



UPPSALA
UNIVERSITET

Företagsekonomiska institutionen
Department of Business Studies

Leading IT-Enabled Change Inside Ericsson

A Transformation Into a Global Network
of Shared Service Centres

Einar Iveroth

Einar Iveroth

Iveroth, E. (2010). *Leading IT-Enabled Change Inside Ericsson: A Transformation Into a Global Network of Shared Service Centres*. Doctorial thesis No. 146, Department of Business Studies, Uppsala University, 116 pp., ISSN 1103-8454.

Dissertation presented at Uppsala University to be publicly examined in Hall 2, Centre for Social Sciences (Ekonomikum), Uppsala, Tuesday, March 30, 2010 at 13:15 for the degree of Doctor of Philosophy. The examination will be conducted in Swedish.

ABSTRACT

The purpose of this thesis is to explore—from a managerial perspective—how IT-enabled change is designed, led, and sustained from-within an organisation. This is an issue of central concern because there is a considerable lack of research that directly incorporates IT in management and organisational change studies. In addition, earlier research has recurrently focused on abstract theorising, aggregated perspectives, and exploring organisational change from the outside, from-without. Consequently, the present body of research provides limited knowledge of how organisations in practice lead large-scale IT-enabled transformations.

The thesis herein sets out to explore this question, and does so by following the change designers and agents of the telecommunications company Ericsson, that transformed its finance and accounting unit from a highly decentralised structure into a shared service centre structure (SSC) entitled: “The Global F&A Transformation Programme”. The formal transformation lasted three years, was enabled by an enterprise resource planning (ERP) system, and was driven in the majority of Ericsson’s sub-units situated in more than 140 countries.

Theoretically, this thesis addresses the research question: how do actors and structures influence large-scale IT-enabled change? The principal finding of the thesis is a four-stage analytical framework built on the concepts of common ground, common meaning, common interest, and common behaviour: *The Commonality Framework for IT-enabled Change*. The value of the framework is that it depicts the interplay between actors and structures on a micro-level. In doing so, the framework explains the different levels of complexity in a transformation and how they require different structures to be used, different activities to be performed, different skills to be applied, and different roles to be played. The framework can be used by both academics and practitioners to develop, assess, and improve IT-enabled change projects.

In a broader perspective, the findings further suggest that change comes about as an upward spiral, within which the moving targets of IT and organisation are intimately interconnected. This reciprocal interconnectedness between IT and organisation across time implies that if changes are done to technological properties, this necessitates changes to the organisational properties, and vice versa. Organisations at the hands-on-level more or less have to change to make use of the IT-enabled advantages. Thus, successful IT-enabled change is more than the technology artefact *per se*, and requires thoughtful attentiveness not only to the technological and material side, but also to the organisational, social and human side of change.

The theoretical contribution of this thesis is the in-depth exposition of different aspects and interplays between the properties of actors and structures from-within the organisation. The empirical contribution is the description of how contemporary multinational organisations initiate, lead, and sustain large-scale IT-enabled change.

Keywords: IT-enabled change, global organisational change, ERP, shared service centre, change agent, actor, structure, practice.

Einar Iveroth, Department of Business Studies, Box 513, Uppsala University, SE-751 20 Uppsala, Sweden.

ISSN 1103-8454 © Einar Iveroth

Printed in Sweden 2010 by Universitetsstryckeriet, Ekonomikum, Uppsala.

Acknowledgements

My profound appreciation goes out to my supervisor Associate Professor Jan Lindvall who has guided and supported my work since 2005. Thank you for believing in me and for your inspiration and dedication which has made me see things in a new light. My sincere gratitude also goes to my second supervisor Professor Lars Engwall, and Professor Birger Rapp, Professor Bo Carlsson, and the colleagues at MIT. I appreciate your insightful feedback and support.

My fellow colleague Pontus Fryk deserves a special acknowledgment, as he has been an excellent critic and friend during the long PhD journey. The academic ride was also made more fun, smoother and less bumpy by Jonas Løvdal, Timothy Olson, Jeanette Fors, Katarina Buhr, Ravi Dar, Johan Gregeby, Oscar Persson Ridell, Dariusz Osowski, Svenja Tams, Firouze Pourmand, Joakim Netz, Martin Svensson, Patrick Grimlund, Erik Nilsson, Erik Lundmark, Leon Caesarius, and Henrik Dellestrand.

I am particularly grateful to Professor Jannis Kallinikos and the colleagues of the ISIG group at The London School of Economics for opening their doors and sharing their ideas. The months I spent at your institution were vital for finishing my work, thank you. The perceptive ideas and questions from Associate Professor Birgitta Södergren during the final higher seminar at Uppsala could not have been more valuable for the closure of this thesis.

I would also like to give credit to The Swedish Research School of Management and IT (MIT) and the foundations of Jan Wallander, Tom Hedelius and Tore Browaldh whose financial support made this thesis possible. Also, Elisabeth Hallmén and Merawi Tezera deserve my acknowledgements for solving my administrative and technological problems. In addition, I would like to extend my deep appreciation to Claes Eriksson, Stig Christensen, and all the other respondents from Ericsson who participated in my research.

Finally, and most importantly, I would like to express my sincere gratitude towards my family Iveroth and Pandis, and especially to my wife Sofie Pandis-Iveroth, for their unconditional love and support. Without them, these pages would never have been written.

Stockholm, January 2010
Einar Iveroth

*There is a crack, a crack in everything
That's how the light gets in.*

Anthem, Leonard Cohen

CONTENTS

Exploring IT-Enabled Change From-Within

Paper I: Lindvall, J. & Iveroth, E. (2010). Creating a Global Network of Shared Service Centres for Accounting.

- Presented at the 31th annual European Accounting Association (EAA) congress, 23-25 April 2008, Rotterdam, The Netherlands. Revised and submitted to the Journal of Accounting and Organizational Change.

Paper II: Iveroth, E. (2010). Developing the Actors of Organisational Change: the Roles They Play, the Tools They Use, and the Skills They Have.

- Presented at the European Institute for Advanced Studies in Management (EIASM) 3rd workshop on organisational change & development: advances, challenges & contradictions, 26-27 September 2008, Bucharest, Romania. Revised and submitted to Organization Studies.

Paper III: Iveroth, E. (2010). Leading IT-enabled Change across Cultures.

- Presented at the 24th European Group for Organizational Studies (EGOS) conference, 10-12 July 2008, Amsterdam, The Netherlands. Revised and submitted to the European Management Journal.

Paper IV: Fryk, P., Iveroth, E. & Persson, O. (2009). A Bibliometric Study of Academic Interaction: IT, Organization, and Change.

- Published in the proceedings from the 15th Americas Conference on Information Systems (AMCIS), 6-9 August 2009, San Francisco, USA. Submitted to the Scandinavian Journal of Management.

Paper V: Iveroth, E. & Fryk, P. (2009). The Emergent View of IT and Organizational Change.

- Presented at the 15th Americas Conference on Information Systems (AMCIS), 6-9 August 2009, San Francisco, USA. Submitted to the International Journal of Information Systems and Change Management.

Exploring IT-Enabled Change From-Within

Table of contents

1. INTRODUCTION.....	1
2. THEORETICAL FOUNDATIONS	5
2.1 Introduction	5
2.2 Theoretical considerations.....	5
2.3 Change in social science.....	9
2.4 What is change?	13
2.5 Technochange	17
2.6 Structures in organisational change.....	20
2.7 Actors in organisational change.....	28
2.8 Summary	34
3. EMPIRICAL FOUNDATION	37
3.1 Introduction	37
3.2 Case study background	37
3.3 The transformation of Ericsson’s F&A department.....	43
3.4 Summary	48
4. RESEARCH METHODOLOGY	51
4.1 Introduction	51
4.2 Stance – a processual and a practice approach	51
4.3 Design and setting – the case study of Ericsson	52
4.4 Collecting – interviews, documents, and observations.....	54
4.5 Analysing – organising, replicating, and grounding strategy	59
4.6 Validating – triangulation, feedback meetings, and temporality.....	63
4.7 Communicating – a narration approach.....	65
4.8 Summary	65
5. CONCLUSIONS	67
5.1 Introduction	67
5.2 Overview of Papers.....	67
5.3 Findings, conclusions, and contributions	69
5.4 Managerial implications	82
5.5 Future research.....	84
NOTES.....	87
APPENDIX	97
REFERENCES	103

1. INTRODUCTION

Information Technology (IT) is pervasive in people's lives, in the organisations they work for, and in the practices that people have for them. IT also offers considerable potential for changing the lives of individuals, enhancing productivity and bringing about efficiency in organisations, and solving social problems in society. In this way, new IT can both enable and drive change.

Successful IT-enabled change is still, however, very much a mystery and the majority of such projects fail (Dedrick et al., 2003; Markus, 2004). The research herein set out to explore the questions behind this mystery. It does so by getting inside the multinational telecommunications company Ericsson and by closely exploring the practice of change designers and change agents that work with IT-enabled change across the globe. As a result, the following pages in this thesis show how large-scale and global organisations initiate, drive, and sustain IT-enabled transformations.

Recent research underlines that firms that obtain the possible benefits from IT-investments often do so because they made complementary changes to the organisation (Zammuto et al., 2007). Organisations at the hands-on-level more or less have to change to benefit from the IT-enabled advantages. Such inter-connectedness between IT and organisation implies a necessity to understand IT-investments as technology driven organisational changes: "technochange" (Barrett et al., 2006; Markus, 2004). This being the case as technology triggers organisational changes. Successful technochange projects integrate the technological and the human aspects of organisational change. In short, technochange combines the material with the social and is therefore more than just the technology artefact *per se*.

In this manner, IT and organisation are intimately interlinked and jointly connected to change. Leading change is however complex and difficult. To change behaviour is complicated, to change a group of people is even more complicated, and to change a whole organisation with its structures

and employees increases the difficulty and complexity of change (Weick and Quinn, 1999).

Recent voices from the empirical world contend that financial outperformers are distinguished from less successful ones by the way they manage large-scale change (IBM, 2008a; IBM, 2008b). For example, the CEO of IBM stipulates that the evolution of the organisation is towards “the globally integrated enterprise” (Palmisano, 2006). In such organisations, everything moves and changes continuously because everything is connected to IT, and these outperformers are simply better at leading IT-enabled change. Even though inspirational, the question that arises from such broad notions is how these globally integrated enterprises actually lead such change in practice.

Theory provides limited answers to this question because organisational change research has been preoccupied by an aggregated perspective with synoptic accounts of change (Tsoukas and Chia, 2002; Van de Ven and Poole, 2005; Weick and Quinn, 1999).¹ Such a perspective frequently views change as a sequence of events that have different states along a linear trajectory towards a pre-determined end-state. The macro-oriented perspective in organisational change concentrates on abstract theorising about the overall form and structure of change. Studies using this perspective repeatedly conclude something about the frequency and rhythm of change, for example such as it being continuous or discontinuous.

Such studies are commendable work for abstract theorising over the aggregated structure and trajectory of change. Nevertheless, because the perspective investigates change using high levels-of-analysis, and because it approaches change from a distance, the perspective provides limited insights into what goes on *inside* the process of change. Since the macro perspective recurrently explores the transition between different aggregated states, it misses the micro-processes that exists in-between the states. Thus, it provides limited considerations of *how* change is actually achieved in practice (By, 2005). Researchers have yet to take a good look inside the organisation to explore how corporations lead IT-enabled change.

The dominant and dissociated studies of change speak more about the aggregated structure of things relating to change and less about of what goes on inside the process of change. Therefore, the time has come to move our understanding of change from the macro perspective, *from-*

without, towards an understanding of change from a micro-perspective, or in other words, *from-within*. The purpose of the thesis is therefore:

To explore, with a managerial perspective, IT-enabled change from-within.

Studies that explore change from-within examine the concepts of either structures, or actors, or both. Structures provide temporary stability to everyday work and are commonly things like rules, routines, and information systems. Actors can be the different people within organisations that have the capacity to reproduce or change structures.

Integral to the studies of actors and structures is the notion of balance and interplay between them. This is, on the one hand, an actor without structure amounts to no more than a sightless journey, whereas on the other hand, structure without the actor is little more than an abandoned ship drifting on its own accord. Brown and Eisenhardt put it in similar terms: “*Too little structure makes it difficult to coordinate change. Too much structure makes it hard to move*” (1997, p. 29). Therefore, change is difficult if there is limited balance and interplay between actors and structures. Research on this matter, however, is limited.

Given the aforementioned insights into the interlink between IT and organisation and their connection to change, and the limited micro-oriented research exploring change from-within, the research question is:

How do actors and structures influence large-scale IT-enabled change?

The thesis answers the research question by following the transformation of the finance and accounting (F&A) department of Ericsson, “The Global F&A Transformation Programme”. In-depth interviews, internal documents, and observations are drawn and then analysed using various process theorising strategies.

The case organisation Ericsson is particularly relevant because the company is a global actor and an outlier (in regards to the type of transformation reported herein) that have successfully utilised IT to enable and further its business. The company had been in need of significant organisational changes, which were enabled by the implementation of an information system. This change did however create additional opportunities for organisational change, because making IT work required changes to the organisation. In this respect, the case study of Ericsson provides an excellent opportunity to explore IT-enabled change from-within. Further, since the focus is on what

facilitated rather than hindered Ericsson's transformation, the thesis contributes to the emerging field of positive organisational scholarship (Cameron, 2008; Ghoshal, 2005; Piderit et al., 2007; Quinn et al., 2003).

The findings show how the transformation evolved out of the interplay between actors and structures across time, but as the subsequent pages will show, the actors were imperative to this process. This was due to the fact that the structures functioned as a lever, which only came into full potential by the actors that enacted them, much as a hammer is useless unless it is combined with a skilled and experienced carpenter.

In all, the thesis consists of five papers. Paper I focuses on the dynamic interplay between actors and structures across time. In doing so, the paper illustrates how Ericsson designed, implemented and developed the transformation. Paper II expands the notion of the actors of change by illustrating the roles they play, the skills they have, and the tools they use. Paper III examines change from a structural vantage point by exploring how practice-based culture and enterprise resource planning systems (ERP) influence change. Finally, the theories of IT-enabled change that are the central part of the first three papers—as well as Chapter 2 that outlines the theoretical foundations of the thesis—are explored and put in a broader contextual perspective by Paper IV and Paper V.

The thesis makes a theoretical contribution to the field of IT-enabled change by an in-depth exposition of different aspects and interplay between the properties of actors and structures from-within the organisation. The empirical contribution is the depiction of how a contemporary multinational initiates, leads and sustains large-scale IT-enabled organisational change.²

2. THEORETICAL FOUNDATIONS

2.1 Introduction

This chapter provides the theoretical foundations of the thesis. The purpose is to show how the thesis is theoretically informed, how the thesis contributes, and how the thesis tries to position itself within the ongoing academic debates. It does so by starting to discuss the nature and purpose of theory and then moves on to broadly explore the issue of change in social science. A section then follows that discusses the question of what change really is. Next, there are two sections related to structure. The first one reviews theories and perspectives of IT related studies, and the second illustrates the materiality and implications of ERP systems. The final section covers the actors' perspective as it examines its different vantage points and problems. Every section ends with a separate text that pinpoints the implications for the thesis, how the thesis contributes, and the different strategic decisions made in regards to the theory presented in the section.

2.2 Theoretical considerations

A natural starting point for a theoretical chapter is to ask the question what a theory actually is, and what the purpose of such a research tool might be. This question is important because limited knowledge of the nature and purpose of theory is likely to result in unsuccessful or biased studies. Trying to answer the question is not an easy task. Scholars continuously debate the question and journals frequently devote special issues to the subject (e.g. ASQ, 1995, No. 3; AMR, 1989, No. 4).

Gregor (2006) offers a fivefold taxonomy that connects to the latter part of the question regarding the purpose of theory. The author outlines that a theory might be used to make Analysis, Explanation, Prediction, Explanation and Prediction, or Design and Action (i.e. guidelines). The

use of theory in this thesis is related to the second category: Explanation. In such an approach, theory works as an explanatory device and is commonly used in research that aims to understand an under-explored phenomenon. This kind of research often seeks answers to questions of *how* and *why*. In short, theory is used as a “sensitising device” (Klein and Myers, 1999). With this vantage point, theory is not used to predict or uncover causal relationship but instead it is used to create a theoretically informed understanding of the research being conducted (Scapens, 2006). For example, if the research is informed by the theories of sociomaterial practices (Leonardi and Barley, 2008; Orlikowski, 2007), then the initial questions posed in the data collection might be connected to the functionality of the information system (material), and how the information system enables its users to change their practices (socio).

One way of trying to answer the former part of the question—the nature of theory—is to make a closer examination of: the *concepts* of a theory, their *relationship*, and the *analytical level* of a theory (Gregor, 2006).

To begin with, a theory is composed of different *concepts* (or constructs or variables depending on academic discipline) that together make up the examined phenomena. Such concepts can evolve out of deduction or induction, or both. Traditionally scientific research has favoured a deductive approach where theory determines which concepts to explore. However, recent academic debate (Costello, 2000; Hambrick, 2007; Locke, 2007; Van de Ven, 2007; Van Maanen et al., 2007) questions this approach as it is less useful when a study explores a new phenomenon (e.g. large-scale IT-enabled change). In the research undertaken here, this is seen as important because sometimes too much devotion to theory can cloud the researcher’s mind, and as a result the researcher risks missing emerging patterns in the empirical data that have the potential to contribute with new theory and insights.

Furthermore, a theory signifies itself by some kind of assumption about the *relationship* between concepts. Luft and Shields (2003) contend that such relationships can be of two different kinds: assumptions about causal relationships and assumptions about linearity.

The first kind of assumption relates to the question if the causal relationship between concepts is one-way or two-way. Most studies explore one-way relationships and these studies pinpoint which of the concepts are the independent (i.e. what causes the change), dependent (i.e. how the cause is reflected), intervening (i.e. what might intervene

when the independent starts influencing the dependent variable), and the moderating variables (i.e. a third variable that might modify the relationship between independent and dependent). For example, the early works of technology and change made the assumption that the independent variable of technology determines the dependent variable of organisation (e.g. Perrow, 1967; Woodward, 1958). Studies that instead focus on a two-way relationship explore the interplay between concepts. Such an approach is more complex because the assumption is that the causal influence between the concepts work both ways. That is, the arrow of causality points in both directions. For example, Barley (1986b) and Orlikowski (1992) examine the interplay between the concepts of actors and structures when technology is enacted. Such studies are however rare. This thesis is an attempt to fill this gap.

The second kind of assumption, about relationships between concepts, is connected to the notion of whether the concepts are linear or non-linear. In the linear relationship, there is proportionality between the cause and the effect. In the non-linear relationship, however, the independent variable is not proportional to the dependent variable; the in-put is not relative to the out-put. Non-linear assumptions are common in studies that explore knowledge, information and IT related issues (as the current research). Quattrone and Hopper (2001; 2005) have demonstrated that because an information system can integrate information and unbound work from time and space, it enables non-linear relationships to emerge. For example, in contemporary integrated information systems, small changes in one part of the system can have significant and immediate effects in other parts of the system. Such phenomena are relatively new, however, as information systems were earlier more isolated and less connected to each other (due to technological immaturity). Sinha and Van de Ven (2005) illustrate similarly that the traditional linear and deterministic models fail to capture the non-linear relationships that appear when work is knowledge-intense and connected to the use of IT. More important, and argued in this thesis, non-linear relationships frequently occur in change because few actors have the potential to make a significant impact. That is, the actors' ability to make a difference is not proportional to how many they are.

Finally, a theory might vary depending on the analytical level to which it is applied (Gregor, 2006; Luft and Shields, 2003). In the case of change theories, they can be classified into four categories depending on whether they apply to the levels of individual (e.g. change of mindset, Quinn et al., 2000), organisational sub-unit or group (e.g. groupthink,

Janis, 1982), organisation (e.g. punctuated equilibrium, Tushman and Romanelli, 1985), or society (e.g. grand theories of social thought, Giddens, 1984). Most theories revolve around one level, though in some cases observed causes are connected to organisational inter-linkages between levels. This means that things that are observed on a macro-level can be explained by activities on the micro-level. For example, many of the issues related to the renowned productivity-paradox can be traced to such organisational inter-linkages (Dedrick et al., 2003; Harris, 1994). This kind of study explores phenomena on multiple levels, which increases the complexity of research. The analytical level is of central concern in studies of change, because a macro-level analysis of change can yield a picture of discontinuous change, whereas micro-level analyses of the same change sometimes show signs of continuous change (Weick and Quinn, 1999). The same phenomena can be observed in studies that explore stability and change, as they can co-exist depending on analytical level (Burns and Scapens, 2000; Scapens, 2006).

Implications

As the introduction noted, every section ends with a separate text that explicitly points out what the presented scholarly debates, and the thesis' standpoint in the matter, have implied for the current research. Accordingly, the primary non-linear concepts in this thesis were the ERP system and certain change agents and designers. The concepts were derived inductively, as they were recurrent themes in the initial interviews and archival data. The concepts were then contrasted to literature regarding structure and actor related properties of change and the decision was taken to explore their interplay. Following this came an interactive and iterative process of inductive and deductive reasoning with the aim to contribute to both theory and practice (see Section 5.3 and 5.4).

The research conducted was also multi-level because it examined both the macro-level strategic activities of change designers and initiators at the corporate level, and the micro-level activities of change agents at the local-level. One of the reasons for this was that some of the observed behaviour on the macro-level was traced to the activities performed on the micro-level, and vice versa. For example, changes to the design and execution of the transformation were linked to elapsed trials of shared service centre (SSC) structure and ERP implementations that were done on the local level (see Paper I).

2.3 Change in social science

This chapter aims at tracing change theories to their roots in grand social science. The reason for this is that when the thesis places itself in a wider perspective, the underlying meta-theories that inform the thesis become clearer, as well as which academic debate the thesis contributes to.

To begin, change in social science is on a grand-theoretical level closely related to the long-standing debate of the divide between agency and structure.³ Explanations of change are frequently attributed to the former or the latter, with a clear dominance for the latter. On the one hand, too much agency gives a voluntaristic stance to change that purports that change is caused by the free will of independent individuals with limited constraints (e.g. Bijker et al., 1987). On the other hand, too much structure yields a deterministic standpoint alleging that change is merely a result of exogenous and social structures that determine the actions of individuals (e.g. Woodward, 1958).

In modern social theory the divide between agency and structure is bridged by theories like structuration (Giddens, 1984), critical realism (Archer, 1995), and Actor-Network-Theory (ANT; Latour, 2005). Such theories are similar in that they renounce the classical dichotomy of agency and structure, instead bringing them together into an interconnected perspective. The theories, however, vary from each other in a number of ways.

Structuration theory holds that agency and structure are mutually constitutive and change emerges through the reciprocal process between the two. Structure forms the practice of actors, and knowledgeable actors have the capacity to change structure, but in the process of doing so the actors produce or reproduce the structure. Lower-level application of such meta-theory includes the work of Orlikowski (1992), Barley (1986a), DeSanctis and Poole (1994), Burns and Scapens (2000), and Walsham (1995).

Critical realism theory condemns structuration theory for conflating agency and structure, and alleges an analytical separation between the two. This is important the advocates claim, because without such distinction the analysis of how one affects the other becomes problematic. Instead, critical realists give prominence to intangible (i.e. soft or immaterial) and tangible (i.e. hard or material) aspects of structure, and the presupposed structural conditions that shape the behaviour of actors (Archer, 1995). Critical realists that have tried to

make empirical contributions of this grand theory are Dobson (2001), Fleetwood and Ackroyd (2004), Mingers (2004), Tsang and Kwan (1999), and Volkoff et al. (2007).

ANT theory contends that agency resides both in human and non-human actors (such as IT) that together make up heterogeneous networks that influences change. The ANT theory contributes by showing how technology can be an autonomous and political actor. By doing so, the theory dissolves the borders between the social and the technical. Researchers that commonly use ANT theory in their empirical work include Callon (1986), Ciborra (2000), Hanseth and Braa (2000), Law (1999), and Walsham and Sahay (1999).

These grand theories of modern sociological thought have their advantage and disadvantage (e.g. Jones and Karsten, 2008; Mutch, 2002; Walsham, 1997), and their value comes from that they reveal different aspects of change, depending on which one is used. For example, the previously mentioned work of Orlikowki and Barley shows how technology can trigger structuring since it is part of the rules and resources that the actors draw upon in their practices. Volkoff, Strong and Elmes use critical realism to illustrate how ostensive, performative, and material aspects of data, routines, and roles affect technology enabled change across time. Hanseth and Braa illustrate how information infrastructures start living their own lives as independent and political actors, how these actors evolve by joining with other networks, and how such development gives unintended consequences for change.

The common denominator and contribution is that the three grand theories provide a more socially oriented, integrated, and interactional view of agency and structure than earlier research has offered. What is common among the three—and what is central for the thesis herein—is that they contend that balance and interplay between agency and structure is imperative for change. As aforementioned, with too much agency and not enough structure, change becomes a sightless journey. With too much structure and too little agency, change is little more than an abandoned ship drifting on its own accord. Brown and Eisenhardt put it similarly: *“Too little structure makes it difficult to coordinate change. Too much structure makes it hard to move”* (1997, p. 29). Because the thesis originates from this perspective, an elaboration of the concepts of structure and agency follows.

Structures can denote both macro-level and micro-level phenomena. Studies of structures can, for example, explore grand social structures, or smaller structures involved in human interaction. An analytical distinction can also be made between tangible and intangible forms of structures (Archer, 1995).⁴ The former consists of human or physical resources such as information systems, roles, routines, and processes (regularly connected to IT) that influence the systems of human relationships (e.g. Becker, 2004; Costello, 2000; Volkoff et al., 2007). The latter, the more intangible property of structures, are made up of for instance ideas, values, theories, cultures, and mind-sets (e.g. Gioia and Chittipeddi, 1991; Hardy, 2004; Kwok et al., 2005; Levy et al., 2007; Tsoukas, 2005).

Analytically, these intangible structures do not only exist in the mind of the actors but are also entities that exist independently of the actors. Following such an approach, this thesis contends that structures have both tangible and intangible properties, hinge on human activity, are fairly stable across time, pre-date human activity, and constrain as well as enable behaviour. For example, the ideas and values of a long dead business entrepreneur may still influence the behaviours of employees (e.g. Selznick, 1957). Likewise, when an accountant starts a new job his or her practices are influenced—but not determined—by the processes and routines that are supplied by the information system that the practice is in part bounded to (e.g. Volkoff et al., 2007).

Agency is also a multi-level concept since it can denote both the micro-level, such as quality circles, as well as more collective and macro-oriented forces, such as labour unions.⁵ There is also a difference between agency and actor. The former refers to the source or capacity to change structures, while the latter refers to the individual, group, organisation or artefact that performs such acts.

Agency and its actors seem however to be “lost” in science because of the pre-dominance of more aggregated and structural perspectives with causal explanations (Ghoshal, 2005). This development is the outcome of trying to make science more scientific, which has given science a legacy of rational nature with notions like homo economicus (Persky, 1995), cybernetics (Wiener, 1948) and artificial intelligence (Wagman, 1991), and behaviourism (Skinner, 1953). As a response, there is nowadays an increasing theoretical debate aiming to bring agency and its actors back to social science (e.g. Archer, 2000; Douglas and Ney, 1998;

Emirbayer and Mische, 1998; Etzioni, 1988; Ghoshal, 2005). The current work aligns with this debate.

Overall, these scholars of social thought argue that agency and actors are under-theorised and one-dimensional. In effect, empirical research has surfaced in a wide variety of academic fields that expands the concept of actors. For example, in economics there is a discussion to replace the perspective of man as homo economicus (Thaler, 2000) in favour of a broader perspective that also includes emotions. Likewise, a development has arisen in psychology that is exemplified by the recent attention paid to emotion and cognition (Pham, 2007), and emotional intelligence (Goleman, 1995; Salovey and Grewal, 2005). Further, in strategy Ghoshal and Bartlett (1997) argue that an organisation can create competitive advantage by moving towards a more individualised corporation with a focus on certain new roles and skills for managers. Even institutional theory researchers have started to focus on the social position of institutional entrepreneurs (Battilana, 2006) and their social skills (Fligstein, 2001) in attempts to resolve the paradox of embedded agency (Seo and Creed, 2002). A final illustrative example is the work of Lamb and Kling (2003) in the field of information systems. They have found that the concept of the IT-users is treated as an atomic, isolated, and taken for granted unit, when instead this concept should be placed in an organisational context with a focus on social relations, affiliations, and interactions.

The growing interest for agency and actors has not yet to the same extent found its way to organisational change, as it is still dominated by structural perspective (Tsoukas and Chia, 2002) with a one-dimensional treatment of agency and actors (Caldwell, 2006; Ford et al., 2008).

Implications

The presented grand theories of social thought have played the role of informing the research performed in a number of ways. For example, an important point of departure is the view that change comes about as a reciprocal interplay between actors and structures; that research should avoid treating IT as an isolated artefact and that IT has the potential to be an actor in change; that change is influenced both by enduring tangible and intangible properties of structures that pre-exists human behaviour.

Another important point of departure is the notion that an interplay between actors and structures is imperative for change. The thesis develops this perspective further in Paper I, which illustrates how the actors and structures interact across time. Paper II shows how the actors leverage organisational change by their combination of actors' internal skills and external structural tools. By doing so, Paper II addresses the concerns of an under-theorised and one-dimensional perspective of actors. The Paper places actors in a less a-historical and a-social context than earlier research, and explains how the actors in practice successfully interact with structures. Finally, Paper III explores how the intangible properties of structure (in the form of a practice-based culture) and the tangible properties of structure (in the form of an information system) can influence change driven across the globe. Additionally, Paper I shows how the intangible properties of structure in the form of ideas were an integral part to the success of Ericsson's transformation.

2.4 What is change?

Change is an ambiguous concept used in many ways to describe many things and therefore it is important to clarify some standpoints on the subject matter that influence the current thesis. To start with, organisational transformation distinguishes itself from organisational change in that the former refers to changes of the deep structures of the organisation (Kotter, 1996). Transformation denotes not only profound and radical changes to the strategic core of an organisation but also small-scale changes that relate to the bigger transformation. In this way, transformation is a broader concept than change and consists of both large-scale and small-scale change projects that are interrelated, exist on different levels, and have different timescales. Such a transformation is examined in the research herein as Ericsson's transformation entailed many small and big change subprojects that together made up "The Global F&A Transformation Programme".

Moreover, scholars have argued about the nature of change as such. Some studies view change as a "noun", while others purport that change should be viewed as a "verb" (Van De Ven and Poole, 1995). Studies that treat change as a noun view change as a "thing" that consists of a sequence of events that have different states along a linear trajectory towards a pre-determined end-state. This perspective frequently focuses on what happens *at* different states in change and less on what happens *between* the states (Tsoukas and Chia, 2002, p. 571). The findings are

often oriented towards structure and reductionist explanation of the causal relationships of the antecedents and consequences of change. Typical examples of this kind of research is the sequential model of unfreeze, change, and refreeze that numerous organisational change models are based upon (Lewin, 1951), as well as Rogers (1962) diffusion of innovation theory. More recent examples and variations include the Tushman and Romanelli (1985) study of punctuated equilibrium, and Greenwood and Hinings (1996) neo-institutional analysis of radical change.

This thesis takes the verb approach and views change as a continuous process that consists of on-going and open-ended micro-processes of organising that together make up organisations and the world. “*Change is all there is*” (Tsoukas and Chia, 2002, p. 576). The perspective focuses on the different activities of “changing” as part of organising, rather than change as a static event (Weick and Quinn, 1999). In doing so, organisations become a secondary-accomplishment that emerge out of the process of “changing”. Studies taking this approach ascribes non-linear, embedded, temporal, contextual, and asymmetrical properties to change (Pettigrew, 1997). Nevertheless, it is notable that there is no best way to examine change. Choosing a verb approach merely means asking different questions and unmasking different aspects of organisational change.

Finally, what can actually be studied with a verb approach if change consists only of processes? This thesis examines a transformation at Ericsson that implied that the organisation changed the rules and routines of the majority of all F&A employees across the globe. That is, there were drastic changes to the formal processes, policies, and procedures for performing F&A activities, as well as for the way they were actually used. Because of this nature the thesis is informed by Burns and Scapens (2000) seminal framework for change. It primarily focuses on intra-organisational change (i.e. from-within) and it is therefore a suitable point of departure for the research undertaken here. The framework consists of the components: *rules* and *routines*, *realm of institution*, and *realm of action*.

The rationale is that an organisation is made up of *rules* and *routines* that actors use to make sense of their actions (Scapens, 2006). These rules and routines shape the action of the actors. The rules are the way things ought to be done and routines are the way things are done in reality. In

other words, “*rules are the formalized statement of procedures, whereas routines are the procedures actually in use*” (Burns and Scapens, 2000, p. 7).

The rules and routines are connected to the *institutional realm* that is made up of the taken-for-granted assumptions of an organisation. The institutional realm will shape and restrain rules and routines but at the same time the rules and routines influence the actions that are taken in the *realm of action*. As such, rules and routines are the know-how of the organisation and what links the realm of institution with the realm of action. Changes to the rules and routines come about as a process across time between the realm of institution and that of action.

Integral to Burns and Scapens framework is the notion that stability and change can co-exist: they are not mutually exclusive. Rules and routines provide stability in every-day life as they are reproduced, but at the same time they can be changed in the on-going practice of the actors. In this respect, in every day action the actors enacts the rules and routines but in the process of doing so they also have the potential to change them. In their action lies the seed of change but it takes time for such seed to take root in the realm of the institution (i.e. it takes time for the change to become institutionalised and become part of the taken-for-granted assumptions).

An elaboration on the details of Burns and Scapens framework for change is outside the scope of this thesis. Description (Burns and Scapens, 2000), background (Barley and Tolbert, 1997; Giddens, 1984; Goffman, 1983), and application (Busco et al., 2006; Lukka, 2007; Myreteg, 2007) of this framework are found elsewhere. The essential notions of this framework can instead be better explained by the below anecdote provided by Scapens (2006, p. 16).

“Start with a cage containing five monkeys. Inside the cage, hang a banana on a string and place a set of stairs under it. Before long a monkey goes to the stairs and starts to climb towards the banana. As soon as he touches the stairs, spray all the other monkeys with cold water. After a while, another monkey makes an attempt with the same result. All the other monkeys are sprayed with cold water. Pretty soon, when another monkey tries to climb the stairs, the other monkeys will try to prevent it. Now, put away the cold water. Remove one monkey from the cage and replace it with the new one. The new monkey sees the banana and wants to climb the stairs. To his surprise and horror, all the other monkeys attack him. After another attempt and attack, he knows that if he tries to climb the stairs, he will be assaulted. Next, remove another of the original five monkeys and replace it with a new one. The

newcomer goes to the stairs and is attacked. The previous newcomer takes part in the punishment with enthusiasm! Likewise, replace a third monkey with the new one, then a fourth, and then a fifth. Every time the newest monkey takes to the stairs, he is attacked. Most of the monkeys that are beating him have no idea why they are not permitted to climb the stairs or why they are participating in the beating of the newest monkey. After replacing all the original monkeys, none of the remaining monkeys have ever been sprayed with cold water. Nevertheless, no monkey ever again approaches the stairs to try for the banana. Why not? Because as far as they know that's what has always been done around here."

The story of the monkeys renders some central notions for change.⁶ To begin with, *history* is important. The story shows how routines are developed over time and how they after a while become part of the taken-for-granted assumptions. In this way, routines become institutionalised and detached from the original circumstance that gave rise to them. This implies, among other things, that history and context become vital when trying to understand current behaviour (and how to change it).

Additionally, the anecdote stresses that change always occurs at a cost, because the way things are done today is deeply ingrained in past events and circumstances. Change is *path-dependent*. For example, the behaviour of the monkeys was locked-in by the forgotten behaviour of the past. Therefore, to change the behaviour of the monkeys when routines were institutionalised would probably involve both emotional and physical costs. Similarly, an implementation of an information system, and the new routines it supplies, will most likely influence future IT-projects.

Moreover, the story illustrates how *tacit properties*—consisting of ideas and assumptions—can have a strong influence on implementing change. They are important because they always exist before the change commences. For instance, the monkeys did not really know why they avoided the stairs in the end. The monkeys later in the story were never sprayed with cold water. Nevertheless, there was an idea and an assumption to avoid such behaviour. Therefore, tacit properties can clearly constrain change but can also enable change and be used as a resource.

What is more, change has both a formal and an *informal side* and includes elements of power. It is formal because management, for example, designs new rules and implements them. The story, however, shows that such change can also be informal since the routine of punishment tacitly

evolved over time and changed the way things were done. Therefore accomplishing successful change means to address and explore both the formal and the informal side of change. To do otherwise would most certainly lead to resistance. This also suggests that if the actors that implement change have sufficient power, they can impose change. For example, the monkey that had the alpha role would most likely have had sufficient power to implement a new way of doing things (alternatively, new routines can also emerge out of the daily enactment and reproduction of accepted routines).

Implications

The thesis views Ericsson's transformation as a continuous process, a verb approach. The thesis contributes to this perspective by unveiling the micro-activities that take place *between* different "states" of the change process. For example, the thesis shows how Ericsson's transformation was a design that came about as different and disparate activities spread across time and levels. Likewise, the thesis illustrates the more actor-oriented activities of translational and relational nature that take place during the motion of change (see Section 5.3). The thesis also illustrates how new rules and routines are initiated, led, and sustained in practice. In doing so, this research adds to the aforementioned framework by empirically showing how past decisions and circumstances had a strong influence on Ericsson's transformation. The thesis also demonstrates how tacit and intangible properties of structure in the form of ideas of the transformation, and the practice-based-culture of F&A employees, can be a positive force in change. Last, the thesis underlines the importance of the informal and emotional side of change.

2.5 Technochange

There are growing concerns that research over the years has continually neglected the role that IT plays in organisations and organising (Orlikowski and Scott, 2008; Orlikowski and Barley, 2001; Zammuto et al., 2007).⁷ The rationale behind the argument is that since IT is pervasive in organisations, and in the practice that people have for them, it would be reasonable for IT to be a recurrent theme in management research—but this is simply not the case. Orlikowski and Scott, for instance, claim that over the last ten years only 5 per cent of the papers in the major management journals have included the role of IT.

An extensive investigation of such speculation is conducted by the theoretical and conceptual Papers IV and V. The initial finding indeed indicates a lack of such research, even across time. For example, out of 4,327 organisational research papers published 1995-2006 only 2.5 per cent include keywords related to IT (keywords in title, abstract, or author-supplied-keyword). Likewise, out of 5,342 research papers published in IT journals, within the same timeframe, only 1.4 per cent addressed the issue of organisational change. A thorough analysis of this finding is included in Papers IV and V.

One of the reasons why IT has been overlooked in scientific work might derive from the way it is conceptualised. Orlikowski and Iacono (2001) suggest that research tends have five different views of IT: (i) The tool view treats technology as an engineered and technical artefact that can be controlled by humans. To its nature, it is definable, static, and consistent over time and space. (ii) The proxy view tries to capture critical aspects of IT through a substitute such as expenditure on IT. (iii) The nominal view occasionally refers to words like computer or information systems but without elaborating on it. (iv) The computational view neglects contextual or social factors of technology and is instead concerned with its computational power. (v) The final ensemble view does not take IT for granted and instead attempts to open the “black-box” by examining the dynamics between IT and people during its design, implementation or use. IT is treated as an unstable entity with a fluid nature that changes depending on time, use, and space. The authors conclude that research is pre-dominated by the tool view and consequently—given the emergent and transforming nature of IT—future research should embrace conceptualisation that is closer to the ensemble view of IT. This is precisely one of the concepts that Papers IV and V explore. One of the conclusions from the papers is that studies need to be less isolated within their academic field and take information systems research, organisational research, and change research into consideration.

The question of conceptualisation of IT is closely related to the causal structure that researchers ascribe to IT (Barley, 1986b; Markus and Robey, 1988). On the one hand, researchers that view IT as a physical object tend to support a causal structure that is *deterministic*. Such a point of departure is often positivistic where IT is considered the independent variable and the driver of change. On the other hand, the researchers that conceptualise IT as a product of the social spectrum tend to ascribe *voluntaristic* properties to IT. Research with this point of departure downplays the casual agency of IT. Instead, with a voluntaristic vantage

point, the human agents are regarded the prime drivers of change since the agents socially construct the IT artefact, and subsequently make the direct choice of whether to use IT or not (see Paper V for an in-depth elaboration).

The deterministic and the voluntaristic perspectives can be seen as a reaction against each other, either attributing the casual agency of change to structure or actor. On the whole, in the 1960s and 1970s studies with a deterministic perspective prevailed (e.g. Perrow, 1967; Woodward, 1958) but later in the 1980s studies with a voluntaristic perspective became more influential (e.g. Bijker et al., 1987).

Research that is more recent treats the causal structure of IT neither as deterministic nor as voluntaristic, but as both. The arrow of causality points two-ways instead of one-way. This kind of research commonly bases itself on one of the three aforementioned grand theories of social thought. This perspective comes by many names such as technochange (Markus, 2004), emergent view (or emergent perspective; Markus and Robey, 1988), affordance (Zammuto et al., 2007), mangle of practice (Pickering and Guzik, 2008), the practice-lens (Orlikowski, 2000; Schultze and Orlikowski, 2004), and social-material practices (Orlikowski, 2007).⁸

Taken together these different studies contend that IT both enables and constrains human behaviour depending on e.g. use, context, and situational factors. However, they have slight variations. Orlikowski and Scott (2008), for instance, make a distinction between studies using an “emergent” or “affordance” perspective versus studies using “mangling of practice” or “socio-material practices”. The former treats individuals (or organisation) and technology as separated entities that mutually interact, whereas the latter argues that individuals and IT only exists in relation to each other. The research undertaken here, though, is primarily inspired by the more empirically oriented concept of technochange.

Technochange denotes technology driven changes (Barrett et al., 2006; Markus, 2004).⁹ Technochange purports that IT and change is intimately connected; successful change cannot have one without the other. Essentially the perspective argues that technology triggers change that then comes about through interplay between actors and structures. This implies that when the IT is implemented it requires complementary organisational changes in order to fit together with the organisation. Technochange projects are continuous because implementing IT

requires changes to the organisation, and the changes that are then done to the organisation necessitate additional changes to the IT. The connection between the words “techno” and “change” illustrates that technochange projects require attentiveness to technological and material properties, as well as organisational and social properties, and how they interact across time.

Implications

This thesis point of departure is an ensemble view of IT. Such a view requires treating IT as a moving target that is interpretively flexible, continuously changing, and dependent on temporal and contextual factors. In turn, this view has entailed a focus on respondent’s narratives and temporality (see Chapter 4). The thesis further subscribes to the technochange perspective that purports that IT both enables and restrains behaviour, and that change is a close companion of IT. This approach has required a focus on both technological and material properties of change (e.g. the functional features of the ERP system), and the organisational and social properties connected too IT (e.g. training, translation and routines). All the first three papers share this focus. Additionally, Paper IV and Paper V investigate and elaborate on the ensemble view and other issues of IT and organisational change. These two conceptual papers serve as an extension and literature review of the IT-enabled change theories presented in this theoretical chapter and those included in the first three papers. In so doing, Papers IV and V put the theories in a broader contextual perspective.

2.6 Structures in organisational change

Technochange related studies ascribe change both to agentic and structural properties, but the focus has varied across the years (Barrett et al., 2006). In the early 1990s the focal point was on structure rather than agency, as studies explored how, for example, technology produces and reproduces structure (e.g. Orlikowski, 1992; Walsham, 1993). Then the attention shifted in favour of agency as studies, for instance, investigated how an information system is enacted in practice (e.g. Boudreau and Robey, 2005; Orlikowski, 2000).

Now though, the development swings the other way since there is rising concern that research is starting to neglect the *materiality* of technology (e.g. Barrett et al., 2006; Leonardi and Barley, 2008; Orlikowski and

Scott, 2008; Orlikowski, 2007). Materiality is part of the tangible properties of structure, and the concept denotes the material nature of technology and, in particular, the functionality of the IT artefact. In other words, “*precisely those tangible resources that provide people with the ability to do old things in new ways and to do things they could not do before*” (Leonardi and Barley, 2008, p. 161). Such a focus does not, however, imply collapsing into a deterministic or voluntaristic perspective.

Leonardi and Barley contend that the affordances and constraints of the materiality of technology have largely been ignored in organisational change research. Such a perspective suggests a greater need to pay attention to what technology makes the user do or not do. This is of central concern because IT is increasingly supplying information that enables its users to change their practices, and in some cases even change the foundation of their profession as such.

Following the call for increased understanding of the implication of materiality, the subsequent text will illustrate the materiality that is the central concern of the research performed in the thesis: the ERP system.¹⁰ The description is a conceptual illustration regarding the *purpose*, *prerequisite*, *implication* and *limitation* of ERP systems.¹¹

To start with, the *purpose* of an ERP system is to integrate the data, information and processes of an entire organisation into a single database that serves the needs of the organisation, which the employees access and use through a single multi-module software (Davenport, 2000; O’Leary, 2000). ERP systems can be seen as the “backbone” of the organisation and have the capacity to process large amounts of data, being of transactional nature (which can be compared with business intelligence solutions that are more analytically oriented). The most common vendor is the company SAP that supplies the SAP R/3 software, but Oracle, the Sage Group, and Microsoft Dynamics are also important vendors.

Largely ERP projects strive to replace the locally dispersed and heterogenic information systems with a unitary information system. Before organisations implement an ERP system they regularly have various local information systems spread out in different parts of the organisation. Such variety implies that the organisations have different local practices with minimal standardisation of processes and activities. As a result information is fragmented, consolidation is difficult, and

reporting and feedback mechanisms are cumbersome (Davenport, 2000; Dresner, 2007).

The ambition of a single ERP system is to minimise such problems by integrating the organisation's data, information, and processes. For example, the ERP system is based on the idea of standardisation and on a common chart of accounts that implies—in contrast to earlier situations—that the organisation has the ambition to have similar definitions, rules, routines, roles, and a “single version of the truth” (Arnold, 2006; Davenport, 2000; Klaus et al., 2000). Such a process is, however, complex and takes time, as the papers in this thesis demonstrate.

Altogether the standardisation and integration—that is essential for reaping the full benefits of the ERP system—open up for significant organisational changes (Scapens and Jazayeri, 2003). This is also put forth by Davenport (2000, p. 5).

“Enterprise systems offer the first great opportunity to achieve true connectivity, a state in which everyone knows what everyone else is doing in the business all over the world at the same time. And because they represent the first great opportunity for connectivity, they pose one of the greatest threats to the status quo that companies have ever faced. Because companies are made up mostly by people, ESs [ERP systems] mean you will have to change people and the way they do things at the same time that you change all computers and the software—and more challenging—than any computer system a company has ever tried to install.”

Second, the *prerequisite* of an ERP system consists of *modules*, an *operational database*, a *data warehouse*, and a *relational database*, as partly depicted by Figure 1.

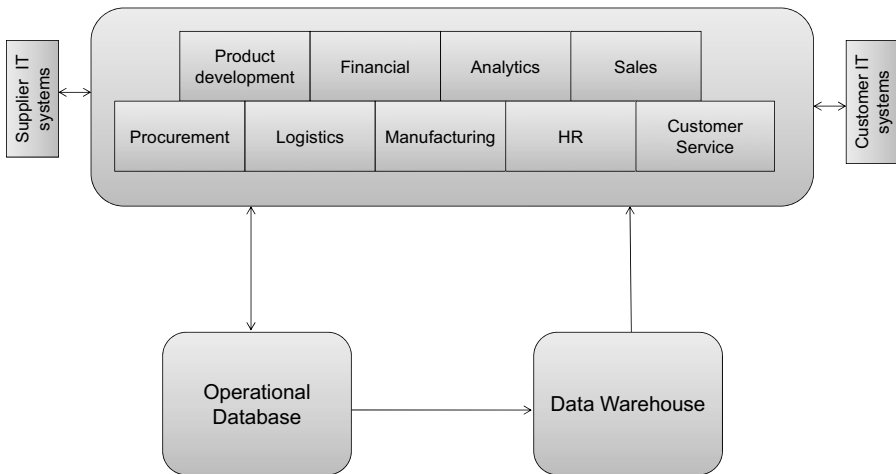


Figure 1: Components of an ERP system. Adapted from Turner and Weickgenannt (2008, p. 603).

The ERP system consists of different functional *modules* such as financial, logistics, sales, manufacturing etc. Though there are many modules, most organisations use only two or three, and most commonly the financial module. The modules interact across the functional areas so that when, as an example, an order is placed in the system the different modules provide instant answers to question like: what is the inventory status for the product?; what is the customer credit history?; what is the sales forecast for the product?; what is the payroll and staffing related to the product?; what are the different costs related to the product?; how long does it take to transport the product?

When the employee uses a module in the ERP system, it draws the necessary data from the *operational database*. In the processes of doing so the database is up-dated in real time. For example, when a sale is completed the data from the sale provides instant and real time changes to sale forecasts in the sale module, and at the same time changes are done to the accounts receivable balance in the financial module. Effects of events are immediate. The information in the operational database is periodically stored in the *data warehouse* that later may be used to support decision-making and business intelligence (Turner and Weickgenannt, 2008).

Integral to the ERP system is a centralised and *relational database* (Klaus et al., 2000; O'Leary, 2000) that links data to each other. The database is also centralised to a few locations from which the users virtually conduct their work. In other words, because most work performed in an

organisation is done utilising such a database, regardless of geographical location, the ERP system has the potential to change the nature of work and how it is organised (Zuboff, 1988). For example, the ERP system may unbound work from time and space (Quattrone and Hopper, 2001), and transcend national, organisational, and departmental boundaries (Sinha and Van de Ven, 2005). This enables organisations to alter the value chain, and to execute externalisation strategies such as outsourcing and shared service centre solutions. Additionally, the database structure of the ERP system makes both decentralisation and centralisation possible (Schulman et al., 1999).

Altogether, the ERP system has a number of *implications* connected to organisational integration that creates accountability and transparency, and reduction of organisational heterogeneity.

The ERP system can entail both horizontal and vertical organisational integration (Dechow and Mouritsen, 2005; Scapens and Jazayeri, 2003) that, in turn, creates accountability and transparency (Arnold, 2006). This enables managers not only to examine aggregated information but also to “drill down” into the organisation and investigate single transactions (Lindvall, 2006).

Because the ERP system has the potential to integrate information and data from various parts of the organisation into one database it can reduce information asymmetry and supply real time and consolidated management information (O’Leary, 2000). Such instant access to information improves the timeliness and quality of the feedback mechanisms, which in turn can alter the decision-making processes (Arnold, 2006; Klaus et al., 2000).

Earlier, before implementing an ERP system, organisations regularly had numerous information systems that meant that practices and information was highly fragmented. Due to technology maturity and development of the internet, it is nowadays easier to implement a more uniform ERP system. Such implementation can create integration and standardisation of business processes, common classification, and a common “blue-print” for conducting practices (such a process is, however, long and complex, and consolidation requires high amounts of manual work). This in turn means that since employees work from the same relational database in the ERP system, they use the same processes, rules, definitions, and data that are built into the system. In this respect, one

possible outcome of using an ERP system is the reduction of organisational heterogeneity (D'Adderio, 2003).

Several recent findings indeed suggest such an effect. For example, Dresner (2007) argues that in its most basic form the ERP system requires standardisation and a limited number of accounts in the chart of account, and that such denominators may create a common understanding regarding rules, definitions, and procedures in the company as a whole. Likewise, Costello (2000) purports:

“Information systems are directly implicated in the flow of information, the opportunities available for acquiring knowledge, the codification of the knowledge and its reproduction and storage. Information system affects shared meanings since it is directly involved in passing on some of those meanings in its day-to-day work.” (p.148).

Similarly, recent research underscores that an ERP system can create “technological isomorphism” (Batenburg et al., 2008; Benders et al., 2006). This is because, the authors argue, the ERP system has embedded similarity-enhancing mechanisms consisting of intra- and inter-organisational pressures that induce behavioural conformity. In itself, the ERP system does not determine behaviour but influences the situation in such a way that using the ERP system becomes a rational and sensible thing to do.

The final example of the reduction of organisational heterogeneity comes from Volkoff et al. (2007) who argue that because organisational elements of data, routines, and roles are embedded in the ERP system, and because employee practice is in part bounded to the system, it can influence social structures. The research underscores that the tangible properties of structure, such as the routines integrated into an ERP system, can influence the more intangible properties of structure, such as mind-set.

ERP systems do have *weaknesses* and have been criticised on a number of points. First, since a “blue-print for action” is built into the ERP system it may create similarities in terms of practice, work-language and work-logic. This may result in an inflexibility as the system influences what you can and cannot do (Dechow and Mouritsen, 2005). It also implies an organisational integration that leads to new demands and compromises. Furthermore, the centralised and relational database, from which work is done, creates sensitivity as small changes in one part of the system can

result in significant and immediate changes in other parts of the system (Arnold, 2006; O'Leary, 2000). Last but not least, once installed ERP systems are very hard to reconfigure and change (Dechow and Mouritsen, 2005), and implementation is a complex and costly venture with a high failure rate (Klaus et al., 2000; Markus et al., 2000).

The high failure rate of ERP systems is commonly due to too much attention being paid to technological aspects and too little attention to indirect social and organisational implications (Davenport, 2000; Dedrick et al., 2003; Markus, 2004; Markus et al., 2000). Managers repeatedly fail to realise that their organisations have to change in order to obtain the IT-enabled advantages of the ERP system. In particular, such organisations view IT as an isolated tool, and believe that when they unleash the ERP system, then change will spread automatically in the organisation, and employees will adapt to the new circumstances, forgetting the social and human aspects of IT-enabled change. In short, an ERP system does not take care of itself.

For example, as noted earlier the ERP system has the potential to create a greater degree of common ground by the shared language and definitions it provides (Dresner, 2007). However, as argued by the present thesis, such common ground does not necessarily mean that employees interpret the system in the same way, nor does it mean that the interest in using the system is the same. In other words, the technological artefact of the ERP system can create a common ground but is limited to the extent that it does not automatically create a *common meaning* or a *common interest* among its users.¹² Such development necessitates what the current thesis coins as *translational activities* that create a greater degree of common meaning, and *relational activities* that create greater common interest (besides the short explanation below the concepts are further developed in Section 5.3).

The former, *translational activities*, aim to bridge interpretive boundaries and to re-contextualise information in order to generate knowledge and a greater amount of *common meaning* among the change recipients.¹³ Such translational activities consist of different activities among social actors and amount to learning and reflection. For example, a global change agent may conduct workshops and training at the sub-unit in order to aid the change recipients' understanding of the ERP system, and the practice connected to it. *Relational activities* aim to create *common interest* among the users of an ERP system. Such relational activities consist of different relationship-building and supporting activities among actors. For

example, a change agent may build relationships with change recipients, gain their trust, and generate legitimacy for the change. At the same time, the change agent shows management support and coaches the recipients in the process of transforming their work practices and, in the long run, their behaviour and mind-set. The point is that these translational and relational activities are social and human oriented activities, which surround the ERP system.

In this way, the implementation and use of an ERP system is limited if it is not combined with the translational activities that produce a common meaning among employees, and the relational activities that build common interest. The materiality of the ERP system has the potential to generate a greater common ground, but a greater common meaning and a common interest requires human and social interaction. Therefore, the full benefits of the ERP system hinge on the social activities of the actors. Brown and Duguid (2001, p. 204) put it similarly when they draw on Giddens (1990) to state that:

“as technologies increasingly allow people to communicate across space and time, as knowledge is disembedded in one place to be reembedded in another, the critical question concerns the degree to which the embedding conditions at both ends of the communication are similar.”

Only human actors can, to the full extent, provide such “disembeddedness” and “reembeddedness”, and this is precisely what this thesis argues, elaborates, and explains.

Nevertheless, in spite the weaknesses, ERP systems are an integral part of the contemporary organisation and are therefore an essential issue for research to explore, as Campbell-Kelly notes (2003, p. 197):

“If overnight R/3 [ERP-system] were to cease to exist (say, if its licenses were made intolerably expensive), the industrial economy of the Western world would come to a halt, and it would take years for substitutes to close the breach in the networked economy.”

Implications

In connection to the structure perspective of organisational change, the research performed in this thesis adds to the recent calls for increased focus on materiality. For example, the thesis aligns with recent research

that purports that the ERP system risks creating inflexibilities, reduced organisational heterogeneity, and produce similarities in the social structure of its users. The thesis develops these notions further by showing how the tangible properties of structure (i.e. the ERP system) is limited to the extent that it may produce a common ground by the “language” that it provides. It does not, however, generate a common meaning, because this calls for actors’ translational activities. Neither does materiality create common interest because this requires actors’ relational activities. In this way, the thesis contributes to the academic debate by showing that actors, and their socially oriented activities, can transcend the boundaries and limitations of materiality.

2.7 Actors in organisational change

Since actors and structures are an integral part of this thesis, and part of the research question, it is important to understand these concepts and the research that is connected to them. Not to do so would amount to a lesser understanding of how and to what the thesis contributes. The above text covered the structural side of change, below the agentic side of change is further explored.

2.7.1 Forms of change agency in organisational change

The concept of change agency in organisational change denotes the source that drives change forward. Over the years, research has suggested different types of agency but the boundaries between these are ambiguous and there is a lack of a coherent view of agency in organisational change. Caldwell (2006), however, offers some clarification on the subject matter by dividing agency in organisational change into four different “discourses”.

The *rationalist discourse* is the most dominant in organisational and IT-enabled change. The discourse treats change as an intentional and planned event, and agency is centralised to an independent and rational expert with a managerial role. The discourse can be detected in literature connected to the OD movement (Cummings, 2008) with key-concepts like action science (Argyris, 1982), process consultation (Schein, 1987; Schein, 1988), and reflective practice (Schön, 1983).

The *dispersalist discourse* diffuses agency to e.g. empowered employees, middle managers, or management teams in the periphery of the

organisation. Such discourse is located in the literature connected to learning organisation (Senge, 1993), communities of practice (Wenger, 1998), sense-making (Weick, 1995), and knowledge creation (Nonaka and Takeuchi, 1995).

The third *contextualist discourse* views agency as decentred and embedded in a non-linear process of change that emerges out of multi-level, political, and incremental activities. The discourse is reflected in Lindblom's (1959) science of muddling through, Quinn's (1980) logical incrementalism, and in Pettigrew's (1997; 1985) processual research.

Agency in the final *constructivist discourse* is problematic because it refuses to accept the dichotomies of subject-object and agency-structure. Instead, this discourse favours a world that is made up only of social construction without independent actors or scientific observers. Foucault inspired research bares the mark of such discourse.

Besides these four discourses, an emerging research stream suggests a fifth discourse: *technology agency*. This stream of research advocates that agency can reside in IT (Costello, 2000; Latour, 2005). The rationale is that if, for instance, routines can be integrated into an ERP system then it has the potential to—in combination with other factors—influence the behaviour of both employees and organisations (Costello, 2000).

2.7.2 *Forms of actors in organisational change*

One of the attributes of change agency is the human actor—being an individual or a group—that has the capacity to act upon a situation to change structures.¹⁴ The actor is a multi-level concept because it can denote macro-oriented forces (e.g. new government regulations, globalisation or actions taken by lobbying groups) or it can refer to complete or parts of micro-level activities (e.g. implementation of an information system or decisions made by managers). This thesis primarily focuses on the micro-level activities of the human actor who are commonly referred to in organisational change literature as “change agents” (denotes the actor or actors that initiate, design, sponsor, and implement change; Kanter et al., 1992).

There is, however, research that directly avoids bringing actors into the study of change. Such a perspective downplays the role of individuals and instead treats them as pawns who are passive to the external and deterministic forces of the wider context of the organisation (e.g.

Greenwood and Hinings, 1996). In such an over-fatalistic perspective, the managers and employees of the organisation are given limited possibility to influence change. The inclusion of agents in change, however, is a vital component for change theory (Dunphy, 1996). To do otherwise would be to acknowledge that individuals do not initiate or influence change in any significant way.

There are many different kinds of change agents in organisational change and the attempts to construct taxonomies are commonly done in relation to the *activities* the agent performs or the *role* that the agent has in the organisation. The former tends to connect the *activities* of the change agent to the states in the sequential and conventional change model of unfreeze, change and refreeze (e.g. Armenakis et al., 1999; Kanter et al., 1992; Ottaway, 1983).

Taxonomies related to the *role* of the change agent are many (e.g. Caldwell, 2003; Ginsberg and Abrahamson, 1991; Hartley et al., 1997; Markus and Benjamin, 1996) but the most comprehensive is also suggested by Caldwell. The classification is fourfold and the first consists of the *leadership model* that includes research that ascribes the change agent role to leaders or executives. In such research the change agents are regularly referred to as change masters (Kanter, 1984), transformational leaders (Bass, 1998), or innovators (Kirton, 1980). In the second *management model* the role is assigned to the managers and functional specialist that research terms e.g. adaptors (Kirton, 1980), changemaker (Storey, 1992), and empowerer (Lawler, 1986). The third model of *consultancy* attributes the role of the change agent to consultants that commonly bare the name of action researchers (Lewin, 1951), facilitators (Tichy, 1974), or process consultants (Schein, 1987; Schein, 1988). The final model connects the change agents to different kinds of *teams* such as T-group (Lewin, 1951), quality teams (Juran and Godfrey, 2000), and task groups (Beer et al., 1990).

This fourfold classification of change agents' roles underlines that research, and management practices, tend to ascribe the role of the change agent to one or a few formal actors with specific leadership qualities. This is problematic because such claims repeatedly translate into a prescription for change in which one single individual with a magic solution implements it. Like for example an external change consultant who gives prescriptive guidance in a single best-way to conduct change (Burnes, 1996). There is little room for the actors "behind the scene" and the informal activities that take place there (e.g. political and

supportable activities). The notion that the role of the change agent can be connected to several actors with various tools and skills that are dependent on context, change complexity, level and temporality is also ignored.¹⁵ Such biases are criticized in Paper II and in Section 5.3.

The change agents perform their practice in relation to a change recipient who adopts and adapts to the change, and such employees are commonly associated with some kind of resistance (Kotter and Schlesinger, 1979).¹⁶ Studies show that resistance can stem from a number of factors such as organisational silence (Bowen and Blackmon, 2003; Morrison and Milliken, 2000), power and politics (Constantinides and Barrett, 2006; Gray and Ariss, 1985), lack of emotion (Huy, 1999; Kotter and Cohen, 2002; Sanchez-Burks and Huy, 2009), and cognition and interpretation (Isabella, 1990; Löwstedt, 1989; Löwstedt, 1993; Stensaker et al., 2008).

Scholars have however criticized earlier resistance research suggesting a too simplistic treatment of the concept. Dent and Goldberg (1999a; 1999b), for instance, contend that “resistance to change” is a monolithic mental model that often obstructs the change effort. Piderit (2000; 2007) similarly holds that resistance is commonly seen as a restraining counterforce and argues instead that studies should in-depth explore the ambivalence in the recipients response to change. More recently, Ford and Ford (2008) criticise resistance research because they frequently view resistance as a dysfunctional and irrational response that exist “over-there”.

2.7.3 The practice of the change agent in organisational change

Recent research alleges that the actors and their practice of change are treated monolithically (Ford et al., 2008). A short investigation of such a claim can be conducted by looking at if and how the most well cited reviews theorises change agents (Porras and Silvers, 1991; Van De Ven and Poole, 1995; Weick and Quinn, 1999; Woodman, 1989). Such investigation, though, yields limited results. The reviews recurrently focus on the aggregated structure and trajectory of change but ignore any deeper exploration of change agents and what they actually do. There is, however, one exception (Weick and Quinn, 1999) that touches upon the role of the change agent in episodic and discontinuous change, but avoids deeper examination.

The lack of theorisation has amounted into a planned approach to change and a picture of the change agent as an actor with activities that are one-dimensional (Caldwell, 2003; Ford et al., 2008). At this extreme, the agent is conceptualised as an undisputed, isolated and single individual with a change prescription. This individual has magical leadership traits, and cognitive/analytical oriented knowledge spawned by the use of instrumental tools.

Organisational change textbooks focusing on the planned approach to change demonstrate such one-dimensional perspective of the change agent. For example according to Cummings and Worley (2008, pp. 23-27) the actions of the change agent in planned change consist primarily of three activities. First, the agent collects knowledge that the agent uses to identify the problem, and define and plan the change interventions. Then, the agent directs and leads the change recipients across the different sequential states and towards the desired and defined end-state. Finally, the agent uses instrumental tools to collect knowledge and evaluate the intervention to see if further action should be taken. The perspective focuses on what is needed *at* the different sequential states (e.g. planning, goal, vision and change message at the start-state; feedback at the end-state), but little or no attention is paid to the activities, tools and skills of the agent that are needed while *getting* to the different states (Tsoukas and Chia, 2002, p. 571).¹⁷

From an historical standpoint such a perspective rests upon the seminal work of Kurt Lewin (1951). In the subsequent decades his work has been interpreted (some even say misinterpreted, Burnes, 2004; Burnes, 2007) and translated into more sophisticated approaches (e.g. Argyris, 1990; Schein, 1987; Schein, 1988) and models (e.g. Beckhard and Harris, 1987; Beer, 1980; Bullock and Batten, 1985; Burke, 2008; Lippitt et al., 1958).

Relying too much on Lewin's research—or research that is based on it—can be problematic because as Caldwell (2006, p. 14) points out his work rests upon:

“commitment to rational action and democratic values, his belief in expert knowledge as reflexive feedback, and his overall liberal idealism regarding the self-reflective mediation of theory and practice, knowing and doing, science and action.”

An illustrative example of such problems is the work of Beckard and Harris (1987). They argue that successful change is mainly the product of a cognitive/analytical process. Such change is achieved when the recipients have intellectually understood the problems of maintaining a status quo and have received clear communication about the future end-state. Change *per se* is merely a transactional event between a sender and a receiver. They summarise their argument in their change formula: $C \equiv [ABD] > X$ in which C refers to change; A denotes the recipients level of dissatisfaction with the status quo; B stands for recipients desire to achieve the proposed change and end-state; D stands for practicality of change; and finally X is the cost of the change. According to this formula, unsuccessful change is often merely a question of failed cognitive/analytical transaction between the agent and recipient that is corrected by e.g. repeating or reinventing the form and message of change.

In the field of information systems a preoccupation with the planned approach is also evident (Avgerou et al., 2004), especially among practitioners (Avgerou and McGrath, 2007; Markus, 2004; Markus and Benjamin, 1997). Such fixation is often referred to as “technical rationality” and has recently been criticised repeatedly by a number of information system researchers (e.g. Agarwal and Lucas Jr, 2005; Avgerou and McGrath, 2005; Ciborra, 2006; McGrath, 2006; Orlikowski, 2000; Walsham, 2001). Overall, these authors argue that IT is too often seen as a stable, robust and reliable artefact that when implemented spreads easily in the organisation, and subsequently employees simply and automatically adapt to the new circumstances. In short, IT will take care of itself. In the cases when research does acknowledge a less planned and less technical/rational perspective it is often taken to the other extreme by overemphasising social and political issues (Avgerou and McGrath, 2007). As a result, there is a lack of multiple perspectives and a more balanced view of IT and change. The current research is an attempt to explore this rarely trod middle ground.

In sum, the dominant perspective in organisational change (and information systems) is a-historical, a-contextual, a-social, and non-emotional. It alleges that successful change only consists of transactional and cognitive/analytical oriented activities between the change agent and the change recipient and is enabled by a shared and common ground. That is, if an organisation succeeds in achieving a high degree of common ground among change recipients (by e.g. change message) then successful change will come automatically. Caldwell (2006, p. 31)

expresses a similar point of view as do others (Ford et al., 2008; Tsoukas and Chia, 2002):

“Essentially what is missing from this model [what Caldwell labels as rational] is a relational, interactional or broader practice/discourse-based understanding of organizational change as processes in which multiple change agents enact their own goals, interests or values as potentially autonomous actors in an open dialogue” (emphasis by thesis author).

Implications

The findings that emerged out of the case study of Ericsson suggest that agency is less restricted than the research pertained to the rationalist discourse (and the planned approach to change) argues. The thesis also offers a more multiple and complex perspective on the role of the actors of change as they are played by different individuals and teams on various levels, depending on the phase of the implementation, and social and contextual factors. In particular, the thesis shows how different levels of change complexity require different roles to be played, different skills to be applied, different activities to be performed, and different structures to be used. In addition, the thesis illustrates that in some cases the change agent is also the change recipient. Such findings suggest that the concept of change agents and change recipients is less clear-cut and monolithic than earlier research suggests, and that change recipients can be a positive force instead of a counterforce. Finally, the research undertaken in this thesis addresses the issue of an under-theorised concept of the change agent in organisational change by, for example, showing that the activities that the agent performs are done in a social and historical context, and contain both cognitive/analytical and emotional elements.

2.8 Summary

The chapter has shown how the thesis is informed by theories that purport that a balance and interplay between actors and structures is imperative to successful and sustained change. The chapter has also discussed change *per se* and has underlined that the concept is seen as a continuous process that is influenced by history, path-dependency, tacit properties, and informal activities. Then the chapter moved on to explain that the present research attempts to fill the gap of limited research on

the role IT in organisations and organising. The thesis goes about doing so by applying the technochange perspective that demands attentiveness to technological and material properties, as well as organisational and social properties, and how they interact across time. These more grand notions of theory were followed by two sections covering a more detailed exploration of the limitations of earlier structure and actor related research. From a structure point of view, it was explained that there is a rising concern among scholars that research is neglecting materiality. As a result, the thesis sets out to explore the possibilities and limitations of one of the most integral parts of materiality in contemporary organisations: ERP systems. From an actor point of view, it was illustrated that the concept of actor is undertheorised, and that earlier research has been pre-occupied by one-dimensional and rationalistic accounts of the actors of change and their practice. Consequently, this thesis attempts to unveil change less as a transactional event between states, and more as a translational and relational process performed by multiple actors in an on-going practice.

3. EMPIRICAL FOUNDATION

3.1 Introduction

This chapter presents the case study organisation of Ericsson, which is the empirical foundation of the thesis. This is accomplished by an initial section that provides an overview of Ericsson's technological shifts and evolution, followed by the historical background to Ericsson's market expansion and the development of its internal structure. The purpose of this first section is to give a contextual backdrop to the subsequent section that presents a short overview of the examined F&A transformation in Ericsson.

3.2 Case study background

The examined case study organisation is the telecommunications company Ericsson that was founded in Stockholm 1876 where the headquarters still reside. Ericsson has often been the market leader in their primary business of communication by providing telecommunications equipment and services to mobile and fixed network operators. A slogan from their annual report 2008 similarly depicts: “*UNLIMITED COMMUNICATION – our vehicle for growth*” (p. 1). In 2008 Ericsson employed over 78,000 people, had customers in over 175 countries, telecom networks that supported 40 per cent of all mobile traffic, and a net sales that amounted SEK208.9 billion. They had established a presence in over 175 countries and their largest markets, in a descending order, were India, China, USA, Italy, Indonesia, Sweden, Brazil, Spain, U.K., and Japan (Annual Report 2008).

Below follows an analytical and conceptual presentation that focuses on Ericsson's development in terms of *technology shifts*, and *market expansion and internal structure*. The presentation is a broad overview rather than an exhaustive review of Ericsson.

3.2.1 Technology shifts

Ericsson view themselves as one of the leaders within communication technology and during the years they have managed to survive numerous technology shifts. The corporation started out as a repair shop for telephones but advanced into telephony equipment, manual switchboards and the manufacturing of phones (by using reverse engineering on Bell's telephone from the US, in absence of patent protection; Attman et al., 1976).¹⁸

The first major technology shift came in the 1920s. Ericsson changed from producing manual switchboards into motor-driven switchboards (a switchboard is a "node" which purpose is to connect an inlet with an outlet within a large network). Earlier, Ericsson's switches required telephone operators that connected the users, but now a new automatic switch replaced these operators (Jacobæus, 1976; Meurling and Jeans, 2000). Ericsson was late to realise the advantage with this new technology. When they did so, however, they advanced rapidly. One of Ericsson's most popular products was the 500-switch. This product had the capacity of making 500 mechanical switches and was used in the telecommunications industry for over 50 years (Helgesson, 2001a).

The next important technology development came in the middle of the century when Ericsson moved into crossbar switching technology that could handle multiple inputs and outputs (Jacobæus, 1976). In doing so, they shifted focus from mechanic to electronic based products. The crossbar switches became popular mainly because they required a less amount of maintenance (which meant that the rural station could be unmanned). Ericsson became the leading developer of the technology in the 1940s and the popularity of the crossbar technology lasted until the 1980s (Helgesson, 2001b; Meurling and Jeans, 2000).

In the beginning of the 1960s, Ericsson moved into the computer age by their development of the computerised telephone switch referred to as AKE (Dahlgren and Witt, 1988). The product was unexpectedly less successful on the market but the know-how from the AKE opened up for the development of the AXE system in the 1970s. The AXE system was a decentralised system, compared to the centralised AKE system, and was an important breakthrough because of its modular-system-architecture and advanced programming (Lindmark et al., 2004; Åsgård and Ellgren, 2001). The strategic decision of making significant investments in the AXE-system signified a shift from their focus on low-

tech electronic and mechanical products into more high-tech electronic and digitised products.

The AXE system increased Ericsson's global market share significantly and paved the way for Ericsson's transition into the mobile communication industry in the 1980s (Meurling and Jeans, 2000). In this decade, the deregulation of the telecommunications market enabled the development of the standards of NMT (analog) and GSM (digital) that Ericsson took an active part in (Dunnewijk and Hultén, 2007). In addition, in the middle of 1980s, Ericsson made the strategic decision of not only producing mobile switching technology (e.g. MTX) but also complete systems including consumer products such as mobile phones (Meurling and Jeans, 2000).

In the 1990s, Ericsson's core business was mobile systems (Åsgård and Ellgren, 2001). These years were constituted by fierce competition with other actors of the mobile phone industry (Dunnewijk and Hultén, 2007; Nilsson, 2002). Ericsson kept its position as industry leader in mobile systems and was initially leading in the handset area, but they eventually lost their market share in mobile phones area. Because of this, Ericsson made the decision of establishing a joint venture with Sony, Sony Ericsson, which took over the production and development of mobile phones. The 1990s and the beginning of the 21st century were also characterised by a rapid technology development that was influenced by several driving forces including deregulations, development of standards, and growth of the Internet (Humphreys and Padgett, 2006). For example, Ericsson's R&D expenditure in 2001 was more than 20 per cent of the total R&D expenditure of companies in Sweden (Lindmark et al., 2004).

Ericsson's prognosis of an expanding telecommunications market was promising (annual report 2000) but around 2001 Ericsson experienced a significant economic crisis (Nilsson, 2002). The problems were connected to the dot.com bubble but there were also, according to a telecommunications analysis (Lindmark et al., 2004, p. 135), presumably connected to Ericsson's mobile phone business that had problems with quality, design, and platform development. Because of the economic crisis within Ericsson, and because of the downturn in the market, Ericsson was forced to perform major organisational restructuring and layoffs. There were some signs of bankruptcy. Nevertheless, Ericsson managed to keep afloat and they focused on their most profitable products AXE, GSM, 3G, and ENGINE (a new multi-service network

that could combine broadband internet, voice and data traffic; annual report 2002). In the years that followed Ericsson made investments in optical transmission, fixed and mobile broadband, and multimedia technology (including acquisition of Marconi, Redback and Tandberg Television; annual report 2006 and 2007).

Ericsson managed to get back on track and in 2008 their main business was increasingly related to telecommunications services and software. In doing so, Ericsson shifted their core competence from tangible products towards intangible and knowledge-intensive services. At the time of writing, Ericsson vision, according to their website, is to be the prime driver in an all-communicating world. They strive towards being an integral part of the communication process from beginning to end. This includes network infrastructure (e.g. 2G and 3G), multimedia (e.g. mobile TV, IPTV, messaging, music solutions), multimedia devices (through Sony Ericsson), and global services (e.g. systems integration, consulting, education, and support services).

3.2.2 Market expansion and internal structure

The internal structure of Ericsson has varied during the years. According to a earlier study conducted by Barlett and Ghoshal (1989) Ericsson's structure has been similar to the theoretical concepts of *international* and *multinational company*.

In the beginning, Ericsson's production and operations were mainly confined to Sweden. Because of market saturation and domestic competition, however, Ericsson started early on to expand internationally (Meurling and Jeans, 2000) and by the turn of the 20th century they were building telephone networks on five different continents (annual report 2006). In the beginning of this internationalisation process, the firm kept development and production in Sweden and exported their products only with minimal service and installation in the foreign markets. Therefore Ericsson resembled what is called an *international company* where the headquarter is central and from which knowledge, development, and decision are made and then delegated to the foreign subsidiaries. In an international company the subsidiaries—that are viewed as appendages—develop their own products and strategies, but in doing so they are dependent on the managerial parent company for knowledge and information.

From the 1890s and onwards Ericsson began a more significant international expansion. Early markets included Russia, where the first foreign manufacturing was established, and Britain, where the biggest market was situated (Meurling and Jeans, 2000). Market entries were also made in China in the late 1890s and in South America in the 1920s. According to Dahlgren and Witt (1988), 95 per cent of Ericsson's sales turnover in the year 1900 was generated by sales outside Sweden. In this phase of internationalisation, Ericsson began making major investments in the foreign subsidiaries that subsequently took over a large part of the manufacturing (Attman et al., 1976). This was due to difficulties exporting, but also because of the fact that it was crucial that Ericsson established close relationships with customers (that in most cases were state-owned monopolies; Elvander and Elvander, 1995). Such development meant that the structure displayed similarities to a *multinational* organisation, which signifies itself not only by decentralisation, but also through depreciation of economies-of-scale in favour of subsidiary autonomy and local responsiveness. In this respect, subsidiaries are viewed as independent businesses, headquarters are viewed as a strategy entity that is responsible for optimising and coordinating subsidiaries, and the whole company is viewed as a collection of different national businesses.

Beside a crisis connected to Ericsson's relations with Ivar Kreuger in the 1930s, the company continued its expansion (Attman and Olsson, 1976; Åsgård and Ellgren, 2001). In the 75 years since its establishment, Ericsson had grown into a large multinational company, and by the end of the Second World War Ericsson had an approximate sale of SEK233 million, of which one third was made in the parent company. At this time, Ericsson had established manufacturing companies in eleven countries, sales companies in twelve countries, and concession companies in seven countries (Föreningen Stockholms Företagsminnen, 2001).

As Ericsson grew larger, the decentralisation continued and by the middle of the 1980s the organisation was constituted by strong localised and independent subsidiaries (Elvander and Elvander, 1995). Local management was often autonomous and managed the subsidiary as their "own kingdoms" (Beckérus and Edström, 1995). As a result, headquarters experienced a lack of transparency, problematic governance, and difficulties implementing change.

Because of the decentralised organisation, and because of the increased complexity of multiple markets, products and customers, Ericsson re-organised in the beginning of the 1990s. The corporation went from having a functional-based organisation—where every line of business was responsible for “their” subsidiary—towards a matrix organisation. According to the corporate policies from 1995, the new organisation was structured into two dimensions. The first dimension was the “local company” that was responsible for its profitability, and for acting as a single interface towards the customer. The second dimension was the “business area” that had the global responsibility for the marketing, development, and supply of their defined products and systems (Ericsson’s Corporate Policies, 1995). However, because Ericsson’s business still relied on national markets with close relationships to customers, the organisation kept a national orientation in its organisational structure. For example, the local companies that were situated in the most important markets could, by the discretion of the CEO, be referred to as “major local companies” and would be treated accordingly (Ericsson Corporate Policies, 1995).

The aim of the matrix organisation was to create a more flexible and boundary-less organisation (Ericsson’s Corporate Policies, 1995). Besides the problem with autonomous subsidiaries the new organisation was driven by a need for greater integration across Europe, as deregulation and political forces had enabled a more uniform European market (Beckérus and Edström, 1995). The matrix oriented structure was beneficial because of market, customer, and product complexity but Ericsson nevertheless experienced the problems that are commonly associated with such organisational structure (Davis and Lawrence, 1978).

In the beginning of the millennium, the foundation of the telecommunications industry started to change significantly (Lindmark et al., 2004). The new situation was the result of developments that began twenty years earlier. For the majority of the 20th century, the telecommunications sector had been dominated by national monopolies that supplied post, telegraph and telephone services—commonly referred to as PTT. The influence from these institutions was now decreasing (initiated by the breakup of state owned AT&T in the USA in the 1980s; Meurling and Jeans, 2000). As a result, a stream of liberalisation and deregulation started that lowered government control and barriers-to-entry, which came into full effect by the turn of the millennium. As the national economies opened up, and as regulation and

protectionist policies were eliminated, companies were less constrained to the local market. As a result, companies started to establish themselves in foreign markets, attracting new consumers with cheaper prices and more choices (Dunnewijk and Hultén, 2007; Humphreys and Padgett, 2006; Nissen, 2005).

Accordingly, and broadly put, organisations like Ericsson moved from having national oriented markets with monopolistic customers within stable and predetermined areas towards “a single global market” (Dent, 1996) with numerous competitors that sometimes came from outside the immediate industry. Additionally, the nature of the customers shifted from being a small group of a few customers (that were connected to national monopolies) towards a broader group of private businesses and consumers.

The stream of liberalisation and deregulation that changed the foundation of the telecommunications market necessitated an organisational response. Therefore Ericsson—as many other companies—began to apply a “one company approach” in which the subsidiary to a larger extent depreciates local interests and instead aligns decisions and operations with the enterprise as a whole (Bartlett and Ghoshal, 1989; Dent, 1996).

In theory, such a refocus requires changes to the organisational structure towards a more integrated company. Organisations in the 21st century that strive for such integration and “one-company-approach” commonly do so by trying to implement a horizontal orientated structure and global processes (Lindvall, 2006). They also try to concentrate on core competencies by externalisation strategies such as outsourcing and Shared-Service-Solution (Hamel and Prahalad, 1994) and they try to increase communication and information integration in the organisation by implementing ERP solutions (Davenport, 2000). Ericsson’s “Global F&A Transformation Programme”, which is the focus of this thesis, bares the mark of such attempts, and this is the subject of the next section.

3.3 The transformation of Ericsson’s F&A department

The Global F&A Transformation Programme, examined in this thesis, concerns the global transformation of the Finance and Accounting (F&A) department of Ericsson that formally lasted for three years, 2004-

2006 (the succeeding text is based on the empirical data of this thesis, presented in Section 4.4).

As in other decentralised companies, Ericsson had, as mentioned above, autonomous subsidiaries with their own “kings”, within their own “kingdoms”, and frequently “with their own agendas”. For the F&A department this broadly meant that the subsidiary had their own information system, their own local F&A activities and processes, and their own way of doing things. Therefore, the F&A headquarters in Stockholm experienced low transparency and control, fragmented information, dysfunctional feedback mechanisms, and difficulties when implementing change. For example, as one respondent explained, when new F&A directives were sent out to the local subsidiaries they were generally only acknowledged and followed if this was considered important by local management.

Such problems were the main background factor, but there were also additional reasons that were summarised in the four Cs of Cost, Control, Consistency and Competencies (recurrent in interviews and specified in early internal presentation material, see strategy document #6 in the Appendix; see also Paper I for a more thorough explanation). First, the business climate and the tough competition had created a stronger Cost focus. Second, the intensified legal control requirements (e.g. Sarbanes-Oxley Act) drove a need for Controls, global governance, transparency, and standards. Third, because business had become global it required global decision, and such decision required fast, consolidated, and Consistent management information. To conclude, the enablers of Cost, Control and Consistency were a global technology, standard processes and a Competent and professional F&A staff to operate it.

The aforementioned matrix oriented structure was inadequate to deal with these problems and therefore in the wake of the economic crisis Ericsson’s F&A department commenced the global transformation of implementing a SSC solution and a common ERP system (this is further elaborated upon in Paper I).

An SSC structure can be seen as a form of ‘internal outsourcing’ in which the supporting and transactional oriented activities of an organisation, in this case F&A activities, are moved into a business unit of their own where they become the core business process and offered to internal customers (Schulman et al., 1999). In Ericsson, these “hubs” supplied new standardised F&A services to internal customers, often

independently of region (regulated through a framework; see documents #21-29 in the Appendix). These transactional oriented F&A activities included: financial master data management, general accounting & closing, credit management, banking, travel and expense accounting, archiving and record retention, and accounts payable. Later in the transformation, the SSCs were also able to provide services outside the immediate area of F&A such as PtP (Purchase to Payment) and HR related services. The implementation process of the new organisational structure implied that transactional oriented F&A activities were mapped (in the majority of the local sub-units). Then the local F&A deviations were identified and managed. Subsequently the F&A activities were turned into standardised global processes, then integrated into a common ERP system, and finally they were supplied as a service from the SSCs to the local F&A sub-units (see Paper I for in-depth description).

In 2001, almost simultaneously with the implementation of the SSCs, Ericsson made the decision to start to implement a unitary ERP system of SAP R/3 (see Section 2.6) and abolish the numerous local information systems within the organisation. In the 1990s, Ericsson had done similar implementation attempts that failed, which were debated in popular press (e.g. Ekstrand, 1998a; Ekstrand, 1998b; Magnusson, 1998).¹⁹ This time around, however, the technology was more mature, the know-how more developed, and the strategy was different. The implementation as such was also coupled with more radical changes to the organisational structure (e.g. the SSCs solution) as well as coupled with actor oriented activities that surrounded the system (see Paper I and Section 5.3).

Besides this, there was a vital distinction in the way Ericsson's F&A department conceptualised the IT-artefact that influenced the way it was managed. Theoretically, successful IT-enabled change projects are often treated as continuous projects where IT and organisation are viewed as dynamical entities that reciprocally interact (as discussed in Section 2.5; 5.3; 5.4, and explored by Papers IV and V). The case study of Ericsson empirically shows such an approach. For example, the F&A department treated the SAP R/3 not as a monolithic and isolated tool but as something that changed continuously as new features were added and adjustments were done to the system. They treated—or treat—the system as a fluid entity and as an open-ended project without an end-state: what the SAP R/3 is today is not what it will be tomorrow (Harris and Davenport, 2006). On top of this, Ericsson changed their

organisation accordingly. When changes were done to the system, and when they learned more about the system, they made changes to the organisation (and vice versa).²⁰

Today, Ericsson is one of the few companies in the world that use the SAP R/3 almost to its full capacity and it has enabled the company to operate its F&A activities within “one controlling area”. For instance, F&A employees use the same master-data, one common chart-of-account, and common F&A processes (often independently of geographical execution).²¹ This made it possible to e.g. classify transactions in one common way and “speak the same language” within Ericsson.

As such, the SAP R/3 is the “backbone” of Ericsson and pervasive in the F&A organisation as F&A activities are hard to accomplish without its support. F&A employees are not, however, the only ones that use the system, as almost all employees of Ericsson are one way or the other using the system in their daily practice. For example, as one respondent described, employees who work with stocks and logistics use the system to send goods in and out of the warehouse, employees who work with R&D use the system for time reporting, and employees who work with project management use the system for project planning and project reporting.

To illustrate Ericsson’s F&A transformation a comparison is made here between the situation before and after the transformation, in regards to the changed conditions for *structures*, *process*, and *actors*. It is notable to point out that the transformation was, or rather is, an ongoing and continuous process. The comparison made here is for pedagogical reasons only, in order to aid understanding.

From the perspective of *structure*, Ericsson, in early 2000, had local F&A departments connected to the majority of the 200 legal units that operated in over 140 countries. Each F&A department performed their own F&A activities, often according to their own standards, which were embedded in their own respective local culture, regulations, and legislation. In contrast, by the end of 2008 Ericsson instead had ten globally dispersed SSC hubs that delivered standardised F&A services to the local sub-units (earlier performed locally).

Similarly, pre-transformation there were over a hundred different information systems, tailored to their own local requirements, which

were used to execute F&A activities. Post-transformation there was only one. Likewise, before the change, F&A activities were performed using numerous different charts-of-accounts, while after one chart-of-accounts was used.

From a *process* standpoint, Ericsson's F&A activities were, pre-transformation, done by the local sub-units and periodical statements were sent to corporate office by email, post, fax or telex machine. In return, corporate F&A directives were sent back from head-office with limited feedback and follow-up procedures. In all, communication and information regularly flowed one-way and was fragmented, and the F&A activities as a whole were cumbersome and time-consuming.

Later the F&A activities were mapped, turned into global processes, consolidated and integrated into the SAP R/3. As a result, the F&A activity became a competitive service that was provided by the SSCs to the local offices.

After the transformation, a process organisation that cut across the traditional departmental boundaries was also established, which communicated through the internet and the SAP R/3 system. Earlier knowledge was in many cases developed and "connected" to a geographically located division. Now, however, because of the process organisation, knowledge was to a larger extent connected to professional individuals who cultivated and communicated their knowledge throughout global communities-of-practice. The purpose of the process organisation was to provide long-term continuity for development, optimisation and implementation of F&A activities beyond the timeframe of the transformation. Additionally, because the F&A activities had been turned into processes and integrated into the SAP R/3, it enhanced transparency and made instant financial analysis possible. In addition, since the ERP-system functioned on a centralised and relational database, F&A activities could largely be performed anywhere and at any time (see Section 2.5).

Finally, from an *actor* point of view, Ericsson's local sub-units had F&A employees who varied in numbers from a few part-time employees to nearly a hundred full-time employees. Communication from corporate headquarters was performed in a top-down fashion and the employees autonomously executed their work with local interests in mind. Their work was both transactional and analytical in its orientation, with dominance for the former. It was also isolated to the local or regional

level with limited lines of communication to other parts of the organisation. As such, F&A work was highly divergent in Ericsson. As in many other companies the F&A employees were regularly perceived by others as careful and skilful actors, but pre-occupied by “tedious” numbers and whose work aimed to command-and-control the organisation (McKenna, 2006; Walther et al., 1997).

Because of the transformation, jobs were lost at the local sub-units, but new ones also arose at the SSCs, and with them new roles were established. The nature of F&A work changed as the majority of the transactionally oriented work was integrated and automated by the SAP R/3. F&A work post-transformation became more focused on analytical activities, and the employees were re-oriented towards a more proactive role of being teachers, developers, and experts. For the F&A employees work offered new possibilities for competence enhancements as well as global career paths. At the same time, however, work was more competitive, had a higher level of complexity than earlier, and came with more demands that necessitated or required higher competence. Work also became less flexible as it was connected to the standardised global processes that were integrated into the global SAP R/3.

Overall and with hindsight, Ericsson’s “Global F&A Transformation Programme” is considered successful—from a managerial point of view—because it was performed within the timeframe and resolved the cost, control, consistency and competency problems that it originally set out to deal with.²² This claim is supported by the empirical data sources that were collected over two years after the transformation was finished.

By the end of 2008, the F&A department of Ericsson employed approximately 1,200 people who supported 96 per cent of the whole corporation with their F&A services and related services such as PtP (Purchase to Payment). The SSC hubs were globally dispersed and established in Stockholm, Rijen (The Netherlands), Madrid, Dubai, Beijing, New Delhi, Manila, Mexico City, Dallas, and Sao Paulo.

3.4 Summary

The chapter has broadly explored Ericsson from two points of view. First, with a technology standpoint it was explained that Ericsson has managed to remain one the leaders within the telecommunications business for over hundred years by shifting its technological focus from

mechanics to electronics, and from supplying mainly physical products and large systems to services and software. Second, with a market and structural viewpoint it was illustrated how Ericsson started out as a domestic repair shop for telephones, how they grew into an international company, moved on into developing a multinational organisation, and later on in the 1990s reorganised into a matrix oriented structure. It was then illustrated how Ericsson, by the end of the millennium, was in need of structural and organisational changes towards a “one-company-approach”, with integrating IT as an enabler. This was mainly due to issues related to globalisation, decentralisation, liberalisation and deregulation. The second viewpoint also explained that it was in the wake of such problems that the examined F&A transformation was commenced. The final section of the chapter provided an overview of the examined transformation by describing it as a shift from an independent structure consisting of numerous local organisations with their own information systems and their own way of doing things, into one interdependent global network of SSCs. This new organisational solution is, as described, based on global and standardised processes, one common governance structure, and one ERP system.

4. RESEARCH METHODOLOGY

4.1 Introduction

The earlier chapters have provided the theoretical and empirical foundation, this chapter moves on to describe the arguments behind the choice of research methodology, and how the research was carried out. The initial two sections explain stance, design and research setting. The following section describes how interviews, documents, and observations were collected, as well as giving examples of their content. The subsequent section explains how and why certain strategies for analysing processual data were chosen and deployed. The final two sections explain how the data were validated and then communicated.

4.2 Stance – a processual and a practice approach

Change is conventionally studied by either using variance theory or process theory (Gregor, 2006; Markus and Robey, 1988; Mohr, 1982). Variance theory is the most dominant approach and functions on an input-process-output model (e.g. Rogers, 1962). The variance approach is beneficial for studies focusing on the causes, outcomes and mechanisms behind organisational change. The underlying assumption is that an outcome will constantly come about when the sufficient and required conditions are present (Poole et al., 2000). Since the approach examines the variance between an independent and a dependent variable, it takes on a “black-box” perspective and therefore it puts less emphasis on how change occurs.

Given the point of departure that change is viewed as a process—as revealed in Section 2.4—the obvious methodological approach is process theory (Langley, 1999; Van de Ven and Poole, 2005). Process theory focuses on what happens in-between the input and output of change, and it is therefore a fruitful approach for studies that explore

change from-within. As such, a process stance entails ascribing temporal, pluralistic, and a-symmetrical properties to change (Pettigrew, 1997). Studies using process theory are scarce and change scholars have made calls for further research with such a methodological approach (Pettigrew et al., 2001; Tsoukas and Chia, 2002; Van de Ven and Poole, 2005; Weick and Quinn, 1999). Additionally, process theory becomes central when viewing technology as an open and dynamic artefact, because the variance approach is limited as a method when attempting to capture a moving target (see Section 2.5).

This thesis also adds to the recent practice-turn in social sciences (Brown and Duguid, 2001; Reckwitz, 2002; Schatzki et al., 2001). Such perspective focuses on the actors, the situated action and their ability and skills to perform their action. With this perspective, change is considered to be something that people actually do, rather than being an external and abstract process (Jarzabkowski et al., 2007; Stensaker and Falkenberg, 2007; Whittington, 2006). The stance meant that the current research focused on *how* the transformation was actually driven in practice. Such an exploration is of central concern for organisational change research, as it lacks pragmatic frameworks and approaches (By, 2005).

The practice-based perspective offers middle ground theorising between the grand theories and the details of specific practices. Since research using a practice-based perspective founds its analysis on a collection-of-practices, it is abstract enough to generalise and contribute to theory, but detailed enough to explain how things emerge through micro-activities.

4.3 Design and setting – the case study of Ericsson

Earlier change research has frequently been a-contextual, a-processual, a-historic, and frequently relying only on snapshots. As Pettigrew (1990) notes “*There are remarkably few studies of change that actually allow change process to reveal itself in any kind of substantially temporal or contextual manner*” (p. 269). This is precisely what this thesis has set out to do with its single case study design of the longitudinal exploration of Ericsson.

A single case study design is appropriate since the thesis explores a *how* related question (Yin, 2003). This type of design is also considered an attractive choice when the phenomena under investigation—such as the moving target of IT-enabled change—is ambiguous and requires rich,

contextual, and real time data (e.g. Benbasat et al., 1987; Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Yin, 2003).

Single case study design is also used when the studied phenomena is new and when there is an opportunity to study it intensely and in depth. This is important because such intensity can sometimes generate a creative insight that makes significant contributions to theory. On top of this, there is the notion of the “revelatory” nature of the case study of Ericsson (Benbasat et al., 1987; Yin, 2003). In other words, a single case study is appropriate when there is a unique opportunity to explore what previously has been largely inaccessible for research. Following Ericsson’s global practice of IT-enabled change, performed by change designers and agents, is such a case.

Single case study design is regularly criticised by researchers because of its low levels of generalisability. When they do so, however, they tend to apply the perspective of statistical generalisability. This is inappropriate because it imposes the principles of sampling-based generalisability that seeks knowledge about objective scientific facts. Not only do the arguments have a positivistic departure point but it also ignores the fact that there are different types of generalising (Klein and Myers, 1999; Lee and Baskerville, 2003; Tsoukas, 1989; Walsham, 1995; Walsham, 2006). Lee and Baskerville offer a framework that illustrates such differences. They argue that there are four types of generalisation: generalising from data to description, generalising from description to theory, generalising from theory to description, and generalising from concepts to theory. The research undertaken here aims to generalise according to the second category, from description to theory. In other words, this research intends not to test tendencies of the past, to give predictive explanations about the future, or to generalise to populations. Instead, this research reflects upon empirical data in order to contribute to theory. In doing so, the ambition is that the findings of the case study will provide valuable insights into situations with a similar context, and contribute to theory regarding organisational change.

The last point in this section is to discuss the relevance of Ericsson as a case study. Imagine that companies are normally distributed on a bell curve (a common assumption), with few on the left side of the curve being under-performers, the majority in the middle being average-performers, and some are on the right side being out-performers. Research recurrently focuses on the companies in the middle, the average performers. This is not surprising given that most studies aim to

test theories, which is of course both valid and valuable. Nevertheless, there are also negative effects of such a research strategy, as it focuses on the outdated practices of yesterday. Such a claim is supported by other researchers (Argyris and Kaplan, 1994; Kaplan, 1998) who argue that some research should aim to explore emerging management practices, how they are developed and successfully implemented. Such research should, if undertaken, focus on the outliers that are on the right side of the curve, and it is here that the case study organisation of Ericsson is located.

4.4 Collecting – interviews, documents, and observations

The enfolding events of the change were followed by drawing on data from interviews, documents and observations, as Table 1 exhibits.²³

TYPE OF DATA	YEAR OF CREATION					
	2004	2005	2006	2007	2008	2009
Number of interviews			9	7	8	5 ²⁴
	Total: 29 interviews with 17 respondents					
Internal documents						
Newsletters	49p	135p	212p	176p	18p	
Strategy documents	5p	74p	117p	2p	32p	
Organisational & policy documents	16p	42p	55p	88p		
Operational documents		6p	96p	221p	10p	
	Total: 1,354 pages					
External documents	Numerous pages consisting of annual reports, theses, books, electronic resources, and telecommunications studies.					
Observations	A total of 1 day at the SSC Stockholm and 2 days at the SSC Beijing.					

Table 1: Summary of Empirical Sources

4.4.1 Interviews

Altogether 29 interviews were conducted with 17 respondents. These were initially identified by snowball sampling (starting with the managers

that were responsible for the transformation), and later identified in the narratives of the respondents (i.e. actors who were recurrently brought up by the respondents), as well as identified in the internal documents (i.e. actors who recurred in different forms of documents).

The respondents were primarily the most significant participants of the transformation, in regards to being an actor in influencing the asymmetrical-change, because of their role, status, or experience (for a discussion see e.g. Battilana, 2006). Since the research question in part focuses on how IT-enabled transformation might be conducted from a managerial viewpoint, the respondents were primarily the managers who initiated, sponsored, designed and implemented the change (Kanter et al., 1992). In other words, the thesis focuses on the actors that made the transformation happen in practice. For example, one respondent had performed over 40 F&A change projects (i.e. F&A migrations) worldwide and recounted stories of what worked and what was less successful when leading change in all his projects. It is primarily through their eyes that the transformation was examined. Such respondents were mainly the formal managers of the transformation, but some actors with a lower position were also identified and subsequently interviewed (interview 13, 15, 18, 20, 21, 23, see the Appendix). This, along with informal conversations with these actors during observations, was done so that a greater number of multiple perspectives could be included.

The interviews were reflexive (Alvesson, 2003) in their nature. That is, the respondents gave an in-depth description of the change as they experienced it, at the same time as multiple interpretations were explored and challenged (e.g. information from the newsletters or information from early strategy documents were brought up and posed during interviews). The interviews focused on broad key themes that were developed both from *a priori* theoretical areas (e.g. background factors of the transformation or advantage and disadvantage with the ERP system) as well as themes that gradually emerged out of the empirical data (change skills or processes for migrating F&A activities from a local unit to an SSC). The interview sessions were conducted in an open, sincere, and revealing atmosphere. This might have been a result of the respondent's curiosity, and the fact that trust was established early in the data collection process.

All interviews, except one phone interview, were conducted face-to-face. They lasted approximately 90 minutes and almost all were recorded and transcribed verbatim directly after the interview. More than half of the

respondents conducted work that was geographically dispersed on a global scale, and they also acted on multiple levels of the organisation. For instance, some of the respondents were involved in designing F&A strategy at a corporate level in addition to working with change management and the migration of F&A activities on-site at local sub-units. The majority of the respondents had also occupied different jobs situated in different countries. For instance, one respondent evolved from being the financial manager of a local company, into being a manager at an SSC, into being a change agent, and finally having the responsibility of global F&A operation that included supervising the whole transformation process.

4.4.2 Documents

Internal documents

The internal documents span from the early events of the organisational change in 2004 (i.e. the year it was created) until the end of the data collection in late 2008, consisting of 1,354 pages. These were of substantial value because they made it possible to follow both the unfolding events and to observe what had happened before the interviews commenced.

The internal documents were collected by consciously and consistently asking the respondents during the interviews for written material that was related to their individual work (e.g. a business case of a migration). These were subsequently explained and elaborated on by the respondent during the interviews. Apart from this, the most significant respondents of the transformation were asked for documents that were related to the transformation process as a whole (e.g. newsletters or organisational charts; it is notable that the respondents were considerably open and cooperative in supplying the researcher with documents).

The internal documents were a rich empirical data source that enabled retrospective accounts as well as real time views of Ericsson's transformation. They also provided insightful overviews of the transformation that indicated which issues Ericsson considered important.

The internal documents were categorised into the following subgroups (displayed in the Appendix): Monthly *newsletters* stretching from April 2004 to January 2008, *strategy documents* (e.g. transformation guidelines or early strategy sketches), *organisational and policy documents* (e.g. role

description or service level agreement between a local company and a SSC) and *operational documents* (e.g. key-performance-indicators of individual SSC or for instance an implementation plan from a project manager). To illustrate the richness of this data the subsequent text will describe them respectively.

First and foremost, the *newsletters* (document #1 in the Appendix) were of significant value as they gave an in-depth understanding of the change across time. Every letter was around 20 pages in length, sent out almost every month by email to all F&A employees, and consisted of four parts. It usually started with an executive summary and a personal letter from the head of Global F&A and Global F&A Operations where the most immediate concerns were addressed. Then the newsletter moved on to a section termed “meet the manager” that gave a portrait of the background, role, feelings, wishes, challenges and future ambitions of an F&A manager (at an SSC or local sub-unit). In some letters, there was also a close up on employees who were not managers. After this, the newsletter zoomed in on a particular project, providing rich details, “lessons learned”, as well as the views and opinions of the projects members. The final section covered news on the progress of the transformation that included descriptive details, new structural arrangements, and new F&A processes and strategy.

For example during the year 2006, eleven newsletters were sent out consisting of 119 pages. These letters gave a personal portrait of individual employees and teams in Dubai, Kuala Lumpur, Madrid, Manila, Mexico City, and Stockholm. The manager in Manila, for instance, recounted the frustrating experience of a “roll-out” and how it resulted in information system overload, workarounds, over-time, and how it was solved. The letters also provided lessons learned from establishing an SSC in Mexico City. This included an ambition to strive for a future increased focus on strong two-way communication, in-depth understanding of both organisational and technological aspects, key performance indicators (KPI), cultural awareness and conflict resolutions.²⁵ During 2006, these newsletters also gave more descriptive information about a revised outsourcing strategy (see below), new controller roles, organisational changes in Stockholm, a process expert conference in Stockholm, and a F&A implementation in Sub-Saharan Africa.

Concerning the *strategy documents* an illustrative example comes in the form of an early strategy sketch from 2004 (document #8). This

document described the new ideas for a revised outsourcing strategy (these were later described in the aforementioned newsletters from 2006).²⁶ It also gave visual graphs and descriptions of the complexities of handling small legal units, which the following illustrates: “*Small is beautiful (if it can be handled as such)*” and “*Not all our legal entities are “big and complex”*”. The strategy document also depicted lessons learned about the importance of viewing IT implementation as a continuous process and to treat IT as a fluid artefact: “*We must avoid the “ultimate machine” mindset*”.²⁷

The *organisational and policy documents* gave a structural perspective on the change. For instance, the service level agreement documents (document #21-29) described various dimensions such as the price, quality, and scope of the services provided by the SSCs to the local sub-units. The role description documents (document #21-29) provided the definition, responsibility, expectation and competence requirements of the most important roles in the F&A organisation (both on a global and a local level).

Finally, the *operational documents* detailed, among other things, local F&A process deviations in local companies in the Americas (document #36). They also described preparation, work shadowing, and stabilisation phases of migration projects in Colombia, Ecuador, Guatemala, Panama, Peru, and Venezuela. They gave information about change management strategies consisting of communication strategies, strong and visible leadership, KPIs, people management, and—as they put it—“*Increasing willingness to change by moving away from analysis, towards feelings!*” (documents #32, #10, #39).²⁸

External documents

The external documents were primarily composed of Ericsson’s annual reports and corporate policies, theses (Dahlgren and Witt, 1988; Lundström, 2006; Moberg, 1997; Ulbrich, 2008), books (Attman et al., 1976; Attman and Olsson, 1976; Jacobæus, 1976; Meurling and Jeans, 2000; Åsgård and Ellgren, 2001), electronic resources (Föreningen Stockholms Företagsminnen, 2001), and telecommunications studies and reports (Dunnewijk and Hultén, 2007; Humphreys and Padgett, 2006; Lindmark et al., 2004; Nissen, 2005). These public sources created an understanding of the telecommunications market, Ericsson as a whole, and put transformation in an historical and contextual perspective. In

addition, the external sources provided background information and made it possible to contrast it against other sources of data.

4.4.3 Observations

Observations were also conducted in connection with interviews at the SSC offices. In total, one working-day of observations were performed in connection with eleven interviews conducted at Ericsson's SSC office in Kista, and two working days of observations in connection with five interviews at Ericsson's SSC office in Beijing (one of the largest SSCs).

On these occasions, the author sat in the SSC offices and indirectly observed the work performed, participated in social events, took pictures, and field notes of the work practices and issues raised during informal conversations. The possibility of direct observation of work practices was, however, limited, as the majority of the work was virtualised (Overby, 2008) and therefore unbounded by time and space (Sinha and Van de Ven, 2005).

Nevertheless, the observations served as additional properties of richness (Weick, 2007) to the primary data-sources of interviews and documents. For example, in Beijing the researcher went out to dinners and lunches with the SSC employees. The informal conversations that took place on these occasions enabled a deeper understanding of their personal feelings, opinions, and practices. In essence, the research activity gave an understanding of what it meant to be an SSC employee in China.

4.5 Analysing – organising, replicating, and grounding strategy

4.5.1 Strategies for processual research

Studying change with a processual approach entails challenges due to the vast quantity of data that it generates. Langley (1999) indicates that “*Process data is messy*” (p. 691) and this regularly results in what Pettigrew (1990) facetiously describes as “*death by data asphyxiation*” (p.281). There are however different analysing strategies that make it easier to make sense of processual data. As Figure 2 shows, this thesis combined the grounding strategy of a constant comparison approach, an organising strategy of narrative, and a replicating strategy of temporal bracketing, addressed respectively below.²⁹

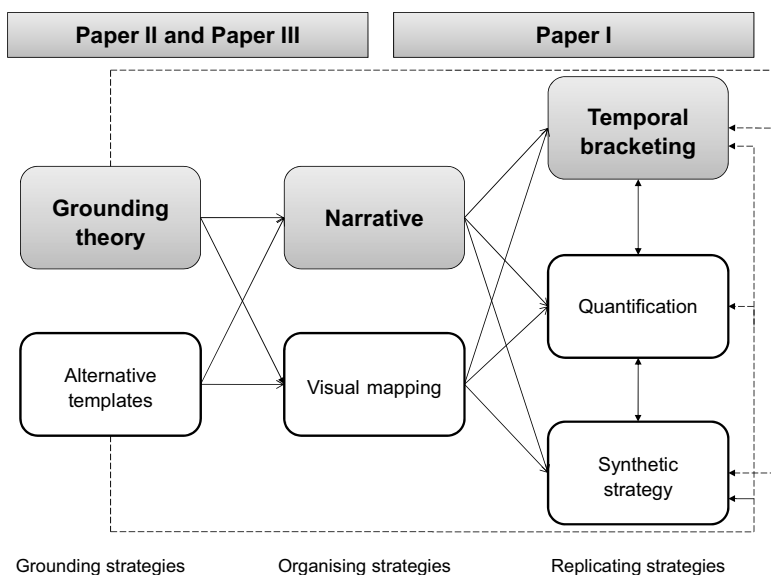


Figure 2: Strategies for processual research. Adapted from Langley (2008).

As Langley (1999; 2008), and Pozzebon and Pinsonneault (2005) note, the strategies are most effective when combined. If, for example, a study relies only on narratives, the result is regularly a plain idiosyncratic story with less abstraction and theorisation. Likewise, studies that rely only on a bracketing strategy have a limited richness of contextual aspects that bring life to the story.

On the one hand, a combination of narrative and temporal bracketing is useful when the purpose of a study is to make sense of the mechanisms and driving forces of change, as in the case of Paper I that shows Ericsson’s change process across time. Or as Pozzebon and Pinsonneault explain: the narrative gives the answers to “why” things change and the bracketing strategy gives answers to “when” and “how” things change. On the other hand, a combination of a grounded theory and narrative approach is valuable when the research aims to make sense of the interpretations of the respondents. It is also powerful when, as in the case of Paper II and III, the research explores actors’ knowledgeability and daily practices and activities that together make up the phenomena under investigation (Pozzebon and Pinsonneault, 2005).

Consequently, Paper I draws mainly on the combination of narrative and temporal bracketing strategy, and Papers II and III draw primarily on grounded and narrative strategy. In all, the three strategies were deployed

simultaneously to the data collection, and were performed in a cyclic trajectory that ended when limited new insights were produced.

4.5.2 Organising the data – a narrative approach

The organising strategy of narrative entailed asking the respondents to give their “story” of the organisational transformation. The purpose was to enable the respondents to tell “their version” of the transformation process and adjacent change practices. In so doing, an in-depth description that illuminated and clarified events, practices and choices was made possible. For instance, managers spoke about their personal experience of migrating finance processes from globally distributed local-companies to newly established SSCs.

The different narratives were turned into two “hybrid stories” (Riessman, 1993) that focused on the macro and micro activities. The first story consisted of a description of the unfolding events of transformation as a whole. The second story centred on the chronological micro activities of the change practices of migrating F&A processes from local units to SSCs. As such, these hybrid stories consisted of the themes, actors, activities, and events that were recurrent across interviews and documents.

The narrative strategy aimed to take different viewpoints from different stakeholders into consideration (Pentland, 1999), to understand how the respondents “*imposed order on the flow of experience*” (Riessman, 2002, p. 218), and to bring contextual richness to the story of enfolding events (Pettigrew, 1990). Later, the first hybrid story became the central part of Paper I, and the second story became the central part of Papers II and III.

4.5.3 Replicating the data – a temporal bracketing approach

Empirical data from a change process is commonly a “mish-mash” of different events, activities, and decisions across time. Temporal bracketing aims to make sense and structure such mish-mash by dividing the temporal process into different broad-range brackets in which every bracket contains a certain continuity of activities and a discontinuity in regards to activities of neighbouring brackets (Langley, 1999; Pozzebon and Pinsonneault, 2005; van de Ven, 1992).³⁰

In practice, Ericssons' transformation process was split up into brackets that became the unit of analysis for comparison across time. The brackets were identified in the empirical data by significant events, activities, or decisions that were divergent and set it apart from the events, activities, or decisions in neighbouring brackets. The identification of brackets was then validated across the different sources of data (e.g. a significant event identified in the narratives of a respondent was validated by the newsletters).

The temporal bracketing strategy is most notable in Paper I and is clearly displayed in the structure of the paper. For example, one early bracket was located in 1999 when different local F&A departments initiated and tried out different national SSC solutions. It was also during this time (or in this bracket) that Ericsson performed trials for implementing a SAP solution (see Section 5.1 in Paper I). This bracket was followed by another bracket in 2002 where the national SSCs had begun to create and compare KPIs and exchange ideas. This bracket was characterised by attempts to establish a regional SSC structure that in some cases ended with failure due to institutionalised behaviour in certain regions. In addition, the corporate office tried to centralise the biggest F&A departments while outsourcing the smaller ones (see Section 5.2 in Paper I). In this way, temporal bracketing was used to frame time and to compare how different mind-sets, practices and decisions in different brackets diverged from others.

4.5.4 Grounding the data – a constant comparison approach

The grounding strategy was inspired by the guidelines of Glaser and Strauss (1967) and Miles and Huberman (1984), which suggest that the researcher should be attentive to both similarities and dissimilarities in data and theory. The analysis consisted of three phases.

First, the data was open-coded into descriptive categories (e.g. background factors of the transformation; process steps for migrating F&A activities). The coding was inductive in nature and focused on the parts of the data that recurred within and across the datasets. The issues and key themes that were repeated were coded into the descriptive categories.

Grounded theory inspired research is not, as Suddaby (2006, p. 635) reminds us, about ignoring the literature, but instead a way of “*trying to achieve a practical middle ground between a theory-laden view of the world and an*

unfettered empiricism". In this way, the open-coding procedure inspired a second phase of studying theory related to the emergent patterns in the data. The theoretical reflection was at first broad (e.g. reading up on structure and agency perspectives of change) and later more focused (e.g. such as emotional and cognitive/analytical elements in the receptivity of change).

Phase three entailed a re-coding of the data. The understanding gained from the open coding, concurrent data collection, and theory insights influenced this phase. The re-coding procedure was conceptual, and less broad and inductive compared to the open coding (e.g. translational activities of change agents; tools for achieving common interest; see Section 5.3). During this phase, old codes were removed because of discovered differences, some codes were modified because of new similarities, and new codes were created because of emerging patterns. This last stage of grounding strategy with a constant comparison approach was followed by the organising strategy of a narrative approach in which the two hybrid-process-stories were rewritten and reconstructed. This cyclic trajectory was performed until the point of saturation had been reached.

4.6 Validating – triangulation, feedback meetings, and temporality

The validation strategy was fivefold. First, the multiple sources of data enabled comparison between the transcribed interviews, the different forms of documents, and observation notes. The examination was performed within and across the different sources of data.

Second, feedback meetings were conducted where the findings were shared with the most significant respondents. Such interviews entailed discussions, validations and elaborations of the similarities and differences that emerged out of the empirical data. The feedback meetings functioned as a kaleidoscope as they revealed different dimensions and facets of Ericsson's transformation. Besides being a strategy for validating the findings, the feedback meetings provided new empirical data that was included in the analysis.

Third, the initial stage of the data collection and the theory development was conducted in a team of two, which limited the confirmatory bias. The team conducted twelve of the interviews together (excluding a focus group session conducted in 2009, see below), discussed before and after

the interviews as well as during the respective writing processes. The constellation enabled both researchers to gain an in-depth understanding of the case study and to have regular meetings at which the emerging findings were discussed. At these meetings, new patterns and issues were identified and coding and assumptions were challenged. The fellowship was a beneficial factor, since the majority of the empirical material could not be disclosed to an outside party due to a confidentiality agreement. In all, the team wrote the initial Paper I and subsequently the fellow researcher went on to collect data focusing on Ericsson's appliance of the Sarbanes-Oxley act.³¹

Fourth, the longitudinal nature of the case study enabled comparison across time in which e.g. interviews conducted early in the process could be compared with the documents and interviews that were collected later. This process facilitated the separation of what was explicitly planned to be done and what was actually done in the end. That is, the information from the documents of the “formal version” of the change process (derived from e.g. newsletters and presentation material) was contrasted against the respondent's informal narratives—giving the interviews a reflexive approach (Alvesson, 2003). Such validation activity is important because change studies are frequently criticised for the bias that arises when a respondent tries to re-construct the past (Golden, 1992; Pettigrew et al., 2001). The bias can, however, be limited by following the process in real time as well as using documents during interviews.

Fifth, during a three-hour long focus group session at Ericsson's headquarters in June 2009 the interim findings for the whole thesis were presented and discussed. Five significant respondents actively took part in this activity and they not only validated the findings but also grounded and compared them to their present projects, future strategic projects for the F&A department, and other IT-enabled change projects in other Ericsson departments. For example, the problems with a current IT-enabled change project in another part of Ericsson were traced to the findings in the thesis (problems had erupted because there was too much attention paid to the material and technological side of the project and too little on the social and organisational side).

4.7 Communicating – a narration approach

The thesis has chosen a middle ground between the higher levels of aggregation and lower-levels of close description of empirical data. As a result, the papers communicate the findings by supplying small narratives, quotations, and stories that are combined with analytical text.

This model was chosen because learning in many cases comes not from aggregated metaphors, figures and models, and neither from atomic details of the empirical world, but rather from the stories that are crafted in between these two extremes. In this way, successful learning in many cases lies in the stories that are weaved from both high and low aggregation of a study. Needless to say, such stories, and their arguments, require the scrutiny and critical examination of fellow colleagues.

By communicating the current research with a narration approach the thesis aligns with similar debates in for example economics (Klamer et al., 1988; McCloskey, 1990), organisational theory (Czarniawska, 1998), management (Dumez and Jeunemaitre, 2006), and more recently in organisational change (Buchanan and Dawson, 2007). The anticipation of such an approach is, by the words of McCloskey (1990, p. vii), that researcher should “*stop selling snake oil and [...] come back into the conversation of humankind. That is where they belong, back where we can watch them*”.

4.8 Summary

This chapter has described that change is examined by using process theory and a practice-based perspective. It was also argued that a single case study design was the most beneficial choice because of the novelty of the studied phenomena and the revelatory nature of the case study. In addition, the choice of a single case study design enabled change to be unveiled in a more contextual, temporal, and historical way, compared to what the dominant body of earlier research has offered. The chapter moved on to explain how the empirical data sources were collected that consisted of: 29 in-depth interviews with 17 respondents, 1,354 pages of internal documents, external documents, and observations. The subsequent section described how the empirical data was analysed by using temporal bracketing, narrative, and grounded theory. This included reasons for why this specific combination of analysing methods was an attractive choice among the various strategies for theorising from process data. Subsequently it was shown how the attained findings were

validated by multiple data sources and analysing methods, feedback meetings with respondents, discussion within the research team, a longitudinal focus, and finally, and perhaps most importantly, by a focus group session with the most significant respondents. The concluding point of the chapter was to offer reasons as to why the thesis communicates its findings using a narration approach. It was argued that such an approach significantly aids learning, understanding, and evaluation because it is situated on the middle ground between the higher levels of aggregation and the lower-levels of close description of empirical data.

5. CONCLUSIONS

5.1 Introduction

This final chapter of “Exploring IT-Enabled Change From-Within” outlines the conclusions of the thesis. A roadmap consisting of the five different papers of the thesis—the grounds from which the conclusions are drawn—is presented in the next section. This roadmap aids the understanding of how the papers fit together, their respective focus, and how they relate to the research question. The section is followed by the findings, conclusions, and contributions of the thesis as a whole. This section develops a framework that answers the research question of how actors and structures influence large-scale IT-enabled change. The answer is further grounded by two subsequent subsections devoted respectively to structures and actors. These two extensions are followed by a subsection that clarifies the final conclusion of this thesis. The chapter ends by translating the main findings into practical guidelines for managers, and by providing ideas and reflections for further research.

5.2 Overview of Papers

The research question for this given thesis is:

How do actors and structures influence large-scale IT-enabled change?

Paper I—*Creating A Global Network of Shared Service Centres for Accounting*—examines how both actors and structures influence IT-enabled change across time. In so doing, the paper provides a macro-oriented process story of the organisational transformation of Ericsson. The findings show how an IT-enabled change process can come about as an upward spiral, which is influenced by experience-based knowledge, pre-understanding, and trials across time.

After a dual vantage point, the natural succession is the actor perspective, since actors are the ones who initiate and drive change. Paper II—*Developing the actors in global organisational change: the roles they play, the tools they use, and the skills they have*—therefore investigates the role of actors in Ericsson’s transformation. It does so by exploring the practice of the change agents alongside how they interact with structures, and this together illuminates the micro-activities of IT-enabled change. In executing such activities, the agent uses internal skills and external tools, which together become an extension of the agent, and add leverage to the change. In all, the paper offers a historical, social, emotional, and contextual perspective of the actors of change.

The counterpart of actor perspective is structure perspective. Therefore, Paper III—*Leading Global IT-enabled Change across Cultures*—examines Ericsson’s transformation from this vantage point. In doing so, it demonstrates how the intangible properties of structure, in the form of practice-based culture, generate a common ground that, in turn, is reinforced by the tangible properties of structure in the form of an ERP system. Such structures can be a powerful source that both enable and restrain organisational change. The structures, however, only matter to a certain extent, because they alone are unable to produce common meaning and common interest. This calls for the social activities of actors.

The remaining issue in the research question is large-scale IT-enabled change. Therefore, the theoretical notions of IT-enabled change are explored, elaborated and put into a broader contextual perspective by Paper IV and Paper V—*A Bibliometric Study of Academic Interaction: IT, Organization, and Change* and *The Emergent View of IT and Organizational Change*. Together these two papers serve as a literature review of the field of IT-enabled change. The papers are conceptual in nature as they use bibliometric methods to analyse 9,669 IT and change related papers published in twenty journals between the years of 1995-2006. The bibliometric approach used in the papers is particularly interesting because it provides the potential to uncover hidden patterns and knowledge basis of research fields. Papers IV and V are an extension and expansion of the essential theories of IT-enabled change that are part of the first three papers and the theories presented in Chapter 2 (primarily Section 2.5) and Section 3.3.³²

5.3 Findings, conclusions, and contributions

Overall, the findings of this thesis suggest that large-scale IT-enabled change comes about less as a linear movement through stages, and more as an upward spiral driven by cognitive/analytical knowledge and emotional insights. The case study demonstrates that within such a spiral, change unfolds as a continuous interaction between a dynamic organisational structure (social dimension) and a less, but still, dynamic IT (material dimension) across time.

The theoretical contribution of this thesis is the in-depth exposition of the interplay between actors and structures in large-scale organisational change. There are earlier theoretical inquiries and descriptions but the present thesis distinguishes itself by revealing how this interplay takes place in practice. In doing so, the thesis empirically contributes by showing how organisational change is—from a managerial perspective—designed, led, and sustained *from-within*.

5.3.1 From the dual vantage point of actors and structures

The Commonality Framework for IT-enabled change

The answer to the research question—and the principal finding of this thesis—suggests that there are different levels of complexities within a transformation. These different change complexities require different structures to be used, different activities to be performed, different skills to be applied, and different roles to be played. The framework “*The Commonality Framework for IT-enabled change*” exhibited in Table 2 has been developed to illustrate this.³³

The framework not only summarises how global IT-enabled organisational change might be led, but it also depicts the interplay between the structural and agentic properties of change. In so doing, the framework opens the black-box of organisational change and explains change from-within. Because the framework rests upon an interplay between inductive and deductive reasoning, it develops both the theory and the practice of organisational change (By, 2005). The theoretical inspiration is mainly provided by Carlile (2002; 2004) but the framework is also based on very similar notions from other studies in information systems (Avgerou and McGrath, 2007; Ciborra, 2006; D'Adderio, 2003; Kallinikos, 2001; McGrath, 2006), organisational change (Boyatzis et al., 2006; Constantinides and Barrett, 2006; Huy, 1999; Kotter and Cohen, 2002; Sanchez-Burks and Huy, 2009; Sirkin et al., 2005; Stensaker and

Falkenberg, 2007; Stensaker et al., 2008), and others (Bechky, 2003; Brown and Duguid, 2001; Dougherty, 1992).

The framework consists of four levels of change complexities, in which each level has distinct activities, tools, skills, and roles connected to it. The change level strives towards a greater degree of commonality with regards to ground, meaning, interest or behaviour. Complete commonality can, however, never be accomplished in reality. The rationale is that a greater amount of commonality at each respective change level equals a greater likelihood for change acceptance, a smoother change process, and a successful transition into the next level of change complexity.

Level of change	Change activities	Roles and e.g. of tools and skills	Similar theoretical perspective
<p>Common Ground</p> <p>↕</p>	<p>Transactional activities such as transfer of change message between change agent and change recipient.</p>	<ul style="list-style-type: none"> • Roles: messenger • Tools: ERP system providing a common “language”, practice-based culture, project model that synchronises work • Skills: one-way communication 	<p>Transferring knowledge by bridging syntactic barrier (Carlile, 2004), boundary objects type: repositories (Carlile, 2002; Star and Griesemer, 1989), planned change (Beckhard and Harris, 1987; Cummings and Worley, 2008), change message (Armenakis and Harris, 2002; Bernerth, 2004; By, 2007), technical rationality (Avgerou et al., 2004; Avgerou and McGrath, 2005; Ciborra, 2006; Orlikowski, 2000; Walsham, 2001).</p>
<p>Common Meaning</p> <p>↕</p>	<p>Translational activities aiming to overcome interpretive differences between actors by learning and reflection.</p>	<ul style="list-style-type: none"> • Roles: expert and translator • Tools: documents depicting global processes • Skills: people management, pedagogics, experience-based knowledge 	<p>Translating knowledge to overcome semantic boundary (Carlile, 2004), boundary objects: standardised forms and methods (Carlile, 2002; Star and Griesemer, 1989), interpretive barriers and translation (Dougherty, 1992; Stensaker et al., 2008), explicit and tacit knowledge (Nonaka and Takeuchi, 1995; Polanyi, 1958), re-contextualisation of information stored in IT for the creation of knowledge (D’Adderio, 2003; Kallinikos, 2001).</p>
<p>Common Interest</p> <p>↕</p>	<p>Relational activities, of both political and supportable nature, where the political aligns interests by negotiations and informal relationships, and the supportable manages feelings, emotions, and motivation of change recipients.</p>	<ul style="list-style-type: none"> • Roles: negotiator and coach • Tools: road-maps of change • Skills: networking, political, emotional 	<p>Transforming knowledge to abridge pragmatic boundary (Carlile, 2004), boundary object: objects, models and maps (Carlile, 2002; Star and Griesemer, 1989), emotions and coaching (Boyatzis et al., 2006; Sanchez-Burks and Huy, 2009), emotions and IT (Barrett and Walsham, 1999; Ciborra, 2006; Essén, 2008; McGrath, 2006), mindset (Gardner, 2004; Orlikowski and Gash, 1994), practice-based cultures (Brown and Duguid, 2001), power, IT and informal relationships (Constantinides and Barrett, 2006; Hill, 2003; Jasperson et al., 2002; Kling and Iacono, 1984; Pfeffer, 1981; Sillince and Mouaktet, 1997).</p>
<p>Common Behaviour</p> <p>↕</p>	<p>Stabilising activities—consisting of monitoring, communicating, and intervening actions—that secures long-term and recurrent behaviour aligned with the implemented change.</p>	<ul style="list-style-type: none"> • Roles: observer and intervener • Tools: KPIs • Skills: communication 	<p>The hard side of change management (Sirkin et al., 2005), planned change (Burke, 2008; Cummings and Worley, 2008), feedback (Beckhard and Harris, 1987; Bruch et al., 2005; Nadler, 1993), technical rationality (Avgerou et al., 2004; Avgerou and McGrath, 2005; Ciborra, 2006; Orlikowski, 2000; Walsham, 2001).</p>

Table 2: *The Commonality Framework for IT-Enabled Change*

Common Ground

The first level of change complexity is referred to here as *common ground* because it aims to generate a shared ground and understanding among the actors of a proposed change. The changes done here are simple in their nature and require only minor adjustments to local practices, such as a new way of filing and coding documents. This level of change consists of *transactional activities* of a transfer between a sender (e.g. change agent) and a receiver (e.g. change recipient). If change at this first level is unsuccessful, it merely boils down to a question of failed cognitive/analytical transaction between the sender and receiver, commonly corrected by repeating or reinventing the form and message of change (see Section 2.7.3). Organisations regularly conduct this kind of transactional change by sending out a change message by e.g. email or by using an ERP system. In some cases, organisations use change agents who take on the role of *messenger* and who make use of one-way communication skills to convey the message of change.

Change of a common ground is cognitively/analytically oriented because success hinges on the actors' ability to understand each other. This level of change is therefore facilitated by different kinds of structures and tools that reduce organisational heterogeneity and afford a more unitary "language", "syntax", and work-logic among actors. Such structures and tools can come in many forms, but in the present case study it was represented by an ERP system that supplied common terms, abbreviations and processes, and also by a project model that synchronised work.

Central to change of a common ground is that it anchors the more complicated changes that follow (i.e. common meaning, interest and behaviour) as it provides the necessary condition of a common ground among actors. That is, if the recipients work with different things, use different language for their practice, and have different work-logics, then changing the way they work becomes difficult. Change of common ground is structurally and cognitively/analytically oriented and has been the main focus of earlier research (see Section 2.7).

Common Meaning

When change grows in complexity—becoming more of a transformation than a change and necessitating more profound changes to local practices—the recipients start interpreting the change differently. Their interpretations of what the new IT, and the adjustments that it brings,

truly means for their daily practice begins to diverge. In other words, they have less of a *common meaning*—which is the term used here for the second level of change complexity.

Without a great degree of common meaning change recipients will have incompatible meaning structures—interpreting and using the IT differently—and consequently change will wander off in different directions. Organisations can try to evade such problems by *translational activities* that produce learning and reflection among actors in order to overcome interpretive differences. Hereby structures are combined with the translational activities of human actors who contextualise information into knowledge. Therefore, this level of change complexity calls for social interaction.

An illustrative example from the case study is the global change agent who travels to a local sub-unit and translates what the change will mean to the change recipients, and tries to answer questions such as: “what are the local implications and consequences”, “what does this new ERP system, and the change that it brings, mean to me, my daily practice and my local organisation” and “how will I perform my work in the future”. In Ericsson, transactional activities were also conducted between peers, by socialising through for example work shadowing, as well as through global and local conferences and workshops.

The tools used at this juncture are documents that explain—with the adequate translation of the agent—the point of the change. They explain how new practices should be conducted, as well as the scope, consequences and implications of the new change. Examples of such documents from the fieldwork are numerical case studies, documents showing new standardised F&A processes, and standardised framework for services between local sub-units and SSCs.

Because the success of the change in common meaning relies on an adequate translation in a social setting, the skills that are vital here are expertise and know-how of old and new practices, people management, and pedagogics. Accordingly, the role of the change agent is to be an *expert* and a *translator*.

The difference between common ground and common meaning is that the latter is more contextually sensitive, requiring a higher form of interpretation that leads to learning and the formation of knowledge (i.e. disembeddedness and reembeddedness of knowledge; re-

contextualisation of information; see Section 2.6). Change at this juncture is also more interactive because of the social nature of translational activities. As one respondent explained: “*It’s no use going to the local organisation like ‘men in black’ from Stockholm with an adamant and hard attitude. We just don’t kick in the door and say ‘let’s do this’*”.

Common interests

The third level of change is the most complex one and is labelled *common interest* because it aims to align interests among different stakeholders. The activities performed here are *relational* and are of two different kinds. The first kind consists of political activities, such as negotiations and gaining influence and power by building informal relationships. The second kind consists of supportable activities that manage recipients’ motivation, feelings and emotions. Such supportable activities are of central concern since the change performed here occurs at the cost of deeply ingrained local practices.

A typical example of the activities performed in common interests is when a change agent who gains access to the local sub-unit through gatekeepers, establishes informal relationships with change recipients, and tries to align interests by networking and by creating buy-in with the use of tools (i.e. political activities). In doing so, the agent tries to answer questions like “Why should we adjust the way we work and our practices so that it supports this new ERP system?”, “How does our local organisation fit into the big picture?” and “Why should we make these trade-offs, why should we bother?”.

Simultaneously, the change agent shows strong and visible leadership-support by coaching, dialogue and one-on-one communication in an effort to motivate the change recipients to change their behaviour in concordance with the proposed IT-enabled change (i.e. supportable activities). Consequently, the role of the change agent at this level of change is to be a *negotiator* and a *coach* who uses networking as well as political and emotional skills.

The tools used at this level of change are often personally tailored and very sensitive to the context. They explain not only how things will change but also why they should change. The tools explain the problems with the current practices, provide a solution and representation of the change, and create some sort of common local interest for the change. In the case study, the agents used tools such as aggregated road maps of

change, project plans, service descriptions, F&A deviations from global processes, global F&A newsletters, and process interface matrices. For instance, the change agents of Ericsson recurrently used aggregated road maps of change to argue why the recipients of the smaller sub-units should embark on the enterprise wide transformation, despite high local costs. The main argument—created by weaving visual representations of the change with the narrative of the agent—was that in the first stage of the transformation the local organisation would indeed experience high cost. As the transformation progressed, however, the local organisation would gain higher efficiency and better quality of F&A services, which in turn would reduce current F&A problems significantly and decrease local costs (see Papers I and II).

As the above example illustrates, the recipients' perception of the tools is not enough to produce common interest, which will only come into full being when they are combined with the role and the skill of the change agent. The tools of common interest are also the most complex tools. Used in the right way and with the right skills, the tools provide a language from which change can be discussed so that a greater degree of common ground is established. The tools provide meaning through the learning that takes place when they are used, and they transform the recipients and their local practices because of their power to generate a joint interest.

The third level of change has its foundation in the former levels of change, because a common interest is hard to accomplish if a common ground and a common meaning have not already been established. In other terms, it is difficult to create a common interest if the recipients do not share a common ground, or if they do not interpret the change in a similar way.

Furthermore, at this juncture change is the most interactive and it is here that local knowledge is the most central. For example, success at this level of change relies on the agent's adequate response to and dialogue with the change recipient's feelings, emotions, and motivation. In addition, the agent's role, level of acceptance, and capacity to influence, is not given from the start, but is instead earned through the agent's relational and situated activities.

In Ericsson's transformation, the change agent established informal relationships with significant key actors of the local organisation, and tried to gain local knowledge, to discuss, to negotiate and to convince—

through more or less democratic means—that it was in their best local interest to change. The agent also identified a local change agent who knew the politics and culture as well as had an inside to the local company. Such local change agents were in many cases informal leaders with a large network and informal influence in the local organisation, such as a secretary. The change strategy was to treat the change recipient not as a counterforce to change but instead as a resource for change. This suggests that concepts like change target (Armenakis et al., 1999) or change recipients (Kanter et al., 1992) can be misleading as they indicate that targets and recipients are passive receivers of change. These concepts fail to a significant degree to acknowledge that the agency of change can stem from the employees themselves (see e.g. Caldwell, 2006, p. 32). In all, change of common interest demonstrates the interactional and multidimensional nature of IT-enabled change, with its political and supportable activities performed by multiple actors using multiple tools in an on-going practice.

Common Behaviour

The fourth level of change is labelled *common behaviour*, as it aims to secure the recipients adoption of and adaption to the implemented change. In other words, the fourth level of change strives towards making sure that the change recipients have established a habitual new behaviour aligned with the implemented IT-enabled change. This level of change differs from the others in that it is performed after the change project is implemented. The temporal aspect of common behaviour is of central concern as behavioural change takes time.

The activities performed here are *stabilising* activities. They consist of different types of remote or direct communications, discussions, and monitoring activities, enabled by tools such as different forms of KPIs.³⁴ The role of the agent at the common behaviour level is to be an *observer*, and occasionally an *intervener* if things go wrong. Change is deemed successful when long-term and iterative behaviour of recipients is ascertained, and the change project ends.

The framework in a broader perspective

Analytically, the framework follows a cyclic trajectory. When an organisation starts an IT-enabled change project it begins by trying to establish a common ground, and then a common meaning. This is followed by activities attempting to establish a common interest and

finally securing a common behaviour. Later, when the organisation starts a new IT-enabled change project, they begin by reassessing the extent of the common ground.

Change that requires slight or simple adjustments to practices might only require the first level of change, where structure has primacy over actors, and where activities are cognitively/analytically oriented. But as change grows in complexity by requiring more radical alterations of local practices—such as implementing an ERP system and becoming transformation rather than change—the importance of actors increases, as well as the interactive, emotional and political dimensions of the change. In the most multifaceted level of change, common interest, the success of the change relies heavily on the interplay between the actors and the structural tools that they use. That is, as change shifts towards common interest it becomes more situated and contextually sensitive.

In the case of Ericsson, the transformation was successful because they realised that IT-enabled change requires more than the tangible and intangible structures of common ground.³⁵ They spent resources on trying to achieve a greater amount of common meaning and a greater amount of common interest among the F&A employees. This was accomplished by having change agents out in the sub-units in order to perform translational and relational activities. Ericsson focused on the combination of actors and structures, realising that IT-enabled change is more than just structures. Conversely, IT-enabled change projects that fail frequently do so because they focus too much on the structures that are dominant during common ground and common behaviour (e.g. the material aspects of technology and KPIs). Such organisations fail to realise that successful IT-enabled change also calls for the more social and actor oriented activities of common meaning and common interest.

In all, the framework can be used as a sensitising device for IT-enabled change as it *explains that the different levels of organisational transformation require different roles to be played, different skills to be applied, different activities to be performed, and different structures to be used.*

Because of the sequential nature of the framework, and because of the resemblance between the level common behaviour and the traditional change model of unfreeze-change-refreeze, the framework can be criticised for following the logic of the rationalist discourse (see Section 2.7). This is however simply not the case as, to start with, the framework

is cyclic and continuous rather than being a single linear sequence towards an end-state.

Second, the framework highlights how different levels of change require different types of roles, skills, tools, and activities. For example, common ground consists of transactional activities that are one-way oriented (e.g. message of change communicated by email), translational change activities are two-way oriented (e.g. teaching and translating activities), and relational change is constituted by more intense and multidimensional interplay between different actors (e.g. negotiation and networking activities).

Third, there may be some elements of the rationalist discourse, especially in common ground and common behaviour, but there are also elements of other types of discourse and perspectives of change. For example, the dispersalist discourse (presented in Section 2.7.1) is present in common interest by the importance of empowered change recipients who work as change agents. In other words, the framework shows how different types of change discourse and perspectives are present at different levels in the change process. This claim is similar to the discussions in organisational theory (e.g. Berglund and Werr, 2000; Czarniawska, 2003; Czarniawska and Sevón, 1996). For instance, Berglund and Werr contend that business discourses of change are characterised by the dichotomy of a rationalistic and a normative/pragmatic myth. They argue that the myths are incommensurable, but in spite of this, they co-exist in the practice and discourse of change.

Fourth, the framework does not imply that stability and change are mutually exclusive but rather they come about simultaneously and are part of the same process (see Section 2.4). The reason for this is that “*change may be necessary (things will have to change) to maintain the appearance of rationality and to preserve control by the powerful members of the organization (so that things stay as they are)*” (Burns and Scapens, 2000, p. 22).

Fifth and foremost, the framework underlines that leading change is less one-dimensional than earlier research would have us believe. Or as Caldwell notes:

Essentially what is missing from this model is a relational, interactional or broader practice/discourse-based understanding of organizational change as processes in which multiple change agents enact their own goals, interests or values as potentially autonomous actors in an open dialogue” (2006, p. 31).

As Section 2.7 points out, and as displayed in the framework, earlier change research has mainly focused on common ground and common behaviour. It is precisely at these levels of the change process that structures prevail over actors. In this way, earlier research has failed to acknowledge the translational, interactional and relational activities that exist *between* common ground and common behaviour. The reason for this might be that researchers, and managers, need considerable courage and skill to manage the softer side of IT-enabled change. Therefore, this thesis contributes by unmasking the more social- and actor-oriented activities taking place between the levels of common ground and common behaviour.

5.3.2 From the vantage point of structures

To answer the research question in depth this and the following section will elaborate and ground the findings of the thesis by explaining how structures and actors respectively influence IT-enabled change.

From the standpoint of structures, the thesis demonstrates that there are both tangible and intangible properties of structure that influence change. In the case study, the intangible properties of structure were mainly represented by the practice-based culture of F&A employees, and the tangible properties were mainly provided by the ERP system. The practice-based culture functioned as a positive force making it easier to lead global change across cultures as it supplied a common ground among the recipients which was influenced and reinforced by the ERP system.³⁶ For example, the practice-based culture facilitated the recipients understanding of the problems, background factors and proposed change solution. Similarly, the ERP system afforded a common “language” (e.g. F&A terms and abbreviations) and a common blueprint (e.g. standardised F&A processes) enabling the employees to communicate on a global basis and supporting the practice-based culture. As such, the two structures provided both a common ground as well as epistemic boundaries for the recipients that were used as a resource by the change agents.

As the above framework indicates, sharing a common ground does not necessarily imply that change recipients will agree on the same meaning of IT-enabled change, as they regularly have interpretive differences and incompatible meaning structures. Neither does it imply that change recipients have the same interest in changing their behaviour and aligning it with the new practices connected to the new structure. Such a

development requires the coupling of structural resources with the activities of actors, as structure has its restrictions. The rationale is that the establishment of common meaning by translational activities, and common interest by relational activities, are human and socially oriented. Therefore, structure has its limits since it needs to be combined with actors. Structure may generate a foundation to build upon, but calls for additional activities that are more situated, social, and human oriented.

Still, structures are imperative because change becomes drastically problematic if there is no common ground among change recipients. Common interest and common meaning are also difficult to build without some sort of a common ground. This is why practice-based culture combined with an ERP system can prove to be powerful resources in large-scale and global organisational change. In this way, structure can be compared to a foundation of a house: *it is simply not advisable to build a house without a solid foundation.*

Structures supply a pattern for action that is constantly present in the ongoing practice of actors, be it intangible such as practice-based culture or tangible such as ERP systems. As such, structure may influence behaviour indirectly, but is unable to determine it in any direct way. In this manner, structures, much like practice-based culture and ERP systems, resemble the idiom “you can lead a horse to water but you cannot make it drink” (as also noted by Batenburg et al., 2008).

5.3.3 From the vantage point of actors

From the vantage point of actors, the thesis has illustrated how change agents are embedded in a historical and social context. They are embedded in history because their power to implement change relies partly on their experience and know-how of the organisation they intend to change. They are embedded in the social context because their ability to execute change is related to their ability to perform the aforementioned translational and relational activities with the employees.

In such embeddedness, the change agents perform activities that contain both cognitive/analytical and emotional elements. However, these cognitive/analytical and emotional activities have little influence on change if they are not complemented by structural tools. Likewise, the tools have little influence in themselves—are not magic wands—and require the skills of the change agent. Thus, the cognitive/analytical and

emotional activities of the change agent consist of the interplay between internal skills and external structural tools.

The internal skills were represented in the given case study by, for example, the actors' experienced-based knowledge (know-how) of local and global F&A practice, people management skills, and political skills. The structural tools were complex or simple tools that were part of the daily practice, such as the ERP system, business cases, service descriptions, process maps, and visual representations of the change.

As Polanyi (1958) points out, the relationship between the actors' internal skills and structural tools is similar to that of a blind man's stick or the hammer of a carpenter. The stick or the hammer becomes an extension of the person, which power hinges on the internal skills of the same person. In this way, the combination of the internal skills of the agent, and the external tools used by the agent become an extension of the agent. The tools and skills are dependent on each other as the tool is the agent's lever for organisational change, the power of which is determined by the agent's skill.³⁷

5.3.4 Conclusion

Weick's and Quinn's seminal work contend that "*change is not a linear movement through the four stages but a spiral pattern of contemplation, action, and relapse and then successive returns to contemplation, action, and relapse before entering the maintenance and then termination stages*" (1999, p. 373). This thesis validates this claim by showing how Ericsson's technochange was an upward spiral driven by pre-understanding, experienced-based knowledge, and trials across time. The thesis also develops their claim in two primary ways. First, this thesis extends the notion of *contemplation* by illustrating how such activity consists of both cognitive-based knowledge and emotional-based insights. Second, the thesis develops the notion of *maintenance* by showing that in IT related change such activity is less of an isolated, fixed and on/off activity, and more of a continuous activity without an end-state. Altogether, this thesis provides new knowledge of what the spiral of technochange looks like, and how it emerges in practice, through the continuous interplay between actors and structures across time.

Within technochange, the individual actors are important, as their ability to make a difference is not proportional to their numbers. Indeed, they by themselves are vital, yet, what is of a more central concern is what

they have in common. This thesis suggests that different forms of actor's commonality, during different phases of a transformation, are imperative for the success of leading large-scale IT-enabled change (i.e. common ground, meaning, interest, and behaviour). However, this is not to say that facilitating change is equal to making sure that actors share all things. Instead this thesis argues that actors more or less always have some attributes and things in common that bind them together, and that the different varieties of such commonality can be used as a resource in the practice of technochange.

In conclusion, there is some accuracy to Ericsson's recurrent statement that in the case of global transformation: *it's all about people*. Structures, however, play a vital role as enablers, but their potential for leveraging organisational change relies on their interplay with the actors. Structures are essential because they provide the power that influences the effectiveness and efficiency of the change, but such power is nevertheless limited if it is not combined with the actors. In this way, the structures are the "order-qualifiers", and the actors are the "order-winners", which are intimately connected in large-scale IT-enabled change.

5.4 Managerial implications

Global organisational change is often a process of two-steps forward and one-step back where ideas, emotional energy and commitment together with supporting structure constitute the force propelling it forward. Since change is uncertain in nature, the design of complex and global IT-enabled change is characterised by trials across time within a broader framework of change. Such uncertainty requires prior understanding and experience, as well as openness for learning during the course of the change journey. Most essential is the ability to reassess and try another solution if a strategic decision is deemed unsuccessful.

Managers should seriously reflect upon how they conceptualise and manage IT and organisation in change. This is important because IT and organisation are in many cases dynamic and unstable entities that change continuously as new features are added to IT and as new practices emerge in the organisation. What they are today is not what they will be tomorrow and such moving targets should be managed accordingly. Therefore, IT-enabled change should be seen as a continuous and open-ended programme without a fixed end-state.

Furthermore, IT and organisation are connected and intertwined, constantly influencing each other. Therefore, in order to obtain the greatest possible benefits from IT-investments, complementary changes to the organisation are required. In other terms, organisations more or less have to change to realise IT-enabled advantages successfully.

As a result, and with a more granular perspective, IT-enabled change translates into attentiveness to organisational change issues and how they are managed and led, as the word technochange indicates. Leading such change is in practice much like performing a “contact sport” because it consists of close and on-going interactional and relational activities between employees with multiple roles.³⁸ These activities are not only intellectual but also emotional and therefore change agents should have the capacity to manage such activities of both natures.

Managers should also ponder their conceptualisation and treatment of change agents and recipients. Such concepts might not be as monolithic, stable, and isolated as one might initially presume. The thesis shows that there are benefits to be gained if change recipients are given responsibility for, and ownership of, change, while the change agent coaches and supports the process. Additionally, if the change agent has been a change recipient during or before the change, he or she will be more skilful in performing translational and relational activities. In doing so, the roles in organisational change are hybridised and the change is not necessarily something that goes on “out-there” but instead becomes something that exists “in-here” that all employees partake in.

The principal finding of the thesis, The Commonality Framework for IT-Enabled Change, contributes to practice because it can develop, assess, and improve IT-enabled change projects. By using the framework as a sensitising device, it can detect issues that are of central concern when leading IT-enabled change. For example, every level of change complexity in the framework raises different types of questions:

- Change of common ground: is the IT that we intend to implement so powerful that it will profoundly change the way people work so that we need to go further and conduct translational, relational, and stabilising activities connected to the higher forms of change complexity?
- Change of common meaning: will the transformation span over many different resolute subcultures within the organisation that

- might have interpretive differences and incompatible meaning structures?
- Change of common interest: do the change agents have sufficient coaching skills to manage the feelings, emotions and motivation of the change recipients during the course of the change journey?
 - Common behaviour: do we actually discuss and monitor changed behaviour across a broader time span?

Altogether, the thesis shows that people are of great significance in organisational change. People are, however, different from one another. Their multidimensional nature means that they will not all be equally successful at playing different roles or in their different skills sets. Also, they will use structure differently and will vary both in their intellectual and emotional orientation in relation to organisational change. People should therefore be managed accordingly.

Additionally, the ideas people provide are crucial because change always starts with a thought. In the case of Ericsson, the transformation centred on several ideas. Such notions as, for example, an idea of transformation, an idea of a global organisation, and an idea of global standard processes and governance.

Such soft factors of change, consisting of people and their ideas can, however, not be realised without the hard factors of change (e.g. the functionality of a IT-system, structure, economical figures, planning, vision, goals, change message, feedback etc.). In this way, the hard factors are the “order-qualifiers” whereas the people who use them are the “order-winners” in IT-enabled change. A hammer in itself is useless unless it is combined with an experienced and skilful carpenter.

In conclusion, if managers are willing to accept the challenges of leading IT-enabled change, they should do so not only relying on the comforting hard factors of change alone. It is also imperative to take into consideration the soft factors, such as people and their ideas. Such an approach, however, requires a considerable amount of both skill and courage.

5.5 Future research

Pettigrew notes (1987, p. 667) that “*One swallow doesn't make a summer*”. Therefore, the natural progression for future research would be similar

investigations in other contexts and using multiple case studies. Future research could also include quantitative methods or action research and more observations. The latter, however, is deemed difficult, as contemporary work is becoming virtualised and unbounded by time and space.

The present research answers certain questions, but in doing so, it also creates new ones. The findings render new research questions such as: How can IT be a resource for change, and how does it relate to actors in other contexts and professions? How can other types of structural tools in other professions elevate organisational change, and how do they interplay with actors? How do change agents manage the feelings and emotions of change recipients? What challenges are faced when driving global IT-enabled change in other professions? How, and to what extent, is the F&A profession transforming due to ERPs capacity to automate, informate and virtualise work? What are the long-term organisational and behavioural effects of relying on an ERP system? Can the pattern of an upward spiral of technochange which is reported in Paper I be replicated in other case studies and contexts? If so, what will this imply for the practice and theory of IT-enabled change as a whole? What other activities, tools, and skills can contribute to a greater degree of common ground, meaning, interest, and behaviour? Most important, can The Commonality Framework for IT-enabled Change stimulate discussion and future research that will steer IT-enabled change towards a more balanced theoretical view of actors and structures?

The last issue that remains is the relevance of future change studies. Recent empirical reports from IBM on the subject of “The Enterprise of the Future” (2008a; 2008b) contend that companies that are financial outperformers treat the management of change as a core competence and nurture it as a professional discipline, and not as an abstract art. The reports further allege that not only are the soft factors of change, such as people and their mindsets, attitudes and culture, the hardest to get right, but the reports also claim that the outperformers develop successful skills and tools. The reports conclude that it is not the technology *per se* that is the winning criteria but the way organisations manage people. The issue not addressed in these sweeping reports is how exactly such management should be executed in practice. The research herein provides some, but by no means all the answers to this question, and numerous questions are yet left to be pursued.

NOTES

1. The word “synoptic” is a keyword in Tsoukas and Chias seminal paper for explaining the dominant view of change: “*Synoptic accounts view change as an accomplished event whose key features and variations, and causal antecedents and consequences, need to be explored and described. Such knowledge is generated by approaching "change" from the outside and, typically, it takes the form of a stage model in which the entity that undergoes change is shown to have distinct states at different points in time*”. (p. 570). The Oxford English Dictionary Online explains the word synoptic as “*Pertaining to or forming a synopsis; furnishing a general view of some subject; spec. depicting or dealing with weather conditions over a large area at the same point in time*”. In this way, a synoptic account can be compared to a weather report that provides information about the overall picture but offers limited information on what happens inside a specific cloud.
2. It is important to point out that the purpose is not to judge the *outcome* of change but to seek an understanding.
3. The concept *agency* in this thesis denotes the source or capacity to change social structure in which the concept of actor is an attribute of agency, which can be an individual, group, organisation, or artefact that has such capacity. When the concept of *agent* is used, it refers the role concept of *change agent* (Caldwell, 2003; Caldwell, 2006). A change agent is here the actor or actors that initiate, design, sponsor, and implement change, or in other words: “*those who are responsible for identifying the need for change, creating a vision and specifying a desired outcome, and then making it happen*” (Ford et al., 2008, p. 362). The change agent is a role that is played by various actors along the change journey. Such concept can also be distinguished from the role of *change recipients* that in this thesis denotes the employees that adopt and adapt to change (Kanter et al., 1992). The roles of agent and recipient are, however, often less clear-cut, monolithic, and isolated than one might initially presume. This is due to, as the findings of this

thesis demonstrate, that change recipients can be used as a source for change by treating them as change agents. The rationale, and the change strategy for Ericsson, is that the change recipient is not treated as a counterforce against change (as commonly done in many change projects) but as a resource. Such findings suggest that common concepts as change target (Armenakis et al., 1999) or change recipients (Kanter et al., 1992) can be misleading as they indicate that these individuals are passive receivers of change. To some extent the concepts of target and recipient fail to acknowledge that the agency of change can originate from the employees themselves (see e.g. Bartunek et al., 2006; Caldwell, 2006, p. 32; Stensaker and Falkenberg, 2007). Besides the conceptualisation of agency, actor, change agent and recipient, this thesis also makes a distinction between the tangible properties of structure (e.g. functionality of an ERP system) and the intangible properties of structure (e.g. practice-based culture, mind-set, ideas). Furthermore, depending on the academic discipline, theory used, and levels-of-analysis, the concepts of agency, actor, and agent are often used when referring to similar phenomena. For example, actor-network theory in information systems use the word actor and actant (Mutch, 2002). Critical realists within sociology often use agency (Archer, 1995). Nevertheless, the thesis herein subscribes to the above definitions. For details on how the concepts structure, agency, actor, actant and agent is used and applied in social science see Ritzer (2008) for a general discussion, and Sztompkas (1991) and Archer (1995) for an in-depth elaboration.

4. Such distinction is theoretical and analytical and is hard to distinguish directly in the empirical world. For example, for managers the concept of structure commonly denotes formalised organisational structure.
5. See note 3.
6. This story is used here only as a means of trying to clarify specific aspects of organisational change. The thesis does not subscribe to the somewhat pessimistic perspective of humans and change that the story provides.
7. As Orlikowski (1992) notes, early technology change research, such as Woodward (1958) and Perrow (1967), has predominately focused on the “hardware” side of technology, i.e. “*the equipment,*

machines, and instruments that humans use in productive activities, whether industrial or informational devices [...] In the "hardware" view, technology is a meaningful variable only in those organizations that employ machinery in their productive activities" (p. 399). IT, however, differs from such technology in that it is used in almost every contemporary organisation and that it, to a greater extent, includes more elements than the artefact of technology *per se*. This being the case as IT is intimately interlinked to broader issues such as knowledge, communication, and organisation. This is a common assumption in the work of contemporary scholars. For example, Kallinikos (2001) shows how IT is closely related to the question of contextualised knowledge and de-contextualised information: "*The information that computer-based systems generate is often de-contextualised, i.e. it has been taken away from the context that it now describes or refers to. However, in order to be interpreted, information has to be re-contextualised, i.e. the context to which it refers must be reconstructed in the minds of the people that deal with this information*" (p. 62). Similarly, Orlikowski (1992) and Barley (1986a) have both illustrated how IT gives an occasion for structuring that is dependent on social, historical, and contextual factors. See also Agarwal and Lucas (2005).

8. Paper V explores the concept of *emergent view* in research using bibliometric methods. This concept became popular with Markus and Robeys paper (1988) and the thesis treats this concept as very similar to the other concepts presented here (technochange, emergent view, affordance, mangle of practice, the practice-lens, and social-material practices), for the reason that they all have the same perspective of treating the causal structure of IT as dynamic (Orlikowski and Scott, 2008). Therefore, in essence, Paper V explores to what extent research has used non-deterministic or non-voluntaristic stance towards IT-enabled change across time. The paper uses the term *emergent view* because it is one of the first popular concepts highlighting that IT-enabled change is an outcome of the interaction between actors and structures. One of the contributions of the paper is that it shows that the emergent view and similar perspectives are essential for understanding IT-enabled change.
9. It is important to note that the concept of technochange in this thesis is similar to the aforementioned concepts in that they are grounded in the same perspective that IT-enabled change comes

about as interplay between agentic and structural properties. The technochange perspective differs from the others presented as it more strongly underlines that IT can trigger organisational changes (that then comes about as an interplay), that such change requires spending resources on both the material and social side of IT-projects, and that technochange projects are continuous.

10. Not to do so would limit the understanding of the background factors of Ericsson's IT-enabled change.
11. The description of the ERP system focuses mainly on the efficiency aspects connected to F&A practices. There are however numerous implications of the ERP system connected to the effectiveness of the corporation as a whole (e.g. the capacity for the ERP system to not only automate but also to informate) but this is outside the scope of this thesis.
12. This thesis coins and develops the concepts of common ground, common meaning, common interest, and common behaviour that are part of "The Common Framework for IT-enabled Change", presented in Section 5.3. The word common is used in an analytical and theoretical sense. The framework, and its concepts, strives towards a greater degree of commonality but such development can never be accomplished to a full extent. The point is that the greater commonality there is the greater the likelihood of change acceptance, smoother change process, and a successful outcome (see Section 5.3 for details). This thesis also makes a distinction between the word *shared* and *common*. A group of individuals that share something have things in mutual to a greater extent than if they would have had things in common. Common simply means that a group of people have some attributes that binds them together. In this way, the word common is a more "looser" term that signifies a weaker connection between actors, compared to shared. Lee (2001, p. 24) provides an example of the difference between common and shared knowledge that clarifies the distinction: "*Common (or background) knowledge is that information which members of a particular community assume to be held common by virtue of the fact they have very similar background or up-bringing. For example, I accept the information that London is in the south of Britain while Edinburgh is to the north to be common knowledge between my brother (a Singaporean who has never been to Britain) and me, even though we have never talked about the relative locations of the two cities before. The reason is because we have very similar*

childhood and school experiences. But once we have talked about taking a possible holiday together to the two cities and about whether we should rent a car or take the train up and down Britain, then that information about the locations of the two cities becomes part of our shared knowledge”.

13. Change recipients in this thesis denote the employees that adopt and adapt change (Kanter et al., 1992).
14. See note 3.
15. This is especially important in contemporary organisation that uses IT, as the technology often renders role hybridisation (Caglio, 2003). That is, IT, such as ERP systems, enables employees to change and enlarge their practices in such a way that they take on more and different roles than earlier.
16. The primary focus in this thesis is not on the change recipients but instead the managerial viewpoint of how to lead IT-enabled change. Therefore, the transformation is primarily explored through the eyes of change agents. A few change recipients, however, were directly interviewed (interview 13, 15, 18, 20, 21, 23, see the Appendix). In addition, some of the change agents had earlier been change recipients before, or early in, the transformation. The change recipients are reflected indirectly in the findings of the thesis by the depiction of the practice of the change agents. For example, one agent had performed over 40 F&A migrations worldwide and told stories during the interviews about what worked and what was less successful in managing change recipients in all his change projects.
17. There are of course other perspectives in organisational change that have influenced the practice of change agents, as shown in Section 2.7.1. The planned change perspective can be grouped within the aforementioned rationalist discourse. Compared to the other discourses presented, the rationalist discourse is the most prominent and influential in IT-enabled change (see below text in this section). This is why the primary focus here, and in the thesis as a whole, is on this planned and rationalistic perspective. The present thesis does not set out to prove this perspective false but on the contrary show how it can be combined with other perspectives. The thesis does so by developing “The Commonality Framework for IT-Enabled Change” that incorporates other perspectives as well, see Section 5.3.

18. Besides the products reported here the firm has also manufactured other important products (Jacobæus, 1976; Meurling and Jeans, 2000). For example, phone manufacturing such as the Dachshund in the 1880s, the Bakelite telephone in the 1930, the Ericofon or “Cobra” in the 1950s, the Ericovox and the Dialog phone in the 1960s. Many of these products were considered attractive not only because of their quality but also because of their original design. Additionally, Ericsson has supplied important products within radar and radio technology for civil and defence use—such as the Radiola in the 1920s and police radio in the 1940s—and attempts were made to enter the information systems industry in the early 1980s.
19. As Paper I illustrates, Ericsson’s earlier attempts for implementations were unsuccessful mainly because they continuously tried to adapt the system to local, heterogeneous and un-standardised activities, consequently leading to a fragmented system (a common problem in most organisations at that time). As a result, the implementation projects were put down in the late 1990’s. To a greater extent than earlier, the new attempt to implement a common ERP system was driven by a strategy to control the ERP system centrally, avoiding a “drift” in information infrastructure. For example, in the earlier information system an account could be opened by using the local information system. While in the new common SAP R/3, opening an account could only be done centrally in Stockholm.
20. Such strategy and approach towards IT-enabled change is often what is neglected in newspaper articles connected to Ericsson’s SAP implementation (Ekstrand, 1998a; Ekstrand, 1998b; Ekstrand, 2007). There are, however, some articles that give a more nuanced picture (Danielsson, 2007; Magnusson, 1998). These notions of strategy and approach towards IT-enabled change are very relevant in other information system projects as well. For example, a recent newspaper article (Holmström, 2009) reports that the Swedish minister of defence has had a very high IT-expenditure and largely failed in their attempts to implement their ERP system named Prio. The news article concludes with a statement from an independent consultant connected to the project: “*the defence ministry believes that they have bought a golden key that solves everything*” (Holmström, 2009, p. 2). In other words and if the speculations are true, they presumably treated IT as a

monolithic and isolated tool. A tool that, when implemented, will take care of itself, spreading change in the organisation, as employees automatically adapt to the new circumstances (see also Harris and Davenport, 2006).

21. For example, in 2006, during the transformation, the number of accounts in the chart of accounts had decreased from 150,000 to 4,000.
22. Because the thesis focus on successful organisational change—attentiveness to what facilitates rather than hinders change—the thesis contributes to the new field of positive organisational scholarship (Cameron, 2008; Ghoshal, 2005; Piderit et al., 2007; Quinn et al., 2003), which focus on the neglected area of *”the investigation of positive dynamics, positive attributes, and positive outcomes in organizations”* (Cameron, 2008, p. 7).
23. For a more detailed description of the data sources see the Appendix.
24. The five interviews conducted in 2009 consisted of a three-hour long focus group session with the most significant respondents. On this occasion the interim findings for the whole thesis were not only discussed, developed, and validated, but also grounded and compared to the F&A departments present and future IT-enabled change projects, as well IT-enabled change projects in other Ericsson departments. See Section 4.6.
25. The KPIs that Ericsson used varied from being aggregated such as number of accounts-payable-invoices that were managed by an SSC during a period, to more specific ones such as quality of feedback between a customer and an SSC. One respondent explained Ericsson’s approach towards KPIs: *“For example, if you take a bank transaction system the goal is not to have the company sign off that it has participated in the new technological solution and that they use it. The goal is instead that we see X percentage of the bank transaction through the new bank. There is a big difference between implementing a solution and getting the people to change their behaviour so that they start using the new solution: it is really important.”*
26. This is an empirical example how temporal bracketing can unveil changes between brackets. See Section 4.5.3.

27. These notions of treating IT-enabled change projects as continuous projects and the dynamic stance towards technological and organisational properties of change is further elaborated in Sections 2.5, 5.3, 5.4, and Papers I, IV, V.
28. These are examples of the importance of translational and relational activities as well as the importance of both cognitive/analytical and emotional elements in the practice of the change agents. See Section 5.3 and Paper II for further details.
29. Temporal bracketing is a well established method within process analysis. The strategy entails decomposing the process of change into different brackets where one bracket is compared to the other. Every bracket may or may not be conceptual significant and they become a unit of analysis across time (Langley, 2008). The temporal strategy is especially powerful when it is combined with a narrative strategy. This is because the duo gives richness to events as well as putting them into perspective by viewing, and comparing them as sequence of events that occurs over time. Such a combination aids the illumination of mutual shaping between individual action and structure (Pettigrew, 1985). For instance, narratives from respondents of Ericsson in an interview performed in an early bracket are subsequently identified as part of the structures in a later bracket. In other words, narrative strategy gives variety and linkage between events, at the same time as temporal-bracketing enables, as Langley (1999) puts it, *“the explicit examination of how actions of one period lead to changes in the context that will affect action in subsequent periods”* (p.703). This is an important methodological aspect since the present research aims to understand the moving target of change and IT.
30. It is important to note that: *“These periods do not have any particular theoretical significance. They are not “phases” in the sense of a predictable sequential process but, simply, a way of structuring the description of events”* (Langley, 1999, p. 703).
31. The fellowship lasted until the end of 2006.
32. Papers IV and V are placed at the end of the thesis not only because they are an extension and expansion of the theories presented earlier in the thesis but also because to do otherwise would mean to obstruct the empirical narrative concerning the interplay between actors and structures in the first three papers.

33. The current illustration is the surface of a more complex framework that is mainly elaborated by Papers II and III.
34. See note 25.
35. See Section 3.3.
36. The thesis draws attention to the importance of considering the nature of the practice of change recipients, as it may or may not form a practice-based culture that can create a common ground. The case study, however, focus on the F&A profession that, as such, is more coherent and less fragmented than other professions due to, for example, the language of bookkeeping (e.g. the standard of double-entry bookkeeping), global standards, code-of-ethics, and institutional and historical legacy. Other professions, such as sales employees, might have a different structure because they are more dependent on submarkets, external focus, and have less information system dependency (Lawrence and Lorsch, 1967). Because of this contextual dependency, a profession such as sales employees might—on a large or global scale—have a weaker practice-based culture and consequently less of a common ground among them. See Paper III for details.
37. The importance of skills and tools is often neglected in research because science tends to apply a less practice-based perspective (By, 2005; Carlile, 2002; Carlile, 2004; Hughes, 2007; Whittington et al., 2006).
38. Also noted by Markus and Benjamin (1996; 1997) and Miller (2002).

APPENDIX

LIST OF INTERVIEWS

	Date	Respondent	Location	Responsibility
1	20060306	Claes Eriksson	Uppsala	Financial control and performance management
2	20060331	Claes Eriksson	Uppsala	Financial control and performance management
3	20060421	Stig Christensen	Kista	Global F&A Operations
4	20060421	Claes Eriksson	Kista	Financial control and performance management
5	20060503	Yngve Broberg	Kista	Global SSC Management
6	20061004	Monika Nordlund	Kista	Finance Process Management
7	20061006	Anders Beckius	Uppsala	Internal support and strategy
8	20061208	Claes Eriksson	Uppsala	Financial control and performance management
9	20061212	Monika Nordlund	Kista	Finance Process Management
10	20070228	Sander Lund	Kista	Transformation Manager, project manager and Manager of Global General Accounting & Closing (GA&C) Support
11	20070319	Michael Andersson	Kista	Manager for global initiative and project managers
12	20070324	Mark Rejjendorf	Kista	Director of the Global F&A Transformation Program
13	20070420	Gunilla Fahlén	Kista	Project manager
14	20070608	Claes Eriksson	Uppsala	Financial control and performance management
15	20071128	Gunilla Fahlen	Kista	Project manager

16	20071107	Claes Eriksson	Uppsala	Financial control and performance management
17	20080417	Sander Lund	Kista	Global F&A Support
18	20080529	Jeroen Andreoli	The Netherlands	Global Project Office - Finance Global F&A Outside Sweden (telephone interview)
19	20080910	Maria Ma	SSC Beijing	SSC Manager Beijing
20	20080910	Stella Jin	SSC Beijing	Project manager
21	20080910	Sophia Cao	SSC Beijing	Global Assignment Process Expert
22	20080911	Maria Ma	SSC Beijing	SSC Manager Beijing
23	20080911	Pia Jing	SSC Beijing	Service Manager
24	20081212	Claes Eriksson	Uppsala	Financial control and performance management
25	20090616	Yngve Broberg	Kista	Head of Global Finance & Accounting
26	20090616	Stig Christensen	Kista	Head of Finance Process Management
27	20090616	Claes Eriksson	Kista	Performance Management
28	20090616	Anders Beckius	Kista	SSC Support
29	20090616	Karin Nagel	Kista	Performance Management

LIST OF INTERNAL DOCUMENTS

	Acquired	Year of creation	Source	Description	Number of pages	Classification ¹
0	20050906	2005	Stig Christensen	Aggregated and strategic transformation explanation.	11	S
1		2004	Claes Eriksson	Newsletters April – Dec. 2004	49	N
		2005	Claes Eriksson	Newsletters Jan. – Dec. 2005	135	N
		2006	Claes Eriksson	Newsletters Jan. – Dec. 2006	212	N
		2007	Claes Eriksson	Newsletters Jan. – Dec. 2007	176	N
		2008	Claes Eriksson	Newsletters Jan. 2008	18	N
2	20051127	2005	Stig Christensen	Aggregated and strategic transformation explanation	19	S
3	20060114	2005	Stig Christensen	Aggregated and strategic transformation explanation	18	S
4	20060331	2006	Claes Eriksson	Aggregated and strategic transformation explanation	12	S
5	20060331	2006	Claes Eriksson	Presentation master for transformation strategy	18	S
6	20060901	2005	Stig Christensen	Early strategic transformation explanation	13	S
7	20061006	2005	Anders Beckius	Aggregated and strategic transformation explanation	13	S
8	20061211	2004	Claes Eriksson	Early strategic transformation explanation. Global F&A Operations F&A transformation, Global and regional operating models.	5	S
9	20061213	2005	Monika Nordlund	Role description – Process Support	2	O
10	20061213	2005	Monika Nordlund	Role description – Process Expert finance Global FA	6	O

¹ N = Monthly newsletters for F&A employees

S = Strategy document (e.g. transformation guidelines or early strategy sketches of the transformation)

O = Organizational and policy document (e.g. role description or service agreement between local company and SSC)

Op = Operational document (e.g. business case, or for instance an implementation plan from a project manager)

					Operations		
11	20061213	2005	Monika Nordlund		Role description – Process lead Finance	3	O
12	20061213	2005	Monika Nordlund		Role description – Sub Process Lead- Finance	2	O
13	20061213	2004	Monika Nordlund		Role description - Manager FA Process Implementation and optimization	3	O
14	20061213	2006	Monika Nordlund		Change management/roles/implementation - Process Management Communications package	53	S
15	20061213	2005	Monika Nordlund		Role Description – FA Super User Finance	2	O
16	20061213	2005	Monika Nordlund		Process Projects – Finance Process Projects. Description of process organization.	20	O
17	20061213	2005	Monika Nordlund		Role Description - Local Process Driver and Demand Manager Finance	4	O
18	20061213	2005	Monika Nordlund		Role Description – ISIT coordination	3	O
19	20061213	2006	Monika Nordlund		Role Description – Manager Process projects	2	O
20	20061213	2006	Monika Nordlund		Role Description – Program Management	3	O
21	20070100	2006	Anders Beckius		Assignment specification model	3	O
22	20070100	2006	Anders Beckius		Interface and review schedule	4	O
23	20070100	2004	Anders Beckius		Service and Support Agreement (SSA) model for SSC-	4	O
24	20070100	2004	Anders Beckius		Pricing Schedule	9	O
25	20070100	2006	Anders Beckius		Quality feedback template	3	O
26	20070100	2006	Anders Beckius		Scope of services, Global F&A Operations	9	O
27	20070100	2006	Anders Beckius		Strategy for service management framework	18	S
28	20070100	2006	Anders Beckius		Service report model	2	O
29	20070100	2006	Anders Beckius		SSC Service Management Framework	14	O
30	20070307	2006	Sander Lund		Business case US CA to Dallas and US AP to Manila	7	Op
31	20070307	2006	Sander Lund		Business case of market unit Brazil	5	Op
32	20070307	2005	Sander Lund		Global Finance & Accounting	6	Op

					F&A Transformation Program Update & Experiences		
33	20070307	2006	Sander Lund		The deviations from the SSC standard service description	3	Op
34	20070307	2006	Sander Lund		Service Description Credit to Cash (CrTC)	20	Op
35	20070307	2006	Sander Lund		The deviations from the SSC	3	Op
36	20070307	2006	Sander Lund		Migration. Transformation Americas. High Level Planning	20	Op
37	20070307	2006	Sander Lund		Service Description for General Accounting & Closing (GA&C)	38	Op
38	20070308	2006	Åke Magnusson		Ericsson's approach to meeting the requirements of Sarbanes Oxley	16	S
39	20070322	2007	Michael Andersson		Change management. Global Initiatives and project managers.	43	Op
40	20070323	2007	Mark Reijndorf		F&A Transformation Program Completed - It's all about people	2	S
41	20070323	2006	Mark Reijndorf		Conference presentation of F&A transformation	23	S
42	20070420	2007	Gunilla Fahlén		ABS Program 2007 Kick-Off Rijen April	70	Op
43	20070420	2007	Gunilla Fahlén		ABS Info for EAS	20	Op
44	20070322	2006	Michael Andersson		Local technology implementation of OCR technology in collaboration with IBM.	10	O
45	20070322	2006	Michael Andersson		OCR workflow definitions in SAP	5	O
46	20070315	2007	Michael Norrell and Andreas Jansson		Introduction to Sarbanes Oxley related work at Ericsson	88	S
47	20080420	2008	Sander Lund		Global F&A Support - This is our way of working	10	Op
48	20080911	2008	Maria Ma		SSC Beijing. Description of services, strategy and KPIs.	23	S

49	20080224	2008	Claes Eriksson	Finance transformation 2008-2009, Program Structure.	9	S
----	----------	------	----------------	--	---	---

REFERENCES

- Agarwal, R. & Lucas Jr, H.C. (2005). The information systems identity crisis: focusing on high-visibility and high-impact research. *MIS Quarterly*, Vol. 29, No. 3, pp. 381-398.
- Alvesson, M. (2003). Beyond neopositivist, romantics, and localists: a reflexive approach to interviews in organisational research. *Academy of Management Review*, Vol. 28, No. 1, pp. 13-33.
- Archer, M.S. (1995). *Realist social theory: the morphogenetic approach*. Cambridge: Cambridge University Press.
- Archer, M.S. (2000). *Being human: the problem of agency*. Cambridge: Cambridge University Press.
- Argyris, C. (1982). *Reasoning, learning, and action: individual and organizational*. San Francisco: Jossey-Bass.
- Argyris, C. (1990). *Overcoming organizational defenses: facilitating organizational learning*. Boston: Allyn and Bacon.
- Argyris, C. & Kaplan, R.S. (1994). Implementing New Knowledge: The Case of Activity-Based Costing. *Accounting Horizons*, Vol. 8, No. 3, pp. 83-105.
- Armenakis, A. & Harris, S. (2002). Crafting a change message to create transformational readiness. *Journal of Organizational Change Management*, Vol. 15, No. 2, pp. 169.
- Armenakis, A., Harris, S. & Feild, H. (1999). "Paradigms in organizational change: change agent and change target perspectives" IN Golembiewski, R. (Ed.) *Handbook of Organizational Behavior*. New York: Marcel Dekker, pp. 631-658.
- Arnold, V. (2006). Behavioral research opportunities: Understanding the impact of enterprise systems. *International Journal of Accounting Information Systems*, Vol. 7, No. 1, pp. 7-17.
- Attman, A., Kuuse, J. & Olsson, U. (1976). *LM Ericsson 100 år. Bd 1, Pionjärtid, kamp om koncessioner, kris: 1876-1932*. Stockholm: Telefon AB LM Ericsson.
- Attman, A. & Olsson, U. (1976). *LM Ericsson 100 år. Bd 2, Räddning, återuppbyggnad, världsföretag: 1932-1976*. Stockholm: Telefon AB LM Ericsson.
- Avgerou, C., Ciborra, C. & Land, F. (2004). *The social study of information and communication technology: innovation, actors and contexts*. Oxford: Oxford University Press.
- Avgerou, C. & Mcgrath, K. (2005). "Rationalities and Emotions in IS Innovation" IN Howcroft, D. & Trauth, E. M. (Eds.), *Handbook of Critical Information Systems Research: Theory and Application*. Cheltenham: Edward Elgar, pp. 299-324.
- Avgerou, C. & Mcgrath, K. (2007). Power, rationality, and the art of living through socio-technical change. *MIS Quarterly*, Vol. 31, No. 2, pp. 295-315.
- Barley, S.R. (1986a). Technology as an occasion for structuring: evidence from observations of CT scanners and the social order of radiology departments. *Administrative Science Quarterly*, Vol. 31, No. 1, pp. 78-108.
- Barley, S.R. (1986b). "Technology, Power, and the Social Organization of Work" IN Bacharach, S. B. & Nancy, D. (Eds.), *Research in the Sociology of Organizations*. Greenwich, Conn.: JAI Press, pp. 33-80.

- Barley, S.R. & Tolbert, P.S. (1997). Institutionalization and Structuration: Studying the Links Between Action and Institution. *Organization Studies*, Vol. 18, No. 1, pp. 93.
- Barrett, M., Grant, D. & Wailes, N. (2006). ICT and Organizational Change. *Journal of Applied Behavioral Science*, Vol. 42, No. 1, pp. 6-22.
- Barrett, M. & Walsham, G. (1999). Electronic Trading and Work Transformation in the London Insurance Market. *Information Systems Research*, Vol. 10, No. 1, pp. 1-22.
- Bartlett, C.A. & Ghoshal, S. (1989). *Managing across borders: the transnational solution*. Boston, Mass.: Harvard Business School Press.
- Bartunek, J.M., Rousseau, D.M., Rudolph, J., W. & Depalma, J., A. (2006). On the Receiving End: Sensemaking, Emotion, and Assessments of an Organizational Change Initiated by Others. *Journal of Applied Behavioral Science*, Vol. 42, No. 2, pp. 182-206.
- Bass, B.M. (1998). *Transformational leadership: industrial, military, and educational impact*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Batenburg, R., Benders, J. & Van Der Blonk, H. (2008). Technical isomorphism at work: ERP-embedded similarity-enhancing mechanisms. *Industrial Management & Data Systems*, Vol. 108, No. 1, pp. 60-69.
- Battilana, J. (2006). Agency and institutions: the enabling role of individuals' social position. *Organization*, Vol. 13, No. 5, pp. 653-676.
- Bechky, B.A. (2003). Sharing Meaning Across Occupational Communities: The Transformation of Understanding on a Production Floor. *Organization Science*, Vol. 14, No. 3, pp. 312-330.
- Becker, M.C. (2004). Organizational routines: a review of the literature. *Industrial & Corporate Change*, Vol. 13, No. 4, pp. 643-677.
- Beckérus, Å. & Edström, A. (1995). *Den europeiska rockaden: svenska företag väljer ny strategi*. Stockholm: Svenska dagbladet, FA-rådet.
- Beckhard, R. & Harris, R. (1987). *Organizational transitions: managing complex change*. Reading, Mass.: Addison-Wesley.
- Beer, M. (1980). *Organization change and development: a systems view*. Santa Monica, CA: Goodyear.
- Beer, M., Eisenstat, R.A. & Spector, B. (1990). Why Change Programs Don't Produce Change. *Harvard Business Review*, Vol. 68, No. 6, pp. 158-166.
- Benbasat, I., Goldstein, D.K. & Mead, M. (1987). The Case Research Strategy in Studies of Information Systems. *MIS Quarterly*, Vol. 11, No. 3, pp. 369-386.
- Benders, J., Batenburg, R. & Van Der Blonk, H. (2006). Sticking to standards; technical and other isomorphic pressures in deploying ERP-systems. *Information & Management*, Vol. 43, No. 2, pp. 194-203.
- Berglund, J. & Werr, A. (2000). The invincible character of management consulting rhetoric: how one blends incommensurates while keeping them apart. *Organization*, Vol. 7, No. 4, pp. 633-655.
- Bernerth, J. (2004). Expanding our understanding of the change message. *Human Resource Development Review*, Vol. 3, No. 1, pp. 36-52.
- Bijker, W.E., Hughes, T.P. & Pinch, T.J. (1987). *The social construction of technological systems: new directions in the sociology and history of technology*. Cambridge, Mass.: MIT Press.
- Boudreau, M.C. & Robey, D. (2005). Enacting integrated information technology: A human agency perspective. *Organization Science*, Vol. 16, No. 1, pp. 3-18.

- Bowen, F. & Blackmon, K. (2003). Spirals of Silence: The Dynamic Effects of Diversity on Organizational Voice. *Journal of Management Studies*, Vol. 40, No. 6, pp. 1393-1417.
- Boyatzis, R., Smith, M. & Blaize, N. (2006). Developing sustainable leaders through coaching and compassion. *Academy of Management Learning & Education*, Vol. 5, No. 1, pp. 8-24.
- Brown, J.S. & Duguid, P. (2001). Knowledge and organization: a social-practice perspective. *Organization Science*, Vol. 12, No. 2, pp. 198-213.
- Brown, S. & Eisenhardt, K. (1997). The art of continuous change: linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative Science Quarterly*, Vol. 42, No. 1, pp. 1-34.
- Bruch, H., Gerber, P. & Maier, V. (2005). Strategic change decisions: doing the right change right. *Journal of Change Management*, Vol. 5, No. 1, pp. 97-107.
- Buchanan, D. & Dawson, P. (2007). Discourse and Audience: Organizational Change as Multi-Story Process. *Journal of Management Studies*, Vol. 44, No. 5, pp. 669-686.
- Bullock, R.J. & Batten, D. (1985). It's just a phase we're going through: a review and synthesis of OD phase analysis. *Group & Organization Studies*, Vol. 10, No. 4, pp. 383-412.
- Burke, W.W. (2008). *Organization change: theory and practice*. Thousand Oaks: Sage Publications.
- Burnes, B. (1996). No such thing as...a 'one best way' to manage organizational change. *Management Decision*, Vol. 34, No. 10, pp. 11-18.
- Burnes, B. (2004). Kurt Lewin and the planned approach to change: a re-appraisal. *Journal of Management Studies*, Vol. 41, No. 6, pp. 977-1002.
- Burnes, B. (2007). Kurt Lewin and the Harwood studies. *Journal of Applied Behavioral Science*, Vol. 43, No. 2, pp. 213-231.
- Burns, J. & Scapens, R.W. (2000). Conceptualizing management accounting change: an institutional framework. *Management Accounting Research*, Vol. 11, No. 1, pp. 3-25.
- Busco, C., Riccaboni, A. & Scapens, R.W. (2006). Trust for accounting and accounting for trust. *Management Accounting Research*, Vol. 17, No. 1, pp. 11-41.
- By, R.T. (2005). Organisational change management: a critical review. *Journal of Change Management*, Vol. 5, No. 4, pp. 369-380.
- By, R.T. (2007). Ready or not ... *Journal of Change Management*, Vol. 7, No. 1, pp. 3-11.
- Caglio, A. (2003). Enterprise Resource Planning systems and accountants: towards hybridization? *European Accounting Review*, Vol. 12, No. 1, pp. 123-153.
- Caldwell, R. (2003). Models of change agency: a fourfold classification. *British Journal of Management*, Vol. 14, No. 2, pp. 131-142.
- Caldwell, R. (2006). *Agency and change: rethinking change agency in organizations*. London: Routledge.
- Callon, M. (1986). "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay" IN Law, J. (Ed.) *Power, Action and Belief: A New Sociology of Knowledge*. London: Routledge & Kegan Paul, pp. 196-233.
- Cameron, K.S. (2008). Paradox in positive organizational change. *Journal of Applied Behavioral Science*, Vol. 44, No. 1, pp. 7-24.
- Campbell-Kelly, M. (2003). *From airline reservations to Sonic the Hedgehog: a history of the software industry*. Cambridge, Mass.: MIT Press.

- Carlile, P. (2002). A pragmatic view of knowledge and boundaries: boundary objects in new product development. *Organization Science*, Vol. 13, No. 4, pp. 442-455.
- Carlile, P. (2004). Transferring, translating, and transforming: an integrative framework for managing knowledge across boundaries. *Organization Science*, Vol. 15, No. 5, pp. 555-568.
- Ciborra, C. (2006). The mind or the heart? it depends on the (definition of) situation. *Journal of Information Technology*, Vol. 21, No. 3, pp. 129-139.
- Ciborra, C.U. (2000). *From control to drift: the dynamics of corporate information infrastructures*. Oxford: Oxford University Press.
- Constantinides, P. & Barrett, M. (2006). Large-scale ICT innovation, power, and organizational change: the case of a regional health information network. *Journal of Applied Behavioral Science*, Vol. 42, No. 1, pp. 76-90.
- Costello, N. (2000). *Stability and change in high-tech enterprises: organisational practices and routines*. London: Routledge.
- Cummings, T. & Worley, C. (2008). *Organization development and change*. Mason, Ohio: South-Western.
- Cummings, T.G. (2008). *Handbook of organization development*. London: SAGE.
- Czarniawska, B. (1998). *A narrative approach to organization studies*. Thousand Oaks, CA: Sage.
- Czarniawska, B. (2003). Forbidden Knowledge. *Management Learning*, Vol. 34, No. 3, pp. 353-365.
- Czarniawska, B. & Sevón, G. (1996). *Translating organizational change*. Berlin: de Gruyter.
- D'Adderio, L. (2003). Configuring software, reconfiguring memories: the influence of integrated systems on the reproduction of knowledge and routines. *Industrial & Corporate Change*, Vol. 12, No. 2, pp. 321-350.
- Dahlgren, G. & Witt, P. (1988). *Ledning av fusionsförlopp: en analys av bildandet av Ericsson Information Systems AB*. Stockholm: Ekonomiska forskningsinstitutet vid Handelshögsk. (EFI).
- Danielsson, L. (2007). Tretton svåra år med SAP *Computer Sweden*, 2007-03-28.
- Davenport, T. (2000). *Mission critical: realizing the promise of enterprise systems*. Boston, Mass.: Harvard Business School Press.
- Davis, S.M. & Lawrence, P.R. (1978). Problems of matrix organizations. *Harvard Business Review*, Vol. 56, No. 3, pp. 131-142.
- Dechow, N. & Mouritsen, J. (2005). Enterprise resource planning systems, management control and the quest for integration. *Accounting, Organizations & Society*, Vol. 30, No. 7/8, pp. 691-733.
- Dedrick, J., Gurbaxani, V. & Kraemer, K.L. (2003). Information technology and economic performance: a critical review of the empirical evidence. *ACM Computing Surveys*, Vol. 35, No. 1, pp. 1-28.
- Dent, E. & Goldberg, S. (1999a). Challenging "resistance to change". *Journal of Applied Behavioral Science*, Vol. 35, No. 1, pp. 25-41.
- Dent, E. & Goldberg, S. (1999b). "Resistance to change": a limiting perspective. *Journal of Applied Behavioral Science*, Vol. 35, No. 1, pp. 45-47.
- Dent, J.F. (1996). Global competition: challenges for management accounting and control. *Management Accounting Research*, Vol. 7, No. 2, pp. 247-269.
- Desanctis, G. & Poole, M.S. (1994). Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory. *Organization Science*, Vol. 5, No. 2, pp. 121-147.

- Dobson, P.J. (2001). The Philosophy of Critical Realism - An Opportunity for Information Systems Research. *Information Systems Frontiers*, Vol. 3, No. 2, pp. 199-210.
- Dougherty, D. (1992). Interpretive barriers to successful product innovation in large firms. *Organization Science*, Vol. 3, No. 2, pp. 179-202.
- Douglas, M. & Ney, S. (1998). *Missing persons: a critique of the social sciences*. Berkeley: University of California Press.
- Dresner, H. (2007). *The Performance Management Revolution: Business Results through Insight and Action*. Hoboken, New Jersey: John Wiley & Sons Ltd.
- Dumez, H. & Jeunemaitre, A. (2006). Reviving narratives in economics and management: towards an integrated perspective of modelling, statistical inference and narratives. *European Management Review*, Vol. 3, No. 1, pp. 32-43.
- Dunnewijk, T. & Hultén, S. (2007). A brief history of mobile communication in Europe. *Telematics & Informatics*, Vol. 24, No. 3, pp. 164-179.
- Dunphy, D. (1996). Organizational Change in Corporate Settings. *Human Relations*, Vol. 49, No. 5, pp. 541-552.
- Eisenhardt, K.M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, Vol. 14, No. 4, pp. 532-550.
- Eisenhardt, K.M. & Graebner, M.E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, Vol. 50, No. 1, pp. 25-32.
- Ekstrand, F. (1998a). Debatt: När det är klart har världen förändrats *Dagens Industri*, 1998-11-28.
- Ekstrand, F. (1998b). Debatt: SAP - en kvarnsten om Ericssons hals? *Dagens Industri*, 1998-10-27.
- Ekstrand, F. (2007). Påskens budskap i SAPs tappning *Computer Sweden*, 2007-04-19.
- Elvander, N. & Elvander, A.S. (1995). *Gränslös samverkan: fackets svar på företagens internationalisering*. Stockholm: SNS.
- Emirbayer, M. & Mische, A. (1998). What Is Agency? *American Journal of Sociology*, Vol. 103, No. 4, pp. 962-1023.
- Ericsson Corporate Policies (1995). Stockholm: Telefonaktiebolaget LM Ericsson.
- Essén, A. (2008). *Technology as an extension of the human body: exploring the potential role of technology in an elderly home care setting*. Stockholm: Doctoral thesis. School of Business. Stockholm University.
- Etzioni, A. (1988). *The moral dimension: toward a new economics*. New York: Free Press.
- Fleetwood, S. & Ackroyd, S. (2004). *Critical realist applications in organisation and management studies*. London: Routledge.
- Fligstein, N. (2001). Social Skill and the Theory of Fields. *Sociological Theory*, Vol. 19, No. 2, pp. 105-125.
- Ford, J., Ford, L. & D'amelio, A. (2008). Resistance to change: the rest of the story. *Academy of Management Review*, Vol. 33, No. 2, pp. 362-377.
- Föreningen Stockholms Företagsminnen (2001). *The Ericsson files: 125 years of Ericsson history on one dvd*. Stockholm: Telefon AB LM Ericsson; Center for Business History in Stockholm/Föreningen Stockholms Företagsminnen.
- Gardner, H. (2004). *Changing minds : the art and science of changing our own and other peoples minds*. Boston, Mass.: Harvard Business School Press.
- Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management Learning & Education*, Vol. 4, No. 1, pp. 75-91.
- Ghoshal, S. & Bartlett, C. (1997). *The individualized corporation: a fundamentally new approach to management*. New York: HarperBusiness.

- Giddens, A. (1984). *The constitution of society: outline of the theory of structuration*. Cambridge: Polity Press.
- Giddens, A. (1990). *The consequences of modernity*. Stanford, Calif.: Stanford University Press.
- Ginsberg, A. & Abrahamson, E. (1991). Champions of change and strategic shifts: the role of internal and external change advocates. *Journal of Management Studies*, Vol. 28, No. 2, pp. 173-190.
- Gioia, D. & Chittipeddi, K. (1991). Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal*, Vol. 12, No. 6, pp. 433-448.
- Glaser, B.G. & Strauss, A.L. (1967). *The discovery of grounded theory: strategies for qualitative research*. Chicago: Aldine.
- Goffman, E. (1983). The Interaction Order. *American Sociological Review*, Vol. 48, No. 1, pp. 1-17.
- Golden, B.R. (1992). The past is the past--or is it? The use of retrospective accounts as indicators of past strategy. *Academy of Management Journal*, Vol. 35, No. 4, pp. 848-860.
- Goleman, D. (1995). *Emotional intelligence: why it can matter more than IQ*. New York: Bantam Books.
- Gray, B. & Ariss, S.S. (1985). Politics and Strategic Change Across Organizational Life Cycles. *Academy of Management Review*, Vol. 10, No. 4, pp. 707-723.
- Greenwood, R. & Hinings, C.R. (1996). Understanding radical organizational change: bringing together the old and the new institutionalism. *The Academy of Management Review*, Vol. 21, No. 4, pp. 1022-1054.
- Gregor, S. (2006). The nature of theory in information systems. *MIS Quarterly*, Vol. 30, No. 3, pp. 611-642.
- Hambrick, D.C. (2007). The Field of Management's Devotion to Theory: Too Much of a Good Thing? *Academy of Management Journal*, Vol. 50, No. 6, pp. 1346-1352.
- Hamel, G. & Prahalad, C.K. (1994). *Competing for the future*. Boston, Mass.: Harvard Business School Press.
- Hanseth, O. & Braa, K. (2000). "Who's in Control: Designers, Managers - or Technology? Infrastructures at Norsk Hydro" IN Ciborra, C. (Ed.) *From Control to Drift: The Dynamics of Corporate Information Infrastructures*. Oxford: Oxford University Press, pp. 125-147.
- Hardy, C. (2004). Scaling up and Bearing Down in Discourse Analysis: Questions Regarding Textual Agencies and Their Context. *Organization*, Vol. 11, No. 3, pp. 415-425.
- Harris, D.H. (1994). *Organizational linkages: understanding the productivity paradox*. Washington, D.C.: National Academy Press.
- Harris, J.G. & Davenport, T.H. (2006). *New growth from enterprise systems: achieving high performance through distinctive capabilities*. . Accenture Report.
- Hartley, J., Benington, J. & Binns, P. (1997). Researching the Roles of Internal-Change Agents in the Management of Organization Change. *British Journal of Management*, Vol. 8, No. 1, pp. 61-73.
- Helgesson, C.F. (2001a). The 500 switch: a workhouse *Föreningen Stockholms Företagsminnen: The Ericsson files: 125 years of Ericsson history on one dvd*.
- Helgesson, C.F. (2001b). The crossbar switch: from concept to success *Föreningen Stockholms Företagsminnen: The Ericsson files: 125 years of Ericsson history on one dvd*.
- Hill, L. (2003). *Becoming a manager: how new managers master the challenges of leadership*. Boston, Mass.: Harvard Business School Press.

- Holmström, M. (2009). Skenande kostnader för försvarets nya IT-system *Svenska Dagbladet*, 2009-07-13.
- Hughes, M. (2007). The tools and techniques of change management. *Journal of Change Management*, Vol. 7, No. 1, pp. 37-49.
- Humphreys, P. & Padgett, S. (2006). Globalization, the European Union, and Domestic Governance in Telecoms and Electricity. *Governance: An International Journal of Policy, Administration, and Institutions*, Vol. 19, No. 3, pp. 393-406.
- Huy, Q.N. (1999). Emotional capability, emotional intelligence, and radical change. *Academy of Management Review*, Vol. 24, No. 2, pp. 325-345.
- IBM (2008a). *The Enterprise of the Future. The IBM Global CEO Study*. IBM Global Business Services.
- IBM (2008b). *Making Change Work. Continuing the Enterprise of the Future Conversation*. IBM: IBM Global Services.
- Isabella, L.A. (1990). Evolving Interpretations as a Change Unfolds: How Managers Construe Key Organizational Events. *The Academy of Management Journal*, Vol. 33, No. 1, pp. 7-41.
- Jacobæus, C. (1976). *LM Ericsson 100 år. Bd 3, Teletekniskt skapande: 1876-1976*. Stockholm: Telefon AB LM Ericsson.
- Janis, I.L. (1982). *Groupthink: psychological studies of policy decisions and fiascoes*. Boston: Houghton Mifflin.
- Jarzabkowski, P., Balogun, J. & Seidl, D. (2007). Strategizing: The challenges of a practice perspective. *Human Relations*, Vol. 60, No. 1, pp. 5-27.
- Jasperson, J., Carte, T.A., Saunders, C.S., Butler, B.S., Croes, H.J.P. & Zheng, W. (2002). Review: Power and Information Technology Research: A Metatriangulation Review. *MIS Quarterly*, Vol. 26, No. 4, pp. 397-459.
- Jones, M.R. & Karsten, H. (2008). Giddens's structuration theory and information systems research. *MIS Quarterly*, Vol. 32, No. 1, pp. 127-157.
- Juran, J.M. & Godfrey, A.B. (2000). *Juran's quality handbook*. New York: McGraw Hill.
- Kallinikos, J. (2001). *The age of flexibility: managing organizations and technology*. Lund: Academia adacta.
- Kanter, R.M. (1984). *The change masters: corporate entrepreneurs at work*. London: Allen & Unwin.
- Kanter, R.M., Jick, T. & Stein, B. (1992). *The challenge of organizational change: how companies experience it and leaders guide it*. New York: Free press.
- Kaplan, R.S. (1998). Innovation Action Research: Creating New Management Theory and Practice. *Journal of Management Accounting Research*, Vol. 10, No. (Fall), pp. 89-118.
- Kirton, M. (1980). Adaptors and Innovators in Organizations. *Human Relations*, Vol. 33, No. 4, pp. 213.
- Klamer, A., McCloskey, D.N. & Solow, R.M. (1988). *The consequences of economic rhetoric*. Cambridge: Cambridge Univ. Press.
- Klaus, H., Rosemann, M. & Gable, G. (2000). What is ERP? *Information Systems Frontiers*, Vol. 2, No. 2, pp. 141-162.
- Klein, H.K. & Myers, M.D. (1999). A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*, Vol. 23, No. 1, pp. 67-93.
- Kling, R. & Iacono, S. (1984). The Control of Information Systems Developments After Implementation. *Communications of the ACM*, Vol. 27, No. 12, pp. 1218-1226.

- Kotter, J. & Cohen, D. (2002). *The heart of change: real-life stories of how people change their organizations*. Boston, Mass.: Harvard Business School Press.
- Kotter, J. & Schlesinger, L. (1979). Choosing strategies for change. *Harvard Business Review*, Vol. 57, No. 2, pp. 106-114.
- Kotter, J.P. (1996). *Leading change*. Boston, Mass.: Harvard Business School Press.
- Kwok, L., Bhagat, R.S., Buchan, N.R., Erez, M. & Gibson, C.B. (2005). Culture and international business: recent advances and their implications for future research. *Journal of International Business Studies*, Vol. 36, No. 4, pp. 357-378.
- Lamb, R. & Kling, R. (2003). Reconceptualizing users as social actors in information systems research. *MIS Quarterly*, Vol. 27, No. 2, pp. 197-235.
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management Review*, Vol. 24, No. 4, pp. 691-710.
- Langley, A. (2008). *Unpublished presentation material from her lecture: "Methodology for case study and qualitative work"*. Amsterdam: 24th EGOS Colloquium. PhD Pre-Colloquium Workshop. July 7-9.
- Latour, B. (2005). *Reassembling the social: an introduction to actor-network-theory*. Oxford: University Press.
- Law, J. & Hassard, J. (1999). *Actor network theory and after*. Oxford: Blackwell.
- Lawler, E.E. (1986). *High-involvement management*. San Francisco, Calif.: Jossey-Bass.
- Lawrence, P.R. & Lorsch, J.W. (1967). Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly*, Vol. 12, No. 1, pp. 1-47.
- Lee, A.S. & Baskerville, R.L. (2003). Generalizing Generalizability in Information Systems Research. *Information Systems Research*, Vol. 14, No. 3, pp. 221-243.
- Lee, B.P.H. (2001). Mutual knowledge, background knowledge and shared beliefs: Their roles in establishing common ground. *Journal of Pragmatics*, Vol. 33, No. 1, pp. 21-44.
- Leonardi, P.M. & Barley, S.R. (2008). Materiality and change: Challenges to building better theory about technology and organizing. *Information & Organization*, Vol. 18, No. 3, pp. 159-176.
- Lewin, K. (1951). *Field theory in social science*. New York: Harper & Brothers.
- Levy, O., Beechler, S., Taylor, S. & Boyacigiller, N.A. (2007). What we talk about when we talk about 'global mindset': managerial cognition in multinational corporations. *Journal of International Business Studies*, Vol. 38, No. 2, pp. 231-258.
- Lindblom, C.E. (1959). The science of muddling through. *Public Administration Review*, Vol. 19, No. (Spring), pp. 79-88.
- Lindmark, S., Andersson, E., Johansson, M. & Bohlin, E. (2004). *Telecom dynamics: history and state of the Swedish telecom sector and its innovation system, 1970-2003*. Stockholm: Verket för innovationssystem (Vinnova).
- Lindvall, J. (2006). Erfarenheter kring utvecklingen av modern verksamhetsstyrning i svenska företag. *Ökonomistyrning & informatik*, Vol. 2005/2006, årgång 21, No. 5, pp. 519-543.
- Lippitt, R., Westley, B. & Watson, J. (1958). *The dynamics of planned change: a comparative study of principles and techniques*. New York: Harcourt, Bruce.
- Locke, E.A. (2007). The Case for Inductive Theory Building. *Journal of Management*, Vol. 33, No. 6, pp. 867-890.
- Luft, J. & Shields, M.D. (2003). Mapping management accounting: graphics and guidelines for theory-consistent empirical research. *Accounting, Organizations & Society*, Vol. 28, No. 2/3, pp. 169-249.

- Lukka, K. (2007). Management accounting change and stability: Loosely coupled rules and routines in action. *Management Accounting Research*, Vol. 18, No. 1, pp. 76-101.
- Lundström, B. (2006). *Grundat 1876: historia och företagsidentitet inom Ericsson*. Stockholm: Doctoral thesis. Avdelningen för Teknik- och Vetenskapshistoria. Kungliga Tekniska Högskolan (KTH).
- Löwstedt, J. (1989). *Föreställningar, ny teknik och förändring: tre organiseringsprocesser ur ett kognitivt aktörsperspektiv*. Lund: Doxa. Doctoral thesis. PMO. Handelshögskolan i Stockholm.
- Löwstedt, J. (1993). Organizing Frameworks in Emerging Organizations: A Cognitive Approach to the Analysis of Change. *Human Relations*, Vol. 46, No. 4, pp. 501-526.
- Magnusson, Å. (1998). Debatt: Morgondagens system byggs av moduler *Dagens Industri*, 1998-11-03.
- Markus, L. & Benjamin, R. (1996). Change agency - the next IS frontier. *Mis Quarterly*, Vol. 20, No. 4, pp. 385-407.
- Markus, M.L. (2004). Technochange management: using IT to drive organizational change. *Journal of Information Technology*, Vol. 19, No. 1, pp. 4-20.
- Markus, M.L., Axline, S., Petrie, D. & Tanis, S.C. (2000). Learning from adopters' experiences with ERP: problems encountered and success achieved. *Journal of Information Technology*, Vol. 15, No. 4, pp. 245-265.
- Markus, M.L. & Benjamin, R.I. (1997). The magic bullet theory in IT-enabled transformation. *Sloan Management Review*, Vol. 38, No. 2, pp. 55-68.
- Markus, M.L. & Robey, D. (1988). Information Technology and Organizational Change: Causal Structure in Theory and Research. *Management Science*, Vol. 34, No. 5, pp. 583-598.
- McCloskey, D.N. (1990). *If you're so smart: the narrative of economic expertise*. Chicago: University of Chicago Press.
- Mcgrath, K. (2006). Affection not affliction: The role of emotions in information systems and organizational change. *Information & Organization*, Vol. 16, No. 4, pp. 277-303.
- Mckenna, C.D. (2006). *The world's newest profession: management consulting in the twentieth century*. Cambridge: Cambridge University Press.
- Meurling, J. & Jeans, R. (2000). *Ericssonkrönikan: 125 år av telekommunikation*. Stockholm: Informationsförl.
- Miles, M.B. & Huberman, A.M. (1984). *Qualitative data analysis: a sourcebook of new methods*. Beverly Hills: Sage.
- Miller, D. (2002). Successful change leaders: What makes them? What do they do that is different? *Journal of Change Management*, Vol. 2, No. 4, pp. 359.
- Mingers, J. (2004). Real-izing information systems: critical realism as an underpinning philosophy for information systems. *Information & Organization*, Vol. 14, No. 2, pp. 87-103.
- Moberg, A. (1997). *Närhet och distans: studier av kommunikationsmönster i satellitkontor och flexibla kontor*. Linköping: Doctoral thesis No. 512. IDA-EIS. Linköpings University.
- Mohr, L.B. (1982). *Explaining organizational behavior*. San Francisco: Jossey-Bass.
- Morrison, E.W. & Milliken, F.J. (2000). Organizational Silence: A Barrier to Change and Development in a Pluralistic World. *Academy of Management Review*, Vol. 25, No. 4, pp. 706-725.

- Mutch, A. (2002). Actors and networks or agents and structures: Towards a realist view of information systems. *Organization*, Vol. 9, No. 3, pp. 477-496.
- Myreteg, G. (2007). *Förändringens vindar: en studie om aktörsgrupper och konsten att välja och införa ett affärssystem*. Uppsala: Doctoral thesis No. 131. Företagsekonomiska institutionen, Uppsala universitet.
- Nadler, D. (1993). "Concepts for the management of organizational change" IN Mabey, C. & Mayon-White, B. (Eds.), *Managing change*. London: Paul Chapman, pp. 85-98.
- Nilsson, T. (2002). *Makten över Ericsson*. Stockholm: Ekerlid.
- Nissen, K. (2005). New World Telecom: A Survival Guide For Global Equipment Suppliers. *Business Communications Review*, Vol. 35, No. 9, pp. 57-61.
- Nonaka, I. & Takeuchi, H. (1995). *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
- O'Leary, D. (2000). *Enterprise resource planning systems: systems, life cycle, electronic commerce, and risk*. Cambridge: Cambridge University Press.
- Orlikowski, W. & Scott, S. (2008). Chapter 10: Sociomateriality: Challenging the Separation of Technology, Work and Organization. *The Academy of Management Annals*, Vol. 2, No. 1, pp. 433-474.
- Orlikowski, W.J. (1992). The duality of technology: rethinking the concept of technology in organizations. *Organization Science*, Vol. 3, No. 3, pp. 398-427.
- Orlikowski, W.J. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science*, Vol. 11, No. 4, pp. 404-428.
- Orlikowski, W.J. (2007). Sociomaterial practices: exploring technology at work. *Organization Studies*, Vol. 28, No. 9, pp. 1435-1448.
- Orlikowski, W.J. & Barley, S.R. (2001). Technology and institutions: what can research on information technology and research on organizations learn from each other? *MIS Quarterly*, Vol. 25, No. 2, pp. 145-165.
- Orlikowski, W.J. & Gash, D.C. (1994). Technological frames: making sense of information technology in organizations. *ACM Transactions on Information Systems*, Vol. 12, No. 2, pp. 174-207.
- Orlikowski, W.J. & Iacono, C.S. (2001). Research commentary: desperately seeking the 'IT' in IT research--a call to theorizing the IT artifact. *Information Systems Research*, Vol. 12, No. 2, pp. 121-134.
- Ottaway, R.N. (1983). The Change Agent: A Taxonomy in Relation to the Change Process. *Human Relations*, Vol. 36, No. 4, pp. 361.
- Overby, E. (2008). Process virtualization theory and the impact of information technology. *Organization Science*, Vol. 19, No. 2, pp. 277-291.
- Palmisano, S.J. (2006). The Globally Integrated Enterprise. *Foreign Affairs*, Vol. 85, No. 3, pp. 127-136.
- Pentland, B. (1999). Building process theory with narrative: from description to explanation. *Academy of Management Review*, Vol. 24, No. 4, pp. 711-724.
- Perrow, C. (1967). A Framework for the Comparative Analysis of Organizations. *American Sociological Review*, Vol. 32, No. 2, pp. 194-208.
- Persky, J. (1995). The Ethology of Homo Economicus. *Journal of Economic Perspectives*, Vol. 9, No. 2, pp. 221-231.
- Pettigrew, A. (1990). Longitudinal field research on change: theory and practice. special issue: longitudinal field research methods for studying processes of organizational change. *Organization Science*, Vol. 1, No. 3, pp. 267-292.

- Pettigrew, A. (1997). What is a processual analysis? *Scandinavian Journal of Management*, Vol. 13, No. 4, pp. 337-348.
- Pettigrew, A., Woodman, R. & Cameron, K. (2001). Studying organizational change and development: challenges for future research. *Academy of Management Journal*, Vol. 44, No. 4, pp. 697-713.
- Pettigrew, A.M. (1985). *The awakening giant: continuity and change in Imperial Chemical Industries*. Oxford: Blackwell.
- Pettigrew, A.M. (1987). Context and action in the transformation of the firm. *Journal of Management Studies*, Vol. 24, No. 6, pp. 649-670.
- Pfeffer, J. (1981). *Power in organizations*. Marshfield, Mass.: Pitman.
- Pham, M. (2007). Emotion and rationality: a critical review and interpretation of empirical evidence. *Review of General Psychology*, Vol. 11, No. 2, pp. 155-178.
- Pickering, A. & Guzik, K. (2008). *The mangle in practice: science, society, and becoming*. Durham: Duke University Press.
- Piderit, S. (2000). Rethinking resistance and recognizing ambivalence: a multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, Vol. 25, No. 4, pp. 783-794.
- Piderit, S., Fry, R. & Cooperrider, D. (Eds.), (2007). *Handbook of transformative cooperation: new designs and dynamics*. Stanford, CA: Stanford University Press.
- Polanyi, M. (1958). *Personal knowledge: towards a post-critical philosophy*. London: Routledge & K. Paul.
- Poole, M.S., De Ven, A.H.V., Dooley, K. & Holmes, M. (2000). *Organizational change and innovation processes: theory and methods for research*. Oxford: Oxford Univ. Press.
- Porras, J.I. & Silvers, R.C. (1991). Organization development and transformation. *Annual Review of Psychology*, Vol. 42, No. 1, pp. 51.
- Pozzebon, M. & Pinsonneault, A. (2005). Challenges in conducting empirical work using structuration theory: learning from IT Research. *Organization Studies*, Vol. 26, No. 9, pp. 1353-1376.
- Quattrone, P. & Hopper, T. (2001). What does organizational change mean? Speculations on a taken for granted category. *Management Accounting Research*, Vol. 12, No. 4, pp. 403-435.
- Quattrone, P. & Hopper, T. (2005). A 'time-space odyssey': management control systems in two multinational organisations. *Accounting, Organizations & Society*, Vol. 30, No. 7/8, pp. 735-764.
- Quinn, J.B. (1980). *Strategies for change: logical incrementalism*. Homewood, Ill.: Irwin.
- Quinn, R.E., Cameron, K.S. & Dutton, J.E. (2003). *Positive organizational scholarship: foundations of a new discipline*. San Francisco, CA: Berrett-Koehler.
- Quinn, R.E., Spreitzer, G.M. & Brown, M.V. (2000). Changing Others Through Changing Ourselves. *Journal of Management Inquiry*, Vol. 9, No. 2, pp. 147.
- Reckwitz, A. (2002). Toward a Theory of Social Practices: A Development in Culturalist Theorizing. *European Journal of Social Theory*, Vol. 5, No. 2, pp. 243.
- Riessman, C. (2002). "Narrative Analysis" IN Huberman, A. M. & Miles, M. B. (Eds.), *The qualitative researcher's companion*. Thousand Oaks, Calif.: Sage, pp. 217-270.
- Riessman, C.K. (1993). *Narrative analysis*. Newbury Park: Sage.
- Ritzer, G. (2008). *Modern sociological theory*. Boston: McGraw-Hill.
- Rogers, E.M. (1962). *Diffusion of innovations*. New York: Free Press of Glencoe.
- Salovey, P. & Grewal, D. (2005). The Science of Emotional Intelligence. *Current Directions in Psychological Science*, Vol. 14, No. 6, pp. 281-285.

- Sanchez-Burks, J. & Huy, Q.N. (2009). Emotional aperture and strategic change: the accurate recognition of collective emotions. *Organization Science*, Vol. 20, No. 1, pp. 22-34.
- Scapens, R.W. (2006). Understanding management accounting practices: a personal journey. *The British Accounting Review*, Vol. 38, No. 1, pp. 1-30.
- Scapens, R.W. & Jazayeri, M. (2003). ERP systems and management accounting change: opportunities or impacts? A research note. *European Accounting Review*, Vol. 12, No. 1, pp. 201-233.
- Schatzki, T.R., Knorr-Cetina, K. & Savigny, E. (2001). *The practice turn in contemporary theory*. London: Routledge.
- Schein, E. (1987). *Process consultation. Vol. 2, lessons for managers and consultants*. Reading, Mass.: Addison-Wesley.
- Schein, E. (1988). *Process consultation: Vol. 1, its role in organisation development*. Reading, Mass.: Addison-Wesley.
- Schulman, D.S., Dunleavy, J.R., Harmer, M., J. & Lusk, J.S. (1999). *Shared services: adding value to the business units*. New York: Wiley.
- Schultze, U. & Orlikowski, W.J. (2004). A Practice Perspective on Technology-Mediated Network Relations: The Use of Internet-Based Self-Serve Technologies. *Information Systems Research*, Vol. 15, No. 1, pp. 87-106.
- Schön, D.A. (1983). *The reflective practitioner: how professionals think in action*. New York: Basic Books.
- Selznick, P. (1957). *Leadership in administration: a sociological interpretation*. New York: Harper & Row, publ.
- Senge, P.M. (1993). *The fifth discipline: the art and practice of the learning organization*. London: Century Business.
- Seo, M.-G. & Creed, W.E.D. (2002). Institutional contradictions, praxis, and institutional change: A dialectical perspective. *Academy of Management Review*, Vol. 27, No. 2, pp. 222-247.
- Sillince, J.A.A. & Mouakket, S. (1997). Varieties of Political Process During Systems Development. *Information Systems Research*, Vol. 8, No. 4, pp. 368-397.
- Sinha, K.K. & Van De Ven, A.H. (2005). Designing work within and between organizations. *Organization Science*, Vol. 16, No. 4, pp. 389-409.
- Sirkin, H.L., Keenan, P. & Jackson, A. (2005). The hard side of change management. *Harvard Business Review*, Vol. 83, No. 10, pp. 108-118.
- Skinner, B.F. (1953). *Science and human behavior*. New York: Macmillan.
- Star, S. & Griesemer, J. (1989). Institutional ecology, 'translations' and boundary objects: amateurs and professionals in berkeley's museum of vertebrate zoology, 1907-39. *Social Studies of Science*, Vol. 19, No. 3, pp. 387-420.
- Stensaker, I. & Falkenberg, J. (2007). Making sense of different responses to corporate change. *Human Relations*, Vol. 60, No. 1, pp. 137-177.
- Stensaker, I., Falkenberg, J. & Gronhaug, K. (2008). Implementation Activities and Organizational Sensemaking. *Journal of Applied Behavioral Science*, Vol. 44, No. 2, pp. 162-185.
- Storey, J. (1992). *Developments in the management of human resources: an analytical review*. Oxford: Blackwell Business.
- Suddaby, R. (2006). From the editors: what grounded theory is not. *Academy of Management Journal*, Vol. 49, No. 4, pp. 633-642.
- Sztompka, P. (1991). *Society in action: the theory of social becoming*. Cambridge: Polity.
- Thaler, R. (2000). From homo economicus to homo sapiens. *Journal of Economic Perspectives*, Vol. 14, No. 1, pp. 133-141.

- Tichy, N.M. (1974). Agents of Planned Social Change: Congruence of Values, Cognitions and Actions. *Administrative Science Quarterly*, Vol. 19, No. 2, pp. 164-182.
- Tsang, E.W.K. & Kwan, K.-M. (1999). Replication and Theory Development in Organizational Science: A Critical Realist Perspective. *Academy of Management Review*, Vol. 24, No. 4, pp. 759-780.
- Tsoukas, H. (1989). The Validity of Idiographic Research Explanations. *Academy of Management Review*, Vol. 14, No. 4, pp. 551-561.
- Tsoukas, H. (2005). Afterword: why language matters in the analysis of organizational change. *Journal of Organizational Change Management*, Vol. 18, No. 1, pp. 96-104.
- Tsoukas, H. & Chia, R. (2002). On organizational becoming: rethinking organizational change. *Organization Science*, Vol. 13, No. 5, pp. 567-582.
- Turner, L. & Weickgenannt, A. (2008). *Accounting information systems: controls and processes*. Hoboken, N.J.: Wiley.
- Tushman, M., L. & Romanelli, E. (1985). Organizational Evolution: A metamorphosis model of convergence and reorientation. An Annual Series of Analytical Essays and Critical Reviews. *Research in Organizational Behavior*, Vol. 7, No., pp. 171-222.
- Ulbrich, F. (2008). *The adoption of IT-enabled management ideas: insights from shared services in government agencies*. Stockholm: Doctoral thesis. Economic Research Institute, Stockholm School of Economics (EFI).
- Wagman, M. (1991). *Artificial intelligence and human cognition: a theoretical intercomparison of two realms of intellect*. New York: Praeger.
- Walsham, G. (1993). *Interpreting information systems in organizations*. Chichester: Wiley.
- Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Information Systems*, Vol. 4, No., pp. 74-81.
- Walsham, G. (1997). "Actor-network theory and IS research: Current Status and Future Prospects" IN Lee, A. S., Liebenau, J. & DeGross, J. I. (Eds.), *Information Systems and Qualitative Research* New York: Chapman & Hall, pp. 466-480.
- Walsham, G. (2001). *Making a world of difference: IT in a global context*. Chichester: Wiley.
- Walsham, G. (2006). Doing interpretive research. *European Journal of Information Systems*, Vol. 15, No. 3, pp. 320-330.
- Walsham, G. & Sahay, S. (1999). GIS for District-Level Administration in India: Problems and Opportunities. *MIS Quarterly*, Vol. 23, No. 1, pp. 39-65.
- Walther, T., Johansson, H., Dunleavy, J. & Hjelm, E. (1997). *Reinventing the CFO. Moving from financial management to strategic management*. New York: McGraw-Hill.
- Van De Ven, A. (2007). *Engaged scholarship: a guide for organizational and social research*. Oxford: Oxford University Press.
- Van De Ven, A. & Poole, M.S. (2005). Alternative approaches for studying organizational change. *Organization Studies*, Vol. 26, No. 9, pp. 1377-1404.
- Van De Ven, A.H. (1992). Suggestions for Studying Strategy Process: A Research Note. *Strategic Management Journal*, Vol. 13, No. Special Issue: Strategy Process: Managing Corporate Self-Renewal (Summer, 1992), pp. 169-191.
- Van De Ven, A.H. & Poole, M.S. (1995). Explaining Development and Change in Organizations. *Academy of Management Review*, Vol. 20, No. 3, pp. 510-540.
- Van Maanen, J., Sorensen, J.B. & Mitchell, T.R. (2007). The interplay between theory and method. *Academy of Management Review*, Vol. 32, No. 4, pp. 1145-1154.
- Weick, K. (2007). The generative properties of richness. *Academy of Management Journal*, Vol. 50, No. 1, pp. 14-19.
- Weick, K.E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage.

- Weick, K.E. & Quinn, R.E. (1999). Organizational change and development. *Annual Review of Psychology*, Vol. 50, No. 1, pp. 361.
- Wenger, E. (1998). *Communities of practice: learning, meaning, and identity*. Cambridge: Cambridge University Press.
- Whittington, R. (2006). Completing the Practice Turn in Strategy Research. *Organization Studies*, Vol. 27, No. 5, pp. 613-634.
- Whittington, R., Molloy, E., Mayer, M. & Smith, A. (2006). Practices of strategising/organising: broadening strategy work and skills. *Long Range Planning*, Vol. 39, No. 6, pp. 615-629.
- Wiener, N. (1948). *Cybernetics or control and communication in the animal and the machine*. Cambridge, Mass.: The Technology Press.
- Volkoff, O., Strong, D.M. & Elmes, M.B. (2007). Technological Embeddedness and Organizational Change. *Organization Science*, Vol. 18, No. 5, pp. 832-848.
- Woodman, R.W. (1989). Organizational Change and Development: New Arenas for Inquiry and Action. *Journal of Management*, Vol. 15, No. 2, pp. 205.
- Woodward, J. (1958). *Management and technology*. London: HMSO.
- Yin, R.K. (2003). *Case study research: design and methods*. Thousand Oaks, CA: Sage.
- Zammuto, R.F., Griffith, T.L., Majchrzak, A., Dougherty, D.J. & Faraj, S. (2007). Information technology and the changing fabric of organization. *Organization Science*, Vol. 18, No. 5, pp. 749-762.
- Zuboff, S. (1988). *In the age of the smart machine: the future of work and power*. Oxford: Heinemann Professional.
- Åsgård, L. & Ellgren, C. (2001). *Ericsson: historien om ett svenskt företag*. Stockholm: Pan.