defining and explaining different views and definitions in order to avoid ambiguousness, ensuring that the concept that is intended to be measured actually is measured. Clear definitions are of particular importance due to the fact that knowledge as a concept is ambiguous in nature (Alvesson 2011). Another step that has been taken in order to achieve a sufficient construct validity is to send a compilation of the interviews to respondents before publishing the report to ensure that the interpretations and the presented information is correct. This is mentioned by Yin (2014) as a suitable approach.

4. Empirical Findings

In the following section, the results of the conducted interviews are compiled and presented by organization. Each section begins with a brief description of the organization and the realized change project. This is followed by empirical findings of the use of MCSs for controlling knowledge transfer in the change processes.

4.1. Alpha's Merger Change Project

Alpha is a Swedish technology company founded in the 1990s that delivers products and solutions to the lighting industry. The organization has undergone a change in the form of a merger of a subsidiary and a parent company, thereby forming the organization Alpha. This merger has been the subject of study and in order to gain an understanding of the change, an interview with Respondent A, the CFO of the organization, has been conducted. The choice to merge the two companies was based on the fact that the two businesses were interconnected in many ways, such as through a shared administration and several other functions. Additionally, many of the employees worked in both the subsidiary and the parent company. Thus, the change aimed at simplifying the daily operation, clarifying and establishing common goals and to create a more time and cost efficient corporate group. The decision to merge the companies was made in March/April 2017 and was subsequently realized during the summer of 2017.

4.1.1. Controlling Knowledge Transfer

The respondent argues that it is critical to control and constantly follow-up the progress of the change project to ensure that the outcome turns out as intended. Following up the created ***plan*** for the change has according to Respondent A therefore been important, this to ensure that that the time-schedule is followed as well as to assure that the change is realized as intended. Involved in the planning activities has mainly been the respondent (CFO of the organization), the former CEO and the purchasing manager. The respondent explains that the purchasing manager possesses good knowledge about customers and suppliers and that this person in addition has a good relationship with them, which is why it was essential to include this person in the planning activities.

As for ***administrative controls***, Respondent A mentions that there was a change in the governance structure due to replacement of the CEO. However, the respondent argues that this was not a result of the merger. Something that however is used within the organization to control knowledge transfer and to facilitate implementation of the change are forums of various kinds, which is linked to administrative structure and design as a control mechanism. Management department meetings, which enable managers to discuss topics or issues related to the particular change, were for example introduced in relation to the change. In addition, Respondent A explains that they also have more informal meetings once a week in the

organization where all employees can attend and where change-related topics or issues can be raised. Respondent A argues that inclusiveness is significant since alignment of various views on the change is enabled which contributes to acceptance of the change among employees. Including the employees in the change process through social interaction is further of importance since much of the knowledge within Alpha is of tacit nature and therefore difficult to transfer due to it being dependent upon certain individuals, e.g. by being based on a personal feeling generated by practical experience.

> *"[...] social interaction is more important for a good knowledge transfer. It is much more effective with meetings than sending 20 000 mails back and forth."*
> Respondent A

Respondent A explains that the use of technical systems can be used to facilitate knowledge transfer in the organization in terms of creating opportunities for interaction and by contributing to a faster dissemination of information. However, technical systems can also constitute an obstacle for knowledge transfer in the way that certain aspects of the communication get lost due to the absence of for example facial expressions. In addition, Respondent A argues that the transfer of more explicit knowledge that is associated with repetitiveness and routinized tasks is easier to transfer through the use of technical systems. However, this type of knowledge has not been critical in relation to the change project due to the limited implications caused by the merger.

When discussing ***culture*** as a control mechanism, Respondent A explains that the culture did not differ significantly between the two organizations before being merged and the change did not affect the vision nor the mission of any of the two companies. Thus, the respondent contends that it was not necessary to use cultural controls during the change. Similarly, ***rewards and compensations*** have not been used to control knowledge transfer from the change project due to the uncomplicated nature of the project. Instead, the bonuses in the organization are used to motivate employees in their daily work by relating it to the net sales of the company. Regarding ***cybernetic controls*****,** Respondent A mentions that financial and non-financial measures have not been used to measure the change or to motivate the people in the organization. However, before taking the final decision of realizing the change, synergies and cost reductions with a potential merger were calculated. Whether these quantifications were reached or not after completing the merger has not been followed up though. Furthermore, the intention was according to Respondent A to create a merger-related budget with the aim of all organizational departments creating their own plan and budget. This attempt was however not successful due to lack of time.

4.2. ICA Business Services' Strategic and Cultural Change Project

ICA Business Services (ICA Affärsservice in Swedish) is comprised of 330 organizational members working with tree different kinds of business activities, which are linked to corporate group level finance, shop level finance and payrolls. There are also different staff groups working with change management, operational change and sales linked to internal

services. The respondent interviewed is Gisela Stockhaus, the Head of Change in the change management staff group. The change that ICA Business Services has gone through was initiated in 2012 and involves the implementation of an improvement program comprising the use of a model called VU (short for "verksamhetsutveckling" in Swedish, which means operational change), a management model used to achieve operational change. When applying the VU-method you start by conducting a strategic reasoning based on an external analysis, for example during employee seminars, in order to find out which shifts and movements the organization needs to realize in order for the organization to end up in the ideal position. Thereafter specific areas of focus are decided on, which are in turn broken down into more detailed goals and points for the organizational members to work on and towards in order to achieve the desired change.

4.2.1. Controlling Knowledge Transfer

Cultural controls have been crucial for controlling knowledge transfer from the change project in ICA Business Services. Stockhaus mentions that before the change, the different departments and individuals had difficulties in understanding what the organizational strategies and vision really meant to them.

> *"[…] ICA's strategies, the grand ones which you see our CEO talking about. Our organizational members could say "Does that have to do with me?".* Stockhaus

However, with the new VU-method initiated through the change this situation has changed for the better. Now the grand strategies are instead broken down thoroughly all the way down to the organizational members which makes it easier to demonstrate how everything is related and that the organizational members actually do make a difference. Stockhaus contends that this new approach makes it almost impossible for organizational members to avoid participation in the change process. To increase participation, the employees further get the opportunity to become change leaders, which implies that they will be in charge of following up the progress made on the different points that their group are working on. This is a way of contributing to changed values. Stockhaus argues that this is sometimes a more effective way to ensure that everything gets done than for the employees to only be accountable to their boss, this since the colleague in the change leader position is in the same position as them and generally knows how much time they would have for working on their points. Furthermore, Stockhaus states that their new way of working with change has made wonders for the dedication and commitment among the organizational members, especially since they get the opportunity to affect and develop their work themselves and thereby have a greater impact on the business activities of the organization. Moreover, the use of various teams has required clan controls, which is a cultural control, since difficulties to transfer knowledge may arise if combining groups of people with different organizational cultures.

Regarding culture, Stockhaus also clarifies that it is not the primary control that you start to work with when implementing the VU-method, this partly because it takes much longer to incorporate than other parts of the method. However, she states that the culture constitutes an

extensive part of the VU-method. She for example mentions that specific phrases and expressions have been implemented linked to the change, such as “whining trap” (gnällfälla in Swedish), “victim cardigan” (offerkofta in Swedish), i.e. to be victimized, as well as Cossack (kosack in Swedish), which means to have consensus in a VU-context. Other expressions include the concept of either “sitting on the bleachers”, which means to not participate in the change activities or to be “on the playing field” and instead participate actively. The use of this common language can be perceived as a symbol, which is a cultural control. Symbols have also been used in terms of visualizing the change on a large wall, which enabled sharing of knowledge related to what the change implies to all affected parties. This results in an understanding of how other departments are affected and also contributes to socialization across units which facilitates implementation of change.

> *“It is not only about knowing your own thing, above all not the silo thinking [...]”.* Stockhaus

Another type of control being used is ***administrative control***, first of all in the form of governance structure through the discussed opportunities for organizational members to become change leaders. The appointed change leaders are however not only subjecting their subordinates to change but are also required to change the way they conduct their work when that is deemed necessary. This is enabled and decided on through change coach participation during change meetings, this in order for the coaches to be able to observe the energy in the room so that recommendations for improvement can be provided. Furthermore, controls linked to the administrative structure and design have been used by putting together either organizational or cross-functional teams, depending on the change topic at hand. To ensure knowledge transfer, Stockhaus argues that it is important to have teams including both people with a lot of detailed knowledge about the problem, but also people that have no knowledge of the problem whatsoever. This is deemed important since it opens for change through the fact that people without detailed knowledge dare to challenge established ways of doing things and thereby can open the team to new ideas. In addition, processing old projects and visiting other departments to create an understanding of how the own work affects this unit also promotes knowledge transfer. Furthermore, the creation of a front desk to which employees can turn when having questions or problems can be perceived as an administrative control. All the questions are then compiled in a log and are thereafter analyzed in order to find out which internal training they need to have in order to eradicate their need for asking some questions.

Regarding ***planning***, ICA Business Services have different rounds of VU, in which they focus on different themes, for example customer value. Every other week, a group meeting is scheduled within each specific working group, during which the specific points that each organizational member should work on are decided and followed up. This provides regularity in terms of ensuring that the necessary change activities are actually performed.

> *"[...] preferably everyone should leave the meeting with a point to work on until next time. If you get that sorted, the regularity, breaking [the strategies and focus areas] down and everyone taking their responsibility you get a fricking energy!"* Stockhaus

Stockhaus explains that each point to work on is a small part in the big change towards improvement. She emphasizes the importance of structuring the process this way since it creates engagement and confidence among employees resulting in progress and that people perhaps take on bigger points next time. Although, she also stresses that it is important that the points are not too big since this instead might create stress and a bad atmosphere when people lack time to finish the points they are working on.

Rewards and compensation is quite prominent within the organization, however not in the form of monetary compensation. For example, one department fell behind with the invoice payments when changing their system while simultaneously starting to work with the VU-method. They then had 36.000 invoices in their backlog and in order to visualize the work ahead of them and reward the employees along the way, the manager of that department introduced a tube filled with juice with a tap in the bottom. The juice symbolized the number of invoices left to process and at the end of the day they got to pour out the amount of juice that related to the number of invoices they had processed during the working day. There also were some motivating sub targets along the tube, such as candy and lottery tickets, which were awarded to the employees along the way.

As for ***cybernetic controls***, these controls are used in the form of different measures, both financial and non-financial, aimed at quantifying the change. During the employee seminars the different measures are discussed in relation to the focus of the change, this to ensure that the right things are measured. Thereafter the measures are revised when necessary. Stockhaus further explains that their way of continuously measuring the financial progress throughout the change project has led to the conclusion that the organization has been able to make many savings, both monetary and time-related. She also stresses that measures are crucial in order to assure that things that are decided on are actually performed, since *"what gets measured gets done"*.

> *"If everyone works with the same things, towards the same goals and you measure it carefully, then things will happen!"* Stockhaus

In addition, Stockhaus argues that it is important to do follow-ups in regard to the measures. However, she also explains that it can be challenging to measure if implemented changes have led to improvement. At first, there was a struggle regarding actually finding proper non-financial measures and targets, although they ended up with measuring the improvement based on a scale from small to extra-large, depending on how much impact the change leading to improvement would have. Small would only impact one specific department, large would impact the entire ICA Business Services organization, while extra-large would impact the entire ICA organization or even outside it. These measures were considered appropriate since it is important to consider how other parties and departments might be affected by

actions and changes, thus contributing to knowledge transfer regarding what comes before and after your own task or part of the process.

4.3. Beta's Corporate Restructuring Change Project

Beta is one of the larger municipalities in Sweden. The municipal office has ten departments, one of which is the Management Control department. Respondent B1 is the CFO and is thereby head of the Management Control department. Respondent B2 is employed in the same department, however instead has the role of Budgeting Manager. The investigated change is quite an extensive organizational change, revolving around the implementation of three central municipal boards, namely a Preschool board, a Primary School board and a Care and Elderly board. Within the organization prior to the change, activities surrounding schools, care of the elderly and other types of social care were instead handled by three different geographically divided municipal boards, while only some of the activities were handled centrally. The aim of the change was to gather all the activities in central boards in order to more efficiently divide the resources needed and to create equality among the performed activities. The change was initiated in 2015 when the city council gave the head of local government the task to put forward a suggestion for a new organization. Thereafter the process of working towards the change started, with the aim of the new organization being fully implemented by January 2017, thereby putting an end to the change project.

4.3.1. Controlling Knowledge Transfer

An attempt was made to use ***cybernetic controls***, in the form of budgets, to direct behaviors regarding resource allocation. The school principals each got a budget to be used for hiring school librarians, which aimed at making the resource allocation more efficient. However, the behaviors did not change in the expected way. Instead of more evenly distributing the resources, the principals cut back on their demanded school librarian hours, which resulted in difficulties in filling the number of hours needed for employing school librarians full time. The control thereby failed in achieving the intended behavioral change. Respondent B1 states that the resources are directed towards the places where you want an activity to be performed, thereby directing behaviors towards the intended change. However, according to B1 difficulties arise when there are organizational voids or gaps, especially occurring outside the core activities, which can result in problems of this sort that are difficult to solve. Another cybernetic control linked to budgets that is in place is the requirement to perform correcting actions in the form of action plans, which then need to be followed up, if the budgets fail to be met multiple times. When the change was initiated there were municipal boards which had previously had trouble meeting the budgets. When starting to work towards the change, follow-up meetings were held with the concerned parties to make sure that the new organization was rigged properly in order for the boards to be able to reach their targets.

As for the budgeting, Respondent B2 has been responsible for transforming the budgets from the old organizational structure to instead suit the new structure for example through dissecting the sums needed for different activities. The respondent states that this sometimes

requires guessing and that the municipal boards continuously attempt to get a higher budgetary limit than the one that has been allocated to them. This is argued to be an important process that requires lots of work and it is described as quite challenging to know when a good result has been achieved.

> *"We know that it is not exactly right, but this is simply the way it is. It is close to the truth. We might not reach the exact truth and there might not be a truth. Because there are two parties. And then... you will never agree to 100 %, you know that somehow."* Respondent B2

When discussing controls linked to organizational structure, which is an ***administrative control***, both Respondent B1 and B2 contend that the new organizational structure, which groups the different municipal boards together in different clusters, has been thought through in order for organizational members that work with similar things to be grouped together. Examples of such clusters are the educational cluster and social care cluster. In some cases, the organizational members have been able to keep working at the same workplace as before, however in many cases the new organization has also required people to move to new offices, sometimes in a new part of the city. Both respondents consider the organizational structure change to have been successful in enabling more social contact between the organizational members as well as more efficient use of the human resources.

> *"[...] just by sitting in the same house it is easier to meet on the coffee break. It is easier to meet and 'Well, now let's fix it together!' [...] These spontaneous meetings spur a lot of creativity and we can see some signs of it showing up."* Respondent B2

> *"[...] everyone [who work in the separate clusters] are in the same place and then you can become a bit more redundant, you can cover for each other and you get a knowledge transfer as well, while you were previously more isolated [...]"*
> Respondent B1

Another type of administrative control that is used within Beta is linked to the governance structure. In order to facilitate knowledge transfer, both respondents state that it is important to achieve an understanding of the change all the way out into the organization to avoid that people work against the change and in order to really anchor the process of change and the intended outcome. By doing so, the engagement of the organizational members can also be ensured. Respondent B2 however states this to be challenging due to Beta being a large organization, thus requiring information to travel far. Hence, boundaries to knowledge transfer are created due to the knowledge being distorted, changed and filtered on the way to the intended recipients. An example of how this has been managed can be identified in regard to the Care and Elderly board, in which there were initially four lines of decision-making.

> *"[...] the board management has had one view and then when it was supposed to, in four lines, go down to the organization it did not work."* Respondent B1

Due to deficient communication stemming from too many steps through which the information needed to travel, a reduction of the number of steps was made. After that measure three lines of decision making remained and Respondent B1 states that a clearer organization and better communication was thereby achieved.

As for organizational ***culture***, Respondent B1 states that the organizational members brought three different cultures into the new municipal boards, which had been established in the previous geographically divided municipal boards. These three cultures are described as different in regard to how the work was conducted and that it was initially problematic for the new organization since the culture remained the same as before. Especially the new Care and Elderly board had problems since the previous culture and ways of working were especially different from each other within that board. The board was organized in four communicational levels, but the communication was not clear enough all the way from the management to the outer edges of the organization, thereby resulting in discontent and problems among those who did not receive clear information regarding the organization's common mission. The Care and Elderly board was therefore reorganized yet again, to include three communicational levels instead of four, this in order to achieve better control over the informational flow. In that way, according to B1, everyone in the board can work together better towards their common goal. The respondent regarded the change within the School board as more easily conducted in comparison, mainly due to the fact that the School board is more autonomous since the school is regulated by school laws, thereby hindering the change from being particularly radical.

Planning as a control is also used, however the use of this type of control is not as apparent as for the other controls mentioned. According to respondent B1, they have organizational goals and plans that they work towards in order to implement the change, however, the respondent states that the knowledge transfer necessary for fulfilling those plans and goals is difficult to achieve. The respondent also mentions that it is very challenging to manage knowledge regarding who should decide on what should be done and how everything should be scheduled. Although, planning in the form of scheduling is mentioned as a type of control that is utilized in this regard. As for the people responsible for executing the planning activities, the board managers are considered to be the main contributors according to respondent B1, who also states that the change plans have mainly been developed separately within the different clusters.

When discussing whether ***rewards and compensations*** are used as a management control respondent B1 contends that such types of controls are not at all used in the municipal line of business.

4.4. The Church of Sweden in Gothenburg's Corporate Restructuring Change Project

The Church of Sweden is governed by elected church politicians, bishops, priests, deacons as well as other employees. This study focuses on a change affecting the CSG. The interviewed respondent, Cissi Hammer, who during the change was the Executive Director of the church administration in Gothenburg, describes the implemented change as *"[...] the largest change that the Church of Sweden has undergone since separating the church from the state"*. The change is a major reorganization where the Church of Sweden in Gothenburg on January 1st, 2018, was divided into ten independent organizational units, nine of which are parishes and the tenth is a funeral association. Before the change, the Church of Sweden in Gothenburg was included in a community association with economy and administration being jointly managed. The division into separate units however entailed allocation of the financial and administrative responsibilities.

4.4.1. Controlling Knowledge Transfer

When discussing MCSs used for managing knowledge transfer, Hammer describes ***planning*** as the most important control in relation to this extensive change. It was essential to, at an early stage, create a plan for when various aspects of the change project should be completed, this to ensure a satisfying transfer of knowledge and outcome of the subsequent reorganization.

> *"Planning has been the most important [control]. We have worked towards and checked against it [the plan] continuously"*. Hammer

Hammer explains that the progress of the change project regularly has been measured against targets of the plan and adjustments to the plan have been realized when considered necessary. The management team of the church administration, who has handled the distribution of financial and other resources, has also been involved in the overall planning activities as well as the time aspects regarding the change. The overall planning has according to Hammer been a prerequisite for the new organizational units to be able to design and plan for their organization. Thus, Hammer states that a crucial aspect has been to transfer knowledge and information regarding the overall plan to the rest of the organizational members. She explains that the employees were informed about the progress of the change every two weeks, regardless if there was any new information or not, this since inclusiveness is considered extremely important.

Due to the nature of the business of the Church of Sweden, Hammer states that monetary ***rewards and compensations*** rarely are used to motivate employees. During this change, managers have been compensated financially though due to the extra amount of work that the change required which additionally is a mean to motivate the managers to stay in the organization during the process of change.

Although the change in itself resulted in changes in the organizational structure, Hammer explains that they have not completed the structuring of people yet. She claims that it was somewhat unsure what the change would imply, and that time therefore was an important factor determining how to seat and structure the employees. However, to facilitate the transfer of knowledge during the change, Hammer explains that networks of people with the same roles were created as a way of exchanging experience and as a mean to communicate which could be perceived as an ***administrative control***. These functioned as forums where the progress of the change or issues related to the change could be discussed once a month, thereby encouraging relationship-building between members of the various organizational units. Some of these networks have according to Hammer been dismantled after the realization of the change, while other networks still are active with regular meetings. Common to the networks regardless of being active or not as of today, is that relational bridges have been built between the various organizational units, thus promoting continued transfer of knowledge after the realization of the change. Another type of administrative controls which are used for managing knowledge transfer in the CSG are routines, procedures and systematics, such as process mapping. These controls are considered important in order to handle knowledge that exists within individuals, so that the organization is not dependent upon those certain individuals who have this inherent knowledge. Hammer states that this type of knowledge is a prevalent knowledge within the CSG due to the old-fashioned and traditional nature of the organization where a large extent of the employees have been working for many years. Through the use of this type of controls Hammer argues that the internal knowledge, also known as tacit knowledge, can be transferred and converted into explicit knowledge.

Culture was according to Hammer a central aspect to discuss in relation to the change. In order to ensure that the change was pervaded by the culture, it was according to Hammer important, as an employer and as a manager, to act in accordance with the culture of the church. Hence, Hammer states that it was critical for her as a manager to stay in her position and in the organization during the change, both as a way of supporting the employees and in order to demonstrate and transfer the values of the church.

> *"We are not going to rationalize and uproot all the employees. Instead we will do it [implement the change] in a fair way, as fair employers."* Hammer

She argues that this was an approach for the church to show that the change was conducted in a fair way and that the employees were treated fairly rather than being "consumed". However, in return the church expected the employees to remain in the organization as well. Hammer explains that there of course was some employee turnover during and after the change, but states that many of the employees did remain in the organization during the change. However, she contends that it is good for the organization with some new employees due to the new experiences and changes that this entails.

As for ***cybernetic controls,*** Hammer mentions that budgeting, in which funds for the particular change were allocated, has been used. Financial resources in relation to the change

were included in the budget of year 2016 and 2017, and this was in addition linked to a follow-up process where the intended financial goals were controlled and possibly revised. Hammer explains that all organizational units received a sum of money to use to facilitate the change through the budget. The inclusive budgeting process in which both the central level within the organization and all separate organizational units were involved is considered an important tool to contribute to target fulfillment and to ensure that organizational members are motivated to proceed in accordance with the change.

4.5. Summary of Empirical Findings

The empirical findings are summarized in table 5 below, building on table 2 in the framework for analysis (section 2.7.3.). The table illustrates the controls used to control knowledge transfer from the various units of analysis.

MCS \ Change project		Alpha's	Beta's	The CSG's	ICA Business Services'
Planning	Long-range planning			X	
	Action planning	X	X	X	X
Cybernetic controls	Financial measures	X			X
	Non-financial measures				X
	Hybrid measures				
	Budgets		X	X	
Rewards & Compensations				X	X
Administrative controls	Organizational structure & design	X	X	X	X
	Governance structure		X		X
	Policies & procedures			X	
Cultural controls	Values			X	X
	Symbols				X
	Clans		X		X

Table 5. MCS use.

5. Cross-Case Analysis and Discussion

In this section, a cross-case analysis elaborating on similarities and differences between the cases regarding the practical use of MCSs for controlling knowledge transfer is presented. This is followed by a discussion where the analysis is related to the frame of reference.

5.1. Cross-Case Analysis

Below, a cross-case analysis where the case-specific empirical findings from section 4 are compared and analyzed is presented. The structure of the section is based on the controls included in the model of analysis

5.1.1. Planning

Controls linked to planning are used to manage knowledge transfer within all the investigated change projects. ***Action planning*** as a control mechanism is used in all the change projects, whereas ***long-range planning*** on the other hand is only utilized within the CSG. The occurrence of action planning controls within all organizations could indicate that this type of control is especially important for achieving change, although Beta have stated that the knowledge transfer linked to such planning activities can sometimes be difficult. The importance of planning as a control is supported by Hammer in the CSG who contends that planning is the most critical control for their change project. The CSG, in addition to action planning, also created a more long-term plan which was later broken down into activities closer in time in the form of an action plan. The long-term plan can therefore be perceived as a tool for transferring knowledge to the organizational departments who are involved in action planning which might be of more importance for the CSG due to the large scale of the project. Involving people from all departments seems to be a critical aspect in all change project planning activities in the CSG. Similarly, people with knowledge related to various areas of the organization were included in the planning activities in Alpha in order to increase the knowledge transfer and to ensure the suitability of the plan in relation to the intended change. In Beta this is also the case, however the groups involved in planning activities are isolated to their separate clusters. ICA Business Services coordinate regular meetings during which previously planned actions are followed-up, and new activities for the next meeting are determined. The importance of regular meetings is also emphasized in the CSG's change project, thereby indicating that regularity might be of importance for achieving a successful knowledge transfer through planning controls.

5.1.2. Cybernetic Controls

Of the three subcategories to cybernetic controls, ***hybrid measurement systems*** were not used in relation to any of the change projects. However, financial- and non-financial measurements were both used separately within some of the change projects as a way of controlling knowledge transfer. Hence, the difficulty may be related to combining these measurements

efficiently, thus explaining the non-existing use of hybrid measurement systems. ICA Business Services used both ***non-financial*** and ***financial measures*** separately, and these measures are continuously followed-up and revised. Alpha, in contrast to ICA Business Services, only uses financial measures without following up the progress of the change project. This control mechanism was mainly used in the pre-phase of the project in terms of calculating cost reductions and synergies which can be perceived as a quantification of the change. As for the change projects in Beta or the CSG, neither financial nor non-financial measures were used to control knowledge transfer. However, a similarity between these organizations was instead the use of ***budgets***. Beta used budgets to direct behavior in line with the change project and to transfer knowledge between organizational departments which contributes to a successful creation of a budget. The budgets are followed up as a way of ensuring that previously created knowledge that has turned into experiences are considered in the change. Following-up the budget was also a crucial aspect in relation to the change of the CSG. Funds for the change were allocated in the budget, and the budgeting process included several levels within the organization in order to contribute to target fulfillment. This differs from the budgeting process of Beta where the budget is created on a more central level. The use of budgets within the CSG and Beta may be explained by the more bureaucratic nature of the organizations as the CSG previously was state-owned which could contribute to similarities with Beta due to it being a municipality.

5.1.3. Rewards and Compensations

In the organizations Alpha and Beta, ***rewards and compensations*** were not used to foster knowledge transfer. This type of control was not deemed necessary for the change in Alpha due to the uncomplicated nature of the merger. In Beta, rewards and compensations are on the other hand ruled out as possible controls due to the organization being a municipality. As for the CSG and ICA Business Services, rewards were used within both organizations as a means for motivating employees and encouraging certain behaviors.

In the CSG, monetary compensations were used in order to motivate managers in the organization. Monetary rewards were in this case used to ensure that cultural values in terms of being loyal and staying in the organization during the change were maintained. In ICA Business Services, monetary rewards are not used for enhancing knowledge transfer. Rather, rewards and compensations with a symbolic meaning or in terms of for example candy and lottery tickets are used as motivation. Another example of this type of non-monetary rewards and compensation can be identified in the case of the invoice backlog, which is visualized with a tube filled with juice. The reward in that case would be that the employees can see the juice decrease as it is gradually poured out, thus requiring a change in the way the work is conducted in order to get rewarded. Based on the evidence gathered from the different change projects, the use of controls based on rewards and compensations seems to be somewhat common. However, the choice of not using this type of control can, as it appears, be taken based on multiple reasons, for example due to the project scale being minor or the organizational form not allowing for such controls.

5.1.4. Administrative Controls

Administrative controls linked to the ***organizational structure and design*** are one of the controls most commonly used for controlling knowledge transfer. These types of controls are used in relation to all the change projects under investigation, thus indicating that it is a useful control mechanism for controlling intraorganizational knowledge transfer. The networks created during the change in the CSG are recognized as such a control and contributes to knowledge transfer by encouraging contact among employees which also reduces potential negative impacts that geographical boundaries otherwise can have on knowledge transfer. Similar to the network structure used for the organizational restructuring of the CSG, the organization Alpha uses forums in which knowledge is exchanged and transferred between employees by discussing change-related topics. Moreover, ICA Business services transfer knowledge in explicit form through the created front desk where difficult questions and problems can be discussed.

Controls related to the organizational structure are also apparent in relation to the change project in Beta. Employees within the organization were restructured by creating clusters including people working within the same area, such as an educational cluster, thus promoting transfer of knowledge between people working within the same area. The representatives of organization Beta argues that this restructuring was used as a means of enabling social contact among employees. As the other organizations, ICA Business Services also uses organizational structures as a control tool. They continuously work with this aspect by putting together organizational or cross-functional teams adapted to the change and include people both with and without detailed knowledge. The openness to new ideas from the people without detailed knowledge is described as a way of enabling transfer since this calls for openness and perhaps also requires the ones with detailed knowledge to explain the problem, thereby codifying it into words and transforming it into explicit knowledge. The prominent reason for using control mechanisms related to the organizational structure and design appears to be the social interaction that is enabled through this type of control, which further promotes knowledge transfer between people across the organization.

As for ***governance structure***, this control mechanism was only used within ICA Business Services and Beta to enhance knowledge transfer from the change projects. Organizational members within ICA Business Services were faced with the opportunity of becoming change leaders, thereby functioning as a control by being linked to accountability. Being accountable to a closer colleague can be argued to facilitate communication and transfer of knowledge due to the change being closer to one self which possibly increases the sense of participation. Compared to ICA Business Services, Beta uses another approach in relation to this type of control. To control the knowledge transfer in relation to the change, Beta has shortened the lines of decision-making which be an approach for reducing boundaries, thereby increasing knowledge transfer.

The final controls of the administrative controls are the use of ***policies and procedures***. The empirical results reveal that this type of control only is used within the CSG. Routines,

procedures and systematics have been critical for the transfer of individual knowledge in relation to this change project. Besides from within the CSG, policies and procedures are not used to control knowledge transfer from any of the other change projects. This could be an indication of knowledge being difficult to transform into written text in form of policies and procedures. In addition, it may also be a possible explanation to why other administrative controls that emphasize social interaction are used instead to a greater extent to transfer knowledge from the examined change projects.

5.1.5. Cultural Controls

The use of cultural controls for managing knowledge transfer varies between the projects under investigation. Cultural controls were not used for controlling knowledge transfer related to the merger change project in Alpha. This may be explained by the small scale of the project as well as the same existing cultures within the two merged organizations, thereby making cultural controls irrelevant. The change project in Beta did on the contrary involve consolidation of different cultures due to moving from geographically divided municipal boards to function-focused municipal boards. Hence, ***clan controls*** were considered necessary to ensure that knowledge were transferred between employees, subsequently resulting in a common culture within the restructured municipal boards which contributes to a successful implementation of change. Similarly, this control mechanism was of importance within ICA Business Services due to the combination of various groups when creating change teams.

The change project in ICA Business Services was the project in which cultural controls were most prominent for managing knowledge transfer as all cultural controls were used. This may be explained by the fact that the change project itself can be categorized as a strategic and cultural change, which hence naturally should involve controlling knowledge transfer through cultural mechanisms. As mentioned, clan controls were used by for example putting together cross-sectional teams which is also perceived as an administrative control. From a cultural perspective, this contributes to socialization and exchange of cultural values between various divisions within the organization, thus contributing to knowledge being transferred. Moreover, ***values*** were used to control knowledge transfer through letting employees become change leaders as well as empowering employees to contribute to changes which through transfer of knowledge results in the creation of new cultural values. Values were also used within the CSG and was argued to be one of the most critical controls, but the difference from ICA Business Services is that values as control mechanisms were mainly used through managers displaying desired values. Unlike the other organizations in the study, ***symbols*** were used to facilitate implementation of the intended change in ICA Business Services in the form of visualizing and sharing symbols related to the change as well as the creation and use of a common language. The lack of cultural controls in Alpha, the organization in which the smallest project in terms of scale was realized, as well as it being critical within the CSG that the change was pervaded by the culture may lead to the idea of the use of cultural controls being linked to the scale of a project. However, the use of cultural controls rather appears to be connected to the type of change project being realized which becomes evident when

assessing the extensive use of cultural controls for managing knowledge transfer from the strategic and cultural change project in ICA Business Services.

5.2. Discussion

In this section, the analysis of the empirical findings is discussed in relation to the frame of reference. An initial discussion based on the individual controls included in the model of analysis is presented. Thereafter, the use of controls for controlling the transfer of tacit versus explicit knowledge is summarized.

5.2.1. Planning

Of the two included planning controls, ***long-term planning*** and ***action planning*** (Malmi & Brown 2008), the latter is used in relation to all change projects while the former planning control is only used by the CSG. Parallels can be drawn to the theoretical discussion related to codification of knowledge (Hansen, Nohria & Tierney 1999; Senaratne & Sexton 2008; Johansson, Moehler & Vahidi 2012) as planning can be considered to capture essential knowledge and codify it into explicit and more concrete knowledge. Thus, planning controls contribute to transfer of more formal and explicit knowledge in terms of which activities that are prioritized as well as which people that are appropriate for certain tasks. Including various people in the planning activities appears to be a critical aspect in relation to the change projects to promote knowledge transfer. Such an approach can increase the willingness to work in accordance with the plan due to being involved in the process (Malmi & Brown 2008; Flamholtz, Das & Tsui 1985) and can also be linked to socialization (Swan et al. 1999; Smith 2001) contributing to transfer of tacit knowledge, thereby resulting in the inclusion of both tacit and explicit knowledge in the planning process. This may be understood as socialization processes contributing to the exchange and transfer of tacit knowledge which thereafter is codified and translated into explicit knowledge transferred through the plan itself.

5.2.2. Cybernetic Controls

Alpha has made an attempt of quantifying the financial implications of the change, however it appears to have fallen somewhat short since the quantifications are not followed up. According to Malmi and Brown (2008) quantifications can be followed up, however it does not seem to be required, which is why Alpha's quantifications could arguably count as ***financial measures***. Alpha's seemingly weak cybernetic controls could be a consequence of their change being of small scale, thus likely not implicating major changes to the finances of the organization. This might also be the reason to why their attempt at using ***budgeting*** as a control in regard to the merger was not prioritized. When analyzing the control in light of the definition of measurement put forward by Bedford and Malmi (2015), one could also presume that probably even less accountability is needed in the organization now, this since the employees are accountable to one organization instead of two as was the case before the change, thereby mitigating the need for control. In contrast, ICA Business Services use financial controls extensively, both in terms of measuring, following up results and revising

the measures in accordance with the follow-ups. The financial measures however seem to have been less challenging than the ***non-financial measures*** in terms of implementation, possibly since the non-financial measures are most likely closely tied to the tacit knowledge and its intangible nature (Baker et al. 1997), thereby making it harder to quantify than the more explicit financial measures that are easier to codify in words or numbers (Baker et al. 1997, Smith 2001). Based on the situation in ICA Business Services one could also argue that the scale of organizational change could play an important role due to the change being transformational, supported by the fact that Beta also uses cybernetic controls, in that case in the form of budgeting. The budgeting controls in Beta were however linked to challenges in terms of achieving the knowledge transfer required for intended behavioral change and accountability. Successful controls in regard to budgeting have however also been used in Beta in regard to the requirement to perform correcting actions in the form of action plans, since it appears to have solved the problem of targets repeatedly not being met and thus changed behaviors. The CSG also uses budgeting as a control, the use being in line with Malmi and Brown (2008) through involvement of both quantification, target-setting and follow-ups. Budgeting is in the cases mostly used for transfer of explicit knowledge, however as for the planning controls the budgeting also includes elements of tacit knowledge being transferred. The cybernetic controls are in many cases linked to planning as a control mechanism as measures and budgeted resources appear to be of importance to consider in the planning activities.

5.2.3. Rewards and Compensations

As argued by Smith (2001) and McElroy (1996), rewards are particularly useful for achieving organizational change related to organizational culture, which the change in ICA Business Services is strongly related to. This may therefore explain why rewards, in non-monetary forms, have been used successfully in relation to their change. In addition, the way in which cultural controls are designed also appears to influence the construction of rewards and compensations, thereby supporting the importance of considering the interconnectedness between different controls (Malmi & Brown 2008; Otley 1994; Dent 1990). Non-monetary rewards are according to Smith (2001) advantageously used to promote transfer of tacit knowledge which is evident in the case of ICA Business Services. Motivating the employees through the use of such rewards enables transfer of tacit knowledge in terms of the employees learning what actions that are desirable. However, this can also be perceived as transfer of knowledge of a more explicit nature due to possibilities of later storing the knowledge in form of working procedures which is argued to be related to explicit knowledge (Baker, Barker, Thorne & Dutnell 1997; Smith 2001). Monetary rewards are otherwise explained by Smith (2001) to be used mostly for the transfer of explicit knowledge. However, this expression is not supported by the study since the CSG, where monetary rewards were used, rather used these types of rewards to transfer tacit knowledge in terms of cultural values. Thus, this study indicates that both financial and non-financial rewards can be used to control transfer of multiple types of knowledge.

Furthermore, Argote and Ingram (2000) argue that it is possible to measure if knowledge has been successfully transferred through assessing changes in knowledge of recipients. Using rewards linked to certain goals or outputs as in the case of ICA Business Services could be considered as a means of measuring knowledge transfer. For example, their use of juice when visualizing the invoice backlog; the same old way of working would not have resulted in a decrease of invoices, and thus no reduction of juice. However, when learning to work more efficient and what working methods that leads to successful management of the invoices, knowledge can be considered to have been transferred, and this is also evidenced by a decreased amount of juice and employees being rewarded along the way.

5.2.4. Administrative Controls

The network structures linked to organizational ***structure and design*** that were used within the CSG to control knowledge transfer can be perceived as the creation of communities of practice (Johansson, Moehler & Vahidi 2012; Smith 2001) due the same expertise shared among the members of the networks which is similar to the controls used by Beta and to some extent Alpha. The use of network as a control mechanism contributes to transfer of particularly tacit knowledge due to the social interactions that this type of knowledge is dependent upon (e.g. Swan et al. 1999; Smith 2001). ICA Business Services continuously work with organizational structure and design by putting together organizational or cross-functional teams possessing various knowledge. Thus, they embrace the mindset of constantly re-creating and renewing knowledge through social interactions, which by Swan et al. (1999) and Smith (2001) is emphasized as an important aspect for transfer of knowledge. In addition, the front desk could be a tool for transferring knowledge by codifying it into explicit knowledge and subsequently transmitting it to the social system (Senaratne & Sexton 2008) that is constituted by the rest of the organization. This since the questions asked are processed and followed by educations, thereby feeding the knowledge forward.

Controlling knowledge transfer through organizational structure and design can be perceived as a way of creating social interaction among employees affected by the changes, this in order to contribute to transfer of mainly tacit knowledge which hence demonstrates a relation with cultural controls. Although transfer of explicit knowledge is evident in the case of ICA Business Services. Organizational structures appear to be useful in the studied projects for transferring knowledge, thereby contradicting the findings presented by Ruggles (1998) and Balogun and Jenkins (2003) where organizational structure is rather considered to be an obstacle to organizational change. However, when change is conceived as a process of knowledge transfer, the organizational structure is critical (Balogun & Jenkins 2003) thereby possibly explaining why controls related to the organizational structure are used to control intraorganizational knowledge transfer from all change projects included in the study.

The use of administrative controls could possibly be tied to the idea of knowledge being separated by boundaries (Lampel, Scarbrough & Macmillan 2008), requiring knowledge to be combined through social processes in order to be successfully transferred. This might explain the effort put into including various individuals in the examined change processes.

ICA Business Services for example focus on tearing down boundaries existing between different units and departments, as exemplified by Argote and Ingram (2000), for example through processing old failed projects and visiting other departments to get insight into their operations. Thus, parallels can be drawn to the theoretical discussion of knowledge silos (Offsey 1997) and functional silos (Lampel, Scarbrough and Macmillan 2008), highlighting the importance of attempting to transfer knowledge between them, for example through breaking down knowledge boundaries. A boundary to knowledge transfer in Beta was instead linked to the distance the information or knowledge needs to travel before reaching the intended individual or unit, wherein increased distance would result in a greater boundary due to information getting distorted along the way. Controlling knowledge transfer through the ***governance structure*** was used within Beta in terms of shortening lines of decision-making, thereby reducing boundaries which contributes positively to transfer of both tacit and explicit knowledge. This supports Ditillo's (2012) findings demonstrating that scalability of decisions is advantageous for knowledge transfer. Moreover, allowing employees to become change leaders as in the case of ICA Business Services is also perceived as controlling knowledge transfer through the governance structure since this is linked to accountability which according to Malmi and Brown (2008) characterizes this control mechanism.

Furthermore, Ditillo (2012) emphasizes the use of manuals and procedures for transferring knowledge. However, the study demonstrates that ***policies and procedures*** are not used to a great extent in practice as the CSG was the only case in which this control mechanism was used for controlling knowledge transfer. Policies and procedures as a control can be used for codifying knowledge, resulting in transfer of explicit knowledge (Hansen, Nohria & Tierney 1999; Senaratne & Sexton 2008; Johansson, Moehler & Vahidi 2012) which is evident in the CSG. The lack of policies and procedures in the other cases in combination with the emphasis put on social processes, suggests that tacit knowledge may be of more importance than explicit knowledge in relation to change. This since tacit knowledge is argued to be difficult to codify into explicit knowledge (Senaratne & Sexton 2008), thereby making the use of policies and procedures irrelevant.

5.2.5. Cultural Controls

Cultural controls for controlling knowledge transfer are widely used in relation to the examined change projects. McElroy (1996) argues that the organizational culture is difficult to change, but that changing the culture is crucial in order for organizations to achieve change. Hence, this may be the reason to why cultural controls are used to some extent in most of the examined cases. This also supports that many types of organizational changes require cultural changes in terms of changed behavior (Nahamias & Crawford 2003). The only case in which cultural controls were not used to control knowledge transfer was in Alpha. Accessing knowledge from the cultural repositories, as it is referred to by Walsh and Ungson (1991), was presumably not considered necessary due to the two merged organizations being closely related before the merger change project. As in the cases of ICA Business Services and Beta, accessing knowledge from different cultural repositories was deemed essential due to constructing teams consisting of people from various groups or due

to the creation of clusters of employees. Therefore, ***clan controls*** were important to align the differing cultures. The common purpose of using clan controls appears to be to create social exchanges between groups with various cultures in order to promote transfer of tacit knowledge, thus supporting the idea of social factors being important for transferring tacit knowledge as expressed by Bresnen et al. (2003) and Johansson, Moehler and Vahidi (2012).

Organizational culture is by Johansson, Moehler and Vahidi (2012) argued to contribute to transfer of knowledge by influencing existing norms in the organization. This is in line with the way ***values*** are used as a cultural control in ICA Business Services and the CSG as they attempt to create an organizational culture that promotes change by influencing the norms in this direction. Encouraging the managers in the CSG to stay in the organization during the change for example contributes to a culture characterized by trust which by Smith (2001) is argued to contribute to transfer of knowledge. Values are included in what Barker et al. (1997) refer to as tacit knowledge. Thus, using values to affect the organization and the way people work can mainly be considered as a means to control the transfer of tacit knowledge.

The use of ***symbols*** in ICA Business Services to illustrate change-related issues can be perceived as a way of codifying and articulating knowledge in line with the thoughts expressed by e.g. Senaratne and Sexton (2008) and Johansson, Moehler and Vahidi (2012) regarding explicit knowledge. This since symbols enables knowledge to be transformed into visualizations that thereafter are transferred to other organizational members. However, it is also possible to argue that the knowledge being transferred could be perceived as tacit knowledge due to it possibly being based on personal values and beliefs related to the change. Thus, symbols can be argued to transfer both explicit and tacit knowledge after codification of it.

There appears to be an interrelatedness between cultural controls and control mechanisms such as rewards and compensations and the organizational structure and design. Thus, being in line with the view of McElroy (1996) who states that the organizational culture can be influenced by elements like reward and control systems and organizational structure. Rewards and compensation are used in the cases to encourage a certain behavior, thus affecting the organizational culture. Similarly, organizational structure and design as a control mechanism are used to encourage social contact across organizational boundaries to benefit the transfer of tacit knowledge which thereby also contributes to the creation of a new culture in the organization.

5.2.6. Controlling Tacit and Explicit Knowledge

Based on the cross-case analysis and discussion, table 6 below has been compiled, building on table 3 in the framework for analysis (section 2.7.3.). The table illustrates how the various management controls are used to control tacit versus explicit knowledge. The dark gray boxes depict a clear connection between control of the specific types of knowledge through the use of the different management control systems. The lighter gray boxes, on the other hand depict identified evidence of management control systems being used to control the separate

knowledge types, however not as strong as for the dark boxes. As for rewards and compensations, non-monetary and monetary rewards/compensations are added as subcategories, thereby complementing the categories presented by Malmi and Brown (2008). This since the study demonstrates that these types of rewards and compensations are used differently to control knowledge transfer, thereby building on findings by Smith (2001).

Management control system / Knowledge type		Explicit	Tacit
Planning	Long-range planning		
	Action planning		
Cybernetic controls	Financial measures		
	Non-financial measures		
	Hybrid measures		
	Budgets		
Rewards & Compensations	Non-monetary		
	Monetary		
Administrative controls	Organizational structure & design		
	Governance structure		
	Policies & procedures		
Cultural controls	Values		
	Symbols		
	Clans		

= Apparent connection
= Less apparent connection

Table 6. Control of knowledge types.

6. Conclusion

In the following section, the main findings of the study are presented and discussed in order to answer the research questions and to fulfill the purpose of the study. In addition, the chapter includes contributions of the study as well as suggestions for future research.

6.1. Findings

Management of intraorganizational knowledge transfer from change projects requires a combination of multiple management control systems, however, not all controls in the Malmi and Brown (2008) MCS package are required. Planning controls in the form of action planning and administrative controls in the form of organizational structure and design are the two most commonly used types of management controls, occurring in all investigated change projects. This implicates that these controls are the most suitable for intraorganizational knowledge transfer from change projects. The conclusion can also be drawn that the project scale affects the amount of controls used to control knowledge transfer from change projects, minor change projects requiring less management control systems while major changes require more MCSs. The type of change project as well as the organizational form also appears to affect the choice of controls. However, there might be other explanatory factors stemming from the differences in change project type, change project scale and organizational form that might affect these results.

Moreover, it is possible to conclude that explicit and tacit knowledge to some extent is controlled differently even though some controls are advantageous in relation to transfer of both types of knowledge. As for explicit knowledge, planning, symbols, policies and procedures, budgeting and financial measures are the controls used to control the knowledge transfer process. The planning and budgeting process as well as the controls involving symbols may involve a few elements related to tacit knowledge, however the controls themselves are directly involved in the transfer of explicit knowledge. Moreover, social elements influence the design of the MCSs, indicating that controlling the transfer of tacit knowledge is particularly critical. Transfer of tacit knowledge is to a great extent controlled through values and clan controls. Organizational structure and design controls designed to enhance social interaction are also frequently used. In addition, the study demonstrates that controls linked to non-financial measures and governance structure are essential controls in relation to tacit knowledge.

6.2. Contributions

The study provides several valuable contributions to the research fields of management control, knowledge management and change management. Firstly, the study provides knowledge pertaining to the research field of *management control* in terms of increasing the understanding of the importance of MCSs for controlling knowledge transfer. Thus, this both

strengthens and builds further on research conducted by for example Bihmani and Roberts (2004) and Ditillo (2012). Additionally, the study proposes that it would be beneficial to add two new sub controls to the control category relating to rewards and compensations, thus adding to the Malmi and Brown (2008) MCS package framework. Secondly, in regard to the research field of *change management*, change projects of various scale and type have been explored, which contributes with knowledge concerning the influence these aspects have on the design of MCSs for controlling knowledge transfer. Moreover, the term knowledge generation used by Balogun and Jenkins (2003) in a change project context is extended to include transfer of existing knowledge as well, thus contributing with a further dimension to the field of change management. Thirdly, the study contributes to the *knowledge management* literature by demonstrating that the transfer of different types of knowledge, namely tacit and explicit, are controlled differently. Ditillo (2012) arrives at the same conclusion, however, he categorizes knowledge differently, further attributing to the usefulness of this study. In addition, the study contributes to the creation of a shared understanding of the concept of knowledge transfer, deemed essential by Ruggles (1998), since the concept is both defined and investigated through a case study, thus widening the scope to not merely explore the definition. Finally, the study contributes with new knowledge to the *combined research field* by investigating the control of project-to-intraorganizational knowledge transfer, thus adding to prior research in which the phenomenon has mainly been examined on a unit-to-unit or project-to-project basis. Additionally, focusing on change projects also contributes with valuable insights as a there is a limited amount of studies conducted within this setting.

6.3. Future Research

As for suggestions for future research, there are several potential areas of research that would benefit from future studies. Despite concluding that projects of larger scale require more controls for controlling the transfer of knowledge, there is a need for further research examining the use of MCSs in relation to projects of various scales due to this study only including one project of each subscale. Thus, future studies could investigate this by only including projects of either the scale transformational change or incremental change to examine if additional results are in line with the findings of this study. Moreover, there are indications that the use of controls may depend upon the type of project being realized. Thus, future studies could also focus on projects of a specific type, such as corporate restructurings or mergers, to examine what characterizes the MCS package used in such project contexts. Focusing on projects of a particular scale or type of change may contribute with valuable insights to the fields in terms of how the use of controls to control transfer of knowledge may differ. Finally, the study indicates that organizational forms may influence the design of MCSs to control knowledge transfer. However, this is also an area where future studies are considered necessary in order to create an understanding of possible differences in the use of MCSs between organizations of various forms

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Appendix

Appendix 1 - Interview Guide

BACKGROUND

What is your role in the organization?

Can you describe the change project?

Has a special project team been involved in deciding on the changes that are to be followed through?

How have you been involved in the change project?

How are the change initiatives implemented in the organization?

What have been the greatest challenges in regard to the change project?

How is it ensured that the changes are actually followed through?

KNOWLEDGE

- How would you define knowledge?
    - Would you say that the definition used in the organization is the same?
    - If not, how does it differ?

The concept knowledge transfer is explained as; *knowledge transfer is the process through which knowledge is transmitted from a change project to the intraorganizational social system, thus affecting the knowledge in recipients by breaking down knowledge boundaries, thereby resulting in change.* In short, knowledge transfer is the change process which aims at resulting in a change.

- Do you consider knowledge transfer as important when it comes to change?
    - Why/why not?
- Are there any challenges linked to the transfer of organizational knowledge?
    - How are they handled in that case?
- Are there any boundaries which may hinder knowledge transfer?
- Would you say that there are different types of knowledge?
    - If so, how do they differ?
- Would you say that some types of knowledge are especially difficult or easy to transfer?
    - If so, how do you manage the transfer of such knowledge?
- Do different projects require different types of knowledge?
    - Change projects in general?
    - This project in particular?
- How is maintenance and transfer of knowledge ensured after the initial change initiatives have been presented to the organizational members?
- Are technical systems or social interaction and relationships most important when it comes to transferring knowledge?
- How is the knowledge transferred through the systems and/or social interactions and relationships?
- How do you ensure that knowledge is transferred between organizational units/groups?

MANAGEMENT CONTROLS

- Can management controls be used to manage the knowledge transfer/change process (i.e. the process leading to change)?
    - Why/why not?
- Would you say that more focus has been put on one/some of these controls in regard to managing the knowledge transfer?

Cultural controls

- How is it ensured that the desired norms, values and beliefs are shared within the organization?
- Is the culture different in separate units and/or groups of individuals? How is this handled?
- Has the project required any changes to the organizational culture? What type of controls are used for this?
    - Has the mission/vision changed?
    - Have any changes been made to the approach used when recruiting new people?
    - Do you look for certain values/beliefs when recruiting? Has this changed?

Planning

- How is commitment to plans and goals regarding the change ensured among organizational members?
    - Are different approaches used depending on the group/unit?
    - Have any challenges/changes in regard to commitment been identified?
- Who are/have been involved in the planning activities related to the change project?

Cybernetic controls

- Are financial and/or non-financial measures used to direct behavior towards the change?
    - If so, how are they used?
    - What types of measures are used?
    - How is the target fulfilment ensured?
- Are budgeting or similar tools used to direct behavior towards the change?
    - If so, how are these used?
    - What type of tools are used?
    - How is the target fulfilment ensured?

Reward and compensation

- Are rewards/compensations used to motivate change?
    - If so, what are these based on?

Administrative controls

- How is the organization structured to promote change/knowledge transfer?
    - Is the structure designed to enable contact that encourages change?
    - Are there different organizational structures within different parts of the organization?
        - If so, are the structures linked together? How in that case?
- Have any changes been made to the organizational or governance structures?

    - Why/why not?
    - Has the decision-making process changed?
    - Have the teams/groups changed?
- How are policies/procedures used to direct behavior in line with the change?