Essays on the nature and dynamics of higher-order organizational capabilities

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Deborah E.M. Mulders

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en
prof.dr. E.P. Antonacopoulou

With life-long gratitude to my parents,
who so lovingly created my today.

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Life offers you a thousand chances, all you have to do is take one… When you ask me about my time as a PhD Candidate, I will therefore answer that a PhD is engaging in one of the extraordinary chances that life offered me. Adopting such a chance is in many respects similar to completing a challenging puzzle. At first, the puzzle of a PhD is most likely characterized by ignorance concerning what pieces there are, and which piece should be in which order. Most wisely, your strategy starts with finding the corner-pieces so as to create the principles of the puzzle. When searching for puzzle-pieces that may connect, you try and fail, and sometimes try and succeed. Eventually, you feel contended when all puzzle-pieces fall into place, though you realize that there are still many puzzle-pieces waiting to be connected, pieces that are part of the 'puzzle of life'…

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Chapter 1
Introduction

"Nothing endures but change"

~ Heraclitus

(Greek philosopher, 540 BC - 480 BC)

This chapter presents the key theme of this dissertation. After introducing the central research question and sub-research questions that this dissertation answers, the main contributions of the systematic literature reviews and empirical studies in this dissertation are discussed, including its relevance for both scholars and practitioners. This chapter concludes with an outline of this dissertation.

1.1 Introduction

One of the core questions in organization science, and strategic management in particular, is how organizations create and sustain competitive advantage. In other words, how do firms persistently outperform their competitors? (Nelson 1991; Rumelt, Schendel & Teece 1991; Barney & Clark 2007; Terziovski 2007). This question has gained importance in today's so called 'Schumpeterian' world with innovation-based competition, price and performance rivalry, and growing returns (Dosi, Nelson & Winter 2000). Moreover, this question has become particularly important in view of the great challenges that companies are increasingly confronted with; competition has become more intense as firms face markets that are fast-moving, facing frequent, rapid and unpredictable change (March 1991; Bettis & Hitt 1995; Teece, Pisano & Shuen 1997; Birchall & Tovstiga 2005). As such, organizations are struggling to (find new ways to) gain and maintain competitive advantage (Terziovski 2007).

An increasing amount of scholars in organization science and strategic management note that firms may develop competitive advantage by competing on one or more organizational capabilities (e.g. Richardson 1972; Chandler 1990; Prahalad & Hamel 1990; Collis 1994; Helfat & Peteraf 2003). Richardson (1972) first referred to the notion of organizational capabilities in his paper 'The organisation of industry'. Richardson (1972) made the point that companies will tend to specialize in activities for which their capabilities offer competitive advantage. In other words, organizations derive succes from their competitive strength of their excellence in a number of capabilities where the firm can create and sustain a leadership position over time. Thus, an organizational capability refers to "the ability of an organization to perform a coordinated set of tasks (…) for the purpose of achieving a particular end result" (Helfat & Peteraf 2003: 999).

In this respect, scholars long understood that competitive advantage mainly depends upon the match between organizational capabilities and environmental circumstances (e.g. Penrose 1959; Porter 1985; Andrews 1987; Chandler 1998). As such, the competitive forces theory by Porter (1985) became prominent during the 1980s. Porter (1985) focused on what industries allow companies to gain financially, and how firms could position themselves in those industries to be profitable. Porter (1985) suggested that a firm should leverage its internal strengths to respond to external environmental opportunities, while avoiding external threats and internal weaknesses (i.e. the SWOT framework). As such, the competitive forces theory by Porter (1985) pursues an 'outside-in' approach. During the late 1980s and early 1990s,

however, the competitive forces theory was criticized as it was unable to explain why firms within the same industry may behave differently, and thus, why one firm was able to outperform the other (e.g. Rumelt 1991).

In order to explain how some organizations perform better than others, scholars such as Wernerfelt (1984) and Barney (1991) built a Resource-Based View (RBV) during the late 1980s and early 1990s that pursues an 'inside-out' approach. The RBV posits that firms may develop competitive advantage on the basis of its unique access to resources that are valuable, rare, difficult to imitate, and non-substitutable by other resources (i.e. the VRIN-conditions) (Wernerfelt 1984; Barney 1991; Peteraf 1993). Competitive advantage is understood here in terms of selecting, building, deploying and protecting the firm's resource base, rooted inside the orgization (Wernerfelt 1984; Chandler 1990; Barney 1991; Russo & Fouts 1997; Deeds, DeCarolis & Coombs 1999). During the early 1990s, the evolution of the RBV resulted in introducing the notion of core competences (Prahalad & Hamel 1990). Here, competitive advantage results from selecting, building, deploying and protecting the firm's resource base in an effective manner, in terms of focusing on the firm's core competences (i.e. know-how). This approach is consistent with the Knowledge-Based View (KBV), which underlines knowledge as the most important firm resource to achieve competitive advantage (Grant 1996). During the mid 1990s, however, several scholars argued that these theories do not recognize the business environment as an evolving entity, which implies the need to effectively address ongoing environmental challenges (e.g. Leonard-Barton 1992; Collis 1994).

In this respect, several scholars started to combine outside-in and inside-out approaches during the past two decades, in order to explain how firms may manage the tensions between the organization and changing market and competitive conditions. As such, these scholars began focusing on higher-order (i.e. meta-) organizational capabilities as the real sources of (sustainable) competitive advantage; organizational capabilities that may define a firm strategically as being key drivers of long-term business performance, particularly in moderately dynamic or high-velocity markets (March 1991; Tushman & O'Reilly 1996; Teece et al. 1997; Eisenhardt & Martin 2000). Yet, the literature on such meta-organizational capabilities is still evolving, and currently lacks an understanding of their key dimensions (cf. Zahra, Sapienza & Davidsson 2006; Raisch & Birkinshaw 2008; Raisch, Birkinshaw, Probst & Tushman 2009; Simsek 2009; Simsek, Heavey, Veiga & Souder 2009; Di Stefano, Peteraf

& Verona forthcoming). In order to contribute to this ongoing debate, this doctoral dissertation therefore examines the following central research question:

> ***What are the key dimensions of higher-order organizational capabilities in addressing situations of changing market and competitive conditions?***

This central research question is split into sub-research questions, each explained in the following (sub-)sections.

1.2 Systematic literature reviews: the notions of dynamic capability and ambidexterity

An increasing number of scholars in organization science and strategic management promote the notion of dynamic capability (e.g. Teece et al. 1997; Eisenhardt & Martin 2000; Zollo & Winter 2002; Helfat & Peteraf 2003; Winter 2003), and the notion of ambidexterity (e.g. March 1991; Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004) as higher-order organizational capabilities.

Dynamic capability

The notion of dynamic capability explains how organizations may develop competitive advantage in fast-moving business environments, by focusing on the dynamic processes of assembling, deploying and integrating a firm's resource base (e.g. Teece et al. 1997; Eisenhardt & Martin 2000). The dynamic capability view (DCV) stresses the importance of the history of a firm's current capabilities, and the importance of revising and reconfiguring these in the future (cf. Teece et al. 1997; Eisenhardt & Martin 2000). As such, firms are able to address changing environments and/or create market change (Helfat & Peteraf 2003; Helfat et al. 2007; Newey & Zahra 2009).

Developing a dynamic capability provides a significant challenge, for scholars attempting to understand the process of this capability formation, as well as for practitioners trying to create such capabilities. This challenge is grounded in a lack of understanding of the notion of dynamic capability, as the dynamic capability literature is riddled with inconsistencies, overlapping definitions and outright contradictions (Zahra et al. 2006; Di Stefano et al.

forthcoming). There is thus a need to assess what the collective understanding of dynamic capability appears to be at this point in time, including its foundations, antecedents and consequences.

In order to do so, a comparison can be made between (theoretical/conceptual) definitions of dynamic capability, their operationalizations, and their measurements. This distinction draws on the work of for example, Rosnow and Rosenthal (1993) and Frankfort-Nachmias and Nachmias (1996). A theoretical definition involves "the meaning of a variable in abstract or conceptual terms" (Rosnow & Rosenthal 1993: 439). Similarly, a conceptual definition describes concepts by using other concepts (Frankfort-Nachmias & Nachmias 1996). An operational definition, however, comprises "the meaning of a variable in terms of the operations used to measure it or the experimental methods involved in its determination" (Rosnow & Rosenthal 1993: 435). In other words, an operational definition refers to "definitions that provide concepts with empirical referents" (Frankfort-Nachmias & Nachmias 1996: 30). Therefore, a (theoretical/conceptual) definition should be typified into key dimensions of the concept (i.e. the operational definition), which then can be broken down into elements that can be measured (Rosnow & Rosenthal 1993; Graziano & Raulin 2009; Sekaran & Bougie 2009). In this respect, the following sub-research question is examined (to be addressed in Chapter 2).

Sub-research question 1:
How can we define, operationalize and measure dynamic capability as a higher-order organizational capability in a coherent manner?

Ambidexterity

In situations of changing market and competitive conditions, organizations need to demonstrate the ability to timely respond to new circumstances, along with the ability to address existing environments (Dosi et al. 2000). In this respect, scholars introduced the notion of ambidexterity, which refers to performing different and often competing challenges (March 1991; Tushman & O'Reilly 1996). Here, competitive advantage results from being efficient in managing today's business demands, while at the same time being effective in adapting to changing business environments and/or in creating market change (Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004). As such, firms need a focus on both exploitation and exploration; on their current activities in existing domains, along

with developing new activities in non-existing domains (March 1991; Holmqvist 2004; Lubatkin, Simsek, Ling & Veiga 2006; Menguc & Auh 2008; Carmeli & Halevi 2009; Nemanich & Vera 2009).

However, there is considerable ambiguity and disagreement regarding the notion of ambidexterity due to a variety of research domains that involve varying meanings of the concept (Li, Vanhaverbeke & Schoenmakers 2008; Raisch & Birkinshaw 2008; Cao, Gedajlovic & Zhang 2009; Simsek 2009; Simsek et al. 2009). A common understanding of the notion of ambidexterity is thus lacking. In this respect, developing ambidexterity provides a significant challenge for scholars attempting to understand the process of this capability formation, as well as for practitioners trying to create such capabilities. There is thus a need to assess what the collective understanding of ambidexterity appears to be at this point in time, including its foundations, antecedents and consequences. In order to do so, a comparison can be made again between (theoretical/conceptual) definitions of ambidexterity, their operationalizations, and their measurements (cf. Rosnow & Rosenthal 1993; Graziano & Raulin 2009; Sekaran & Bougie 2009). In this respect, the following sub-research question is examined (to be addressed in Chapter 2).

Sub-research question 2:
How can we define, operationalize and measure ambidexterity as a higher-order organizational capability in a coherent manner?

In answering these two sub-research questions, this dissertation adopts a systematic literature review approach in Chapter 2 which involves a comprehensive search of potentially relevant papers and books, and the use of explicit, reproducible criteria in the selection of papers and books for review (cf. Cook, Mulrow & Haynes 1997; Needleman 2002; Tranfield, Denyer & Smart 2003; Thorpe, Holt, Macpherson & Pittaway 2005). As such, this chapter explores the foundations, antecedents and consequences of dynamic capability and ambidexterity in terms of comparing definitions, operationalizations and measurements of their key dimensions. This eventually results in the proposal of a (re-)definition of both meta-organizational capabilities.

1.3 Empirically studying ambidexterity in service industries

The insights from the systematic review of the dynamic capability and ambidexterity literature provide a theoretical basis for the empirical studies in this dissertation, suggesting a

further focus on ambidexterity for the following reasons. In contrast to the notion of dynamic capability, the notion of ambidexterity addresses multiple types of business environments. In addition, the notion of ambidexterity is likely to be effectively operationalized and measured. Moreover, the notion of ambidexterity may account for dynamic capability. In this respect, the notion of ambidexterity will drive the empirical studies in subsequent chapters of this dissertation. These studies focus on service industries (i.e. retail banking and management consultancy), because most previous studies on ambidexterity have been conducted in manufacturing firms, whereas relatively less attention has been paid to the challenges of exploitation versus exploration in service firms. Notable exceptions are, for example, Jansen et al. (2005; 2006), Han (2007), Im and Rai (2008), Jansen et al. (2008), Tiwana (2008), Groysberg and Lee (2009), Güttel and Konlechner (2009), and Jansen, Vera and Crossan (2009). More particularly, one of these studies focuses on ambidexterity in the retail banking industry because ambidexterity is a major challenge for financial firms, as new service development is considered to enhance productivity of a firm's financial services (Lievens 2000). In order to enhance the productivity of a firm's financial services, new service operations and processes should then be integrated with existing business activities (cf. Lievens 2000; Nijssen, Hillebrand, Vermeulen & Kemp 2006; Groysberg & Lee 2009). However, only a small amount of scholars have started to investigate this relationship (e.g. Jansen 2005; 2006, Jansen et al. 2008; Jansen, Vera & Crossan 2009), implying that ambidexterity in the retail banking industry has not received full attention in the literature on ambidexterity yet.

1.3.1 An organizational design and managerial perspective

The empirical studies on ambidexterity draw on an organizational design and managerial perspective. An organizational design perspective challenges scholars to identify organizational designs and structures that foster ambidexterity. In this respect, the literature proposes a decentralized structure to facilitate ambidexterity (e.g. Benner & Tushman 2003; Gibson & Birkinshaw 2004; Jansen, van den Bosch & Volberda 2005; Raisch & Birkinshaw 2008). However, the ambidexterity literature lacks an (empirical) in-depth understanding of the impact of decentralization on the dynamics entailed in the way ambidexterity is organized and balanced in large service firms over time, without differentiating between effects of decentralization (including generative mechanisms and outcomes) and the role interdependencies play in integrating exploration activities into the firm's exploitation activities (cf. Siggelkow & Levinthal 2003; Siggelkow & Rivkin 2006). An examination of

the relationship between decentralization and ambidexterity thus contributes to a more detailed understanding of how organizational design may facilitate ambidexterity. In this respect, the following sub-research question is examined (to be addressed in Chapter 3).

Sub-research question 3:
How does a decentralized organizational structure impact the way ambidexterity is organized, balanced and connected in large service firms, and what role do timing and interdependencies play?

In answering this question, comparative case studies of two service innovations in a large decentralized retail bank in the Netherlands serve to examine the way service innovations (i.e. exploration activities) unfold over time, and are then integrated into the firm's exploitation activities.

From a managerial perspective, the relationship between founders' employment models in organizations and ambidexterity has not been explored in the ambidexterity literature yet. In particular, no (empirical) studies have been conducted that focus on the relationship between founders' employment models and the degree of ambidexterity in organizational practices (cf. Leana & Barry 2000; Rivkin & Siggelkow 2006). The literature would thus benefit from an understanding of the impact of founders' employment models on the dynamics entailed in the way practices are organized, balanced and connected. Examining this relationship contributes to our understanding of the way an organization is able to manage ambidexterity over time. Such an understanding becomes especially important in small-to-medium sized service firms, as the owner-manager is the principal actor in most organizational practices and therefore substantially influences the evolution of these practices (cf. Baron, Hannan & Burton 1999; Hannan, Baron, Hsu & Koçak 2006). In this respect, the following sub-research question is examined (to be addressed in Chapter 4).

Sub-research 4:
How do founders' employment models in organizations impact the degree of ambidexterity in organizational practices in small-to-medium sized service firms, in terms of the way the dynamics of organizational practices are organized, balanced and connected?

In answering this question, comparative case studies in small- and medium-sized firms in management consultancy in the USA, the Netherlands and the UK serve to examine how founders' employment models impact the degree of ambidexterity in organizational practices, particularly when competing priorities within these practices demand both continuity and renewal.

1.3.2 Methodological approach

The empirical studies on ambidexterity employ a case study methodology. Traditionally, a case study approach serves to understand relatively unknown (social) phenomena, and is particularly important for 'how' and 'why' research questions (Yin 2003). As such, a case study methodology is adopted here because the sub-research questions 3 and 4 involve 'how' questions (cf. Yin 2003). In addition, such an approach enables the researcher to disentangle a complex set of relationships of contemporary phenomena in their real life context (Yin 2003; Dul & Hak 2008). Therefore, this dissertation draws on a case study methodology to examine the complex phenomenon of ambidexterity in its real life context.

A case study methodology may involve one case (a single case study), or a small number of cases (comparative case studies) (Yin 2003; Dul & Hak 2008). When theory is not well articulated yet, a single case study may be sufficient for beginning the theory building process in terms of gathering empirical evidence for the formulation of propositions (Dul & Hak 2008). When a well articulated theory exists, certain elements of the theory (i.e. the formulated propositions) may be tested in detail within a single case study in order to advance the theory (Dul & Hak 2008). However, a comparative case study on a limited number of elements of the theory is most suitable for theory building and testing (Dul & Hak 2008), as it is more compelling by making the overall study more robust (Johnston, Leach & Liu 1999). As such, the studies in Chapter 3 and 4 draw on comparative case studies so that the case study findings can be compared in terms of a previously developed theory (cf. Yin 2003). The logic behind this approach is that each case study within a particular study is expected to lead to contrasting findings, bringing in theoretical meaningful variation (cf. Yin 2003). In this respect, the case studies that have been selected in Chapter 3 show different ways the firm uses its decentralized structure to develop service innovations. In addition, the case studies that have been selected in Chapter 4 differ in founders' employment models.

Moreover, the two studies in these chapters are independent of each other, each drawing on different methodological approaches in order to deliver a contribution to the discourse on ambidexterity in relation to decentralization and service innovation, and ambidexterity in relation to founders' employment models and practice-based research. As such, a critical realist perspective is adopted in the study in Chapter 3 (cf. Tsoukas 1989; Pawson & Tilley 1997; Sayer 2000). This implies that the broad notion of 'effects' (of decentralization) is differentiated into outcomes and generative mechanisms that produce these outcomes. In addition, this chapter applies a temporal bracketing strategy (cf. Langley 1999), and as such distinguishes different phases of innovation (cf. Cooper 2001). The study in Chapter 4 builds upon five basic types of employment relationships between firm founders and their employees (cf. Baron et al. 1999), and examines the way the blueprints of these employment relationships can be altered (cf. Hannan et al. 2006). In addition, the study in this chapter adopts a more pragmatic perspective by introducing a dynamic practice perspective that accounts for processes of practices' continuity and renewal over time (cf. Bourdieu 1990; Waldman, Javidan & Varella 2004; Antonacopoulou 2007; 2008). This chapter draws on a grounded theory approach, in which grounded theory is derived from the data that are systematically gathered and analyzed (cf. Strauss 1987; Corbin & Strauss 2008).

These different theoretical lenses have been adopted because ambidexterity research has not (yet) converged around one particular (coherent) theoretical and methodological approach. Thus, the key dimensions of ambidexterity are more likely to be identified if different lenses are employed. The plural nature of the studies in these chapters also implies that the definition of ambidexterity developed in Chapter 2 (based on a systematic literature review) merely inspires these studies. Moreover, the ambidexterity definition developed in Chapter 2 can not be directly imported in the studies in these chapters, because these studies are embedded in a specific discourse in the literature (on decentralization and ambidexterity versus founders' employment models and ambidexterity). In general, the semi-autonomous nature of Chapters 2, 3 and 4 is also expressed in the phrase "Essays on (…)" in the title of this dissertation.

1.4 Theoretical and practical contributions

This dissertation answers the central research question of this dissertation as follows. In answering sub-research questions 1 and 2, this dissertation contributes to the development of a *theoretical* understanding of the key dimensions of dynamic capability and ambidexterity as higher-order organizational capabilities in addressing situations of changing market and

competitive conditions. In addition, in answering sub-research questions 3 and 4, this dissertation *empirically* advances our theoretical understanding of the key dimensions of ambidexterity by means of studying ambidexterity from an organizational design and managerial perspective.

In this respect, this dissertation contributes to both scholars in organization science and strategic management, and practitioners in particularly service industries. The main theoretical contribution of this dissertation lies in developing an understanding of the key dimensions of dynamic capability and ambidexterity. In particular, by means of a systematic literature review approach in Chapter 2, the foundations, antecedents and consequences of dynamic capability and ambidexterity are explored in terms of comparing definitions, operationalizations and measurements of their key dimensions. As such, this advances our understanding of dynamic capability and ambidexterity, and develops insights into the way dynamic capability and ambidexterity can be operationalized and measured more effectively in future research (i.e. by means of the proposal of a (re-)definition of both concepts). In addition, by drawing on systematic literature reviews, these reviews extend prior ones on dynamic capability and ambidexterity, as such an approach differs in multiple ways from previous reviews.

The main contribution of the empirical study on the relationship between decentralization and ambidexterity in Chapter 3 lies in elaborating and extending existing theory, to contribute to a more detailed understanding of how organizational design may support ambidexterity. In this respect, this study contributes to the literature by combining the ambidexterity literature with the organizational design literature and service innovation literature. In addition, the main contribution of the empirical study on the relationship between founders' employment models and the degree of ambidexterity in organizational practices in Chapter 4 lies in building new theory, as the relationship between founders' employment models and ambidexterity in organizational practices has not been studied yet. Examining this relationship contributes to our understanding of the way an organization is able to manage ambidexterity over time. In this respect, this study contributes to the literature by combining the literatures on ambidexterity, founders' employment models and practice-based research.

This dissertation contributes to practitioners as well, particularly those (top) managers in service firms who are increasingly confronted with fast-moving business environments.

These practitioners aim to (find new ways to) create and sustain competitive advantage in dynamic environments characterized by frequent, rapid and unpredictable change. In this respect, managers may well face different and often contradictory demands when adapting to both existing and new markets, that need to be effectively managed. In order to do so, managers may draw on the notion of dynamic capability and/or ambidexterity. In this respect, this dissertation provides them key insights into (the development of) these meta-organizational capabilities, which may help firms in becoming more effective in responding to change in external conditions.

1.5 Outline

The remainder of this dissertation is organized as follows. This dissertation provides a starting point for future theoretical and empirical studies of dynamic capability, and ambidexterity in particular, as key drivers of long-term business performance and (sustainable) competitive advantage in addressing situations of changing market and competitive conditions. Drawing on a systematic literature review approach, this dissertation explores the foundations, antecedents and consequences of dynamic capability and ambidexterity by means of comparing definitions, operationalizations and measurements of their key dimensions in Chapter 2. A (re-)definition of dynamic capability and ambidexterity is proposed here, which provides a starting point for scholars who wish to operationalize and measure the notion of dynamic capability or ambidexterity, as well as for practitioners who attempt to develop such higher-order organizational capabilities. Drawing on systematic literature reviews, comparative case studies in service industries extend our understanding of the dynamics entailed in the way ambidexterity is performed. As such, Chapter 3 involves comparative case studies of two service innovations in a large decentralized retail bank in the Netherlands. In addition, Chapter 4 involves comparative case studies of two organizational practices in three management consultancy SME's (i.e. small-to-medium sized firms) in the USA, the Netherlands and the UK. Finally, Chapter 5 summarizes the main findings and (practical) implications of the studies described in the systematic literature reviews and the empirical studies in this dissertation. Subsequently, a taxonomy of key dimensions of ambidexterity is developed in Chapter 5. As such, this taxonomy integrates the previous chapters, and serves to answer the central research question in this dissertation. Finally, Chapter 5 describes the main limitations of this dissertation and makes suggestions for future research.

Chapter 2

A systematic literature review approach

Unpacking higher-order organizational capabilities[1]

"It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change"

~ Charles Darwin

(English biologist, 1809 - 1882)

[1] This chapter partly draws on:
Mulders, D.E.M., & Romme, A.G.L. 2009. Unpacking dynamic capability: A design perspective. In A. Bøllingtoft, D.D. Håkonsson, J.F. Nielsen, C.C. Snow and J.P. Ulhøi (Eds.). *New approaches to organization design: Theory and practice of adaptive enterprises*, 61-78. New York: Springer.

Drawing on the organization science and strategic management literatures, this chapter introduces and reviews the notions of dynamic capability and ambidexterity. However, the literature lacks a coherent understanding of both concepts. As such, this chapter adopts a systematic literature review approach to explore the foundations, antecedents and consequences of dynamic capability and ambidexterity in terms of definitions, operationalizations and measurements of their key dimensions. This chapter concludes by arguing that dynamic capability and ambidexterity share some common elements, but are idiosyncratic meta-organizational capabilities for developing and maintaining superior firm performance in today's fast-moving business environments. The insights from the systematic literature review approach provide a theoretical basis for the empirical studies in this dissertation.

2.1 Introduction

As is suggested in Chapter 1, the notions of dynamic capability (Teece et al. 1997; Eisenhardt & Martin 2000; Zollo & Winter 2002), and ambidexterity (March 1991; Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004) have taken center stage in the organization science and strategic management literatures to address situations of changing market and competitive conditions. This chapter explores the key dimensions of these higher-order organizational capabilities. As such, this chapter draws on a systematic literature review approach to develop an understanding of both concepts.

Section 2.2 first describes how the systematic literature reviews of dynamic capability respectively ambidexterity have been conducted. Drawing on these reviews, sections 2.3 and 2.4 develop an understanding of the foundations, antecedents and consequences of dynamic capability respectively ambidexterity. As such, this chapter examines how both concepts can be described in terms of definitions, operationalizations and measurements of their key dimensions. A summary and synthesis (including common elements and idiosyncrasies between dynamic capability and ambidexterity) is provided in section 2.5. These insights provide a theoretical basis for the remainder of this doctoral dissertation, as is outlined in section 2.6.

2.2 Systematic literature reviews

To assess the collective understanding of dynamic capability and ambidexterity, a systematic literature review approach is adopted "that attempts to minimize bias using systematic and explicit methods to identify, select, critically appraise and summarize relevant research" (Needleman 2002: 6). A systematic literature review thus involves a replicable, scientific and transparent process that minimizes bias and random error (Tranfield et al. 2003). In particular, such a review involves a comprehensive search of potentially relevant papers and books, and the use of explicit, reproducible criteria in the selection of papers and books for review; this serves to bring together existing studies that are relevant to the research being undertaken, irrespective of their published location or disciplinary background (Cook et al. 1997; Thorpe et al. 2005).

The systematic review of the dynamic capability and ambidexterity literature includes the search engines ABI/Inform, Emerald, Informs PubsOnline, Oxford Journals, ScienceDirect, SpringerLink, Web of Science and Wiley InterScience Journals; and catalogues such as

Catalogue Tu/e, NARCIS and PiCarta. The selection of papers and books in the dynamic capability literature draws on title and content, using the following search criteria: 'does the title of the paper or book contains dynamic capability or dynamic capabilities?', and 'does the paper or book (theoretically) contributes to the notion of dynamic capability and/or empirically study the notion of dynamic capability?'. Appendix A refers to the selected studies of dynamic capability that have been published before the 1st of January 2010: 47 papers and 1 book. The selection of papers and books in the ambidexterity literature draws on title and content, using the following search criteria: 'does the title of the paper or book contains ambidexterity, ambidextrous, or exploitation/exploration?', and 'does the paper or book (theoretically) contributes to the notion of ambidexterity and/or empirically study the notion of ambidexterity?'. Appendix B refers to the selected studies of ambidexterity that have been published before the 1st of January 2010: 46 papers and 2 books.

By sampling a large number and broad range of studies, rather than focusing on the consensus list of key papers and books, this approach differs from prior reviews of the dynamic capability literature (e.g. Zahra et al. 2006; Cavusgil, Seggie & Talay 2007; Schreyögg & Kliesch-Eberl 2007; Wang & Ahmed 2007; Easterby-Smith, Lyles & Peteraf 2009; Di Stefano et al. forthcoming), and the ambidexterity literature (e.g. Li, Vanhaverbeke & Schoenmakers 2008; Raisch & Birkinshaw 2008; Cao et al. 2009; Simsek 2009; Simsek et al. 2009). The systematic literature reviews of dynamic capability and ambidexterity in this chapter also differ from prior reviews by drawing on a comparison of definitions, operationalizations and measurements of dynamic capability respectively ambidexterity. One of the major limitations of these systematic literature reviews may arise from the subjective judgement regarding the relevance and quality of papers and books. A relevant paper or book, for example, may have failed to make the final selection when its title does not involve the key words used as the search criteria (whereas its content does), or because of a poorly written content that decreased the quality of the paper or book (cf. Pittaway, Robertson, Munir, Denyer & Neely 2004).

2.3 Towards a dynamic capability view

Several scholars suggested that the principal means for competitive advantage is rooted inside an organization (Hart 1995; Russo & Fouts 1997). Superior firm performance persists as less efficient and effective enterprises face high costs when copying more efficient and effective companies (Rumelt 1984). According to this so-called resource-based view (RBV),

competitive advantage relates to the degree to which the organization selects, builds, deploys and protects its resource base (Wernerfelt 1984; Chandler 1990; Barney 1991; Deeds et al. 1999). Barney (1991) extended the RBV to explain sustainable competitive advantage. In this respect, a firm should implement a value-creating strategy that is not introduced and unable to be duplicated by any current or potential competitor. Thus, bundles of firm resources need to meet the VRIN-conditions (i.e. valuable, rare, in-imitable and non-substitutable by other firm resources) (Wernerfelt 1984; Barney 1991; Peteraf 1993; Priem & Butler 2001; Barney & Clark 2007).

Within the RBV, early scholars defined a firm's resource base broadly, including the firm's physical, human and organizational assets, as well as organizational capabilities. For example, Barney (1991: 101) defined firm resources as: "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness." In addition, Ray, Barney and Muhanna (2004) used the notion of a firm's resource base and organization capabilities interchangeably, referring to the tangible and intangible assets firms use to develop and implement their strategies. However, Penrose (1959: 25) suggested that firm resource inputs are available to all firms, but "the 'capability' to deploy them productively is not uniformly distributed." Dosi et al. (2000) noted that to be capable of some 'thing' is to have a generally reliable ability to bring that 'thing' about as a result of intended action. Organizational capability thus refers to "the ability of an organization to perform a coordinated set of tasks (…) for the purpose of achieving a particular end result" (Helfat & Peteraf 2003: 999). Here, the focus is aimed at assembling, integrating and deploying firm resources that are embedded in the firm's primary activities; its operating routines and processes (Penrose 1959; Amit & Schoemaker 1993; Russo & Fouts 1997; Javidan 1998; Helfat & Peteraf 2003; Winter 2003; Zahra et al. 2006; Mom, van den Bosch & Volberda 2007). In this respect, Helfat and Peteraf (2003: 999) defined a firm resource as: "an asset or input to production (tangible or intangible) that an organization owns, controls, or has access to on a semi-permanent basis." Firm resources may be tangible, including physical assets (e.g. plant, stock of raw materials, equipment, geographic location and financial capital); or intangible, including human assets (e.g. know-how of manpower and the management team, employee training and loyalty), and organizational assets (e.g. product/service quality, brand image and reputation) (Grant 1991; Javidan 1998; Eisenhardt & Martin 2000). Operating routines and processes refer, for example, to product/service development, the manufacturing

of a particular product, distribution and logistics, marketing of products/services, and sales of products/services (cf. Javidan 1998).

In order to achieve a particular end result (Helfat & Peteraf 2003), an organizational capability needs to display intentionality. Specific actions may be intentional or may be rather automatic, whereas automatic actions involve intentionality indirectly; that is, intentionality is deeply embedded in specific actions (e.g. habitual responses of human beings) (Dosi et al. 2000). Here, Dosi et al. (2000) distinguished between tacit, subconscious and high-frequency of exercise, and more deliberate processes in skill development and deployment. Similarly, Dosi et al. (2000) also distinguished between the execution of high-frequency, repetitive daily business by lower-level employees, and decisions by (top) managers about the development and deployment of organizational capabilities. An organizational capability must also have reached some level of routine activity, involving patterns of behavior that are followed repeatedly rather than idiosyncratically (Nelson & Winter 1982; Feldman 2000; Helfat et al. 2007). In other words, taking a first cut at an activity does not constitute an organizational capability. However, an organizational capability should be distinguished from organizational routines here (Dosi et al. 2000). Whereas organizational capabilities involve repetitive organized activity, organizational routines are units of organized activity with a repetitive character; they are the building blocks of organizational capabilities. In this respect, organizational routines involve no presumption regarding evident purpose nor deliberation or conscious choice, although an organizational routine does not exclude the possibility of deliberate or conscious decisions about actions (Dosi et al. 2000). Finally, organizations may differ in the efficiency or effectiveness of a particular organizational capability. When firms have an organizational capability, it merely means that this capability has reached some minimum level of functionality that permits repeated performance of an activity (Helfat & Peteraf 2003). Different terminologies are used to describe organizational capabilities, such as first-order capability (e.g. Danneels 2002), zero-level capability (e.g. Winter 2003), substantive (i.e. ordinary) capability (e.g. Zahra et al. 2006), and operational capability (e.g. Cepeda & Vera 2007; Newey & Zahra 2009). These different terminologies all refer to the organizational capability that permits "a firm to 'make a living' in the short term" (Winter 2003: 991).

The RBV has thus marked a clear shift towards the importance of organizational capabilities in creating and sustaining competitive advantage (Barney 1991). However, gaining and

maintaining competitive advantage in situations of changing market and competitive conditions asks for an extension of the RBV. In this respect, firms are faced with markets that are moderately-dynamic or high-velocious (cf. Eisenhardt & Martin 2000). In moderately-dynamic markets, change occurs frequently along roughly predictable and linear paths in the context of stable industry structures (i.e. clear market boundaries and well known competitors and customers). High-velocity markets involve change that occurs frequently along less predictable and nonlinear paths in the context of blurring industry structures (i.e. ambiguous market boundaries and shifting competitors and customers) (Eisenhardt & Martin 2000). Under the RBV, core rigidities may develop, for example when long periods of firm success results in a loss of alertness for environmental change (Leonard-Barton 1992). Firms should overcome such core rigidities (Leonard-Barton 1992), especially in environments where environmental change is prominent (Luo 2000; Griffith & Harvey 2001). As Newey and Zahra (2009: 83) argued, "the need for dynamic capabilities is most acute when operating capabilities become core rigidities through exogenous shocks", implying that a firm's dynamic capabilities are of utmost importance in today's modern firms (Kyläheiko, Sandström & Virkkunen 2002). As such, the *dynamic capability view* (DCV) has been introduced as a valuable source in addressing dynamic business environments (e.g. Teece & Pisano 1994; Teece et al. 1997; Eisenhardt & Martin 2000). In the organization science and strategic management literatures, dynamic capability has become a key meta-organizational capability to do so (Teece et al. 1997; Eisenhardt & Martin 2000). See table 2.1 for a comparison between the RBV and DCV.

Although the DCV is primarily rooted in the RBV (Griffith & Harvey 2001; Makadok 2001), research streams such as evolutionary theory (Nelson & Winter 1982), the knowledge-based view (Kogut & Zander 1992), transaction cost theory (Williamson 1975), behavioral theory (Cyert & March 1992), and the positioning view (i.e. Porter 1985) also contributed to the dynamic capability literature (Augier & Teece 2009; Di Stefano et al. forthcoming). As an increasing number of scholars in different research streams is studying dynamic capability, the dynamic capability literature is riddled with inconsistencies, overlapping definitions and outright contradictions (Zahra et al. 2006; Di Stefano et al. forthcoming). This has contributed to a lack of consistency in theoretical and empirical work, creating problems for comparing and integrating the literature, as well as for replicating and generalizing findings (Di Stefano et al. forthcoming). The literature would thus benefit from developing an understanding of the key dimensions of dynamic capability in order to respond to scholars that attempt to

	Resource-Based View (RBV)	Dynamic Capability View (DCV)	
Theoretical roots	Wernerfelt (1984)/Barney (1991)	Teece & Pisano (1994)/Teece et al. (1997)/ Eisenhardt & Martin (2000)	
Conceptualization	**Firm's resource base:** includes (a combination of) a bundle of firm assets, organizational capabilities, organizational processes, firm attributes, information, knowledge, etcetera (Barney 1991) *versus*... only includes the tangible/ intangible assets or inputs to production that a firm owns, controls, or has access to on a semi-permanent basis (Helfat & Peteraf 2003)	**Dynamic capability:** detailed, analytic routines by which firms alter their organizational capabilities to address changing environments (Teece et al. 1997) *versus*... specific detailed, analytic routines, or simple, experiential routines, by which firms alter their resource base to address changing environments and/or create market change (Eisenhardt & Martin 2000)	
		Teece et al. (1997)	**Eisenhardt & Martin (2000)**
Heterogeneity	Idiosyncratic (i.e. firm specific)	Idiosyncratic (i.e. firm specific)	Commonalities (i.e. best practice), with some idiosyncratic (i.e. firm specific) details
Outcome	Predictable	Predictable	Predictable/unpredictable: depend on market dynamism
Environment	Does not differentiate	Does not differentiate	Moderately dynamic versus high-velocity markets
Competitive advantage	Possible in any environment through a competitive firm resource base position; here, firm resources are valuable, rare, in-imitable and non-substitutable	Possible in dynamic environments where dynamic capabilities are valuable, rare, in-imitable and non-substitutable	Possible in dynamic environments where dynamic capabilities are valuable, somewhat rare, imitable and substitutable

Table 2.1: Comparing the RBV and the DCV
(adapted from: Eisenhardt & Martin 2000; Cavusgil et al. 2007)

comprehend the process of this capability formation, as well as to practitioners that are trying to create such a capability. The following sections assess what the collective understanding of

dynamic capability appears to be at this point in time, drawing on a comparison between definitions, operationalizations and measurements of dynamic capability.

2.3.1 Foundations of dynamic capability

Teece and Pisano (1994) and Teece et al. (1997) introduced the concept of dynamic capability. In their view, competitive advantage stems from high-performance routines operating inside the firm, shaped by distinctive organizational processes, asset positions, and evolutionary paths. These high-performance routines constitute dynamic capability, defined as: "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al. 1997: 516). Here, dynamic capabilities are detailed, analytic, idiosyncratic, and have rather predictable outcomes. In changing environments, competitive advantage can thus be build through reshaping existing (tangible and intangible) firm resources and organizational capabilities, and through creating new ones (Teece et al. 1997).

Eisenhardt and Martin (2000) treated dynamic capabilities as capabilities that shape a firm's resource position (e.g. capabilities in firm acquisition, alliancing, product development, and strategic decision making). Eisenhardt and Martin (2000: 1107) adopted the following definition of dynamic capability: "the firm's processes that use resources - specifically the processes to integrate, reconfigure, gain and release resources - to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die." In Eisenhardt and Martin's (2000) view, dynamic capabilities involve commonalities (i.e. best practice) with some idiosyncratic details, and are linked to market dynamism (with predictable and unpredictable outcomes), exhibiting different features in two types of markets. In a moderately-dynamic market, dynamic capabilities resemble the traditional conception of capabilities as detailed and analytic. In high-velocity markets, however, dynamic capabilities tend to involve simple and experiential capabilities (Eisenhardt & Martin 2000). The behavioral dynamics of creating dynamic capability is thus fundamentally different in stable versus dynamic market conditions. As such, Eisenhardt and Martin (2000) suggested that dynamic capabilities are specific capabilities that embrace not only detailed, analytic capabilities, but also simple, experiential ones. In addition, they argued that dynamic capabilities can be a source of competitive advantage if they are applied sooner and more straightforwardly than competition to create bundles of firm resources.

Scholars built on Teece et al. (1997) and Eisenhardt and Martin (2000). See table 2.2 for an overview of the five most prominent dynamic capability papers (drawing on Web of Science and ISI Web of Knowledge (i.e. Journal Citation Reports): these are the papers that contain dynamic capability or dynamic capabilities in the title, and that are cited > 100 times in journals that have a 5-year impact factor in 2008 of > 5).

Teece et al. (1997), Eisenhardt and Martin (2000), Zollo and Winter (2002), Helfat and Peteraf (2003), and Winter (2003) demonstrated that the dynamic capability literature is of a high abstract level: their theoretical papers showed the inconsistency, overlap and contradictions in definitions of dynamic capability. Scholars also tend to draw on different terminologies to refer to dynamic capability, such as second-order capability (e.g. Danneels 2002), first-order capability (e.g. Winter 2003), and higher-order (i.e. meta-) capability (Collis 1994). Although other scholars provided a new definition of dynamic capability (see table 2.3), the inconsistency, overlap and contradictions in terminology and definitions of dynamic capability tends to remain (see table 2.2 and 2.3).

2.3.2 Distinguishing dynamic capability from other activities

In order to understand what dynamic capability is, there is a need to also define what dynamic capability is *not*, thereby drawing on the most fundamental concerns that have been raised in the dynamic capability literature. In this respect, several scholars argued for a number of organizational activities that do not account for dynamic capability. As such, dynamic capability should be distinguished from:

- *An unintentional and idiosyncratic way of acting*. Zollo and Winter (2002: 340) defined dynamic capability as: "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness." This definition implies that dynamic capabilities consist of patterned organizational behavior that firms invoke on an intentional and repeated, rather than unintentional and idiosyncratic basis (Sher & Lee 2004; Cepeda & Vera 2007; Helfat et al. 2007).
- *The firm's primary activities* (i.e. operating routines and processes). Dynamic capabilities govern the rate of change of the firm's primary activities, that is, dynamic capabilities operate to assemble, integrate and deploy firm resources that are embedded in the firm's operating routines and processes (Collis 1994; Teece et al. 1997; Eisenhardt & Martin 2000; Rindova & Kotha 2001; Adner & Helfat 2003; Helfat & Peteraf 2003; Winter

Author	Type of study	Definition dynamic capability	Key issue
Teece et al. (1997)	Theoretical	"The firm's **ability** to **integrate, build, and reconfigure** internal and external competences to address rapidly changing environments" (p. 516)	**What is a dynamic capability?** Introduce the notion of dynamic capability
Eisenhardt & Martin (2000)	Theoretical	"The firm's **processes that use resources** - specifically the processes to **integrate, reconfigure, gain and release** resources - to match and even create market change. Dynamic capabilities thus are the **organizational and strategic routines** by which firms **achieve new resource configurations** as markets emerge, collide, split, evolve, and die" (p. 1107)	**What is a dynamic capability and what is the role of market dynamism?** Suggest a contradictory understanding of the notion of dynamic capability compared to Teece et al. (1997), and propose how dynamic capabilities are influenced by market dynamism
Zollo & Winter (2002)	Theoretical	"A **learned and stable pattern of collective activity** through which the organization systematically **generates and modifies its operating routines** in pursuit of improved effectiveness" (p. 340)	**How to shape a dynamic capability by means of learning mechanisms?** Suggest how the co-evolution of learning mechanisms (i.e. experience accumulation, knowledge articulation/codification) create dynamic capabilities
Helfat & Peteraf (2003)	Theoretical	"Dynamic capabilities involve adaptation and change, because they **build, integrate, or reconfigure other resources and capabilities** (p. 997)	**How does an organizational capability become a dynamic capability?** Introduce a dynamic resource-based view by proposing the capability lifecycle model (i.e. describe the evolution of organizational capabilities in terms of its founding, development and maturity)
Winter (2003)	Theoretical	"Those that operate to **extend, modify or create ordinary capabilities**" (p. 991)	**What is and is not a dynamic capability?** Suggests what the notion of dynamic capability is and is not (i.e. ad-hoc problem solving)

Table 2.2: Prominent studies in the dynamic capability literature

Dynamic capability
"The capacity of an organization to consistently nurture, adapt, and regenerate its knowledge base, and to develop and retain the organizational capabilities that translate that knowledge base into useful actions" (Iansiti & Clark 1994: 563)
"The ability of a firm to develop new capabilities in response to shifts in its external environment" (Tripsas 1997: 341)
"The subset of competence/capabilities which allow the firm to create new products and processes, and respond to changing market circumstances" (Verona & Ravasi 2003: 578)
"A set of specific and identifiable processes, such as product development, strategic decision-making, and alliances" (Sher & Lee 2004: 935)
"The abilities to reconfigure a firm's resources and routines in the manner envisioned and deemed appropriate by its principal decision-maker(s)" (Zahra et al. 2006: 918)
"The capacity of an organization to purposefully create, extend or modify its resource base" (Helfat et al. 2007: 4)
"The capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets" (Teece 2007: 1319)
"A firm's behavioural orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage" (Wang & Ahmed 2007: 35)
"The ability to sense and then seize new opportunities, and to reconfigure and protect knowledge assets, competencies, and complementary assets with the aim of achieving a sustained competitive advantage" (Augier & Teece 2009: 412)
"The ability of the firm to reconfigure operating capabilities and thus allow the organization to adapt and evolve" (Newey & Zahra 2009: 81)
Global dynamic capability "The creation of difficult-to-imitate combinations of resources, including effective coordination of inter-organizational relationships, on a global basis that can provide a firm a competitive advantage" (Griffith & Harvey 2001: 598; Chen & Jaw 2009: 250) **Dynamic managerial capability** "The capabilities with which managers build, integrate, and reconfigure organizational resources and competences" (Adner & Helfat 2003: 1012) **Dynamic marketing capability** "Reflect human capital, social capital and the cognition of managers involved in the creation, use and integration of market knowledge and marketing resources in order to match and create market and technological change" (Bruni & Verona 2009: 103)

Table 2.3: New definitions of dynamic capability

2003; Zahra et al. 2006; Teece 2007; 2008; Ambrosini, Bowman & Collier 2009; Bruni & Verona 2009; Newey & Zahra 2009).

and …

- *Ad-hoc problem solving*. Winter (2003) introduced the concept of ad-hoc problem solving; the non-routine change activities, typically appearing as a response to relatively unpredictable events. According to Winter (2003), the ability to solve problems does not imply a dynamic capability. In fact, dynamic capabilities may be quite rare (Winter 2003). In this respect, Winter (2003) contrasts the cost structure of dynamic capabilities with that of ad-hoc problem solving. Dynamic capabilities involve long-term commitments to specialized resources, for example, account management. The ability to sustain a particular approach and commitment to, for example, account management depends to some extent on continuity in staff experience, information systems and client networks (cf. Winter 2003). However, Winter (2003) argued that the costs of ad-hoc problem solving largely disappear if there is no problem to solve. These costs, if any, tend to be opportunity costs of staff with alternative productive roles in the organization (Winter 2003). The fundamentally different cost structures between dynamic capabilities and ad-hoc problem solving may explain why dynamic capabilities tend to be rare as well as why ad-hoc problem solving tends to prevail in many firms.

2.3.3 Designing for dynamic capability

In order to understand how to design for dynamic capability, several scholars started proposing a variety of antecedents of dynamic capability. As a variety of antecedents exists, the question of how to develop dynamic capability has not been fully explained yet (Cavusgil et al. 2007). For example, scholars focused on antecedents such as social capital (Blyler & Coff 2003), and organizational structure and process (Teece et al. 1997; Rindova & Kotha 2001). In this respect, Blyler and Coff (2003: 678) argued that social capital involves "the ability of actors to secure benefits by virtue of membership in social networks", and therefore is a necessary condition for dynamic capability. In addition, Teece et al. (1997) suggested that a decentralized organizational structure helps firms to develop dynamic capability. Rindova and Kotha (2001) moved beyond decentralization: significant changes in the ranges of products and services that the internet search engine firms under study offered, along with reconfigurations of the firm's resource base, organizational capabilities and organizational structures employed to deliver the extended range of products and services, were found to serve as antecedents of dynamic capability. By continuously adapting form and function,

these firms engaged in what was labeled as the 'continuous morphing of form' (Rindova & Kotha 2001).

Most scholars, however, argued that dynamic capability stems from path dependency, incorporating the influence of a firm's history on the evolution of dynamic capability (Nelson & Winter 1982; Teece et al. 1997; Eisenhardt & Martin 2000; Zollo & Winter 2002; Helfat et al. 2007). In this respect, dynamic capabilities are considered to be knowledge-based (e.g. Iansiti & Clark 1994; Helfat 1997; Tripsas 1997; Zollo & Winter 2002; Marsh & Stock 2003; Verona & Ravasi 2003; Macpherson, Jones & Zhang 2004; Sher & Lee 2004; Prieto & Easterby-Smith 2006; Cepeda & Vera 2007; Easterby-Smith & Prieto 2008; Bruni & Verona 2009; Pandza & Thorpe 2009; Romme, Zollo & Berends forthcoming). Influential scholars in this area are Zollo and Winter (2002), who suggested that the co-existence of learning mechanisms (i.e. experience accumulation, knowledge articulation and knowledge codification) may lead to the development of dynamic capability, whereas the latter assemble, integrate and deploy firm resources that are embedded in operating routines and processes (see figure 2.1).

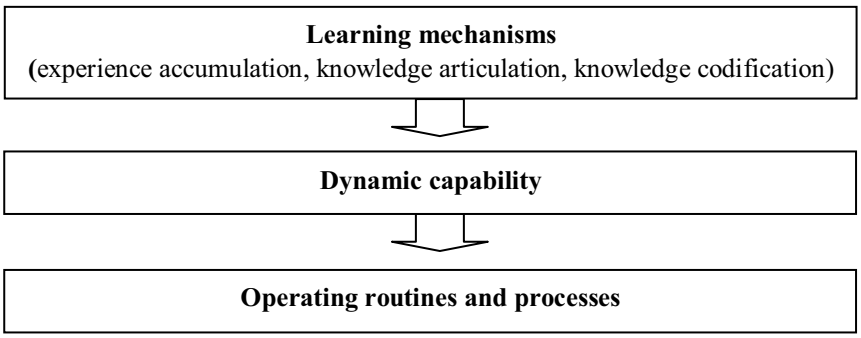


Figure 2.1: Learning mechanisms for dynamic capability (adapted from: Zollo & Winter 2002)

Zollo and Winter (2002) argued that the level of investment in developing dynamic capabilities is the lowest when the firm draws on experience accumulation, as the learning then happens in an essentially semi-automatic fashion (e.g. learning-by-doing). This is therefore likely to be a valid approach in less volatile market environments (cf. Eisenhardt & Martin 2000). In more volatile environments (cf. Eisenhardt & Martin 2000), the learning investment is likely to be higher, particularly when the organization (or the relevant business unit) relies on knowledge articulation (e.g. in meetings) to attempt to master or improve a certain activity. In this respect, the company will have to incur costs due to the time and

energy required for people to meet and discuss their respective experiences and beliefs. This implies the necessity of a high level of cognitive effort because there is a certain level of understanding of the causal mechanisms intervening between the actions required to execute a certain task and the performance outcomes produced. According to Zollo and Winter (2002), such articulation efforts can produce an improved understanding of the new and changing action-performance links, and as such result in adaptive adjustments to the existing sets of routines or in enhanced recognition of the need for more fundamental change. Moreover, the learning investment and cognitive effort will be the highest for knowledge codification, because people then not only have to meet and discuss, but they also have to actually develop a document or a tool (e.g. manual or piece of software) aimed at distilling the insights achieved during discussions. If such a document or tool already exists, one has to decide whether and how to update it, and then to actually do the update (cf. Zollo & Winter 2002).

2.3.4 Dynamic capability and tautology

Dynamic capability involves three levels of analysis: the capability itself, what makes up the capability, and its outcome. The dynamic capability literature tended to interweave these levels of analysis. In particular, dynamic capability and firm performance are often intertwined. Because dynamic capability aims to improve a firm's "effectiveness" (Zollo & Winter 2002: 340), dynamic capability is considered to be intertwined with: (1) financial performance in terms of return on assets and return on sales, and/or (2) business performance in terms of market share, sales growth, diversification, and product/service development. This may raise a tautological problem in measuring dynamic capability, particularly when dynamic capability is inferred from successful firm performance: if the firm performs well, it apparently possesses dynamic capability; if performance is not superior, then the firm apparently scores low on dynamic capability (Zahra et al. 2006).

Eisenhardt and Martin (2000) first attempted to decouple dynamic capability from firm performance in order to solve this tautological problem. They stated that dynamic capabilities are identifiable, specific processes that are neither vague nor tautological. For example, such dynamic capabilities are capabilities in product/service development "by which managers combine their varied skills and functional backgrounds to create revenue producing products and services", or in strategic decision making through which "managers pool their various business, functional, and personal expertise to make the choices that shape the major strategic moves of the firm" (Eisenhardt & Martin 2000: 1107). Zott (2003) also made the distinction

between dynamic capabilities and firm performance, by synthesizing Zollo and Winter's (2002) work into an evolutionary model in which change processes (i.e. dynamic capabilities) operate on a firm's resource position, which then determines its performance in a competitive marketplace. Other scholars who focused on this tautology are Zahra et al. (2006) and Helfat et al. (2007). They deliberately attempted to decouple the definition, operationalization and measurement of dynamic capability from a firm's financial and business performance. For example, Zahra et al. (2006) described dynamic capability as the ability to reconfigure a firm's resources and routines in the manner its principal decision-maker(s) envisioned it. In this respect, the creation and use of dynamic capabilities correspond to: (1) the firm founder's or top manager's perception of opportunities to change existing firm resources and routines, (2) their willingness to undertake such change, and (3) their ability to implement change. Similarly, Helfat et al. (2007) described dynamic capability as the firm's capacity to purposefully create, extend, or modify its resource base, acknowledging that change in the firm's resource base implies only that the organization is doing something different, but not necessarily better than before. Helfat et al. (2007) further proposed the notion of evolutionary fitness, referring to how well a dynamic capability enables a firm to 'make a living' in the long term by creating, extending or modifying its resource base. By contrast, technical fitness refers to how effectively a dynamic capability performs its intended function (i.e. intended on the short term). Technical fitness has two dimensions: quality and cost (i.e. how well the dynamic capability performs respectively how much it costs to perform at a certain level) (Helfat et al. 2007). Evaluating technical fitness, however, needs to take place at an ad-hoc basis, which can raise a new tautological problem when distilling what resulted in the level of quality and amount of cost. In this respect, the question remains whether what has been assumed to account for the performance and costs of the dynamic capability actually accounted for it.

Regardless of the discourse on the tautology issue in measuring dynamic capability, only a small number of empirical studies avoided firm performance indicators in operationalizing and measuring dynamic capability (e.g. Daniel & Wilson 2003; Verona & Ravasi 2003; Newbert 2005; Wilson & Daniel 2007). Most empirical studies did in fact raise tautological problems related to firm performance indicators. For example, Menguc and Auh (2006) addressed the impact of the dynamic capability of market orientation on firm performance, measured in terms of return on investment/sales/assets, sales/market share/profit growth, cash flow from market operations, and profitability, as the firm performance indicator. Another

example study is Fang and Zou (2009), who examined how marketing dynamic capabilities are reflected in an international joint venture by measuring the firm's return on asset and sales growth as the firm performance indicators that reflect the international joint venture's financial performance.

When firm performance is (conceptually) decoupled from dynamic capability, other tautological problems may still remain. Defining dynamic capability in terms of, for example, specific firm rules and behaviors rather than an ability to accomplish something, is as problematic as defining it in terms of firm performance. If a dynamic capability is an ability to do something (cf. Teece et al. 1997), then the organization could change its meta-rules and still have the capability, even if the firm rules and behaviors change. An example is the relationship between learning mechanisms, dynamic capability and improved effectiveness, that was suggested by Zollo and Winter (2002). According to Zollo and Winter (2002), dynamic capability may lead to improved effectiveness (outcome of a capability), which involves the capability of assembling, integrating and deploying firm resources that are embedded in operating routines and processes (the capability itself). This capability, in turn, is grounded in specific rules and behaviors that are embedded in learning mechanisms of experience accumulation, knowledge articulation and knowledge codification (what makes up the capability) (Zollo & Winter 2002). Similarly, Schreyögg and Kliesch-Eberl (2007) suggested that, in order to avoid tautological problems, a firm should possess innovation routines ('dynamic capabilities'), which refer to novel problem-solving patterns that are directed towards modifying the firm's operating routines and processes (the capability itself). In their opinion, these innovation routines arise from learning (what makes up the capability), thereby referring to the work of Zollo and Winter (2002). Nielsen (2006), however, interweaved different levels of analysis (what makes up the capability and the capability itself), in terms of assembling knowledge management activities into the dynamic capabilities of knowledge development, knowledge (re)combination and knowledge use.

Most empirical studies did in fact raise tautological problems related to firm rules and behaviors indicators. For example, Iansiti and Clark (1994) associated dynamic capability with both internal and external integration, that were measured with technology and customer integration consistency indexes. King and Tucci (2002) linked static and transformational experience with market entry (as part of a dynamic capability), whereas static experience was measured with the firm's experience in producing and selling to existing markets, and

transformational experience with entering into a new market niche, a firm's technological position, its market share and the firm's structure and industry conditions. In this respect, appendix C gives an overview of the operationalization and measurement of dynamic capability in the empirical studies that are part of this sub-section.

As such, researchers need to demonstrate that changes in operating routines and processes are due to at least one dynamic capability, instead of solely examining whether: (1) the existence of one or more dynamic capabilities leads to successful firm performance or specific firm rules and behaviors, or (2) if underperformance or specific firm rules and behaviors result from the absence of such capabilities. However, as McKelvie and Davidsson (2009: 70) argued, "one definitive measurement tool for dynamic capabilities has yet to emerge." In this respect, a fundamental challenge is to develop operationalizations and measures of dynamic capability that are grounded in existing theory, are empirically straightforward and valid (i.e. do not include direct or indirect measurements of firm performance or specific firm rules and behaviors), and serve to help practitioners make their organizations more effective. Therefore, the following sub-section proposes a new definition of dynamic capability that provides a starting point for future research, advancing our understanding of dynamic capability.

2.3.5 Re-defining dynamic capability

The previous review of what dynamic capability is (not) implies the following components of a definition of dynamic capability; dynamic capability involves a higher-order organizational capability that conveys knowledge among its key agents that:

- is mastered with intention and invoked on a repeated basis (e.g. Zollo & Winter 2002; Sher & Lee 2004; Cepeda & Vera 2007; Helfat et al. 2007);
- serves to question purpose and effectiveness of the firm's resource base (e.g. Zollo & Winter 2002; Winter 2003; Helfat et al. 2007); and
- serves to generate and modify operating routines and processes (e.g. Teece et al. 1997; Eisenhardt & Martin 2000; Zollo & Winter 2002) to address changing environments and/or create market change (e.g. Teece et al. 1997; Eisenhardt & Martin 2000).

Dynamic capability is thus re-defined as a higher-order organizational capability…

that conveys knowledge among its key agents that:
- *is invoked on an intentional and repeated basis,*
- *serves to question purpose and effectiveness of the firm's resource base, and*
- *serves to generate and modify operating routines and processes to address changing environments and/or create market change.*

The proposed definition builds on previous definitions of dynamic capability. For example, as Zollo and Winter (2002), this definition suggests that a dynamic capability generates and modifies operating routines and processes. In addition, as Teece et al. (1997) and Eisenhardt and Martin (2000), this definition suggests that a dynamic capability addresses changing environments and/or create market change. However, this definition imposes boundaries on which capabilities can be understood as being dynamic in nature, which has obvious implications for what should not be interpreted as a dynamic capability. In particular, this definition, more explicitly than in most other studies (e.g. Teece et al. 1997; Eisenhardt & Martin 2000), implies that routinized capabilities with a low level of awareness are not understood as dynamic in nature. Such routinized capabilities involve repetitive organized activity (Feldman 2000), but lack intentionality (Dosi et al. 2000), whereas this definition stresses the importance of capabilities' repeatedness as well as its intentionality. In this respect, this definition extends the concept of innovation routines as suggested by Schreyögg and Kliesch-Eberl (2007), who emphasized dynamic capabilities' repeatedness (captured by the term innovation routines), but not so much its intentionality (as they do not stress that innovation routines should involve a high level of awareness). Similarly, this definition implies that a dynamic capability that subsequently matures and becomes more habitual and therefore requires less and less conscious thought (cf. Helfat & Peteraf 2003) breaks down as a dynamic capability (note that it may constitute a growing capability that is operational in nature). In addition, this definition avoids tautological problems by decoupling dynamic capability from firm performance (i.e. the outcome of dynamic capability involves addressing changing environments and/or creating market change). Also, this definition avoids tautological problems in relation to defining dynamic capability in terms of specific firm rules and behaviors. In this respect, this definition distinguishes between the capability itself (i.e. generating and modifying operating routines and processes), and what makes up the capability

(i.e. knowledge among key agents on how to question the firm's resource base). In turn, the criteria to observe dynamic capability 'in action' can be articulated as follows:

- an organizational capability, conducted in a routinized way (i.e. not inspired by firm performance or specific firm rules and behaviors);
- that specifically deals with reflecting upon the firm's operating routines and processes by continuously and deliberately questioning how the firm's resource base influences operating routines and processes; and
- that is capable of changing the firm's operating routines and processes, when reflection showed that existing operating routines and processes do not (sufficiently) address changing market and competitive conditions and/or create market change.

2.4 Linking dynamic capability and ambidexterity

Scholars recently started to link the notions of dynamic capability and ambidexterity. In this respect, firms need to demonstrate the ability to timely respond to new circumstances in situations of changing market and competitive conditions (e.g. by drawing on one or more dynamic capabilities), along with the ability to address existing environments (e.g. Kyriakopoulos & Moorman 2004; O'Reilly & Tushman 2008; Jansen, Tempelaar, van den Bosch & Volberda 2009; Bodwell & Chermack forthcoming). The interest in ambidextrous organizations has therefore increased in recent years (Raisch & Birkinshaw 2008), suggesting that competitive advantage results from firms that are effective in adapting to changing market and competitive conditions and/or in creating market change, while at the same time being efficient in managing today's demands (March 1991; Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004; Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004). In other words, Gibson and Birkinshaw (2004) noted that superior firm performance results from being innovative and pro-active by moving quickly towards new opportunities, while also having a clear sense of how value is created in the short term and how to coordinate and streamline a firm's activities to deliver this value creation. Organizations thus face different and often competing priorities that need to be organized at the same time (March 1991; Adler, Goldoftas & Levine 1999; Gavetti & Levinthal 2000; Brown & Duguid 2001; Katila & Ahuja 2002; Miles & Snow 2003; Birchall & Tovstiga 2005; Jansen 2008; Rothaermel & Alexandre 2009), which refers to *the notion of ambidexterity* (March 1991; Tushman & O'Reilly 1996; Jansen 2005; 2008; Jansen et al. 2005; Jansen, George, van den Bosch & Volberda 2008; Jansen, Tempelaar, van den Bosch &

Volberda 2009). In the organization science and strategic management literatures, ambidexterity has become a key meta-organizational capability to create and sustain competitive advantage (Menguc & Auh 2008).

However, there is considerable ambiguity and disagreement regarding the notion of ambidexterity (Li, Vanhaverbeke & Schoenmakers 2008; Cao et al. 2009), as a variety of research domains have been creating a disconnected and complex debate (Raisch & Birkinshaw 2008). For example, research has spanned several disciplines, including organizational learning (e.g. pursuing single-loop and double-loop learning) (Argyris & Schön, 1978), organizational design (e.g. efficiency and effectiveness) (Burns & Stalker 1994), and technological innovation (e.g. incremental and radical innovation) (Tushman & O'Reilly 1996). This involves varying meanings of the concept, which has contributed to a lack of consistency in theoretical and empirical studies, creating problems for comparing and integrating the literature, as well as for replicating and generalizing findings (Simsek 2009; Simsek et al. 2009). The ambidexterity literature would thus benefit from developing an understanding of the key dimensions of ambidexterity in order to respond to scholars that attempt to comprehend the process of this capability formation, as well as to practitioners that are trying to create such a capability. As the field is developing into a new research paradigm, in which theories, generalizations and methods are formulated, such an assessment would be especially beneficial (Raisch & Birkinshaw 2008; Raisch et al. 2009). The following sections assess what the collective understanding of ambidexterity appears to be at this point in time, drawing on a comparison between definitions, operationalizations and measurements of ambidexterity.

2.4.1 Foundations of ambidexterity

The word 'ambidexterity' is derived from the Latin 'ambos' (i.e. both), and 'dexter' (i.e. right, as opposed to left). Ambidexterity thus refers to (Simsek 2009: 599): "right on both sides." Several scholars contributed to a shift towards this paradoxical thinking. In 1976, Duncan coined the term 'organizational ambidexterity' to focus on the firm's ability to design dual structures (i.e. mechanic versus organic) that facilitates the initiating and implementation stages of innovation. Several years after Duncan (1976), March (1991) referred to the simultaneous pursuit of exploitation of old certainties and exploration of new possibilities; reconciling the firm's operations-focused exploitation of its competitive position with the firm's future-focused exploration of new opportunities.

As exploitation and exploration are imperatives for succeeding in the competitive environments facing firms today (March 1991), companies need to manage the dynamics of exploitation and exploration from a protective stance (i.e. maintaining the status quo), to a disruptive stance (i.e. deliberately moving beyond the status quo). As such, organizations may create and sustain a competitive advantage through maintaining continuity in their daily operations, and implementing change (Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004; Gibson & Birkinshaw 2004). As such, exploitation captures terms as efficiency, selection and implementation (March 1991), and a focus on current activities in existing domains (Holmqvist 2004; Carmeli & Halevi 2009). Exploration implies terms as search, discovery, variation and experimentation (March 1991), and a focus on new activities in non-existing domains (Holmqvist 2004; Carmeli & Halevi 2009).

See table 2.4 for an overview of the four most prominent ambidexterity papers (drawing on Web of Science and ISI Web of Knowledge (i.e. Journal Citation Reports): these are the papers that contain ambidexterity or ambidextrous in the title, and that are cited > 70 times in journals that have a 5-year impact factor in 2008 of > 2). He and Wong (2004) and O'Reilly and Tushman (2004) stressed both exploitation and exploration, as most other scholars that provided a definition of ambidexterity (see table 2.5).

2.4.2 Exploitation and exploration: competency and failure traps

Tushman and O'Reilly (1996) argued that few firms may succeed in managing ambidexterity, as exploitation and exploration are fundamentally different logics. Given the inherent challenge of managing exploitation and exploration, companies run the risk of being mediocre at both, or get stuck in the middle (O'Reilly & Tushman 2008). Some scholars therefore suggested that firms need to make choices that favor one activity over the other (Barney 1991). In this respect, March (1991) argued that emphasizing exploration activities may be self-destructive as it degrades organizational learning in terms of a convergence between individual and organizational beliefs; for example, individuals may adjust to an organizational code before the code can learn from them. An emphasis on exploitation activities may lead to suboptimal equilibria: positive feedback of individuals may produce a strong path dependence in inferior activities that exclude superior activities which an organization has little experience with (March 1991). In addition, Menguc and Auh (2008) differentiated between organizations that focus on efficiency in narrow product-market domains (but seldom make major adjustments in their technology, structure, or methods of operation), and organizations that

Author	Type of study	Definition ambidexterity	Key issue
Tushman & O'Reilly (1996)	Theoretical	"Managers and organizations must be ambidextrous - able to implement both **incremental and revolutionary change**" (p. 8)	**How do incremental and revolutionary change complement each other?** Successful organizations evolve through relatively long periods of incremental change (i.e. alignment of strategy, structure and culture), punctuated by revolutionary change (i.e. periodically destroy alignment so as to reconstruct a new organization better suited for the next wave of competition)
Gibson & Birkinshaw (2004)	Empirical	Successful organizations in dynamic environments are ambidextrous: "**aligned and efficient** in their management of today's business demands, while also **adaptive** enough to changes in the environment that they will still be around tomorrow" (p. 209) ▪ Structural ambidexterity: "organizations manage trade-offs between conflicting demands by putting in place "**dual structures**", so that certain business units - or groups within business units - focus on alignment, while others focus on adaptation" (p. 209) ▪ Contextual ambidexterity: "the capacity to **simultaneously** achieve **alignment and adaptability** at a **business-unit level**" (p. 209)	**How does contextual ambidexterity differ from structural ambidexterity and what are antecedents and consequences of contextual ambidexterity?** Whereas structural ambidexterity involves separating alignment and adaptation into distinct business units, contextual ambidexterity involves achieving alignment and adaptation within a single business unit. Empirical findings: ▪ An organizational context (characterized by a combination of stretch, discipline, support and trust) is associated with contextual ambidexterity ▪ Such an organizational context is associated with firm performance; contextual ambidexterity mediates the relationship between organizational context and firm performance
He & Wong (2004)	Empirical	"Firms need to achieve a "balance" between the two ***(exploitation and exploration)*** to achieve superior performance" (p. 481)	**How do exploitation and exploration interact and what are the consequences of this interaction?** Examine how exploitation and exploration may jointly influence firm performance (i.e. ambidexterity hypothesis) in the context of technological innovation. Here, technological innovation activities aim at entering new product-market domains and at improving existing product-market positions. Empirical findings: ▪ The interaction between exploitative and explorative innovation strategies is positively related to sales growth rate ▪ The relative imbalance (i.e. absolute difference) between exploitative and explorative innovation strategies is negatively related to sales growth rate
O'Reilly & Tushman (2004)	Theoretical	"Ambidextrous organizations encompass two profoundly different types of business - those focused on **exploiting capabilities** for profit and those focused on **exploring new opportunities** for growth" (p. 8)	**How to integrate a firm's exploration activities into its exploitation activities?** Ambidextrous organizations segregate exploratory units from their traditional units so as to develop breakthrough innovations for staying competitive (i.e. exploration), and tightly coordinate these new units with the existing organization at the senior management level so as to protect the firm's traditional business (i.e. exploitation)

Table 2.4: Prominent studies in the ambidexterity literature

Ambidexterity
"The ability to pursue exploratory and exploitative innovation simultaneously" (Jansen et al. 2005: 351)
"Ambidextrous firms are capable of exploiting existing competencies as well as exploring new opportunities with equal dexterity" (Lubatkin et al. 2006: 647)
"The combination of two discrete capabilities (exploration and exploitation)" (Menguc & Auh 2008: 455)
"The ability of a firm to simultaneously explore and exploit" (O'Reilly & Tushman 2008: 185)
Ambidextrous organizations "excel at exploiting existing products to enable incremental innovation and at exploring new opportunities to foster more radical innovation" (Andriopoulos & Lewis 2009: 696)
"An organization's ability to simultaneously reconcile exploration and exploitation" (Güttel & Konlechner 2009: 150)
"A manager's behavioral orientation toward combining exploration and exploitation related activities within a certain period of time" (Mom et al. 2009: 812)
"The ability to explore new capabilities while exploiting existing ones" (Nemanich & Vera 2009: 19)
" "Exploiting" existing complementary assets to support the new "exploratory" core technology" (Taylor & Helfat 2009: 718)

Table 2.5: Definitions of ambidexterity (which include exploitation and exploration)

almost continually search for new market opportunities (but are not completely efficient). In addition, firms that pursue exploitation activities usually achieve returns that are proximate and predictable, but not necessarily sustainable; whereas pursuing exploration activities is likely to involve a difficulty in estimating a firm's returns a priori, and may take a long time to materialize (Jansen 2005). Most firms however, seem to have a preference for exploitation activities, as the returns in the short term are more certain as well as closer in time and space than are the returns of exploration activities (March 1991). Also, exploitation activities usually involve positive feedbacks from pursuing current ways of doing things (Groysberg & Lee 2009). And finally, past exploitation activities make future exploitation activities in the same domain even more efficient (Jansen 2005).

Favoring exploitation or exploration activities led to the ambidexterity premise (Liu 2006): excessive exploitation (i.e. high exploitation, low exploration) may result in a competency trap, whereas excessive exploration (i.e. high exploration, low exploitation) may result in a failure trap. As Liu (2006) suggested, especially successful firms that have performed well

over a longer period of time become trapped into excessive exploitation or excessive exploration as they generally focus on a single activity at the expense of another activity. In addition, firms that are in a position to ignore their competitors will be more likely to be trapped than weaker firms that must battle with rivals (Liu 2006). Such traps initially may give a company a competitive advantage, as it may dramatically improve coordination and efficiency (Liu 2006). However, excessive exploitation may result in firms that are unable to respond adequately to environmental changes and new opportunities (fostering inertia) (Jansen et al. 2005; Liu 2006; Jansen, Tempelaar, van den Bosch & Volberda 2009). In contrast, excessive exploration may trap firms in an endless cycle of search and failure, becoming oversensitive to short-term search and errors in change, driving out efficiencies, and preventing a gain from economies of scale (fostering adrift) (March 1991; Jansen 2005; Liu 2006).

2.4.3 Distinguishing ambidexterity from other activities

In order to develop an understanding of ambidexterity, ambidexterity should be distinguished from:

- *A solely adaptive stance when exploiting and exploring*. Several scholars referred to ambidexterity in terms of pursuing incremental and radical/discontinuous innovation (Tushman & O'Reilly 1996; Benner & Tushman 2003; Holmqvist 2004; Li, Lin & Chu 2008; Andriopoulos & Lewis 2009). Incremental innovation represents minor adaptations of existing products/services and business concepts. Radical/discontinuous innovation refers to major adaptations leading to a switch from existing products/services and business concepts to new ones (Tushman & O'Reilly 1996; Raisch & Birkinshaw 2008). Besides adaptation that is involved in both incremental and radical/discontinuous innovation, ambidexterity also refers to stability, continuity and maintaining the status quo (Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004). As Tushman and O'Reilly (1996) and Gibson & Birkinshaw (2004) argued, firms need a protective stance in their daily operations.
- *The pursuit of the same levels of exploitation and exploration activities*. The ambidexterity literature raised the question whether a firm should merely strive for pursuing the same levels of exploration and exploitation, or seek to maximize (one of) both (cf. Cao et al. 2009). Several scholars suggested that ambidexterity refers to pursuing exploitation and exploration activities with equal dexterity (e.g. Kyriakopoulos

& Moorman 2004). As such, ambidexterity concerns matching the magnitude of exploration and exploitation activities on a relative basis (Cao et al. 2009), where ambidexterity is viewed as the absolute difference of exploitation and exploration activities (e.g. He & Wong 2004). However, ambidexterity is more than the pursuit of the same levels of exploitation and exploration (cf. Raisch & Birkinshaw 2008). Ambidexterity does not denote a mediocre split, but involves excelling in both, or in exploitation over exploration, or vice versa (Barney 1991; Liu 2006; Menguc & Auh 2008; Andriopoulos & Lewis 2009). In this respect, ambidexterity concerns the combined magnitude of both activities (Cao et al. 2009), where ambidexterity is viewed as the sum of exploitation and exploration activities (e.g. Gibson & Birkinshaw 2004, He & Wong 2004; Lubatkin et al. 2006).

and …

- *Pursuing, but not connecting exploitation and exploration activities*. As exploitation and exploration activities are interdependent, they need to be connected to generate synergistic outcomes as integrative efforts appropriate the value that is embedded in separated activities of exploitation and exploration (March 1991; Gibson & Birkinshaw 2004; O'Reilly & Tushman 2004; Lubatkin et al. 2006; Jansen et al. 2008; Tiwana 2008; Güttel & Konlechner 2009; Jansen, Tempelaar, van den Bosch & Volberda 2009; Jansen, Vera & Crossan 2009).

2.4.4 Designing for ambidexterity

Overall, there is a need to combine organizational design geared for repetitive activities and short-term efficiency with more flexible organizational forms for accommodating novelty (Tushman & O'Reilly 1996), as exploitation and exploration activities require fundamentally different organizational structures (Raisch & Birkinshaw 2008). However, scholars differ in their views on how to actually design firms for (antecedents of) ambidexterity, as is demonstrated in this sub-section.

Weaving ambidexterity

Duncan (1976) suggested a temporal and sequential separation of exploitation and exploration activities, which is labeled here as 'weaving ambidexterity' (see figure 2.2). To create ambidexterity, firms need to cycle through times of exploitation, and times of exploration (Duncan 1976), by utilizing the same business units at different times (temporal separation), as well as utilizing different business units (sequential separation) (Andriopoulos & Lewis

2009). In this respect, Simsek et al. (2009) referred to the sequential pursuit of exploitation and exploration activities across business units (i.e. reciprocal ambidexterity). This assumes a reciprocal interdependence in which the outputs of exploitation from a particular business unit become the inputs for exploration by another business unit, and the outputs of the latter business unit cycles back to become the inputs of the former business unit (Simsek et al. 2009). According to Holmqvist (2004), this cycling happens when there is dissatisfaction with ongoing rule-like behavior of either exploitation or exploration activities: exploitation will generate exploration via learning, whereas exploration will generate exploitation through focusing. As such, large and diversified firms with multiple business units are more likely to engage in weaving ambidexterity than small and focused organizations (cf. Duncan 1976; Andriopoulos & Lewis 2009; Simsek et al. 2009).

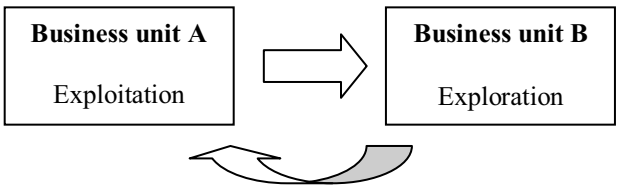


Figure 2.2: Weaving ambidexterity

Structural ambidexterity

More recently, several studies suggested structural ambidexterity as the simultaneous pursuit, but structural separation of exploitation and exploration (see figure 2.3) (Tushman & O'Reilly 1996; Benner & Tushman 2003; Gibson & Birkinshaw 2004; O'Reilly & Tushman 2004; Andriopoulos & Lewis 2009). In other words, Simsek et al. (2009) referred to structural ambidexterity as the simultaneous synchronizing of exploitation and exploration activities across multiple business units, each having its own strategies, structures and cultures (i.e. partitional ambidexterity). Here, the construct of ambidexterity is thus treated as bi-polar, where exploitation and exploration activities are on the opposite ends (Raisch & Birkinshaw 2008). Such an approach "protects ongoing operations in exploitative units from interfering with emerging competences being developed in exploratory units. Hence, it ensures that exploratory units are able to enjoy the required freedom and flexibility to develop new knowledge and skills" (Jansen, Tempelaar, van den Bosch & Volberda 2009: 798).

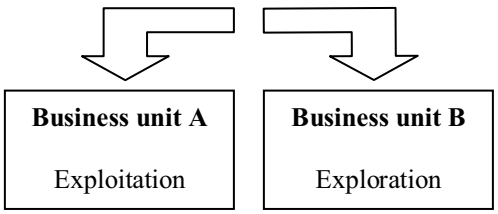


Figure 2.3: Structural ambidexterity

Large and diversified firms are more likely to engage in structural ambidexterity than small and focused organizations (Raisch & Birkinshaw 2008), because such firms are able to manage exploitation and exploration activities by creating separate business units (Lubatkin et al. 2006). In particular, pursuing exploitation activities seems to work best in large, more centralized business units of large and diversified firms, whereas pursuing exploration activities tends to be successful in small, more decentralized business units of these firms (Tushman & O'Reilly 1996; Benner & Tushman 2003).

While each business unit may operate independently, they are interdependent regarding the achievement of ambidexterity (Simsek et al. 2009). For example, without densely connected structures, exploration activities may not be exploited successfully (Simsek et al. 2009). Exploration activities should thus be integrated with the firm's existing systems and processes, after being spatially separated from the firm's exploitation activities (Gibson & Birkinshaw 2004; Jansen, Tempelaar, van den Bosch & Volberda 2009). Therefore, integrating exploitation and exploration activities of different business units should occur in terms of a combination between loose and tight coupling of business units (Tushman & O'Reilly 1996; O'Reilly & Tushman 2004; Simsek et al. 2009). Mechanisms for achieving this include a shared vision (O'Reilly & Tushman 2004; Jansen et al. 2008; Simsek et al. 2009), top managers' coordination (Lubatkin et al. 2006; Güttel & Konlechner 2009; Simsek et al. 2009), and systems for knowledge integration (Tiwana 2008).

Overall, (top) managers are suggested as key drivers for structural ambidexterity (Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004; Güttel & Konlechner 2009). Gibson and Birkinshaw (2004: 223), for example, note the "important role played by senior executives in making an organization context effective and developing ambidexterity." The linking of exploitation and exploration activities has therefore been often located at the (top) management level. These managers (are assumed to) judge best how to divide employees'

time between one set of activities and another, and as such, are able to create structures for exploitation and exploration activities (Tushman & O'Reilly 1996; Benner & Tushman 2003; Gibson & Birkinshaw 2004). Recently, scholars started investigating how managers enable their firms to manage exploitation and exploration activities. Antecedents that impact how managers facilitate these contradictory forces, are, for example, (top) management's wholeness in terms of collaborative behavior, and unity of effort regarding information exchanged and decision making (Lubatkin et al. 2006). Moreover, Carmeli and Haveli (2009) argued that managers need to take a wide range of leadership roles in different contexts. Antecedents also involve transformational leadership behaviors and (top) management's shared vision, its social integration, and its contingency rewards (Jansen et al. 2008). In particular, Jansen, Vera and Crossan (2009) suggested that transformational leadership behaviors contribute significantly to adopting generative thinking and pursuing exploratory innovation. Transactional leadership behaviors, on the other hand, facilitate improving and extending existing knowledge and are associated with exploitation activities (Jansen, Vera & Crossan 2009).

Contextual ambidexterity

Structural ambidexterity tends to focus on large and diversified firms, overlooking small and focused firms (Lubatkin et al. 2006). In small and focused firms, there are fewer hierarchical levels so that the entire firm (including the management) is likely to be involved in addressing both exploitation and exploration (cf. Lubatkin et al. 2006; Raisch & Birkinshaw 2008). Scholars therefore suggested contextual ambidexterity as the pursuit of exploitation and exploration within a single firm or business unit (see figure 2.4) (Gibson & Birkinshaw 2004). Here, scholars recognized the importance of combining, instead of structurally separating seemingly competing priorities (Gibson & Birkinshaw 2004; Lubatkin et al. 2006; Raisch & Birkinshaw 2008). In this respect, Simsek et al. (2009) referred to the sequential pursuit of exploitation and exploration within a single firm or business unit (i.e. cyclical ambidexterity). The firm alternates between long periods of exploitation (or relative stability) and short and sporadic periods of exploration (or change), by switching or shifting emphasis between exploitation and exploration activities (Simsek et al. 2009). In addition, Simsek et al. (2009) also refers to the simultaneous pursuit of exploitation and exploration within a single firm or business unit (i.e. harmonic ambidexterity).

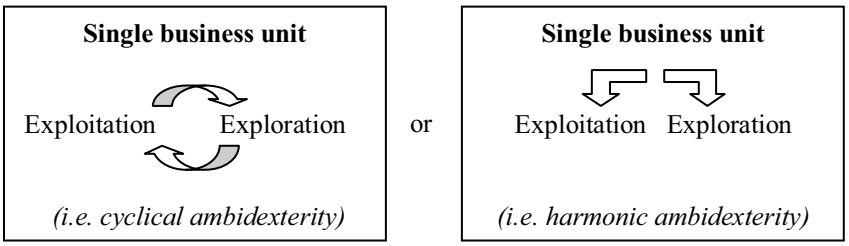


Figure 2.4: Contextual ambidexterity (i.e. cyclical or harmonic)

Contextual ambidexterity assumes that it is not in the firm's best interest to abdicate thinking and pro-activity only to people at the top (Gibson & Birkinshaw 2004). Jansen et al. (2005: 354) defined decentralization as: "the extent to which authority is delegated to lower levels of an organizational hierarchy", and argued that it facilitates the interplay between different perspectives and leads to a rich network of knowledge resources, facilitates ad-hoc problem solving that increases the range of possible responses to problems, and supports exploration activities. In this respect, employees at operating levels (e.g. middle, front-line managers, and lower-level employees) have taken center stage in mediating between divergent forces (Taylor & Helfat 2009). These employees use their own judgment for how they divide their time between alignment-oriented and adaptation-oriented activities in the context of their day-to-day work (Gibson & Birkinshaw 2004). The existence of a broad skill base of employees, a common frame of reference among employees, and a similar level of background knowledge among employees, is suggested to enhance contextual ambidexterity (Güttel & Konlechner 2009).

2.4.5 Operationalizing and measuring ambidexterity

Despite the growing theoretical consensus that ambidexterity is related to the pursuit of exploitation and exploration activities (Tushman & O'Reilly 1996; He & Wong 2004; Lubatkin et al. 2006), empirical research in this area has been rare (He & Wong 2004; Raisch & Birkinshaw 2008), and mainly draws on quantitative data (e.g. Rothaermel & Deeds 2004; Lubatkin et al. 2006; Sidhu, Commandeur & Volberda 2007; Tiwana 2008; Groysberg & Lee 2009; Rothaermel & Alexandre 2009; Uotila, Maula, Keil & Zahra 2009). Moreover, empirical studies are largely inconclusive as there are different ways to operationalize and measure ambidexterity as a result of different views and levels of analysis (He & Wong 2004; Raisch et al. 2009), which will be further explained in this sub-section. In this respect, appendix D gives an overview of the operationalization and measurement of ambidexterity in the empirical studies that are part of this sub-section.

Views on ambidexterity

As sub-section 2.4.4 showed, there are distinct views on ambidexterity. In this respect, some scholars suggested that exploitation and exploration activities draw on different business units, or focus on a single firm or business unit. In addition, others suggested a sequential separation of exploitation and exploration activities, or stress a simultaneous pursuit of both. Jansen (2008) argued that there are three ways to respond to these distinct views on ambidexterity: a firm may accept, resolve, or solve the difference between exploitation and exploration (see table 2.6).

Levels of analysis

This sub-section also turns to the question whether ambidexterity relates to the individual, organization, alliance, or industry level. At the individual level, scholars indicated that ambidexterity is rooted in the individual's ability to exploit and explore (e.g. Gibson & Birkinshaw 2004; Groysberg & Lee 2009; Mom, van den Bosch & Volberda 2009). Mom et al. (2009) for example, found that managers' decision-making authority (i.e. decentralization), their participation in cross-functional interfaces, and their connectedness to other employees, positively relates to managers' ambidexterity (i.e. ambidextous managers host contradictions in that they are sensitive to, and understand contradictions in, opportunities, they are multi-taskers, and they refine and renew their knowledge, skills and expertise).

At the organizational level, scholars frame ambidexterity in different ways. For example, several scholars referred to exploitation and exploration as innovation (e.g. Tushman & O'Reilly 1996; He & Wong 2004; Jansen et al. 2005; Jansen, van den Bosch & Volberda 2006; Lubatkin et al. 2006; Sidhu et al. 2007; Li, Lin & Chu 2008; Andriopoulos & Lewis 2009). For example, drawing on a sample of 206 manufacturing firms, He and Wong (2004) found that the interaction between exploitation and exploration in the context of technological innovation strategies is positively related to a firm's sales growth rate, whereas a relative imbalance between the two is negatively related to a firm's sales growth rate. Lubatkin et al. (2006) found similar results in small- and medium-sized firms. In addition, Sidhu et al. (2007) found that exploration is positively associated with innovation in more dynamic environments, but hinders innovation in less dynamic environments. Reversely, exploitation is favorably associated with innovation in less dynamic environments, but harms innovation in a more dynamic context.

Difference exploitation and exploration	Mode	Characteristics
'Accept' (i.e. acknowledge, allow)	Compromise	Comprise between exploitation and exploration
	Outsource	Outsource either exploitation or exploration, as the paradox of exploitation and exploration can not be resolved within the organization
'Resolve' (i.e. convert, shift, transfer)	Weaving ambidexterity: temporal and sequential separation of exploitation and exploration across business units	Distinct business units are organized to create periodicity through alternation between exploitation and exploration at different periods in time
	Structural ambidexterity: spatial separation of exploitation and exploration across business units	Distinct business units are simultaneously organized for the pursuit of either exploitation or exploration
'Solve' (i.e. disentangle, unravel, untie)	Contextual ambidexterity: ▪ Cyclical ambidexterity: sequential separation of exploitation and exploration within a single firm or business unit ▪ Harmonic ambidexterity: simultaneous exploitation and exploration within a single firm or business unit	A single firm or business unit is organized to address exploitation and exploration: ▪ sequentially and at different periods in time, or ▪ simultaneously and at similar moments in time

Table 2.6: Responding to the paradox of exploitation and exploration (adapted from: Jansen 2008)

Several other scholars interpreted exploitation as proximate knowledge search and exploration as distant knowledge search (i.e. ambidextrous learning) (e.g. Benner & Tushman 2003; Auh & Menguc 2005; Sidhu et al. 2007; Im & Rai 2008; Kang & Snell 2009; Simsek et al. 2009). As such, ambidextrous learning is defined as: "simultaneously exploring new knowledge domains while exploiting current ones" (Kang & Snell 2009: 65). In this respect, exploitation refer to learning gained via local search and experiential refinement (Simsek 2009), and refines and deepens a firm's existing knowledge (Kang & Snell 2008; Li, Vanhaverbeke & Schoenmakers 2008; Andriopoulos & Lewis 2009), whereas exploration refer to learning gained through processes of variation and planned experimentation (Simsek 2009), and involves learning outside the firm's current knowledge domains (Kang & Snell 2008; Li, Vanhaverbeke & Schoenmakers 2008; Andriopoulos & Lewis 2009). As such, an

ambidextrous organization "maintains a high degree of balance between exploitation (learning via local search, experiential refinement, and reuse of existing knowledge) and exploration (learning gained through processes of concerted variation, planned experimentation, and play)" (Simsek 2009: 597).

Some other scholars viewed exploitation and exploration as paradoxical strategies (i.e. strategic ambidexterity) (e.g. Kyriakopoulos & Moorman 2004; Han 2007; Han & Celly 2008; Judge & Blocker 2008; Bodwell & Chermack forthcoming). As such, Bodwell and Chermack (forthcoming: 1) defined strategic ambidexterity as: "the ability of an organization to embrace and balance deliberate and emergent approaches to strategy at the same time." As Kyriakopoulos and Moorman (2004) argued, strategic fit results from the duality of strategies and the co-existence of extremes, not by choosing one or another. In addition, Han (2007) focused on separation and integration of paradoxical strategies, that carry tensions and trade-offs in strategic choices.

At the alliance level, exploitation and exploration are seen as different motivations to enter interfirm collaboration (i.e. alliance ambidexterity) (e.g. Rothaermel & Deeds 2004; Lin, Yang & Demirkan 2007; Tiwana 2008). Here, alliance ambidexterity incorporates "the simultaneous and balanced presence of both existing and new partners in a firm's alliance network" (Lin et al. 2007: 1645). Rothaermel and Deeds (2004) linked exploitation and exploration activities to a technology venture's strategic alliances. Tiwana (2008) argued that bridging ties in innovation-seeking alliances provides innovation potential but lacks integration capacity, whereas strong ties provide integration capacity but lack innovation potential. They proposed that strong ties complement bridging ties in enhancing alliance ambidexterity.

And at the industry level, exploitation and exploration build upon each other through a cycle of discovery, moving between exploitation and exploration activities (e.g. Gilsing & Nooteboom 2006), as a result of industry technological dynamism (e.g. Uotila et al. 2009). Uotila et al. (2009) showed that in R&D intensive industries, simultaneously exploiting and exploring is highly important. They argued that industry technological dynamism (i.e high levels of R&D spending and patenting, and technological opportunities) increases the importance of exploration, and at the same time, increases the risk of overemphasizing exploitation as firms face greater risks that their core technologies become rapidly outdated.

Given these different units of analysis, there is a need to capture ambidexterity across multiple levels of analysis (Li, Vanhaverbeke & Schoenmakers 2008; Simsek 2009). In this respect, Andriopoulos and Lewis (2009) engaged in more holistic empirical research by conducting comparative case studies of five ambidextrous firms to examine how these firms manage exploitation-exploration tensions. They suggested that paradoxes need to be managed across levels, from (top) management to lower-level employees, and that both differentiation and interrelation offer complementary tactics that foster ambidexterity. In addition, Jansen, Tempelaar, van den Bosch and Volberda (2009) observed that at the organizational level, firms need to resolve conflicting tensions among (top) managers by encouraging social integration, and at lower hierarchical levels, these firms need to integrate the diverse knowledge sources across different exploitative and exploratory business units by establishing formal cross-functional interfaces.

2.4.6 Defining ambidexterity

The previous review of what ambidexterity is (not) implies the following components of a definition of ambidexterity. Given the overall research question of this dissertation, ambidexterity is defined at the organizational level and involves a higher-order organizational capability that:

- serves to exploit current activities in existing domains to address existing environments as well as explore new activities in non-existing domains to address changing environments and/or create market change (e.g. March 1991; Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004; Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004);
- involves a focus on exploitation activities respectively exploration activities that
  - may be equivalent (volume of exploitation activity = exploration activity) (e.g. O'Reilly & Tushman 2008; Cao et al. 2009; Güttel & Konlechner 2009; Nemanich & Vera 2009; Simsek et al. 2009), or
  - may be non-equivalent (volume of exploitation activity > volume of exploration activity respectively volume of exploitation activity < volume of exploration activity, while avoiding competence and failure traps) (e.g. Jansen 2005; Jansen et al. 2005; Liu 2006; Menguc & Auh 2008; Jansen, Tempelaar, van den Bosch & Volberda 2009), and
  - is aligned to the firm's resource base and the market and competitive conditions;
- in order to generate synergistic outcomes, exploitation and exploration activities need to

be connected in a systematic manner (e.g. Lubatkin et al. 2006; Jansen et al. 2008; Jansen, Tempelaar, van den Bosch & Volberda 2009; Jansen, Vera & Crossan 2009).

Ambidexterity is thus defined as a higher-order organizational capability that…

> *serves to exploit current activities in existing domains as well as explore new activities in domains that are new to the firm; creates a balance between exploitation and exploration activities that is aligned to the firm's resource base and the market and competitive conditions; and systematically connects exploitation and exploration activities.*

Drawing on this definition, the criteria to observe ambidexterity 'in action' can be articulated as follows:

- An organizational capability, conducted in a routinized way, that specifically draws on (1) exploitation which includes assets, budget and/or time invested in sustaining a firm's daily operations by focusing on current activities in existing domains, and (2) exploration which includes assets, budget and/or time invested in exploring new activities in non-existing domains;
- An equivalent or non-equivalent balance between exploitation and exploration activities, depending on what firm resources are available respectively whether the firm operates under stable/moderately-dynamic markets or under dynamic/high-velocity markets;
- Ways to connect exploitation and exploration activities by means of particular designs. One the one hand, this may occur in terms of temporally and sequentially shifting between exploitation and exploration activities within a single firm or business unit (contextual ambidexterity: cyclical), or across business units (i.e. weaving ambidexterity) by drawing on a timely switch between efficiency and effectiveness (e.g. Duncan 1976; Holmqvist 2004; Simsek et al. 2009). On the other hand, this may also occur in terms of coupling the spatial separation of exploitation and exploration within a single firm or business unit (i.e. contextual ambidexterity: harmonic), or across business units (i.e. structural ambidexterity) by embedding exploration activities in a firm's exploitation activities (e.g. Tushman & O'Reilly 1996; Benner & Tushman 2003; Gibson & Birkinshaw 2004; Simsek et al. 2009). In other words, connecting exploitation and exploration activities may draw on a timely switch when exploitation and exploration are temporally and sequentially separated, or may draw on the embeddedness of exploration

activities into a firm's exploitation activities when exploitation and exploration are spatially separated.

2.5 Summary and synthesis

Drawing on a systematic literature review approach, this chapter serves to develop an understanding of the notions of dynamic capability and ambidexterity. The review of the dynamic capability literature showed that firm performance in defining, operationalizing and measuring dynamic capability results in severe tautological problems. Even scholars who deliberately attempted to decouple the definition, operationalization and measurement of dynamic capability from firm performance, did not solve these problems by defining dynamic capability in terms of specific firm rules and behaviors; any dynamic capability is grounded in specific firm rules and behaviors, but these firm rules and behaviors can not be equated with dynamic capability. The proposed definition of dynamic capability in this chapter provides a starting point for scholars who wish to operationalize and measure this higher-order organizational capability without producing tautological problems. However, operationalizing and measuring dynamic capability will continue to be a rather difficult task, because dynamic capability is largely intangible as a meta-organizational capability that serves to question purpose and effectiveness of the firm's resource base in order to generate and modify operating routines and processes.

The review of the ambidexterity literature showed that scholars used definitions of ambidexterity that largely avoid tautological problems when operationalized and measured. This chapter proposed a definition of ambidexterity that captures the key dimensions of ambidexterity as suggested by previous scholars. This definition suggests that organizations face competing priorities in existing and new domains that need to be organized by a higher-order organizational capability, and noticed the importance of balancing as well as connecting distinct activities by such a meta-organizational capability. As such, this definition involves addressing business environments that are rather stable, as well as (creating change in) business environments that face rapid and unpredictable change. The proposed definition of ambidexterity incorporates elements of the definition of dynamic capability, as both dynamic capability and ambidexterity focus on exploration (and thus serve to address changing environments and/or create market change). Moreover, the definition of ambidexterity extends the way dynamic capability was defined previously by incorporating exploitation as well (and thus also serves to address existing environments).

As such, the proposed definitions contribute to a large extent to the discourse on linking the notions of dynamic capability and ambidexterity (e.g. Kyriakopoulos & Moorman 2004; O'Reilly & Tushman 2008; Jansen, Tempelaar, van den Bosch & Volberda 2009; Bodwell & Chermack forthcoming). O'Reilly and Tushman (2008: 190) suggested that "dynamic capabilities are at the heart of the ability of a business to be ambidextrous - to compete simultaneously in both mature and emerging markets - to explore and exploit." The DCV thus "focuses on mechanisms that facilitate the enterprise's ability to explore and exploit over time; specifically on how the firm and its leaders are organized to sense and seize opportunities and their ability to reconfigure assets to address these" (O'Reilly & Tushman 2008: 192). Jansen, Tempelaar, van den Bosch and Volberda (2009: 797) argued that firms need a dynamic capability to achieve ambidexterity; such a capability creates valuable new configurations of exploitation and exploration activities in terms of mobilizing, coordinating, and integrating dispersed contradictory efforts, and allocating, re-allocating, combining, and recombining resources and assets across dispersed exploitative and exploratory business units. Vice versa, it it also suggested that ambidexterity may become a dynamic capability over time (Benner & Tushman 2003; Kyriakopoulos & Moorman 2004; Schreyögg & Kliesch-Eberl 2007; O'Reilly & Tushman 2008; Jansen, Tempelaar, van den Bosch & Volberda 2009; Bodwell & Chermack forthcoming). These scholars suggested that dynamic capabilities require a blend and interaction of two different logics that are incorporated in the notion of ambidexterity, those of exploitation and exploration (Benner & Tushman 2003; Schreyögg & Kliesch-Eberl 2007). However, these points of view differ to some extent with regard to what the proposed definitions of dynamic capability and ambidexterity have implied. We have suggested that an organization that draws on dynamic capability incorporates exploration activities to address changing environments and/or create market change, whereas an organization that draws on ambidexterity also focuses on exploitation activities to address existing environments as well. As such, we argue that exploration may involve dynamic capability, but not necessarily; exploration involves dynamic capability if knowledge to question purpose and effectiveness of the firm's resource base is invoked on an intentional and repetitive basis, and if this knowledge serves to generate and modify operating routines and processes. Thus, dynamic capability may imply that a firm draws on ambidexterity as well (i.e. when the firm also focuses on exploitation activities), while a firm that is ambidextrous may also have a dynamic capability (i.e. when exploration involves dynamic capability). In other words, a firm may draw on either dynamic capability or ambidexterity, or dynamic capability and ambidexterity may co-exist within a firm.

See table 2.7 for an overview of the general issues raised and discussed in this chapter as well as the definitions of both concepts that have been proposed, their key dimensions, and their implications. In this respect, this table shows how dynamic capability respectively ambidexterity can be defined and operationalized in a coherent manner (and eventually measured in future empirical research), providing an answer to sub-research questions 1 and 2 of this dissertation.

2.6 Outline remainder of this dissertation

Whereas several scholars started to link the notions of dynamic capability and ambidexterity by arguing that dynamic capabilities are at the heart of ambidexterity and vice versa, we provided a more differentiated view in this chapter. As argued in this chapter, the proposed definition of ambidexterity extends that of dynamic capability. In this respect, dynamic capability serves to address changing market and competitive conditions (by incorporating exploration activities), whereas ambidexterity serves to address both existing and changing environments and/or create market change by means of organizing, balancing and connecting exploitation and exploration activities. Here, exploration activities may or may not constitute a dynamic capability, depending on whether knowledge to question purpose and effectiveness of the firm's resource base is invoked on an intentional and repetitive bases, and whether this knowledge serves to generate and modify operating routines. In turn, the proposed definition of ambidexterity showed that operationalizing and measuring exploitation and exploration activities are likely to be less difficult (in terms of avoiding tautological problems) than operationalizing and measuring dynamic capability, as dynamic capability is difficult to grasp and account for. Thus, the notion of ambidexterity addresses multiple types of business environments, is likely to be effectively operationalized and measured, and may account for dynamic capability as well. As such, the remainder of this dissertation focuses on contributing to an in-depth understanding of ambidexterity by means of empirical studies, drawing on the systematic literature review of ambidexterity (including the proposed definition) in this chapter. The empirical studies in these chapters illustrate how ambidexterity can be measured, as an additional response to sub-research question 2 of this dissertation. Particularly, these studies examine ambidexterity from an organizational design and managerial perspective, answering sub-research questions 3 and 4 of this dissertation.

	Operationalization and measurement of previous definitions	Proposed definition	Key dimensions proposed definition	Implications proposed definition
Dynamic capability	Creates tautological problems when operationalization and measurement draw on: ▪ Firm performance ▪ Specific firm rules and behaviors (sub-section 2.3.1-2.3.4)	An organizational capability that conveys knowledge among its key agents that is invoked on an intentional and repeated basis, serves to question purpose and effectiveness of the firm's resource base, and serves to generate and modify operating routines and processes to address changing environments and/or create market change (sub-section 2.3.5)	▪ Generate/modify operating routines and processes on an intentional and repetitive basis (by means of knowledge among key agents to question the firm's resource base) ▪ Address changing environments and/or create market change	▪ A new definition is proposed that intends to avoid tautological problems ▪ However, operationalizing and measuring dynamic capability will continue to be a rather difficult task as dynamic capability is difficult to grasp and account for; in addition, this new definition neglects addressing existing environments ▪ As such, the notion of dynamic capability is linked to the notion of ambidexterity
Ambidexterity	Operationalizing and measuring ambidexterity (i.e. exploitation and exploration activities) according to different views and levels of analysis: ▪ Non-equivalent or equivalent balance between exploitation and exploration activities (exploitation > or < exploration respectively exploitation = exploration) (sub-section 2.4.2-2.4.3) ▪ Different designs to connect exploitation and exploration activities, thereby distinguishing between different business units respectively a single firm or business unit, and a sequential separation of exploitation and exploration activities respectively a simultaneous pursuit of exploitation and exploration activities (sub-section 2.4.3-2.4.5) ▪ Analysis at individual, organization, alliance or industry level (sub-section 2.4.5)	An organizational capability that serves to exploit current activities in existing domains as well as explore new activities in domains that are new to the firm; creates a balance between exploitation and exploration activities that is aligned to the firm's resource base and the market and competitive conditions; and systematically connects exploitation and exploration activities (sub-section 2.4.6)	▪ Organize exploitation and exploration activities ▪ Balance exploitation and exploration activities (exploitation </>/= exploration), aligned to the firm's resource base and the market and competitive conditions ▪ Connect exploitation and exploration activities by means of particular designs (i.e. weaving, structural and contextual ambidexterity) ▪ Address existing and changing environments and/or create market change	▪ The proposed definition draws on previous definitions of ambidexterity and simultaneously incorporates elements of the proposed definition of dynamic capability (in terms of addressing changing environments and/or creating market change by incorporating exploration), as well as extending it (in terms of addressing existing environments by focusing on exploitation) ▪ Drawing on the proposed definitions, dynamic capability and ambidexterity may or may not co-exist; when co-existing, the firm balances and connects exploitation and exploration activities, whereas exploration involves dynamic capability ▪ Generally speaking, operationalizing and measuring ambidexterity is likely to become a less difficult task as exploitation and exploration activities are more easily grasped and accounted for than dynamic capability

Table 2.7: Key dimensions of definitions, operationalizations and measurements of dynamic capability and ambidexterity

Chapter 3

Comparative case studies in a retail bank

Organizational design and ambidexterity: service innovation in a decentralized firm[2]

"An empowered organization is one in which individuals have the knowledge, skill, desire, and opportunity to personally succeed in a way that leads to collective organizational success"

~ Stephen Covey

(1932 - present)

[2] This chapter draws on a paper written together with Hans Berends, Peter Berends and Georges Romme. The empirical study in this chapter draws on funding from Eindhoven University of Technology, as well as from ESRC/EPSRC/Advanced Institute of Management (AIM) Research, as part of the AIM project 'Practice and practising: A comparison across organizations, industries and countries', under grant number RES-331-25-0024, led by Elena Antonacopoulou.

The empirical study in this chapter examines the relationship between decentralization and ambidexterity. Recently, scholars have suggested that a decentralized structure facilitates ambidexterity. However, comparative case studies of two service innovations in a large decentralized retail bank in the Netherlands paint a more complex picture. First, a literature review implies that decentralization may activate highly different generative mechanisms. Subsequently, the case study findings show that these generative mechanisms and their outcomes gain and lose dominance in different phases of the innovation process. Moreover, the activation of these generative mechanisms depends on the actual use of the decentralized structure. In particular, the effectiveness of the decentralized structure depends on the interdependence of exploitation and exploration activities. A decentralized structure appears to be of limited help for ambidexterity if exploration involves complex service innovation that needs to be integrated into the exploitative core of the organization. In other words, a decentralized structure does not support ambidexterity when exploitation and exploration activities are strongly interdependent.

3.1 Introduction

One of the more enduring ideas in the organization science and strategic management literatures is that competitive advantage depends on the higher-order organizational capability to exploit current activities, while simultaneously exploring fundamentally new ones. A firm that is able to exploit and explore is called ambidextrous (March 1991; Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004). In this respect, scholars are challenged to identify organizational designs that foster ambidexterity. As such, scholars proposed a decentralized structure to facilitate ambidexterity (e.g. Gibson & Birkinshaw 2004; Jansen et al. 2005; Raisch & Birkinshaw 2008). Simulation studies have suggested that the effects of decentralization shift over time, and depend on interdependencies (Siggelkow & Levinthal 2003; Siggelkow & Rivkin 2006). Yet, there is hardly any empirical evidence of the effects of a decentralized structure on ambidexterity over time and the role of interdependencies. The empirical study in this chapter examines the way decentralization affects ambidexterity, and thus contributes to the ambidexterity and organizational design literature.

By adopting a critical realist perspective (Tsoukas 1989; Pawson & Tilley 1997; Sayer 2000), the study in this chapter focuses on the underlying generative mechanisms through which decentralization affects ambidexterity. As such, this study differentiates the broad notion of 'effects' (of decentralization) into 'outcomes' and 'generative mechanisms' that produce an outcome in a given context. That is, we assume that the key relationships between particular interventions of decentralization and outcomes are mediated by generative mechanisms, operating in a context-dependent manner (cf. Pawson & Tilley 1997; Denyer, Tranfield & van Aken 2008). Comparative case studies of two service innovation processes in a large decentralized retail bank in the Netherlands serve to explore whether and at what moment generative mechanisms were triggered, and how this was influenced by contextual conditions. In this respect, this study contributes to the service innovation literature as well.

The contributions of this study are as follows. First, it provides more detailed insight in the generative mechanisms associated with decentralization in section 3.2. Section 3.3 describes the methodology of this study. The case study findings in section 3.4 imply that these generative mechanisms and their outcomes do not necessarily need to occur simultaneously in each phase of innovation. Moreover, these generative mechanisms are not triggered automatically, but apparently depend on the deployment of the decentralized structure over time. In addition, this study reveals limitations to the applicability of a decentralized structure

for supporting ambidexterity. In particular, the case study findings suggest that service innovations that strongly depend upon existing business systems and processes are only likely to benefit from a decentralized structure if it enables the experimentation with and adaptation of these business systems and processes. Drawing on the case study findings, section 3.5 provides the discussion and conclusion of this study.

3.2. Literature review

3.2.1 Ambidexterity and decentralization

Ambidexterity involves the pursuit of both exploitation and exploration (e.g. March 1991; Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004; Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004). Exploitation captures activities such as efficiency, selection and implementation (March 1991), and a focus on current activities in existing domains (Holmqvist 2004; Carmeli & Halevi 2009). Exploration implies activities characterized by search, discovery, variation and experimentation (March 1991), and a focus on new activities in non-existing domains (Holmqvist 2004; Carmeli & Halevi 2009).

The literature on structural ambidexterity suggested that organizing, balancing and connecting exploitation and exploration activities is often located at a firm's (top) management level, as such managers are best able to create separate structures for exploitation and exploration activities (Tushman & O'Reilly 1996; Benner & Tushman 2002; Gibson & Birkinshaw 2004). It is further suggested that separate structures are most likely to occur in large firms (Tushman & O'Reilly 1996; Benner & Tushman 2003; Lubatkin et al. 2006; Raisch & Birkinshaw 2008). However, an in-depth understanding of the way the cognitive burden of managers in large firms is alleviated by placing the challenge of exploitation and exploration on a greater number of shoulders lower down the hierarchy is missing (Gibson & Birkenshaw 2004; Jansen et al. 2005). The literature on contextual ambidexterity suggested that it is not in the firm's best interests to abdicate thinking and pro-activity only to people at the top, because most firms face environments that are so dynamic that maintaining exploitation and exploration is beyond the ability of a small elite of managers (cf. Burnes, Cooper & West 2003). In this respect, previous studies have pointed at the notion of *decentralization* as an interesting approach towards facilitating ambidexterity (e.g. Gibson & Birkinshaw 2004; Jansen et al. 2005; Raisch & Birkinshaw 2008).

Scholars distinguished between various definitions of decentralization (Singels, Vos & de Leeuw 1994). Dessler (1986: 169), for example, defined decentralization as: "delegating authority to subordinates for most decisions while maintaining control over essential companywide matters." Robbins (1990) referred to the degree to which the formal authority to make discretionary choices is concentrated in an individual, unit, or organizational level (usually low in the organization), thus permitting employees (usually high in the organization) minimum input into their work. Here, a high concentration of formal authority to employees, usually low in the organization, indicates decentralization. Similarly, Mullins (2007: 803) defined decentralization as: "where specific delegation is given to sub-units or groups within an organisation such that they enjoy a measure of autonomy or independence." Drawing on Dessler (1986), Robbins (1990) and Mullins (2007), we define decentralization as:

> *decision making that is distributed over a large number of points in the organization, rather than centered at a single point; the distribution of decision making thus increases subordinates' autonomy.*

3.2.2 Decentralization and generative mechanisms

We distinguish between different generative mechanisms that may be triggered by decentralization. In doing so, we adopt the critical realist terminology of differentiating the broad notion of 'effects' (of decentralization) into 'outcomes' (o) and their underlying 'generative mechanisms' (gm). The generative mechanisms serve to explain why certain actions lead to certain outcomes, as suggested by Pawson and Tilley (1997) and Denyer et al. (2008). According to critical realists, illusion needs to be separated from reality. Consequently, critical realists aim to develop the most accurate possible description and understanding of reality, seeking to uncover underlying generative mechanisms that explain regularities among variables, or the absence of such regularities (Bhaskar 2008). Actual events are therefore not the only possible events: if other mechanisms have been active, different outcomes may have resulted (Sayer 2000). For example, a generative mechanism that involves "empowerment of employees" is about offering these employees the means to contribute to some activity beyond their normal tasks or outside their normal sphere of interest, which then prompts participation and responsibility, offering the potential of long-term benefits to them and/or to their organization (Denyer et al. 2008). Possible outcomes may involve performance improvement, cost reduction, or low error rates (Denyer et al. 2008). In this study, a generative mechanism mediates between decentralization and the

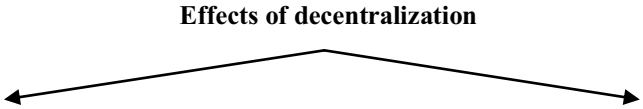
outcome of decentralization, whereas the outcome arises from decentralization and the generative mechanism (cf. Pawson & Tilley 1997; Denyer et al. 2008).

Previous research has identified multiple generative mechanisms that are triggered by decentralization (see also figure 3.5):

- Decentralization may trigger flexibility and adaptability: Decentralization causes decisions to be delegated to the agents who possess the most relevant information (Poitevin 2000). The autonomy of actors at lower hierarchical levels and the delegation of decision making authority to those further removed from the centre (gm) (Cummings 1995) enables the latter to act flexibly and adapt to changing environmental conditions (o).
- Decentralization may foster individual and organizational learning (March 1991; McGrath 2001; Burnes et al. 2003): Decentralization enables a firm to draw more fully on the knowledge and creativity of a larger number of people in the organization (gm) (Vancil 1979; Dessler 1986; Hales 1999), which enables employees lower in hierarchy to take decisions closer to business operations so that decisions are speedier, more responsive and quicker (o) (Dessler 1986; Hales 1999).
- Decentralization may involve larger costs of control and coordination: Organizational actors may not have their preferences perfectly aligned with the objectives of (top) management (i.e. strategic differences) (gm), which implies that more time and effort need to be invested in control and coordination, leading to greater management involvement requirements (o) (Galbraith 1973; Keider 1976).
- Decentralization may hamper the integration of information: When agents summarize their information to their hierarchical superiors (gm), useful information may be lost because single agents can not process all information as they are limited in the ability to give attention to data they receive (o) (Robbins 1990; Vayanos 2003). In addition, decisions may depend on information held by actors in other parts of the organization (gm), which may cause a sub-optimalization of decision making (o) (Vayanos 2003).

While the first two generative mechanisms tend to involve positive outcomes, the latter two tend to involve negative outcomes. Yet, the evaluation of outcomes generated by a generative mechanism may depend on contextual characteristics and underlying value systems (Sayer

2000). See figure 3.5 for an overview of the effects of decentralization in terms of generative mechanisms and their outcomes.



Flexibility and adaptability Delegating decision making authority and increasing autonomy (gm) result in a more flexible and adaptable firm (o) (cf. agency theory)	**Costs of control and coordination** A loss of control by the principal (gm), implies that more time and effort has to be invested in control and coordination, and thus leads to greater management involvement requirements (o) (cf. agency theory)
Individual and organizational learning Drawing more fully on the knowledge and creativity of a larger number of people (gm) may result in individual and organizational learning (o) (cf. organizational learning literature)	**Limits to integrating information** Departmental interdependencies (gm) may cause a loss of information useful to superiors and a sub-optimalization of decision making (o) (cf. information processing view)

Figure 3.5: Effects of decentralization in terms of its generative mechanisms (gm) and outcomes (o)

3.2.3 Timing and interdependencies

Past research suggested that the generative mechanisms of decentralization are subject to particular conditions. One of those conditions is timing, referring to the focus on exploitation and/or exploration activities at a particular point in time (Pierce & Delbecq 1977; Damanpour 1991; Siggelkow & Levinthal 2003). For example, Pierce and Delbecq (1977) argued that decentralization facilitates both the initiation and implementation of innovation, where innovation involves both incremental change (exploitation) and revolutionary change (exploration) (cf. Tushman & O'Reilly 1996; Jansen et al. 2006). In addition, Pierce and Delbecq (1977) stated that there will be a stronger positive relation for initiation than for implementation. Initiation requires some formalization and centralization of decision making to decrease conflict, thereby making control and coordination easier as well as improving the integration of information. Implementation requires the focus of effort (of those with functional authority) to carry through innovation, and thus raising costs of control and coordination and possibly hampering the integration of information. Other studies contradicted Pierce and Delbecq's (1977) findings. For example, the study by Damanpour (1991) did not confirm that decentralization facilitates the initiation of innovation.

In addition, Siggelkow and Levinthal (2003) suggested that firms should cycle between different organizational structures. They simulated how centralized, decentralized, and temporarily decentralized structures moderate the balance between exploitation and exploration activities. Their simulation findings suggested that a temporarily decentralized firm, which starts with a decentralized structure followed by reintegration, yields higher long-term performance than either pure form because it allows the firm to avoid low-performing activity configurations and to eventually coordinate across its divisions. Switching back and forth between two (or more) types of structures is explained by Raisch and Birkinshaw (2008) as drawing on 'parallel structures'.

Past research also suggested that the generative mechanisms of decentralization depend on interdependencies, referring to a dependent relationship between two or more persons, business units or organizations, in which the degree of dependency between persons, business units, or organizations may differ. Siggelkow and Rivkin's (2006) simulation model suggested that decentralization frees low-level managers to explore options broadly (low-level exploration), which potentially fuels firm-level exploration. Siggelkow and Rivkin (2006) suggested that unleashing low-level managers is likely to raise firm wide exploration when decisions are well modularized (i.e. when most interdependencies fall within the purview of individual low-level managers), but not when interdependencies span departments. A firm should therefore balance between decentralization and centralization, based on interdependencies of departments, as follows: low in the organization when interdependencies are mostly intradepartmental, and high when they are predominantly interdepartmental (Siggelkow & Rivkin 2006). Thus, different parts of a firm may need to develop distinct structures (cf. Lawrence & Lorsch 1999).

3.3 Methodology

Following critical realism (Pawson & Tilley 1997; Sayer 2000), this study investigates the generative mechanisms through which decentralization affects ambidexterity. In particular, we explore how these mechanisms are invoked over time, and how these mechanisms depend on interdependencies. In this respect, this study answers sub-research question 3 of this dissertation in terms of how a decentralized organizational structure impacts ambidexterity, and what role timing and interdependencies play. This sub-research question is highly relevant because empirically examining the relationship between decentralization and ambidexterity contributes to a more detailed understanding of how organizational design may

support ambidexterity. Moreover, previous studies have not addressed this question adequately, which most likely resulted in an inconclusive representation of how decentralization is related to ambidexterity (cf. Eisenhardt & Graebner 2007): that is, previous research suggested that decentralization impacts ambidexterity, but failed to differentiate between effects of decentralization (including generative mechanisms and outcomes). In addition, previous research on the relationship between decentralization and ambidexterity did not take the role of timing and interdependencies into account. As such, this study seeks to elaborate and extend existing theory on the relationship between decentralization and ambidexterity (cf. Dul & Hak 2008).

Qualitative research procedures are considered appropriate for the following reasons (cf. Lee 1999). Although we build upon existing insights into decentralization and ambidexterity, further specification of the relationship between decentralization and ambidexterity requires an open and iterative approach to data collection and analysis (cf. Corbin & Strauss 2008). In other words, a qualitative approach is adopted to inductively study the outcomes and underlying generative mechanisms of decentralization, and the role of timing and interdependencies, in the relationship between decentralization and ambidexterity. Such a qualitative approach enables explorative search, and facilitates the analysis of the interactions involved. In addition, this complexity is best grasped by qualitative methods that investigate phenomena in their natural environment (cf. Langley 2007; Yin 2003).

3.3.1 Research setting and data collection

This study focuses on the service industry as the literature on ambidexterity in service firms is still in its infancy. Previous studies on ambidexterity have been primarily conducted in manufacturing firms, whereas relatively less attention has been paid to ambidexterity in service firms - notable exceptions are for example Jansen et al. (2005; 2006), Han (2007), Im and Rai (2008), Jansen et al. (2008), Tiwana (2008), Groysberg and Lee (2009), Güttel and Konlechner (2009), and Jansen, Vera and Crossan (2009). Moreover, ambidexterity is particularly challenging for service firms in the retail banking industry because new service development is likely to enhance the productivity of a firm's financial services (Lievens 2000). In order to enhance the productivity of a firm's financial services, new service operations and processes should then be integrated with existing business activities (cf. Lievens 2000; Nijssen, Hillebrand, Vermeulen & Kemp 2006; Groysberg & Lee 2009). However, only a small amount of scholars (e.g. Jansen 2005; 2006, Jansen et al. 2008; Jansen,

Vera & Crossan 2009) have started to investigate this relationship, implying that ambidexterity in the retail banking industry has not received full attention in the literature on ambidexterity yet.

In particular, we focus on a large decentralized retail bank in the Netherlands (employing proximately 35.000 people) to gain an in-depth understanding of the way ambidexterity unfolds in large decentralized firms. This firm (labeled as 'Bank') has a decentralized structure in its 'DNA' because its origins lie in local loan cooperatives, organized on the basis of cooperative principles. The local loan cooperatives of this firm were founded in the Netherlands over 150 years ago by those who had virtually no access to the capital market. Today, the Bank comprises 152 local banks and a central organization in the Netherlands, as well as subsidiaries in different countries across the world. The local banks and their clients form the Bank's core cooperative business. The local banks are members and shareholders of the central organization. The central organization advises local banks and supports their services, including the development of new services and its marketing. It also supervises, on behalf of the Dutch Central Bank, the solvency, liquidity and administrative organization of the local banks. The Bank engages in multiple exploitation and exploration activities: explorative ventures in the form of several innovation programs, and exploitation activities such as improving and renewing the firm's core business of payment, savings, grant credits, investments, mortgages and insurances. Although this organizational structure is not typical for most banks, the Bank's extremely decentralized structure and its broad engagement in both exploitation and exploration activities make it an excellent object of study with regard to the way decentralization affects ambidexterity.

We selected two innovation programs in this firm as the main object of the case studies (cf. Yin 2003), and analyzed how these innovation processes unfolded, as well as how these service innovations were then integrated into the firm's exploitation activities (cf. Langley 1999; de Chock & Sharp 2007; van de Ven 2007). Drawing on Trott (2005: 15), we defined innovation as: "the management of all the activities involved in the process of idea generation, development, and marketing of a new (or improved) product or service." The two innovation programs selected for this study were 'Mobile' and 'Television', whereas Television comprises multiple sub-programs at central and local level. These innovation programs showed different ways in using the firm's decentralized structure to develop these service innovations, bringing in theoretically meaningful variation (cf. Yin 2003). Moreover, these

innovation programs were very recent and their ultimate fate is unclear, thereby securing access to information, reducing threat of interpretations based on the success or failure of the innovation program, and limiting retrospective biases (cf. Huber & Power 1985; Miller, Cardinal & Glick 1997). See table 3.8 for a descriptive summary of the Mobile and Television programs.

Innovation program	Sub-program	Number of people involved
Mobile (supports primary service of banking)		140 FTE fulltime and 170 FTE parttime
Television (supports communication with clients)	▪ Television on internet (incl. InvestTv, SportTv and Event-tv) ▪ Internet on television (incl. Tvbanking) ▪ Community-tv	48 FTE fulltime and 115 FTE parttime

Table 3.8: Descriptive summary of the Mobile and Television programs

Drawing on the contact information of potential informants that our contact persons provided, we selected informants that were highly involved in Mobile or Television in the central organization or at local banks. The informants include employees at (top) management level of both the central organization and local banks, as these employees function on the boundary between the central organization and local banks in their day-to-day activities. These informants were also able to reflect on the role of organizational structure in the innovation processes. They included a member of the Supervisory Board, the vice-president of a particular department (incl. the initiator of Mobile), and (program) managers of Mobile and Television. We conducted semi-structured in-depth interviews with these employees. A total of 22 interviews were held, with 19 different informants, in a period of 18 months, which reduced the threat of any single recent event impacting the views of those that were interviewed. The duration of each interview ranged between thirty minutes and two hours. We asked open-ended questions about the history of Mobile and/or Television and the interaction between the central organization and local banks in these innovation programs.

We applied snowball sampling by asking interviewees for other informants, following up upon stories and individuals mentioned in the interviews. In addition, we verified the data that

resulted from prior interviews with additional informants in order to triangulate their stories (cf. Jick 1979). Finally, additional follow-up interviews were conducted to clarify a number of issues that remained ambiguous in the data analysis. Moreover, email conversations were conducted with original informants to clarify remaining points of uncertainty. These follow-up interviews, together with frequent email conversations, mitigated the bias of retrospection (cf. Leonard-Barton 1990). All interviews were recorded and then fully transcribed, giving us a pull of over 250 of pages of research data to work with.

3.3.2 Data analysis and coding procedures

In the analysis of the data, we used the software program NVivo 7 (i.e. Gibbs 2002) to build a case study database of the interviews that have been conducted, and to maintain a chain of evidence in order for outsiders to understand how conclusions have been drawn (cf. Yin 2003). To analyze the effects of decentralization over time we applied a temporal bracketing strategy (cf. Langley 1999), and distinguished phases in the innovation processes of Mobile and Television. These phases corresponded to the innovation phases described in the literature (cf. Cooper 2001). 'Pre-history and initiation' refers to pre-work designed to discover and uncover opportunities and generate ideas, and the preliminary and detailed investigation of the new service. 'Development' implies the development of the new service, and the design of the operations process. 'Testing and validation' accounts for the tests or trials to verify and validate the proposed new service, the operation process, and marketing. And finally, '(post) launch' describes the beginning of full operations, marketing, selling, and spotting and tackling problems.

First, data were broken down into thematic units, which sometimes consisted of a phrase and at other times of multiple sentences. The emergent codes we used to break down the data into thematic units fitted in our pre-defined codes. These emergent codes were described in NVivo as 'free nodes', a first step to maintain a chain of evidence (cf. Yin 2003). The pre-defined codes resulted from the objectives of this study; to examine the effects of decentralization on ambidexterity, thereby incorporating the role of timing, we studied the *generative mechanisms* and *outcomes* of decentralization (as drawn from the literature review), in relation to the *phase of innovation* of *Mobile* and *Television* (thereby drawing on Cooper 2001). This coding process became saturated when no more new emergent codes were added (cf. Strauss 1987; Corbin & Strauss 2008). Table 3.9 illustrates how quotes that related to emergent codes fitted our pre-defined codes (cf. Strauss 1987; Miles & Huberman 1994; Corbin & Strauss 2008).

As such, data has been broken down, conceptualized, and put back together in new ways (cf. Corbin & Strauss 2008). In NVivo these emergent codes were categorized under 'tree nodes' as a second step to maintain a chain of evidence (cf. Yin 2003), where the 'tree' involved each of our pre-defined codes including the emergent codes that were related to each pre-defined code.

Effects of decentralization	**Phase of innovation**	**Coding examples**
Flexibility and adaptability	Testing and validation of Television	"If you are negotiating with many stakeholders, you will never succeed. Everyone has an opinion about everything. Therefore, it becomes very difficult to find a middle road, especially if you're dealing with local banks that are all independent (gm). So, it is useful to first roll out your ideas at some local banks. As such, it becomes a lot easier to develop your ideas (o)."
Individual and organizational learning	Testing and validation of Television	"At a particular point in time, we (i.e. the local bank in Weert) approached the community of Weert at a local baseball club. However, these people weren't interested in our story because they were too pre-occupied with baseball (o). We changed our approach. We approached the local community from a shop specialized in doing odd jobs, with in the back of our mind that these people would be interested now because of their involvement in changing interiors themselves (gm). Such things are hard to think of at the central organization. They would probably never have come across this idea."
Costs of control and coordination	(Post) launch of Mobile	"If we (central organization) wanted to involve local banks in selling from day one (o), we also needed them in the development and decision making processes of Mobile (gm)."
Limits to integrating information	Development of Television	"I can not really put my finger on where the process exactly stops, but I did not hear from the central organization for a long time in this matter (o). There could be several reasons; there is no more budget, or they do no longer want to participate. They have formed a team that has to think about our idea, but nothing comes out of it. Or maybe they do have numerous plans, but I don't see them (gm)."

Table 3.9: Coding examples effects of decentralization in terms of its generative mechanisms (gm) and outcomes (o)

At this stage, we wrote a first draft of the case histories of Mobile and Television (cf. Corbin & Strauss 2008). After that, we started collecting quotes regarding the integration of Mobile

and Television into exploitation activities and regarding interdependencies, in order to explain how these service innovations were integrated into the Bank's exploitation activities, and the role interdependencies played in this integration. In this respect, these quotes involved emergent codes that fitted our pre-defined code of *interdependencies* (i.e. between the service innovations and existing business systems and processes). Although we believe that these pre-defined codes covered the objectives of this study, we emphasize that service innovations other than Mobile and Television could have been selected as well. Finally, we extended and adapted our initial draft of the case histories and drew conclusions on the effects of decentralization on ambidexterity. In this respect, we followed what Eisenhardt (1989) called 'within-case analysis', which involves a detailed case study write-up for both Mobile and Television, combined with a comparison between these case studies in terms of similarities and differences in the effects of decentralization in different phases of innovation and interdependencies of existing business systems and processes.

In this process, we ensured reliability as two researchers coded the data independently (by using a coding dictionary that involved our pre-defined codes as mentioned previously), who then compared codes and discussed differences in order to develop a mutual understanding in respect to the codes (cf. Eisenhardt 1989; Yin 2003). In addition, we triangulated our case study findings with observations from secondary data (i.e. archival data such as program plans on Mobile and Television), and obtained feedback from informants. We used archival material primarily to corroborate our case study findings or put them in perspective (cf. Eisenhardt 1989; Yin 2003). By asking firm representatives to reflect on codified output by means of verifying if the case descriptions fitted our pre-defined codes, and by means of inquiring whether they recognized it as authentically theirs, we checked for researchers' biases (cf. Miles & Huberman 1994).

3.4 Case study findings

3.4.1 Mobile

The 'Mobile' program was associated with the primary services of the Bank. At the introduction of Mobile at 15 November 2006, users were able to phone, to use the SMS service, and had insight into their banking account by means of a mobile phone. The Bank expanded its services after 2006; users of Mobile nowadays are able to transfer cash quickly, and pay their invoices. The Bank's goal was to eventually replace cash cards with Mobile.

Pre-history and initiation of Mobile

By the end of 1990, one of the members of the Supervisory Board of the Bank advised to focus on mobile phones. The underlying vision was that banking by means of mobile phones would eventually evolve in payment by mobile phone in the future. The pre-history and initiation of Mobile thus started at central level in order to retain and strengthen the Bank's competitive position.

A virtual team was formed, involving employees from different directories of the central organization. This team started experimenting with WAP (Wireless Application Protocol) in combination with mobile phones in 1999. WAP ensured that clients could benefit from internet services, including news items and current stock quotations. However, the application of WAP proved to be too slow and resulted in low user experiences. In 2002, the central organization decided to introduce i-mode under GPRS (General Packet Radio Service), which made it possible to speed up sending and receiving information through mobile phones. In 2003, mobile banking was introduced at i-mode, enabling clients to transfer money to another bank account by mobile phones. Two years after the introduction of i-mode in combination with mobile banking, the Bank faced a low user experience again; only 15.000 active clients used i-mode. At that stage, the central organization faced two options: pulling the plug or finding a solution. They decided to go with the latter option.

Development of Mobile

In the period of the pre-history and initiation of Mobile, the central organization started thinking about introducing a MVNO (Mobile Virtual Network Operator). This would enable the Bank to sell mobile phones through the network of a mobile phone operator. The central organization believed that a MVNO for Mobile was a logical move to stay ahead of competitors. A MVNO would result in publicity and would make a difference for clients. However, from 2001 onwards, several attempts to set up a MVNO for Mobile failed because the local banks did not provide the necessary support as they did not believe in its advantages. This lack of support for the MVNO also triggered *learning* as local banks provided a reality check concerning business potential to the central organization. As a result, the central organization, involving the virtual team, hired a consultancy firm with extensive experience in starting MVNO's. The central organization thus faced *costs of control and coordination* in terms of putting more effort into the start of this initiative by hiring a consultancy firm, which, on the other hand, raised the chances of successfully starting the MVNO.

Then, the central organization started negotiating with a mobile phone operator, which eventually withdrew. They turned to another mobile phone operator and within one week this deal was sealed. Thus, the central organization succeeded in setting up a MVNO in 2005, drawing on mobile banking under i-mode. One of the program managers explained:

> "Mobile has been set up as separate entity, separate from the Bank in a rather isolated environment. The backbone with other systems was that we made sure we were kept informed about things as 'who has a mobile phone and who has not', and 'what is the use of mobile phones'."

Testing and validation of Mobile

A strict deadline at 15 November 2006 resulted in severe inaccuracies after testing and validation. After two to three months, it turned out that 90% of Mobile's clients were above forty years, while the primary target group was twenty to forty years. What caused this problem? A month prior to the end of testing and validation, the central organization tested parts of the chain (i.e. from advertising to clients' orders), because the chain could not be tested as a whole at that moment. Problems were documented, but not solved because of the deadline; according to one of the program managers solving these problems "should have been a higher priority then." According to the initiator of Mobile the deadline was "holy" for those involved in the project; everything else was of secondary importance. According to the initiator, this was an example of strategic differences between the central organization and local banks:

> "There is always a conflict between centralization and decentralization. At the central organization, there is a need for speed and effectiveness; in local banks things evolve slowly because of the importance of quality."

(Post) launch of Mobile

Until the introduction of Mobile, those involved at central level kept the project hidden for several other departments and directories of the central organization. According to one of the managers:

> "By keeping the project hidden, departments and directories were more eager to cooperate because they were curious. In addition, by informing every department and directory from the start, Mobile should have been more difficult to integrate into the organization because of the many different opinions of those that should have been involved."

Thus, Mobile was developed centrally throughout the whole process and local banks became involved from launch. The central organization decided to sell Mobile only via the web page of the Bank. A key argument was that it was such a major project that the central organization wanted to be sure that Mobile could be sold via their web page, before involving local banks. Moreover, the central organization did not want to involve local banks before launch to avoid *costs of control and coordination*, which would have occurred when Mobile would have been introduced locally from the start. According to one of the managers:

> "If we wanted to involve local banks in selling from day one, we also needed them in the development and decision making processes of Mobile."

After launch, it became clear to the central organization that they needed local banks to achieve sales targets. The *costs of control and coordination* raised when the central organization had to convince local banks to become involved in Mobile and to keep stimulating these local banks to prioritize the selling of Mobile once they were involved. Local banks were not obliged to participate: they were able to decide themselves about how far they would like to be involved in Mobile.

Examples of these effects can be found in the local bank situated in Helmond. Initially, employees of the Helmond bank were not very enthusiastic about Mobile. They believed that Mobile would not bring clients enough added value. In addition, they questioned whether Mobile was financially attractive, because traditional services were considered as more attractive to sell. According to one of the managers of the Helmond bank, several meetings with representatives of the central organization were needed to persuade this local bank to participate in Mobile. The Helmond bank demonstrated Mobile at a local fair held in October 2007. After the fair, the staff members involved became more enthusiast because it was considered "exciting" selling Mobile. Once this initial group of employees of the Helmond bank was convinced and began selling Mobile, it took a year before all employees and clients were accustomed to it. One of the managers of the Helmond bank noted:

> "Employees slowly realized the importance of the vision behind Mobile."

A positive side-effect is shown in the example of the Helmond bank; once this bank agreed to participate and subscribed to the vision behind Mobile, its motivation to sell Mobile increased, thus limiting the *costs of control and coordination* faced by the central organization.

In the meantime, the central organization quickly introduced improvements based on problems encountered by local banks. This included improvements in promotion material of Mobile for local banks, a renewed helpdesk for clients, and more modern mobile phones for clients to choose from. In addition, the central organization introduced a 'Taskforce' in 2007, which should have integrated Mobile into the organization by the end of 2009. For example, the Taskforce accomplished that the MVNO and the central organization would jointly conduct the marketing of Mobile. Also, Mobile was further integrated in other services the Bank offers, for example in internetbanking. In addition, users were enabled to quickly check their balance with a special device, to pay large or small amounts of money, and to pay by means of SMS service. At a more general level, the Bank introduced two major projects: contactless mobile payment via Near Field Communication technology (i.e. electronic payment by means of a mobile phone) and a tool for small amounts to pay they called 'MT'.

See table 3.10 for a summary of the key characteristics of Mobile.

	Duration	**Scope**	**Process**
Mobile	Until launch: 1999 - 15 November 2006 Post launch: 15 November 2006 - present	Until launch at central level, after launch at central and local banks' level	Central process followed by a diffusion process in local banks from (post) launch

Table 3.10: Summary of key characteristics of Mobile

3.4.2 Television

The 'Television' program was associated with communication. Through the sub-program 'Television on internet', the Bank intended to approach potential clients by means of bringing moving images on existing channels. This sub-program provided information on mortgages, life insurance policies, and investment topics through the Bank's web page (i.e. InvestTv). In addition, it provided information via the Bank's web page of what is behind screens of cycle racing, hockey and horse riding, as these sports are sponsored by the Bank at the central level (i.e. SportTv). Another part of this sub-program was Event-tv, an innovative internet platform (i.e. video) for sponsored projects at local level. Through the sub-program 'Internet on television', the Bank aimed to focus on the interaction with clients by means of offering

services via Television. For example, the Bank introduced Tvbanking, a web page for television that can be used with one's remote control and through which users are able to access their bank account, transfer cash, and pay invoices. Finally, the sub-program Community-tv involved a platform where clients can find local news, while also trying to increase people's well-being in collaboration with parties outside the Bank, such as the health care industry.

Pre-history and initiation of Television

Similar to Mobile, the central organization started Television in order to retain and strengthen the Bank's competitive position. In 2006, they started Television as a four-year program, after becoming involved in the Nuenen project. The municipality of Nuenen had previously implemented a glass fibre network, which substantially increased up- and downloading speed. The Nuenen project excited one of the members of the Supervisory Board of the Bank because he believed that glass fibre would create opportunities for novel banking services. As a result, the central organization started one of the three sub-programs of Television, named 'Community-tv'. Moreover, this Supervisory Board member stressed the importance of one of the Bank's slogans: "staying close to our clients." Although the Bank is physically near its clients in terms of for example local bank offices, it acknowledged the need to explore the opportunities arising from other communication channels such as internet, mobile, and television as well, in order to increase the Bank's visibility towards its clients.

The central organization had set up a 'core team' for steering Television to decide on what projects to handle and at what moment. The chairman of the core team was selected from one of the three main directories. The other two main directories, and other departments such as the department of communication and ICT, were involved in this team as well. An operational team operated below the core team. Besides this core and operational team, other central departments were involved such as the sales department that took go or no-go decisions on projects.

At the same time the central organization initiated Television, local banks became involved in several other pilots. For example, the Weert bank was especially interested in television because the central organization was already involved in the internet and mobile, and television provided other possibilities as well. For example, Television was only used for broadcasting videos concerning the Tour de France, a sport event sponsored by the Bank. As

such, the Weert bank envisioned a home television program for the local community. In other words, the autonomy of the Weert bank resulted in new ideas being generated, implemented and adapted (resulting from the local bank's *flexibility and adaptability*). Then, the director of the Weert bank contacted the central organization to explore possibilities to further develop Television based on his ideas. This finally resulted in a local home television program, which was steered collaboratively by the Weert bank and the central organization.

Development of Television

About one-and-a-half year after the start of the four-year program of Television, the central organization realized that team members were giving poor feedback to each other as a result of a lack of knowledge of the activities of one another. They decided to group sub-projects in four clusters. Within each cluster, approximately five to seven projects were executed, involving project managers and cluster coordinators. However, at that time there was poor communication between the central organization and local banks. As one of the cluster coordinators argued:

> "As central organization we do not explain enough to the local banks what we are doing ... At this stage we are too much focused at getting things done."

As such, "it took too long before things proceeded at central level", according to one of the managers of the Weert bank. The Weert bank introduced someone to the central organization to assist in decisions on the services to offer in Community-tv. However, the central organization did not respond to the Weert bank. As one of the managers of the Weert bank said:

> "I can not really put my finger on where the process exactly stops, but I did not hear from the central organization for a long time in this matter. There could be several reasons; there is no more budget, or they do no longer want to participate. They have formed a team that has to think about our idea, but nothing comes out of it. Or maybe they do have numerous plans, but I don't see them."

Apparently, the central organization created a certain distance towards the local Banks; the Weert bank did not know what was exactly going on at central level. Because this local bank was 'left in the middle', *limited integration of information* resulted: the Weert bank became less willing to provide information to the central organization because they felt that their feedback was not appreciated and used, creating an even greater communication problem. In

this respect, the generative mechanisms of decentralization are expected to be more visible when communication is fluid between the central organization and local banks; better communication may result in more efficient *learning* at the local and central level.

Testing and validation of Television

The Bank has been engaged in testing and validating different parts of the sub-program Community-tv (e.g. in Sittard/Geleen, in Weert, and in a collaboration of five local banks and external local partners), or was still engaged in this at the moment we finished our study (e.g. in Nuenen). Testing and validation of Community-tv was located at a small, continuously changing sample of local banks. According to one of the cluster coordinators:

> "If you are negotiating with many stakeholders, you will never succeed. Everyone has an opinion about everything. Therefore, it becomes very difficult to find a middle road, especially if you're dealing with local banks that are all independent. So, it is useful to first roll out your ideas at some local banks. As such, it becomes a lot easier to develop your ideas."

This statement suggests it would be more efficient to coordinate testing and validation at the central than local level. However, local banks are close to their clients and are thus better positioned to sense client's needs. As such, involving local banks in pilots opens up possibilities to quickly address customers and other needs. For example, regarding testing Community-tv in collaboration with the Weert bank, one of the managers of the Weert bank mentioned that as a local bank:

> "You do know local needs better. You automatically feel why certain projects will not work. This strengthens our bank in the way that we know on beforehand what we can and can not do, and how we should approach or should not approach our clients."

One of the managers of Community-tv mentioned additional paradoxes between the central organization and local banks:

> "Sometimes the central organization has to complete a complex pilot. As such, you need to set boundaries. Great if a local bank cooperates, however, these banks want to know what is in it for them? This means that you need to negotiate with these banks on the organization of the pilot. This contradicts the fact that you have one pilot that you would like to test in different areas and on different aspects."

The central organization noticed the difficulties that resulted from local bank's autonomy: an increase in *costs of control and coordination* in terms of negotiating with local banks on a

pilot and creating boundaries regarding pilots. Yet, once a local bank decided to become involved in a pilot, its motivation to stay committed increased as they gain some sort of value by means of participating, which weakened the *costs of control and coordination* for the central organization.

The central organization learned how to overcome the failures in this pilot. In addition, local banks were also able to learn from local needs, as the following example shows:

> "At a particular point in time, we (i.e. the local bank in Weert) approached the community of Weert at a local baseball club. However, these people weren't interested in our story because they were too pre-occupied with baseball. We changed our approach. We approached the local community from a shop specialized in doing odd jobs, with in the back of our mind that these people would be interested now because of their involvement in changing interiors themselves. Such things are hard to think of at the central organization. They would probably never have come across this idea."

This is an example of *organizational learning* enhanced by the involvement of the local banks.

The Weert bank then tested the success of their home television program by hiring a research agency, which concluded that the program had been a success. To further elaborate on this success, the Weert bank started thinking about ways of reducing the enormous costs that were involved, resulting in several ideas. The central organization investigated these possibilities, but remained inefficient in *integrating the information* of local banks as it "took too long" before the central organization responded.

(Post) launch of Television

Both the sub-programs 'Internet on television' and 'Television on internet' had been launched in the past years by the central organization (in respectively 2006 and 2007). For the sub-program Television on internet, the department of communication had introduced, in collaboration with the team of Television, special space for advertisements of the bank campaigns at the web page of SportTv (i.e. 'bannerspace'). With respect to Event-tv, the central organization (including the Television core team, and the sponsorship and communication departments) were still trying to stimulate local banks to produce films of local sponsored projects and to place these on the Event-tv web page, because the success of Event-tv depends on the input of local banks. Again, this shows a local bank's *flexibility and*

adaptability and *costs of control and coordination* for the central organization to convince local banks to produce videos of locally sponsored projects for Event-tv.

Eventually, the Bank aimed for integrating Community-tv with channels such as television, mobile phones, and its web page. The Bank's overall goal was to bring moving images on other channels such as Mobile and cash dispensers. Regarding Mobile for example, the central organization started a pilot in 2008 to explore the technical possibilities of (interactive) video on mobile phones.

See table 3.11 for a summary of the key characteristics of Television.

	Duration	**Scope**	**Process**
Television	2006 - 2010	From pre-history and initiation at central level and local banks' level	Central process, immediately followed by a diffusion process in local banks from pre-history and initiation

Table 3.11: Summary of the key characteristics of Television

3.4.3 Interdependencies in Mobile and Television

Table 3.12 provides the cross-case study findings of the effects of decentralization on Mobile and Television, displaying the generative mechanisms (gm) and outcomes (o) that were triggered in each innovation phase, and describing whether they contributed positively (+) or negatively (-) to the two service innovations.

Our case study findings indicate that the use of the decentralized structure depend on interdependencies of exploitation and exploration activities. The central organization was eager to control the Mobile program until launch and was able to do this effectively because local banks were not involved until then. In addition, local banks played a more passive role when they became involved in Mobile at launch; therefore, it became harder for the central organization to experiment with Mobile to further develop the service innovation. Thus, the central organization faced difficulties in using the decentralized structure (i.e.

Phase of innovation	Mobile	Television
Pre-history and initiation	Local banks were not involved, as such no indication of effects of decentralization	+ **Flexibility and adaptability:** local bank's autonomy and decision making authority (gm) supported idea generation of local banks (o)
Development	Local bank's autonomy and decision making authority (gm) resulted in providing no support for a MVNO by local banks + This in turn, triggered **individual and organizational learning** as local banks provided a reality check concerning business potential to the central organization (o) - Local bank's autonomy and decision making authority (gm) resulted in **costs of control and coordination** for the central organization in terms of extra input in starting a MVNO (o)	The central organization and local banks did not interact effectively (gm) - This resulted in **limits to integration of information** as local banks became less willing to provide information to the central organization when they felt their feedback was not being used (o)
Testing and validation	Local banks were not involved, as such no indication of effects of decentralization	+ Problem solving by the central organization and local banks (gm) resulted in **individual learning and organizational learning** (o) + **Flexibility and adaptability:** local bank's autonomy and decision making authority (gm) resulted in the decision to become involved in testing or not (o) - At the same time, the independency of local banks to become involved or not (gm) resulted in **costs of control and coordination** for the central organization (o) (Yet, once a local bank decided to become involved in a pilot, its motivation to stay committed became higher, which weakened the costs of control and coordination for the central organization) - Because the central organization did not pick up idea generation of local banks fast enough (gm), the central organization faced **limits to integration of information** (o)
(Post) launch	+ **Flexibility and adaptability:** local bank's autonomy and decision making authority (gm) resulted in the decision on how far to become involved in Mobile (o) - Because the central organization had to convince local banks to become involved, and stimulate them to sell Mobile (gm), the central organization faced **costs of control and coordination** (o) (Yet, once local banks agreed to participate and subscribed to the vision behind Mobile, their motivation to sell Mobile increased, thus limiting the costs of control and coordination faced by the central organization)	+ Local bank's autonomy and decision making authority (gm) resulted in **flexibility and adaptability** to decide on how far to become involved in Event-tv (o) - As a result of convincing local banks to produce videos of local sponsored projects for Event-tv (gm) the central organization faced **costs of control and coordination** (o)

Table 3.12: Cross-case findings of Mobile and Television

decentralization proves to be non-beneficial to the Mobile program, as the firm suffers from several generative mechanisms of decentralization).

Interdependencies regarding Mobile clarify when decentralization is non-beneficial. In this respect, Mobile depended on and was strongly integrated with existing business systems and processes of the Bank, as Mobile was associated with the primary services of the bank. For example, Mobile enabled users to check their account balance and pay invoices (i.e. internetbanking), pay by cash transfer and SMS, and eventually replace cash cards. As a result of this interdependency: (1) those involved at central organization ensured that Mobile remained hidden for local banks and several departments at central level until launch; (2) even after launch, the central organization took care of small changes in the program (e.g. improvements of Mobile based on problems that local banks encountered); (3) in addition, a Taskforce was introduced in 2007 for integrating Mobile into the organization (e.g. the Taskforce accomplished that the marketing of Mobile (actions for sales improvements) will be done cooperatively between the MVNO and the central organization; (4) besides the involvement at central level, Mobile drew on the Bank's earlier service innovations such as mobile under i-mode, and used the same security systems as internetbanking. Our case study findings thus show that Mobile was fundamentally a technical support innovation program, and as such, it appeared to be more efficient to coordinate it at the central level, which also located technology support departments.

However, our case study findings show that several parts of Television (i.e. Community-tv and Event-tv) were less dependent on and integrated with existing business systems and processes of the Bank; the central organization was conscious of the importance of involving local banks in an early stage (in the form of pilots) in order to experiment with Community-tv and Event-tv. Regarding Community-tv, examples were the pilots in Nuenen, Weert, and Sittard/Geleen, and a pilot involving a collaborative project of local banks and external partners. Regarding Event-tv, the central organization tried to stimulate local banks to produce films of local sponsored projects and to place these on the Event-tv web page. As such, the Bank could made effective use of the decentralized structure for Community-tv and Event-tv. Other (parts of the) sub-programs of Television were more dependent on and integrated with existing business systems and processes of the Bank (e.g. Tvbanking where safety systems were the same as for Mobile and internetbanking). These other (parts of the) sub-programs were mainly developed at central level (i.e. a collaboration of the team of

Mobile, the three main directories, several departments and external partners for, for example, introducing advertisement space at the web page and placing videocontent on the web page). Not using the decentralized structure for these other (parts of the) sub-programs of Television enabled the firm to avoid several generative mechanisms of decentralization.

3.5 Discussion and conclusion

In this study we critically examined the argument that ambidexterity in organizations benefits from a decentralized structure. We conducted an empirical study in a large decentralized retail bank in the Netherlands. Our analysis of two comparative case studies of service innovations, one in venturing in an unrelated industry (mobile phones), and the other in developing novel ways of interacting with customers (interactive television), contributes in several ways to the literature on ambidexterity, organizational design and service innovation, and answers sub-research question 3 of this dissertation as follows.

First, we differentiated between different generative mechanisms potentially triggered by decentralization. Our case study findings indicate that the generative mechanisms of a decentralized structure were not activated simultaneously in each phase of the innovation process. While several generative mechanisms depended fully on the deployment of this structure, some occurred even when the service innovation was organized and executed centrally. However, once a local bank agreed to participate, for example, in a pilot or in selling a new service such as Mobile (i.e. flexibility and adaptability), the local bank's motivation to stay involved tended to increase. This in turn was likely to reduce costs of control and coordination for the central organization. In addition, the local bank's flexibility and adaptability did not always constrain the central organization as local banks may provide a reality check in terms of business potential, so that the central organization improves its chances of successfully introducing a particular initiative.

Second, our case study findings show that the occurrence of these generative mechanisms depend foremost on the actual use of a decentralized structure. The deployment of a decentralized structure differed over various stages of the innovation trajectories. The Bank did not make active use of the decentralized structure for Mobile until launch. After launch the central organization faced difficulties in using the decentralized structure, facing substantive control and coordination costs. However, as Mobile was fundamentally a 'technical support' service innovation program, it would have been efficient to coordinate this

type of innovation at the central level, where technology support departments were located. In the Television case on the other hand, the central organization involved local banks from the initiation phase on, using the decentralized structure to facilitate the development of Community-tv and Event-tv. While Siggelkow and Levinthal's (2003) simulation findings suggested that a firm should start with decentralization and later reintegrate by centralization, this study thus shows that the opposite may work as well. Starting with a centralized approach and subsequently involving local banks, made it possible to launch Mobile. And, the other way around, the Television project benefited from the deployment of the decentralized structure from the start of the project.

Third, our case study findings suggest that the use of the decentralized structure depends on interdependencies of exploitation and exploration activities. The interdependencies regarding Mobile and Television clarify when decentralization is (non-)beneficial. While Mobile depended on and was integrated with the Bank's existing business systems and processes, Television was less dependent on and integrated with the Bank's existing business systems and processes. Our case study findings suggest that decentralization is beneficial for experimenting with and further developing exploration activities that are less dependent on and integrated with a firm's exploitation activities, its existing business systems and processes. When a service innovation depends on and is historically strongly integrated into the firm's exploitation activities from initiation, the decentralized structure may not be effective. We thus conclude that a decentralized structure does not support ambidexterity when exploitation and exploration activities strongly depend on each other. This is particularly the case for the complex service innovations investigated in this study. Only the development of rather independent modules of innovation programs may profit from decentralization.

In addition, our case study findings imply how a firm may balance its organizational design by defining and explaining the role of timing and interdependencies. The effects associated with a particular organizational design are not static but dynamic, depending on its use. Firms should therefore deploy a decentralized structure according to need. Similarly, Cummings (1995) argued each firm needs vis-à-vis decentralization or centralization, whereas Siggelkow and Levinthal (2003) suggested that firms should cycle between decentralization and centralization. Consequently, firms will have different optimal mixes. For example, for service innovations that depend less on, and are less integrated with the Bank's existing

business systems and processes, it may be efficient to coordinate testing and validation at the central level, and at the same time involve local banks that are close to their clients and able to sense client's needs better than the central office. These insights extend Siggelkow and Rivkin's (2006) work, who argued that balancing between decentralization and centralization depends on interdependencies between departments. In this respect, the study in this chapter shifted focus to explaining the role of organizational design in relation to interdependencies between service innovations and existing business systems and processes. By explaining the role of interdependencies, our case study findings also imply that there is no trade-off between exploitation and exploration here (cf. Gibson & Birkinshaw 2004). Instead, we found that the service innovations have been developed along, and (will be) integrated in, the firm's exploitation activities (cf. Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004; O'Reilly & Tushman 2004; Jansen, Tempelaar, van den Bosch & Volberda 2009; Simsek et al. 2009).

There are some limitations to this study. A first limitation arises from differentiating the broad notion of 'effects' (of decentralization) into 'outcomes' and 'generative mechanisms'. Future explanatory research should sort out what activates particular generative mechanisms, and how those generative mechanisms affect eventual outcomes (cf. Sayer 1992). A second limitation arises from the unconventional nature of the organizational setting in this study: the firm studied in this study has a much more decentralized structure than most other (non-cooperative) banks. This served to identify specific mechanisms and outcomes generated by decentralization, but does not imply that our findings can be directly generalized to similar or comparable non-cooperative banks. Third, research on organizational structures needs to be complemented by additional process research. Any effect of a particular organizational structure does not occur spontaneously, but is triggered by actions and events in unfolding processes. Thus, additional process research is needed on the actual use and reproduction of structures. Fourth, focusing on decentralization as one of the organizational antecedents for ambidexterity neglects a variety of other organizational antecedents, environmental conditions, and moderators. Organizational antecedents may comprise leadership, informal social relations in coordinating the development of exploitation and exploration activities, and a context of support and trust. Environmental conditions may involve static or dynamic market conditions. And moderators may include market orientation and firm scope (cf. Gibson & Birkinshaw 2004; Raisch & Birkinshaw 2004; Jansen et al. 2006).

Chapter 4

Comparative cross-country case studies in the management consultancy industry

Founders' employment models and ambidexterity in organizational practices[3]

"Study the past if you would define the future"

~ Confucius

(Chinese philosopher & reformer, 551 BC - 479 BC)

[3] This chapter draws on a paper written together with Elena Antonacopoulou, Georges Romme and Susan Taylor. The empirical study reported in this chapter draws on funding from Eindhoven University of Technology, as well as from ESRC/EPSRC/Advanced Institute of Management (AIM) Research, as part of the AIM project 'Practice and practising: A comparison across organizations, industries and countries', under grant number RES-331-25-0024, led by Elena Antonacopoulou.

The empirical study in this chapter examines the relationship between founders' employment models in organizations and the degree of ambidexterity in organizational practices. As such, this study extends our understanding of the dynamics entailed in the way competing priorities are performed, especially when these priorities demand both continuity and renewal. More specifically, this study explores the way founders' employment models impact organizational practices, and in particular the capability to change these practices. The findings of comparative case studies of two practices in three management consultancy SME's in the USA, the Netherlands and the UK reveal how founders' employment models affect the way competing demands of continuity and renewal are addressed. The case study findings primarily suggest the importance of founders' blueprints, embedded in their employment models. These blueprints are difficult to alter, and as such mark the firm's future path by impacting the level of ambidexterity in practices over an extended period of time.

4.1 Introduction

One of the more enduring ideas in the organization science and strategic management literatures is that competitive advantage depends on the higher-order organizational capability to exploit and explore by means of sustaining a firm's daily operations and implementing change (Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004). An organization that is able to synthesize competing priorities of continuity and renewal is referred to as ambidextrous (cf. Feldman 2000; Leana & Barry 2000; Rivkin & Siggelkow 2006; Godkin 2008; Håkonsson, Klaas & Carroll 2008).

In responding to the dearth of studies that focus on competing demands of continuity and renewal (cf. He & Wong 2004; Smith & Tushman 2005; Raisch & Birkinshaw 2008), the empirical study in this chapter adopts a dynamic practice perspective. A dynamic practice perspective highlights the forces that shape how organizational practices are performed (Bourdieu 1990; Turner 1994; Schatzki, Knorr-Cetina & von Savigny 2001), by drawing attention to practices' continuity *and* renewal through practising (cf. Antonacopoulou 2007; 2008). The dynamic practice perspective in the study in this chapter captures the way founders' employment models in organizations impact the subsequent evolution of practices, and in particular the level of ambidexterity of the incumbent organization (in terms of continuity and renewal) (cf. Waldman et al. 2004; Grönfeldt & Strother 2006; Godkin 2008).

A dynamic practice perspective is consistent with a growing focus on the co-existence of different forces in organizations, as is most prominent in the ambidexterity literature (e.g. adaptation and alignment, effectiveness and efficiency, and exploitation and exploration) (e.g. March 1991; Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004). In addition, applying such a dynamic view to founders' employment models contributes to the literature on founders' employment models as well as to the practice literature, as the practice literature does not connect practice to managerial issues of competitive advantage (Dougherty 2004). Notable exceptions here are Jarratt and Stiles (forthcoming) and Burgoyne and James (2006), although these scholars did not link founders' employment models to continuity and renewal. Jarratt and Stiles (forthcoming) built upon a strategy-as-practice approach to capture strategizing insights of senior executives responsible for competitive strategy, whereas Burgoyne and James (2006) developed a best practices guide to inform organizations striving to improve their approach to leadership development.

The contributions of this study are as follows. From a dynamic practice perspective, we provide a definition of organizational practice in section 4.2 that incorporates the role of the practitioner (incorporating the firm founder) in the ways the practice is performed, instigating processes of continuity and renewal. Then, more detailed insight is provided in section 4.2 into the relationship between founders' employment models and the dynamics of practices. Section 4.3 describes the methodology of this study. Drawing on comparative case studies of two practices in three management consultancy SME's (i.e. small-to-medium sized firms) in the USA, the Netherlands and the UK, we explore in section 4.4 the way founders' employment models impact the subsequent evolution of practices over an extended period of time. Drawing on the case study findings, section 4.5 provides the discussion and conclusion of this study.

4.2 Literature review

4.2.1 Ambidexterity and a dynamic view on organizational practice

Ambidexterity involves the pursuit of both exploitation and exploration (e.g. March 1991; Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004; Gibson & Birkinshaw 2004; He & Wong 2004; O'Reilly & Tushman 2004). Exploitation captures activities such as efficiency, selection and implementation (March 1991), and a focus on current activities in existing domains (Holmqvist 2004; Carmeli & Halevi 2009). Exploration implies activities characterized by search, discovery, variation and experimentation (March 1991), and a focus on new activities in non-existing domains (Holmqvist 2004; Carmeli & Halevi 2009). In this respect, exploitation and exploration activities refer to maintaining continuity in daily operations respectively implementing renewal (Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004).

In order to organize, balance and connect competing priorities of continuity and renewal, scholars suggested a dynamic practice perspective (cf. Bourdieu 1990; Turner 1994; van de Ven & Poole 1995; Schatzki et al. 2001; Antonacopoulou 2007; 2008). A dynamic practice perspective involves a 're-turn' to practice as a fundamental aspect of organizing (Giddens 1984; Bourdieu 1990; Schatzki et al. 2001). This return has both extended the 'reach' of practices in terms of areas of research, for example to topics such as business ethics as practice (e.g. Clegg, Kornberger & Rhodes 2007), communities of practice (e.g. Wenger 1998; Brown & Duguid 2001), knowing in practice (e.g. Cook & Brown 1999; Orlikowski

2002), learning as practice (e.g. Wenger 1998; Gherardi 2000; Gherardi & Nicolini 2002; Antonacopoulou 2006), and strategy as practice (e.g. Jarzabkowski 2005; Whittington 2006; Jarratt & Stiles forthcoming), and its utility as a conceptual lens through which a number of phenomena (e.g. institutional change, technology) have been re-examined (Dougherty 1992; 2004; Orlikowski 2000; Seo & Creed 2002).

The body of work now referred to as Practice-Based Studies (PBS) focused predominantly on the situated nature of action as embedded in performing practices, that is enacted by actors and manifested in the context of language, the physical environment, and the interactions between actors (Gherardi 2000). A practice is viewed as a basis for coordinated collective activities which provide coherence and standardization. The dominant orientation of PBS is therefore on replication. In this respect, PBS serves to understand how continuity of practices (i.e. those organizational activities and processes that are maintained over a period of time) can be reached in social arrangements, due to the socialization process that defines how one performs one's practice in accordance to the specified and negotiated 'rules' (cf. Leana & Barry 2000; Buchanon et al. 2005).

However, continuity of practices may lead to a bias towards the status quo (cf. Hannan & Freeman 1984; Greve 1998; Colombo & Delmastro 2002; Hodgkinson & Wright 2002; Hannan, Pólos & Carroll 2004; Boyer & Robert 2006), also referred to as becoming locked into excessive exploitation (Jansen et al. 2005; Liu 2006; Jansen, Tempelaar, van den Bosch & Volberda 2009). Such excessive exploitation may result in a competency trap, fostering inertia and thereby reducing a firm's capacity to adequately respond to future environmental changes and new opportunities (Jansen et al. 2005; Liu 2006; Jansen, Tempelaar, van den Bosch & Volberda 2009). In particular, inertia refers to a failure to pay attention to signals, and/or an absence of appropriate activity over time (Buchanon et al. 2005). In this respect, a persistent resistance to renewal exists, even where it may be appropriate (Hannan et al. 2004).

A dynamic view of organizational practices is mindful of processes of replication, but is also concerned with the ways in which multiple and diverse performances of a practice provide a basis for re-evaluating and re-inventing the practice (i.e. renewal of practices), and the manner in which it is performed through practising (cf. Antonacopoulou 2007; 2008). Renewal itself, however, is also fraught with potential difficulties in that firms may find it difficult to break away from a continuous stream of practices' re-evaluation and re-invention, also referred to as

excessive exploration (March 1991; Jansen 2005; Liu 2006). This difficulty, in turn, may result in a failure trap, which involves becoming oversensitive to short-term search and errors in change, reduces the speed at which existing competencies are improved and refined, drives out efficiencies, and prevents a gain of economies of scale (fostering adrift) (March 1991; Jansen 2005; Smith & Tushman 2005; Liu 2006). Such a dynamic view is consistent with practice as dissected in the next section.

4.2.2 Dissecting organizational practice

From a dynamic view, a significant factor affecting how on-going practising fosters practices' continuity and renewal lies in the choices practitioners make. In this respect, a dynamic practice perspective implies a shift in focus towards the firm's practitioners as they create, maintain and re-create the practices themselves in the midst of practising, which indicates more intrincate aspects at play. In this respect, a focus on practising accounts for the micro-dynamics of action; the tensions practitioners experience in performing a practice, and thus gives practice its unique character (Antonacopoulou 2007). Practising, however, not only encompasses practitioners' enactment and embodiment of the action and interactions, but also the differences in the performance of a practice that are due to the individual's standards of performance, knowledge and skills, mood at a given point in time, and personal idiosyncrasies about how the practice should be performed. All these characteristics underpin practitioners' practical judgments that have the potential to define the character of a practice. This is illustrated by Antonacopoulou (2009), using the example of an opera singer performing an aria. The same aria is performed differently, by the same opera singer at different times, subject to the way the very practice of singing is refined.

What underlies practising (i.e. the values, beliefs and interpretations) is just as critical as understanding the behaviors, activities and actions that constitute a practice. This implies the importance of 'practising one's practice' (Antonacopoulou 2004). In this respect, much of the variance in performance levels at the individual and organizational level may be attributed to long hours of practise that includes both repetition and the modification or correction of activities. Moreover, unless practitioners are at least somewhat conscious of the purpose, procedures, principles, and other aspects constituting the practice, they will face severe barriers in replicating these activities (Antonacopoulou 2007). Nor can practices be replicated by others, without some level of consciousness of the actions and activities, especially complex ones (cf. Wenger 1998). We acknowledge here that certain practices can become so

automated that the practitioner is unconscious of them (i.e. when familiarity with a practice becomes second nature as the practice *has* been learned at a prior stage in the form of a conscious act). However, activities of which practitioners are, or have become, unaware, are not part of our definition of practice. In addition, we agree with the mainstream practice theorists in placing practice firmly in their social and historical context, following Bourdieu (1990) and Schatzki (1996).

In sum, we extend the current literature by arguing that an *organizational practice* encompasses the performance of activities by practitioners in an organization that: (1) are characterized by replication (i.e. contuinity), as well as re-evaluation and re-invention (i.e. renewal), (2) include a certain level of consciousness about the activities performed, and (3) are embedded in a historical and social context, as collective patterns of actions, activities and modes of knowing have evolved historically, and are governed by a purpose, certain rules, and formal and informal routines (Wenger 1998; Gherardi 2000; Jarzabkowski 2004; Antonacopoulou 2007). In this respect, competing demands of continuity and renewal can be organized, balanced and connected by replicating a firm's current activities and processes embedded in a specific practice, while also moving into new opportunities by re-evaluating and re-inventing these activities and processes (cf. Tushman & O'Reilly 1996; Birkinshaw & Gibson 2004).

4.2.3 Founders' employment models and organizational practice

Differences in *founders' employment models* in organizations may influence the dynamics of practices. Building on the notion of path-dependency, founders' employment models become imprinted on companies and mold their subsequent development, underscoring the importance of logics of organizing that firm founders bring to new organizations (Stinchcombe 1965; Carroll & Harrison 1994; Barnett & Carroll 1995; Baron et al. 1999). Thus, differences in how administrative structures evolve may be 'programmed' in an organization's infancy (Stinchcombe 1965).

In this respect, this study builds on the work of Baron et al. (1999) and Hannan et al. (2006). Baron et al. (1999) proposed five basic types of employment relationships between founders and their employees (i.e. autocracy, bureaucracy, commitment, engineering, star), along three dimensions (employee attachment, selection of employees, basis of coordination and control) (see table 4.13).

Employment model	Dimensions		
	Attachment	Selection	Coordination/control
Engineering	Work	Skills	Peer/cultural
Star	Work	Potential	Professional
Commitment	Love	Fit	Peer/cultural
Bureaucracy	Work	Skills	Formal
Autocracy	Money	Skills	Direct

Tabl 4.13: Five employment model types (source: Baron et al. 1999)

Baron et al. (1999) proposed that through the employment models that founders initiate in their fledgling firms, they impact many aspects of organizational behavior and firm outcomes, affecting firm evolution over time. For example, while autocratic-model firms are often able to economize on administration by relying on information technology, budgeting, rules, etcetera, such economies are not costless. When founders exclusively use formal means of coordination and control, employees are less likely to develop the capability to self-manage. At the other extreme of the types of employment relationships, commitment-model firms will tend to develop the least bureaucratic overhead. In this case, founders may economize on formal control by providing long-term employment prospects, relying on peer pressure, encouraging employees to internalize the organization's goals and values, and investing in employees' development. Thus, firms with an autocratic-model subsequently become more administratively intense than otherwise similar companies, particularly when compared with commitment-model firms (Baron et al. 1999). As such, Baron et al. (1999) proposed that employment models lock-in the adoption of particular structures and premises that guide decision-making, which impacts the intensity of administration.

Drawing on the work of Baron et al. (1999), Hannan et al. (2006) empirically tested the impact of: 1) altering the blueprint of the employment relationship imposed initially by the founder, and 2) replacing the founder with an external (outsider) CEO on different aspects of firm performance. Hannan et al. (2006) argued that both types of change are destabilizing to firms. Changes in the founder's blueprint of the employment relationship are deeply embedded in the organization's identity, which draws on a firm's core features (e.g. the firm's mission, form of authority, core technology and employee skills, or marketing strategy). Such changes may therefore be viewed as "violations of deep-seated, taken-for-granted

expectations by key organizational constituents" (Hannan et al. 2006: 755). Moreover, Hannan et al. (2006) observed that changing the founder's blueprint of the employment relationship decreased the firm's growth in market value, whereas appointing an outside CEO even further decreased the rate of growth.

Baron et al.'s (1999) and Hannan et al.'s (2006) empirical work enriches our understanding of founders' employment models and their impact on the degree of ambidexterity in organizational practices. A higher degree of continuity/inertia would be expected in firms where founders draw on autocratic-models, as these firms involve a high intensity of administration, while one would expect a higher degree of renewal/adrift in firms where founders implanted commitment-models, because of a low intensity of administration (cf. Baron et al. 1999). More specifically, firms with autocratic founders' blueprints of the employment relationship are more likely to lock-in (and thus inhibit renewal of) practices than commitment-model firms. The work of Hannan et al. (2006) also suggested that founders' blueprints of the employment relationship are difficult to alter, and therefore are likely to have a strong and stable impact on the subsequent evolution of practices. As such, one would expect that autocratic-model firms involve practices that remain largely unchanged over an extended period of time, whereas commitment-model firms involve practices that are more likely to change.

4.3 Methodology

Drawing on Baron et al. (1999) and Hannan et al. (2006), this study accounts for the way founders' blueprints of employment relationships relate to organizational practices' continuity and renewal. In this respect, this study answers sub-research question 4 of this dissertation in terms of how founders' employment models in organizations impact the degree of ambidexterity in practices. As such, this study seeks to build new theory (cf. Strauss 1987; Corbin & Strauss 2008; Dul & Hak 2008) on the relationship between founders' employment models and the degree of ambidexterity in practices, as this relationship has not been theoretically proposed in the literature. This sub-research question is highly relevant, particularly because examining this relationship contributes to our understanding of the way an organization is able to manage ambidexterity over time (cf. Eisenhardt & Graebner 2007).

Qualitative research procedures are considered appropriate for the following reasons (cf. Lee 1999). Building on existing insights of Baron et al. (1999) and Hannan et al. (2006) requires

an open and iterative approach to data collection and analysis (cf. Corbin & Strauss 2008). This approach enables an inductive study of the relationship between founders' employment models and the dynamics of practices, facilitating search and the analysis of the interactions involved. In this respect, this complexity is best grasped by qualitative methods that investigate phenomena in their natural environment (cf. Langley 2007; Yin 2003).

4.3.1 Research setting and data collection

We adopted a data collection approach that is similar to the methods used by Hicks, Nair and Wilderom (2009). Hence, we were concerned with pivotal practices in firms, and the way these reflect continuity and renewal. As such, we studied practices that were key to the incumbant organizations, and that particularly provided close insight into founders' employment models of Baron et al. (1999), in terms of employee selection and attachment and their means of controlling and coordinating work. These practices were: business development and acquisition (BDA) and staff induction (SI). BDA is the generation and development of new business opportunities, from existing as well as new clients. In other words, it entails the development of new consulting projects. As such, BDA is a critical practice for survival, particularly in profit firms, where explicit objectives such as market share, revenue, and profitability targets are of key importance (cf. Richter, Dickmann & Graubner 2008). The BDA practice thus particularly provided insight into the way a founder's blueprint of the employment relationship affects how work is controlled and coordinated. SI involves the way new staff members are introduced and socialized into the firm. SI is a critical practice for survival in particularly service firms, as these are 'people businesses' (cf. Scott 1998; Kubr 2002; Lorsch & Thierney 2002). In this respect, their success largely hinges on how well human resources are managed (Graubner & Richter 2003; Teece 2003; Richter et al. 2008). The SI practice thus particularly provided insight into the way founders' blueprints of the employment relationship affects how employees are selected and attached.

This study focuses on the service industry as the literature on ambidexterity in service firms is still in its infancy. Previous studies on ambidexterity have been primarily conducted in manufacturing firms, whereas relatively less attention has been paid to ambidexterity in service firms. Notable exceptions are for example Jansen et al. (2005; 2006), Han (2007), Im and Rai (2008), Jansen et al. (2008), Tiwana (2008), Groysberg and Lee (2009), Güttel and Konlechner (2009), and Jansen, Vera and Crossan (2009). We selected the management consultancy industry because of the key role of the firm founders in the practices (under

study) that largely determine the success of management consultancy firms. The founders tend to exclusively generate and develop new business and strongly determine how human resources are managed, as they often work side by side with other employees and may have personally recruited many of them (cf. Hannan et al. 2006).

We drew on cross-country case studies in the USA, the Netherlands and the UK. Cross-country case studies in a particular industry decrease variety arising from the industrial context. Moreover, the case studies that were selected brought in theoretically meaningful variation as the cases differ in founders' employment models (cf. Yin 2003). ConsulUSA, ConsulNL and ConsulUK were founded in respectively 1980, 1995 and 1990. When data collection started, the firms employed respectively 5, 14 and 25 people. The founder of ConsulUSA added a new PhD with complimentary skills, who ultimately became the second partner. Together they then owned and managed the firm, and constituted the main actors in the BDA and SI practice. However, the founder was considering leaving the firm in the near future as the typical retirement age approached and the founder expressed a desire not to 'work that hard' any longer. The vision of the founder of ConsulNL was to implement a process model, where client and advisors were partners in a mutual process of cooperation and learning. The founder took two partners on board (i.e. the 1st generation of management in this firm), whose views differed from the founder's approach to organizing. In 1999, the founder suddenly left after a dispute between himself and one of the other partners; a lack of respect for each others way of working resulted in a lack of unanimity. Subsequently, a new team of three partners was gradually built (i.e. the 2nd generation of management/current partners), with similar views on organizing as compared to the partners of the 1st generation of management (i.e. the former partners). This team was completed when the second partner of the 1st generation retired (but still stayed connected to ConsulNL several days a week), and when the third partner of the 1st generation withdrew from an executive position to focus on operating and learning processes in the firm (incl. coaching juniors). The 2nd generation of management owned and managed the corporation; both managers and employees were main actors in the BDA and SI practice. Finally, ConsulUK's origins go back to 1977 when it was a centre of excellence, provided advice, guidance, and training in industrial relations. In 1980 this centre was privatized and renamed itself a year later. In 1986 it became the human resource consulting arm of a major professional service provider. In 1990 a management buy-out created the firm as an independent, employee-owned company. The founder (also the current CEO) played a significant role in the management buyout, and was the single largest

shareholder of the firm (owning 50% of the shares). The founder/CEO, the chairman along with the non executive director, and the four directors (i.e. one of them being the founder's wife) constituted the board of ConsulUK, and owned and managed the firm. Of the 25 employees, 18 were management consultants, who came from diverse backgrounds ranging from human resource management and business psychology, operational management and engineering. Together with the firm's employees, they were the main actors in the BDA and SI practice. However, the founder/CEO had indicated an intention to leave in the near future because of his upcoming retirement. All case studies involved a situation in which the founder would likely retire in the near future (i.e. ConsulUSA and ConsulUK), or recently left the firm after which a new team of partners had been formed (i.e. ConsulNL). This provided the opportunity to examine the impact of founders' blueprints, as embedded in the founders' employment models, on practices' continuity and renewal, and its potential to alter.

We selected these organizations because in most SME's the owner-manager is the principal actor in the BDA and SI practice (cf. Hannan et al. 2006). This enabled us to examine founders' employment models in relation to the subsequent evolution of practices in an in-depth manner (cf. Baron et al. 1999; Hannan et al. 2006). Second, SME's provided the opportunity to extensively explore the two practices under study, as in such firms the BDA and SI practice are often highly visible because both practices reflect a range of work tasks and processes that are central to the firm's functioning. Third, ad-hoc problem solving tends to prevail in many SME's (cf. Winter 2003). SME's generally engage in non-routine and non-repetitious change activities, typically appearing as a response to relatively unpredictable events, as ad-hoc problem solving brings few costs (cf. Winter 2003). These costs, if any, tend to be opportunity costs of staff with alternative productive roles in the organization. In addition, the costs of ad-hoc problem solving largely disappear if there is no problem to solve (Winter 2003). In other words, other variables influencing our case study findings (other than ad-hoc problem solving) are expected to be less strong than in large(r) firms.

Drawing on the contact information of potential informants that our contact persons provided, we selected the founders, those employees that were involved in the firm's management, and employees lower in hierarchy that were involved in one or both of the practices under study. We conducted semi-structured in-depth interviews with these employees. In ConsulUSA, a total of 4 interviews were conducted, with 4 different informants, representing 75% of the entire staff. Functions varied from junior to partner (including the founder). In ConsulNL, a

total of 7 interviews were conducted, with 7 different informants, representing 50% of the total work force. Functions varied from junior, medior (i.e. someone who is in-between junior and senior), senior, to (former) partners (including the founder). In ConsulUK, 23 interviews were conducted, with 21 different informants, representing almost 85% of the staff population. These interviews comprised both consulting and non-consulting staff, across different hierarchical levels (including the founder/CEO, board, marketing manager, senior consultant, consultant, and office administration), and across different propositions (i.e. departments offering different services). Here, the differences in employee population representation rates resulted from differences in access to informants.

The duration of each interview ranged between thirty minutes and two hours. We asked open-ended questions about the what, how, why, when and where in respect to continuity and renewal of the BDA and SI practice from the time the firm was founded until the point in time of data collection. This historical analysis of how the practices evolved provided further in-depth understanding of the role of the founder in shaping the practices. This historical orientation also enabled us to account for continuity if it involved the exploration of activities and processes embedded in the BDA and SI practice that were maintained over a period of time. Equally, we were able to capture renewal of practices if it involved the exploration of activities and processes embedded in the BDA and SI practice that withdrew from the status quo. Our research strategy captured incidents where continuity and renewal were manifested in the way interviewees accounted for the multiple ways in which the practices were performed. By tracing the variety of performances of practices, we were able to capture some of the contributing forces shaping the evolution of the practices.

We applied snowball sampling by asking interviewees for other informants, following up upon stories and individuals mentioned in the interviews. In addition, we verified the data that resulted from prior interviews with additional informants in order to triangulate their stories (cf. Jick 1979). Finally, additional follow-up interviews were conducted to clarify a number of issues that remained ambiguous in the data analysis. Moreover, email conversations were conducted with original informants to clarify remaining issues and questions. These follow-up interviews, together with frequent email conversations, mitigated the bias of retrospection (cf. Leonard-Barton 1990). All interviews were recorded and then fully transcribed, giving us a pull of over 150 of pages of research data to work with.

The interviews in all case studies were conducted by a team of researchers as part of an international study which unfolded over a period of 36 months. This enabled the international research team to adopt a coherent approach to data collection and analysis, in terms of the practices to be studied (thereby agreeing upon what these practices contain), similar questions to be asked during interviewing, and similar ways to capture continuity and renewal in the practices under study. Such a coherent approach had been made possible through a series of meetings where a common research approach, which was subsequently followed, was agreed. In this respect, construct equivalence has been attained as we agreed upon what constructs to be measured and which data to be collected and analyzed across case studies. Tabel 4.14 summarizes a descriptive summary of ConsulUSA, ConsulNL and ConsulUK. We note here that sample equivalence differs somehow, which is the result of different judgments of each researcher regarding the number of interviews to be conducted and (functions of) informants to be included during data collection.

4.3.2 Data analysis and coding procedures

In the analysis of the data, we used the software program NVivo 7 (i.e. Gibbs 2002) in order to build a case study database of the interviews that have been conducted, and to maintain a chain of evidence in order for outsiders to understand how conclusions have been drawn (cf. Yin 2003). The first step included breaking down the data of each case study into thematic units, which sometimes consisted of a phrase and at other times of multiple sentences. The emergent codes we used to break down the data into thematic units fitted in our pre-defined codes. These emergent codes were described in NVivo as 'free nodes', a first step to maintain a chain of evidence (cf. Yin 2003). The pre-defined codes resulted from the objectives of this study; in order to examine the way founders' employment models impact ambidexterity in organizational practices, we studied the *founders' employment models*, the *BDA* and *SI practices*, and the *continuity*, *inertia*, *renewal* and *inertia* of these practices; the content of these concepts have been drawn from the literature review. We believe that these pre-defined codes cover the objectives of this study. However, we do stress that instead of the BDA practice, other organizational practices could have been selected (e.g. the innovation practice, as this practice also accounts for how work is coordinated and controlled). In addition, we

	Founding year	Management team	Number of employees	Number of interviews (informants)	Number of informants in relation to entire staff	Functions informants
ConsulUSA	1980	Founder took a second partner on board	5	4	75%	Junior, partner
ConsulNL	1995	Before 1999 the founder took two partners on board; after the departure of the firm founder in 1999, a new management team was gradually built (i.e. three new partners)	14	7	50%	Junior, medior, (former) partner
ConsulUK	1990	Firm founder is current CEO	25	23 (21)	+/- 85%	Office administrator, consultant, senior consultant, marketing manager, member of the board, CEO

Table 4.14: Descriptive summary of ConsulUSA, ConsulNL and ConsulUK

acknowledge that instead of renewal and continuity other concepts such as adaptation and alignment, effectiveness and efficiency, and exploitation and exploration (as prominent concepts in the ambidexterity literature) could have been selected to capture the degree of ambidexterity in practices.

This coding process became saturated when no more new emergent codes were added (cf. Strauss 1987; Corbin & Strauss 2008). Table 4.15 illustrates how quotes that related to emergent codes fitted our pre-defined codes (cf. Strauss 1987; Miles & Huberman 1994; Corbin & Strauss 2008). As such, data has been broken down, conceptualized, and put back together in new ways (cf. Corbin & Strauss 2008). In NVivo these emergent codes were categorized under 'tree nodes' as a second step to maintain a chain of evidence (cf. Yin 2003). The 'tree' involved each of our pre-defined codes including the emergent codes that were related to each pre-defined code.

In this process, two researchers coded the data of each case study independently (by using a coding dictionary that involved our pre-defined codes as have been mentioned previously), who then compared codes and discussed differences in order to develop a mutual understanding in respect to the codes (cf. Eisenhardt 1989; Yin 2003). In addition, we triangulated our case study findings with observations from secondary data (i.e. archival data such as HR-manuals and consulting reports of business development and acquisition activities), and obtained feedback from informants. We used archival material primarily to corroborate our case study findings or put them in perspective (cf. Eisenhardt 1989; Yin 2003). A check for researchers' biases was conducted (cf. Miles & Huberman 1994) by asking firm representatives to reflect on codified output to verify if the case descriptions fitted our pre-defined codes, and by means of inquiring whether they recognized it as authentically theirs.

Subsequently, we wrote each of the case histories (cf. Corbin & Strauss 2008). Then, we compared our cross-country case histories and drew conclusions. In this respect, we followed what Eisenhardt (1989) labeled a 'within-case analysis' approach, involving a detailed case study write-up for ConsulUSA, ConsulNL and ConsulUK, combined with a comparison between these case studies in terms of similarities and differences regarding founders' employment models and the degree of ambidexterity in practices.

Case studies	Pre-defined codes	Coding examples
ConsulUSA	BDA practice, inertia	"We rarely introduce a new service because every employee has his/her own specialty and preferences among the established five services. For example, I prefer cognitive work, that is test development and validation, but our inductees often prefer leadership or organizational effectiveness assignments."
	SI practice, continuity	"Inductees are able to fully learn about the job they are examining by means of developing a task list. This approach ensures that they have a strong understanding of what the job really is and what an incumbent actually has to do. With an accurate task list, we are able to do anything the client asks, even years later, without repeating the interviews and observation process. Yet, it could take years to get a job fully and correctly analyzed. Therefore, we have to conduct a detailed validation of the task list."
	SI practice, renewal	"I started giving inductees more responsibility early on. Inductees don't like it that much, but if I want them to learn, this is essential."
ConsulNL	BDA practice, inertia	"We think it is still fun to develop it (i.e. new service)."
	BDA practice, renewal	"In the past, partners always acted together, but because of the work pressure arising from what still needs to be done, this turned out inefficient. Now they have divided tasks based on what each one is good at, and merely work on the major issues together. Then they will go for it and that works."
	SI practice, continuity	"In most cases, I work with this particular inductee. He pays close attention to me, and listens to how I converse. That person is me. If I see him working, I see myself. This process is inevitable."
	SI practice, adrift	"There were disputes over what is the 'right' inductee. First, partners just hired people, now they are looking for talent. Every partner, with no exceptions, needs to be convinced that the potential job candidate has the talent they are looking for, otherwise this person will not be hired."
ConsulUK	BDA practice, renewal	"The firm founder is reaching a certain age and sales targets need to move, so employing people like one of the directors was the way to go for us and change direction. And we don't use the founder at all for stuff because you know, he is not really in our space and actually he is less and less in the space of people. … He is probably focused on the board development work and it is up to everybody else to try to sell."
	SI practice, continuity	"Everybody who is in the board has a responsibility to help bring people on board and we take different roles at different times."

Table 4.15: Coding examples of the dynamics in organizational practices

4.4 Cross-country case study findings

4.4.1 ConsulUSA

ConsulUSA was headquartered in the Northeastern part of the USA. The firm acquired an international reputation for test development and validation, development of physical guidelines for selection, and promotion and retention of employees in a variety of jobs. The firm's clients came from the private and public sectors, spread all over the USA as well as in a few international locations. The firm founder and second partner attempted to attract, motivate and retain employees through compensation paid (i.e. money most prominent in attaching employees). Through a variety of ways the partners selected new staff members, searching exclusively for those who immediately and effectively became competent at work tasks, thereby lacking formal routines and processes for socializing new firm members (i.e. skills most prominent in selecting employees). As such, they hired two employees: a consultant with a MSc in psychology, and a PhD in physiology. Any work with interest and discretion was, however, kept by the founder and second partner. In addition, the partners basically maintained control of all the decision-making, and achieved coordination and control largely through the direct monitoring of employees' work (i.e. direct coordination and control). In this respect, the founder's employment model closely fits that of the autocratic prototype proposed by Baron et al. (1999).

Business development and acquisition practice ConsulUSA

Over time, the partners decided to limit the firm's services to five types in which they believed they performed better than their competitors. As the second partner put it:

> "We rarely introduce a new service because every employee has his/her own specialty and preferences among the established five services. For example, I prefer cognitive work, that is test development and validation, but our inductees often prefer leadership or organizational effectiveness assignments."

The partners often acquired new business from past success with a particular client (even as long as five to ten years earlier), their international reputation for a specialized niche expertise such that (past) clients referred it to other organizations with similar needs (i.e. referrals), and proposals prepared in response to a Request For Proposal (RFP). They attained a very high 'hit' rate (85% for the RFP's it responded to). Presentations and networking at major professional conferences that drew both academic and practitioner participants accounted for

new engagements as well. A few new engagements also resulted from partnering with other large and small firms with complimentary competencies.

There have been few changes over the years in the ways that the partners acquired new business. Due to the growth of the firm's reputation over time within their expertise niche, the partners mentioned that they now have all, or most of, the business they can handle, just from new engagements with existing customers, referrals, RFP's, presentations and networking, and partnering. In this respect, they even delayed the start of new projects for a period that is acceptable to the client in order to finish existing projects and free up resources to start new ones. As a result, the reliance on follow-up calls to existing customers basically was non-existent. In addition, they limited the firms and types of engagements on which they were willing to partner, and submitted fewer proposals in response to RFP's.

There is no evidence that the partners wished to grow the firm much past its current size. The founder, approaching the typical retirement age articulated a desire to work less in the near future ("I do not want to work as hard as I did in the past"). Both partners expressed a desire to maintain a 'hands-on' approach to consulting itself, rather than to grow the firm and simply manage the work of other consultants. And finally, they articulated concerns that growing the firm would be unwise as an economic downturn would force them to layoff permanent employees. Although they acknowledged that this had never happened, and seemed somewhat unlikely given their past track record and the fairly tight staffing levels, they clearly stated that they would find that course of action unacceptable.

Staff induction practice ConsulUSA

The partners recruited new employees through a variety of ways in order to make sure inductees had the qualifications to do their jobs. Recruitment took place through professional organizations, their newsletters, and personal and professional contacts with universities in the local geographic area. However, because of the decision not to grow staff, the partners had as much work as they could handle, and did not accept more than they could accomplish with their existing staff.

Once hired, inductees learned their jobs by reading prior client reports in order to develop an understanding of the firm's way of working. These reports included detailed task lists of the jobs being examined, and subsequently became the foundation for many of the firm's

services. New employees began by engaging in the development of these task lists. In order to do so, they accompanied the partners to client meetings, conducted interviews of job incumbents and observed incumbents work on the job. In addition, the partners kicked off a new engagement with their attendance, and took new employees along to introduce them to the client, and to let the new hires observe their interactions. When the inductee completed a task list for their assigned project, the partners then compared the task list the new employee compiled to similar task lists on file, to make certain it was clear and complete, requesting detailed revisions if it was not. As the founder argued:

> "Inductees are able to fully learn about the job they are examining by means of developing a task list. This approach ensures that they have a strong understanding of what the job really is and what an incumbent actually has to do. With an accurate task list, we are able to do anything the client asks, even years later, without repeating the interviews and observation process. Yet, it could take years to get a job fully and correctly analyzed. Therefore, we have to conduct a detailed validation of the task list."

An inductee's development and the (length) of staff induction depended on what projects the new hire wanted to do and what (s)he still needed to learn.

Over time new employees were exposed to a variety of different projects. The partners mentioned that a change had occurred in the speed of projects, with which the inductees received more responsibility for the work tasks early on. The purpose of this change was the following:

> "I started giving inductees more responsibility early on. Inductees don't like it that much, but if I want them to learn, this is essential." (founder)

The partners evaluated inductees as self-sufficient if they could do a validation study from beginning to end and write the final report, so that they only had to look it over and give a few comments. The partners stated that they eventually hope to move their new employees into proposal writing for clients. However, this never happened. Each of the partners mentioned that it was a case of failing to reach a high level of development of inductees. As the founder said:

> "It takes a while to get a new person up to speed, and I am still having to edit the work of the employees we have at the moment."

In fact, there seemed to be little emphasis on developing employees to take on business development tasks. As such, the partners ultimately needed to re-staff each time skilled and capable employees left due to unmet needs.

Table 4.16 summarizes the main findings from ConsulUSA.

ConsulUSA	BDA practice	SI practice
Continuity	▪ Maximum of five types of services partners wanted to be engaged in. ▪ Partners exclusively acquired new engagements. ▪ New engagements resulted of: past success with a particular client, referrals, RFP's, presentations and networking at major professional conferences, and partnering with other large and small firms with complimentary competencies. Over time: ▪ Partners relied less (almost none at all) on follow-up calls to existing customers. ▪ Partners had limited the firms and types of engagements on which it was willing to partner. ▪ Partners submitted fewer proposals in response to RFP's.	▪ Partners recruited new employees through a variety of ways. ▪ Inductees started by reading prior client reports, and over time wrote (parts of) client reports themselves. Such client reports were based on detailed task lists of the jobs being examined. After reading prior client reports, inductees began their work by engaging in the development of these task lists. In order to do so, they accompanied the partners to client meetings, conducted interviews of job incumbents, and observed incumbents work on the job. ▪ Partners provided feedback to inductees on task list. Thus, an inductee learned-by-doing and there was great attention to detail in the work an inductee delivers. ▪ An inductee's further development and (length) of staff induction depended on what projects they wanted to do and what they still needed to learn. ▪ Partners ultimately re-staffed each time skilled and capable employees left due to unmet need.
Inertia	▪ Partners rarely introduced a new service. ▪ Partners did not wish to grow the firm much past its current size.	

Table 4.16: Case study findings of ConsulUSA

4.4.2 ConsulNL

ConsulNL was headquartered in the South and Mid-West of the Netherlands (operating from a large respectively small office). As a niche player, the firm supported organizations in improvement issues. In particular, ConsulNL focused on process and project aspects of management consultancy (e.g. coaching individual people and teams in implementing major organizational changes, development of management competencies, or project realization). As

the firm tried to develop and sustain a competitive edge around result-oriented process and project consulting skills, the firm increasingly distinguished itself from many competitors, particularly the larger management consultancy firms that tend to focus more on content (e.g. of strategic decisions and system solutions). Since the firm's founding, the partners basically maintained control of all the decision-making authority. However, both partners and senior consultants engaged extensively in coordinating and controlling SI and BDA practices (i.e. control and coordination processes are peer/cultural in nature). Moreover, when selecting a new recruit, a job candidate's skills and qualities were perceived to be critical. This included their ability to conduct tasks immediately as they became directly involved into business operations linked to projects for major clients. However, the partners introduced flexible criteria for hiring as long as the firm's needs were met (i.e. skills and fit most prominent in selecting employees). In addition, newcomers were involved in interesting and challenging work, which also served to attach employees to the firm (i.e. work most prominent in attaching employees). The founder's employment model thus closely fits the engineering- and commitment-models described by Baron et al. (1999).

Business development and acquisition practice ConsulNL

The main leads for new clients came from personal and professional networks of the firm's staff. However, some years ago, the firm went through a difficult time with decreasing numbers of new engagements and turnover. This became evident when one of the firm's former offices in the North of the Netherlands did not bring in sufficient new business. Hence, the profitability of the firm initially stabilized and then decreased. It took a long time to make the decision to close the office because the current partners were hopeful that the office would still become a success. The stakes of the first partner of the 2nd generation in sustaining the office open were high (in terms of owning most of the shares). This resulted in a dispute between the first and second partner of the 2nd generation about keeping the office open or not. Where success remained absent, the current partners eventually decided to close the office:

> "… we ran into disputes because he *(first partner of 2nd generation)* had chosen the road of least resentment in terms of not wanting to be influenced by anyone of us. In this respect, he created a lot of distance from us and consciously chose to take the lead in The Hague." (second partner 2nd generation)

The current partners long believed that immersing and training juniors in conversations with (potential) clients would lead to a distributed capacity for acquiring new business. However, when not enough projects were acquired, it became apparent that acquisition capacity was insufficient. Moreover, a small number of senior consultants apparently brought in most new projects. The current partners therefore realized that they needed to become more market-oriented. As such, different strategies were followed. The firm aimed at approaching new customers by developing new services, and by experimenting with groups of services such as team development, and project- and process management. For example, from the founding of the firm, ConsulNL worked on a new service. This new service ultimately was unsuccessful; the partners were unable to sell it as a new service to its clients, although the idea was that this new service would became the backbone of the company. However one of the current partners expressed:

> "We think it is still fun to develop it."

In addition, the former and current partners experienced difficulties in selling a service under the label of 'training', even though this was what clients wanted. In fact, they did not believe that training could be sold as a service.

However, the current partners engaged in selling training as a service under the label of for example 'project management'. In addition, they started focusing on setting (financial) targets and, as such, drew on a result-oriented approach. And finally, they apparently divided tasks more efficiently among each other:

> "In the past, partners always acted together, but because of the work pressure arising form what still needs to be done, this turned out inefficient. Now they have divided tasks based on what each one is good at, and merely work on the major issues together. Then they will go for it and that works." (senior consultant)

There were several other attempts to increase the firm's acquisition capacity. The skill to participate in tenders was developed by the current partners. Furthermore, a summer school in 2005, led by an outside expert in acquisition and commercial skills, was offered to the entire staff to boost commercial talents and skills. And finally, an acquisition manager with a strong commercial background was hired in order to help the firm with becoming more pro-active in business development and acquisition. The current partners agreed with this acquisition manager that he would focus on bringing in new leads and a certain amount of new clients.

The latter strategy failed, because only a very small number of new clients were actually acquired in subsequent years.

Staff induction practice ConsulNL

The basic idea of staff induction at ConsulNL did not change considerably over the years. For example, since the early years of the firm, newcomers were immediately immersed in business operations linked to projects for major clients. In this respect, new hires had their own projects, and were directly exposed to clients. As such, they developed their personal style and approach by figuring out what worked and what did not. In this endeavour, new employees were guided by the partners and senior consultants. Also, inductees learned by watching a colleague practise. For example, the first and second partners of the 2nd generation were carefully trained in a hands-on-way by the founder. Every senior consultant of the firm engaged in the task of immersing a newcomer in what it was that he did. A critical issue regarding mentoring was the way senior people included or excluded new hires they would (not) like to mentor and involve in their projects. In choosing a particular newcomer, interpersonal 'chemistry' thus seemed to play an important role. The diversity of role models caused inductees to learn different ways of approaching their work. The partner or senior consultant who worked with a particular inductee, determined for a large part what style the newcomer developed. For example:

> "In most cases, I work with this particular inductee. He pays close attention to me, and listens to how I converse. That person is me. If I see him working, I see myself. This process is inevitable." (first partner 2nd generation)

After a while, inductees needed to learn different skills from another mentor:

> "At a certain moment in time I tell them 'you need someone else for your further development'. Why? Because you need to learn new skills, because you look too much like me." (senior consultant)

Moreover, the former and current partners drew on a training program for new staff, where new hires learned by listening to stories of events experienced by a colleague. In this training program, newcomers were exposed to background knowledge, theories, and tools senior staff was working with.

One of the partners of the 2nd generation argued that things changed and became a bit more structured. For example, there was a change in the firm's ideal profile of new staff. The current partners realized the importance of bringing in young people to increase the viability

of the firm (i.e. bringing in the next generation of consultants and managers of ConsulNL). However, by recruiting several people directly from university, ConsulNL discovered that these junior staff members could not help bring in new clients because they lacked any consulting experience. Therefore, the current partners switched to hiring senior people who were 45 or older. However, this approach failed as these people had their own established way of doing things that did not align well with the consulting approach developed at ConsulNL. As such, the partners started thinking about a middle road, which would involve hiring 'mediors' (i.e. someone who is in-between a junior and senior, with 2 to 4 years of work experience). Therefore, the idea of standardizing the profile of new staff was replaced by a more flexible approach.

In addition, the current partners dropped certain criteria such as educational background from the original standard profile for hiring new staff, demonstrating flexibility so as to attract candidates who would not have been considered earlier. For example, a senior consultant met a person who was looking for a job or internship. Although at first the current partners were not interested in interviewing this person because he did not have an academic background and was fully immersed into a sports career, they nevertheless decided to explore this opportunity because of the candidate's potential value to the company, in terms of providing new light on team processes. The partners subsequently decided to hire this job candidate on a part-time basis, so he could continue to engage in professional sports. Moreover, the current partners also added a general requirement for hiring someone:

> "There were disputes over what is the 'right' inductee. First, partners just hired people, now they are looking for talent. Every partner, with no exceptions, needs to be convinced that the potential job candidate has the talent they are looking for, otherwise this person will not be hired." (senior consultant)

The current partners also introduced 'consultancy days' in an attempt to learn what this talent should be. In the setting of these consultancy days, potential job candidates had the opportunity to explore in one-and-a-half day how ConsulNL operated. The current partners initially saw these consultancy days as a recruitment and selection tool, allowing them to closely observe potential new staff members. However, the short time period in which they could observe people appeared to provide a limited basis for predicting how they would develop and perform within the firm. As such, the partners repositioned these consultancy days as a platform for learning about what kind of talent ConsulNL needed and would be

most successful. Moreover, newcomers also became more immersed in external training opportunities, next to internal training programs. Furthermore, theory development became more important. In this respect, senior staff members of the firm invested substantial amounts of time in writing several popular management books published by established Dutch publishing houses, as well as a series of papers made available to anyone interested. These writings addressed core ideas and perspectives on project, process and team management. An inductee perceived one of the books to be "a kind of bible which describes the project management methodology as we use it." It teached newcomers the firm's philosophy. In addition, the production of these documents served to create visibility and reputation among a broader audience (including potential clients). Finally, newcomers started to write down their own personal development plan, which was codified into a small document.

Table 4.17 summarizes the main findings from ConsulNL.

4.4.3 ConsulUK

ConsulUK was headquartered in South UK. The firm operated in the area of human resources, where it had a particular focus on change management. Although the firm catered to clients who were in all industries and of all sizes, it tended to avoid working with very small and/or start-up companies. It is considered that these companies often lack financial resources and/or are at the stage of their own development where change management is not a critical priority. Due to the small size of ConsulUK, recruitment of new members happened on an individual and irregular basis, depending on the work available and future projection of the work. In this respect, once employees joined the firm, they were expected to perform consulting tasks immediately and effectively (i.e. skills most prominent in selecting employees). Moreover, although the board maintained control of all the decision-making authority, all employees were occupied with coordinating and controlling organizational practices (i.e. coordination and control processes are peer/cultural in nature). Furthermore, the founder/CEO inspired and emotionally bonded employees to become involved in, and dedicated to, the firm. As such, he particularly sought to prepare a smooth transfer of business activities to employees appointed to look after different aspects of the business in time for his imminent retirement. In this respect, the founder's employment model resembles both an engineering- and a commitment-model in Baron et al.'s (1999) terminology.

ConsulNL	BDA practice	SI practice
Renewal	▪ After closing one of the firm's offices, one of the current partners created a (physical) distance towards the other partners and took the lead in one of the firm's new offices.	▪ Current partners introduced 'consultancy days' in an attempt to learn what new talent was needed. ▪ Inductees became more immersed in external trainings by current partners. ▪ Theory became more important by current partners. ▪ Inductees started to write down their own personal development plan, which was codified into a small document. ▪ The idea of standardizing the profile of new staff dissolved and was replaced by a more flexible approach by current partners (i.e. dropping/adding criteria from/to the original standard profile for hiring new staff, demonstrating flexibility so as to attract candidates who would not had been considered earlier).
Adrift	▪ Current partners decided to implement different strategies for becoming more market-oriented: introducing new services as well as experimenting with groups of services, focusing on setting (financial) targets, tasks were more efficiently divided among partners, effort was putted in developing partners' own network of clients, the skill to participate in tenders was developed, a summer school led by an outside expert in acquisition and commercial skills was held for all staff to become more commercially-oriented, and an acquisition manager with a strong commercial background was hired to bring in additional new clients.	
Continuity	▪ The main leads for new clients came from personal and professional networks of both partners and senior consultants.	▪ Inductees were immediately immersed in business operations linked to projects for major clients. In this learning process, newcomers were guided by partners and senior consultants. ▪ Inductees learned by watching a colleague practise. Every partner and senior consultant engaged in the task of immersing a newcomer in what it is that he did (i.e. mentoring, chemistry). The diversity of role models caused newcomers to learn different ways of approaching their work. ▪ Inductees became involved in an internal training program, where newcomers were exposed to background knowledge, and theories and tools the staff worked with.
Inertia	▪ For almost 15 years, the firm worked on a new service, which was unable to sell to clients. However, several former and current partners thought it was still fun to develop the new service. ▪ Both former and current partners found it hard to sell a service under the label 'training'.	

Table 4.17: Case study findings of ConsulNL

Business development and acquisition practice ConsulUK

The board focused on managing the relationship with the client, as well as continuously explored clients' needs in order to identify new projects. Thus, new business was created either from existing or new clients. This generally took place through an informal approach by building, maintaining and nurturing the contact database of interpersonal relationships with key players in client organizations (i.e. networking). Moreover, the firm participated in, or organized, events (e.g. conferences, or engaging in government initiatives) to inform potential clients about the services that they provided. These activities were intended to showcase the firm's expertise and generated new leads that could materialize subsequently into new consulting projects. Once a lead was generated and the potential client showed interest in engaging with the firm, one of the consultants took responsibility in writing the proposal, which was internally discussed and subsequently presented to the potential client. On one hand, this process of coordination and control revealed an effort to maintain standards and ensured that clients received personalized service. On the other hand, it also reflected an absence of a standardized procedure on how to win new projects. Here, consultants interacted with the client on a very personal basis, which allowed for a continuous modification of business development and acquisition to match the specific circumstances at hand, as judged by the clients and consultants.

ConsulUK ensured it had enough projects from an appropriate mix of clients from both the private and public sector. The emergence of public sector organizations as potential clients necessitated that the firm adapted its business development and acquisition activities. In this context, proposal writing became more important, as a task mindful of the formal procedures in the public sector which demand writing high quality proposals. Together with proposal writing, bidding through presentations, and pitching became the formal procedures adopted for developing new business.

Beyond the orientation to respond to external pressures, some internal forces were also changing the ways in which business development and acquisition activities were performed. A more concerted program of renewal had been initiated as part of a wider internal change initiative. At the core of the internal change initiative was the shift in management. Up until five years ago, the founder/CEO shaped the character of business development and acquisition as he was the key player involved in generating new business; he used his extensive network in the industry to get the company known and to attract new clients.

However, with his forthcoming retirement, more consultants were becoming more directly involved in engaging in business development and acquisition activities. This change centered around two developments directly linked to the founder/CEO himself. In the last few years, he took an interest in developing a new proposition within the firm called 'board development'. In addition, he also slowly prepared the organization for his retirement and therefore withdrew from the day-to-day activities of the firm. Key individuals were recruited who could take over the business development and acquisition activities from him. According to one of the consultants:

> "The firm founder is reaching a certain age and sales targets need to move, so employing people like one of the directors was the way to go for us and change direction. And we don't use the founder at all for stuff because you know, he is not really in our space and actually he is less and less in the space of people. … He is probably focused on the board development work and it is up to everybody else to try to sell."

In addition, both a director and a marketing manager were particularly acknowledged as one of the key driving forces in creating a longer term business view, by bringing some sense of sales-orientation within the firm. With regard to the director, a consultant noted:

> "I think he's made a huge impact on the business. … I think it's just that he's brought in that drive."

Similarly, the role of the marketing manager was also acknowledged:

> "Having the marketing manager here has made a big change. Having someone who is dedicated you know 24/7 for doing marketing, doing PR, thinking about our brand, our corporate identity, how we network, looking after the database regularly, and helping us with the events and seminars. All that stuff has been beneficial." (consultant)

Staff induction practice ConsulUK

The board agreed on what staff induction needed to cover, guided by certain principles instigated as central to how staff induction was to take place. Due to the small size of the business, recruitment of new members happened on an individual and irregular basis, depending on the work available and future projection of the work. As one of the directors explained:

> "Everybody who is in the board has a responsibility to help bring people on board and we take different roles at different times."

For many fresh recruits, ConsulUK was the starting point in their career as consultants. The board recognized this, and through staff induction they attempted to provide the recruits with an introduction to the organization and its culture, as well as a sense of introduction to consultancy as a profession. In this respect, staff induction centered around the individual newcomer and was to a large extent bespoken to their needs. As such, staff induction was organized in such a way so that the board was able to influence the attitude of the newcomers in order to help them become an 'ideal consultant': someone well rounded in skills, independent in thinking, and entrepreneurial in attitude. This view was echoed by both directors and consultants:

> "We try to encourage people to do the whole breadth of the consulting process which is extremely difficult, and realistically, no one is good at it all ..." (director)
>
> "... we give people a lot of freedom and responsibility ..." (director)
>
> "Here you do everything yourself." (consultant)

Staff induction evolved over the last few years. The majority of interviewees agreed that staff induction became more structured as a result of several complaints of being badly organized. For example, the ultimate responsibility for staff induction shifted from the board towards a specific team leader, responsible for an inductee's development, and as such the main point of contact for the new recruit for at least their first few years. After recruiting a new employee, the team leader provided the newcomer with the basic requirements that are needed to function within the first few days, such as information about policies, quality measures, and IT systems. In these first few days, the new employee met on a one-to-one basis with the founder/CEO who welcomed the new recruit, and provided the inductee information about the history of the firm, its current focus, and future aspirations. A consultant described this by saying:

> "The founder *is* the history of the firm ... He owns 50% of the firm and he is the one who founded it, so you would want as an individual and new employee to listen to the firm founder telling it, and he tells the story very well."

Inductees also met for a more informal conversation with each of the directors, and with different team leaders. In these informal conversations, the different team leaders introduced their teams to the inductee and informed the inductee about the type of work they did, so that (s)he would get an understanding of the services the firm offered.

In addition, three workshops were introduced and delivered by three directors (on how to write client proposals, on the general consultancy skills needed, and on how to sell and generate business). The delivery of these workshops helped in attracting and generating new business, as there was an increasing recognition that consultants themselves were responsible for selling. Moreover, seven specific documents had been designed to provide guidance on staff induction. These documents had emanated due to the personal initiative of two of the directors (i.e. one of them being the founder's wife). These documents outlined the 'critical' areas that staff induction should cover, and emphasized the importance of doing it thoroughly and in line with company policy. A checklist was utilized to ensure all aspects of staff induction were covered.

Even though staff induction was followed in this structured manner, it provided ample opportunities to be flexible, particularly as interaction with staff members depended on their respective diaries. In such circumstances, inductees were encouraged and expected to demonstrate personal initiative in organizing meetings with other consultants within their own proposition as well as outside it, and shadow fellow consultants for at least a few weeks. In respect to inductees' personal initiative, the new recruit was able to influence staff induction immensely as the formal procedures allowed for a lot of flexibility and individual initiative. For example, the firm actively encouraged their members to utilize their personal qualities and allowed their personalities to be reflected in the way they delivered consulting. As two directors explained:

> "I think we do encourage individuals to be themselves."
>
> "Our individuality can shine through, you know, we promote that, we encourage that."

However, tensions resulted from several contradicting demands: inductees were expected to become attached to the organizational way of doing things, as well as to remain individual in their approach. This tension is typically captured in statements like: "induction is important but the client comes first" or "you have to become a member of us, but still stay yourself".

Table 4.18 summarizes the main findings from ConsulUK.

ConsulUK	BDA practice	SI practice
Continuity	▪ Creating new business either from existing or new clients generally took place through networking. ▪ Networking, and participation in, or organizing of, events (e.g. attending conferences, engaging in government initiatives) constituted the informal procedures for developing new businesses. ▪ Proposal writing, bidding through presentations, and pitching constituted the formal procedures for developing new businesses. ▪ No standardized procedure on how to win new projects; instead each consultant interacted with the client on a very personal basis.	▪ The board agreed on what staff induction needed to cover. ▪ Due to the small size of the business, the board recruited new members on an individual and irregular basis depending on the work available and future projection of the work. ▪ Staff induction was centered around inductees' needs. As such, it was organized in such a way so that the board was able to influence the attitude of the newcomers in order to help them to become an ideal consultant. ▪ Inductees were able to shape the practice as a result of paradoxes, it did not allow for a stable pattern to emerge which simply had to be replicated.
Renewal	▪ Proposal writing became more important. ▪ The founder/CEO ensured that more consultants were directly involved in engaging in business development and acquisition because of his upcoming retirement. Both a director and a marketing manager were particularly acknowledged as one of the key driving forces in bringing some sense of sales-orientation within the organization.	▪ Responsibility for staff induction shifted from the board towards a specific team leader. ▪ Three workshops were delivered by three directors. ▪ An informal chat between the inductee and each of the directors and different team leaders was introduced. ▪ Specific documents that were designed on the personal initiative of two directors, were used as a guideline for staff induction.

Table 4.18: Case study findings of ConsulUK

4.4.4 Comparative cross-country case findings

Our cross-country case study findings show the impact of founders' employment models in organizations on the degree of ambidexterity in organizational practices, when competing priorities demand both continuity and renewal. Table 4.19 summarizes the main case study findings, discussed more extensively in the remainder of this sub-section.

The founder's blueprint of the autocracy-model in ConsulUSA, and the engineering-commitment model in the two other cases, affected practices and the degree of ambidexterity in these practices in several ways. In ConsulUSA, the founder and second partner obtained new engagements in a variety of ways. As such, they experienced a relatively constant stream

	ConsulUSA	ConsulNL	ConsulUK
Firm founder	One of the two partners, preparing for retirement	Left after a dispute, 2nd generation of management was then gradually built	Current CEO, preparing for retirement
Founder's employment model	Autocracy	Engineering-commitment	Engineering-commitment
BDA and SI practices	Founder and second partner stuck to BDA and SI practices established early on in the firm's history; thus, the continuity of practices prevailed, with emerging symptoms of inertia (of BDA practice).	The 2nd generation of management repeatedly attempted to change the BDA and SI practices, while respecting the continuity of some dimensions of these practices (resulting in some inertia). The efforts to change the BDA practice went adrift, resulting in failure; by contrast, the SI practice was gradually transformed over time.	Recently, the founder/CEO created change in (particularly) the BDA practice and SI practice, while holding on to several dimensions of these practices that were established early on.
Ambidexterity: ▪ Level ▪ Nature	Low Stick to what worked well in the past	Moderate Sequential pursuit of continuity and renewal	High Simultaneous pursuit of continuity and renewal

Table 4.19: Main case study findings of ConsulUSA, ConsulNL and ConsulUK

of work. However, the partners had no desire to grow the revenues of the firm, and thus, to increase the size of the staff. Instead, they deliberately offered services they could perform better than their competitors, and rarely introduced a new one. In addition, the partners provided no real culture of employee attachment through interpersonal closeness or particular concrete opportunity structures for employees. Therefore, they ultimately re-staffed each time skilled and capable employees left due to unmet needs. Moreover, the partners basically maintained control of all the decision-making authority, making it relatively easy for them to institutionalize old ways of working as employees left for new opportunities and new inductees joined in their place. On the other hand, the partners often had to postpone the start

of new jobs because they suffered from a backlog. However, they required new inductees to take on more unfamiliar tasks earlier in their time at the firm, to help new inductees learn more quickly. This process had seemingly enabled the partners to take on more work with the same sized staff, and thus, limited the amount of time new customers must wait for their services. Moreover, the frequency with which they used business development methods, client follow-ups, subcontracting, and responding to new RFP's for new business, had decreased rather than increased over time. As the founder is approaching retirement age, he wished to slow a rather frenetic work pace. As such, the partners had maintained a fairly good fit with their environment and stabilized their income flow, without really altering the kind of work they do.

In ConsulNL, the 2nd generation of management engaged in developing certain characteristics that were perceived as not present, such as becoming more commercial, and developing the ideal profile of new staff with the necessary skills and qualities to do the job. This, however, resulted in adrift as the partners experimented with many options by being largely ignorant in respect to what courses of action would work. On the other hand, they stuck to models of working that worked well in the past. For example, the main leads for new clients came from personal and professional networks of both partners and senior consultants, and both partners and senior consultants engaged in mentoring new recruits (including an internal training program for new staff members). Here, inductees were expected to fit-in quickly, as 'chemistry' between the mentor and the new recruit was an important criterion for mentoring. As such, both partners and senior consultants were key practitioners occupied with coordinating and controlling. However, inertia developed when the 2nd generation of management copied the views of the 1st generation regarding what business development and acquisition activities to undertake. As a result, both management teams faced difficulties in developing new services (e.g. 'training'). In this respect, the current partners uncritically adopted what types of services tended to sell well from the former partners.

In ConsulUK, the founder/CEO was part of the growth of the business due to his own success to secure new business. His imminent departure prompted the need to provide a basis for other staff members to acquire a more central role. He inspired them to be involved and dedicated to the firm, and built a level of attachment through ownership of how the practices were performed. Hence, besides the founder/CEO, many other staff members (including several board members) were the key practitioners engaged in coordinating and controlling

practices. These key practitioners made practical judgments for continuity (by following the agreed structures based on what worked well in the past), and renewal (in the flexibility they had to adapt the procedures to fit their circumstances and preferences). In respect to staff induction, for example, the needs of the inductee were most important. This flexibility amidst that formality was achieved by practitioners when they practically assessed the situation, and exercised their judgment in deciding how to adapt different aspects of staff induction to suit the particular circumstances. At the same time, inductees were charged to determine how to make best use of the infrastructure available to ensure that they were able to fit-in quickly, but also needed to retain their distinctive skills and qualities by being different.

In sum, since ConsulUSA was established, the founder and second partner tended to stick to their current modes of working. Here, the partners emphasized practices' continuity rather than its renewal, which also implied some level of inertia in practices. The ConsulNL case involved substantially more renewal of practices than its American counterpart. The 2nd generation of management in this firm engaged in accomplishing several changes in the SI practices (i.e. a practice that gradually transformed over time), whereas attempts to change the BDA practice went adrift, resulting in failure. The ConsulUK case demonstrated both continuity and renewal of practices, without clear signs of inertia or adrift. Here, the founder/CEO's vision and efforts, as well as the practical judgements of other staff members, accounted for renewal, whereas a degree of continuity was maintained on what had worked well in the past. A common approach observed in all three firms is the tendency to promote continuity, drawing on past experiences of what worked well before (which was seen as central to the success of the business), while renewal slowly is taken hold given the changing external forces and the new perspectives new recruits could bring if they were allowed to exercise their practical judgments.

Moreover, the level and nature of ambidexterity in practices of the three management consultancy firms appears to differ substantially. The ambidexterity in ConsulUSA can be considered to be rather low, given the strong focus of its leadership on what had worked well in the past. By contrast, ConsulNL and ConsulUK appear to involve what Simsek et al. (2009) called 'cyclical' respectively 'harmonic' ambidexterity. In this respect, ConsulNL involves a rather sequential pursuit of continuity and renewal (i.e. cyclical ambidexterity). As Simsek et al. (2009) suggested, cyclical ambidexterity involves alternating between long periods of continuity and short periods of renewal by switching or shifting emphasis within a single firm

or business unit. Our analysis suggests that the leadership of ConsulNL had not yet fully mastered the capability of cyclical ambidexterity, evident from the inertia that arised from over-respecting the continuity of practices and from efforts to change its business development and acquisition activities going adrift over an extended period of time. This implies a moderate level of ambidexterity in practices. ConsulUK demonstrates a simultaneous pursuit of continuity and renewal (i.e. harmonic ambidexterity). As there are no clear signs of inertia or adrift in ConsulUK, this implies a high level of ambidexterity in practices.

In particular, our case study findings suggest that the impact of employment models on the dynamics of practices results from a strong and stable influence of firm founders' blueprints over an extended period of time. Many years after founding the firm, the initial founders' blueprints of ConsulUSA, ConsulNL and ConsulUK continued to strongly impact practices, even after a founder left. In other words, our case study findings showed how different founders let go of the firm and its practices as they reach the point when they depart, and how their initial influence when they first founded the business continues to affect the employment models instigated, in turn affecting the continuity and renewal of practices. Even after the departure of the founder and the entire 1st generation of partners in ConsulNL, the founder's blueprint continued to impact practices indirectly, as was evident from the highly similar configuration of views and disputes on organizing and consulting of the 2nd generation of partners. In addition, over the course of two management generations, the founder's blueprint appeared to be difficult to alter, even though the need for practices' renewal was stressed again and again. Disputes arosed from attempts of the 2nd generation of management to change their different views of organizing (i.e. similar to that of the 1st generation of management). This yielded very poor reactions among the partners, that they were not prepared to encounter via conflict-resolution methods. History thus repeated itself when the 2nd generation of management encountered the same issues as the 1st generation.

4.5 Discussion and conclusion

In this study we explored the role of founders' employment models in organizations in relation to the dynamics of organizational practices, and the degree of ambidexterity in these practices. We conducted an empirical study in management consultancy SME's in the USA, the Netherlands and the UK. Our analysis of three comparative case studies of two practices

contributes in several ways to the literature on ambidexterity, founders' employment models and practice literature, and answers sub-research question 4 of this dissertation as follows.

Our case study findings suggest that ambidexterity is driven by the firm's history: firm founders' blueprints, embedded in their employment models, affect the degree of ambidexterity in practices. These blueprints are difficult to alter, and therefore mark the firm's future path by affecting the dynamics of practices over an extended period of time. In this respect, our observations of ConsulUSA suggest that practices are more likely to remain largely unchanged in an autocracy-model (cf. Baron et al. 1999), confirming what we initially argued (in section 4.2.3). In this case study, the founder and second partner stuck to the BDA and SI practices that were established early on in the firm's history, safeguarding the continuity of these practices; in particular, the BDA practice demonstrated emerging symptoms of inertia. Our data on ConsulNL and ConsulUK illustrate that practices are more likely to change if the founders' blueprints involve an engineering- and/or commitment-model, in line with what we initially suggested (in section 4.2.3). In ConsulNL, the 2nd generation of management repeatedly attempted to change the BDA and SI practices, while respecting the continuity of some dimensions of these practices, resulting in some inertia. However, the efforts to change the BDA practice went adrift, resulting in failure. By contrast, the SI practice was gradually transformed over time. In ConsulUK, the founder/CEO created change in (particularly) the BDA practice as well as in the SI practice, while holding on to several dimensions of these practices that were established early on. Moreover, our analysis of both cases suggests a clear distinction between founders' employment models, as advocated by Baron et al. (1999), may not be feasible in some settings. In particular, the Dutch and British case studies imply that combined (mixed) employment models may not be an exception. In turn, the case study findings suggest that the level and nature of ambidexterity in practices in SME's in the management consultancy industry may vary between low, moderate and high. A low level of ambidexterity results from firm founders that strongly focus on what worked well in the past (i.e. stressing practices' continuity). A high level of ambidexterity is demonstrated when practices' continuity and renewal are sequentially or simultaneously pursuited (i.e. cyclical respectively harmonic ambidexterity), not involving clear signs of inertia or adrift (cf. Simsek et al. 2009). A moderate level of ambidexterity occurs when practices become inert or go adrift, suggesting that the firm has not (yet) fully mastered the capability of cyclical or harmonic ambidexterity.

In addition, the case study findings of this study extend the work of Hannan et al. (2006) regarding the importance of the firm's history. In this respect, firm founders in all case studies have a strong and stable impact on the subsequent evolution of practices over an extended period of time (cf. Hannan et al. 2006). The ConsulNL case suggests that it is difficult to effectively alter the founder's employment model, even years after the founder left the firm. In addition, firms that draw on employment models that emphasize practices' continuity (e.g. autocracy-model firms) are likely to face similar difficulties in altering the founder's blueprint as firms that draw on employment models that more easily facilitate renewal of practices (e.g. engineering- or commitment-model firms). However, if the founder's employment model supports renewal of practices and the firm's employees are key participants in these practices, the firm's blueprint is more likely to alter as new employees have the potential to introduce new ways of performing practices, in particular through practising and exercising their practical judgement, thus contributing directly to renewal.

There are some limitations to this study. A first limitation is that the organizational setting in this study involved small-to-medium sized management consultancy firms. Selecting SME's served to examine the role of founders' employment models in relation to the practices under study. Our case study findings, however, can not be easily generalized to larger (management consultancy) firms. Second, previous research suggested that, apart from the start-up phase, most SME's owners/managers are more concerned with survival and independence as primary motives than growth per se. Therefore, SME's often stop acting entrepreneurially once the firm becomes established (Foley & Green 1989), which will likely affect the dynamics of its practices. Third, conducting case studies in one industry is likely to show similar employment models (cf. Baron et al. 1999). As such, this research could be extended with case studies from multiple industries, other than management consultancy. Fourth, a clear distinction between founders' employment models, as advocated by Baron et al. (1999), may not be feasible in some settings. An interesting question for future work in this area may be whether such combined models tend to constitute conditions positively affecting the degree of ambidexterity. Fifth, this research needs to be complemented by additional process studies. Continuity and renewal do occur spontaneously, triggered by actions and events in unfolding processes other than founders' employment models (cf. Kelly & Amburgey 1991; DuBrin 2009). As such, the focus on founders' employment models as an antecedent for ambidexterity can be extended to other organizational antecedents in future work.

Chapter 5

Conclusions, limitations and future research

"Science never solves a problem without creating ten more"

~ George Bernard Shaw

(Irish dramatist & socialist, 1856 - 1950)

This final chapter first summarizes the main findings and (practical) implications of the studies described in previous chapters of this dissertation. Subsequently, a general conclusion regarding the central research question is given. In this respect, by drawing on the systematic literature reviews and empirical studies, this chapter describes a taxonomy of key dimensions of ambidexterity as a higher-order organizational capability. Finally, this chapter describes the main limitations of this dissertation and makes suggestions for future research.

5.1 Introduction

Persistently outperforming competitors in order to create and sustain superior firm performance has gained considerable attention in today's business environments, which have become fast-moving, involving frequent, rapid and unpredictable change (March 1991; Nelson 1991; Rumelt et al. 1991; Bettis & Hitt 1995; Teece et al. 1997; Birchall & Tovstiga 2005; Barney & Clark 2007; Terziovski 2007). Scholars in organization science, and strategic management in particular, have shifted focus towards competing on higher-order organizational capabilities in addressing such dynamic business environments (March 1991; Tushman & O'Reilly 1996; Teece et al. 1997; Eisenhardt & Martin 2000). However, the literature has not systematically addressed what the key dimensions of such meta-organizational capabilities are.

As such, this doctoral dissertation attempts to answer the following central research question: *What are the key dimensions of higher-order organizational capabilities in addressing situations of changing market and competitive conditions?* In this respect, this dissertation builds upon the notions of dynamic capability and ambidexterity (e.g. March 1991; Tushman & O'Reilly 1996; Teece et al. 1997; Eisenhardt & Martin 2000). In particular, this dissertation extends and builds (new) theory in the field of dynamic capability, and ambidexterity in particular, which leads to several findings and implications that are of general scientific value for scholars and provide valuable insights for practitioners (in service firms).

5.2 Main findings and implications of Chapter 2

In Chapter 2, the notions of dynamic capability and ambidexterity have been explored. Drawing on a systematic review of the dynamic capability literature (including 47 papers and 1 book), and of the ambidexterity literature (including 46 papers and 2 books), this chapter assessed the collective understanding of both concepts at this point in time. As such, this chapter examined relationships between the foundations, antecedents and consequences of these notions in terms of their definitions, operationalizations and measurements.

The review of the dynamic capability literature in Chapter 2 demonstrated that the foundations of dynamic capability draw on the theoretical papers of Teece et al. (1997) and Eisenhardt & Martin (2000). The publications by these scholars, however, differ in respect to heterogeneity, outcome, type of environment, and grounds for competitive advantage of dynamic capability. Similarly, this review demonstrated that other scholars have not been able

to develop a more consistent definition of dynamic capability. In addition, this review showed what dynamic capability is not: an idiosyncratic way of acting, the firm's primary activities/operating routines and processes, and ad-hoc problem solving. This review also illustrated that many scholars draw on the notion of path-dependency for explaining the development of dynamic capability, which involves the co-existence of related learning mechanisms (i.e. antecedents) (Zollo & Winter 2002). Finally, this review showed that most empirical studies draw on indicators of performance, or specific firm rules and behaviors to operationalize and measure dynamic capability, which raises tautological problems. As such, this review resulted in a new proposed definition of dynamic capability that may avoid tautological problems when operationalized and measured. This definition is as follows: dynamic capability is a higher-order organizational capability *that conveys knowledge among its key agents that is invoked on an intentional and repeated basis, serves to question purpose and effectiveness of the firm's resource base, and serves to generate and modify operating routines and processes to address changing environments and/or create market change.*

In addition, the review of the ambidexterity literature in Chapter 2 showed that the foundations of ambidexterity involves the theoretical papers of March (1991) and Tushman and O'Reilly (1996). Regarding the work of March (1991), this review demonstrated that the body of literature arising from this work stressed both exploitation and exploration when defining ambidexterity. This however, may result in competency and failure traps. In addition, this review demonstrated what ambidexterity is not: ambidexterity can not be reduced to a solely adaptive stance when exploiting and exploring, the pursuit of the same levels of exploitation and exploration activities, and pursuing (but not connecting) exploitation and exploration activities. This review also illustrated that different designs for connecting exploitation and exploration activities appear to exist (that is, weaving, structural, and contextual ambidexterity). Similarly, the review suggested how organizational structures and managerial behavior (i.e. antecedents) influence these particular designs. However, because of these different views on designing ambidexterity and its antecedents, and because of different levels of analysis (i.e. individual, organizational, alliance and industry), operationalization and measuring ambidexterity tend to remain largely inconclusive. As such, this review resulted in a definition of ambidexterity. This definition is as follows: ambidexterity is a higher-order organizational capability that *serves to exploit current activities in existing domains as well as explore new activities in domains that are new to the firm; creates a balance between exploitation and exploration activities that is aligned to the firm's resource base and the*

market and competitive conditions; and systematically connects exploitation and exploration activities.

Chapter 2 thus contributes to the development of a *theoretical* understanding of the key dimensions of dynamic capability and ambidexterity. In this respect, a coherent definition of both concepts is developed here by way of systematic reviews of the literature, addressing sub-research questions 1 and 2: *How can we define, operationalize and measure dynamic capability/ambidexterity as a higher-order organizational capability in a coherent manner?* With respect to the notion of dynamic capability, this refers to the proposed definition of dynamic capability in terms of its key dimensions: knowledge (invoked intentionally and repeatedly) regarding questioning purpose and effectiveness of the firm's resource base, operating routines and processes, and changing environments/market change. Regarding the notion of ambidexterity, the proposed definition of ambidexterity in terms of its key dimensions involves: organizing exploitation and exploration activities, balancing exploitation and exploration activities aligned to the firm's resource base and the market and competitive conditions, and (designs for) connecting exploitation and exploration activities. These definitions therefore point at ways in which dynamic capability and ambidexterity can be operationalized and measured more effectively in future research. As such, this chapter provides a starting point for future theoretical and empirical studies that advance our collective understanding of dynamic capability and ambidexterity as key drivers of long-term business performance.

Moreover, Chapter 2 compared the definitions of dynamic capability and ambidexterity produced on the basis of the systematic literature reviews. As such, this chapter concludes that dynamic capability and ambidexterity do share some common elements, but are largely idiosyncratic higher-order organizational capabilities in addressing today's fast-moving business environments. In this respect, the proposed definition of ambidexterity incorporates elements of the definition of dynamic capability because both dynamic capability and ambidexterity focus on exploration; moreover, it also extends it because ambidexterity focuses on exploitation as well. Here, exploration may or may not involve dynamic capability, depending on whether knowledge to question purpose and effectiveness of the firm's resource base is invoked on an intentional and repetitive bases and whether this knowledge serves to generate and modify operating routines and processes. A firm may thus draw on either dynamic capability or ambidexterity, or dynamic capability and ambidexterity may co-exist

within a firm. As such, this extends the work of scholars who link the notions of dynamic capability and ambidexterity, by arguing that dynamic capabilities are at the heart of ambidexterity and vice versa. In turn, the proposed definition of ambidexterity showed that operationalizing and measuring exploitation and exploration activities are likely to be less difficult (in terms of avoiding tautological problems) than operationalizing and measuring dynamic capability, as dynamic capability is difficult to grasp and account for.

Although measurements of particular dimensions of dynamic capability and ambidexterity employed in previous empirical studies were discussed in Chapter 2, this chapter did not actually engage in measuring key dimensions of dynamic capability or ambidexterity. In the empirical studies reported in Chapter 3 and 4, ambidexterity as a higher-order organizational capability was defined, operationalized and measured in the context of specific research questions pertaining to firms in the service industries. In this respect, the notion of ambidexterity addresses multiple types of business environments, is likely to be effectively operationalized and measured, and may account for dynamic capability as well. These studies focused on the service industries, primarily because most previous studies on ambidexterity have been conducted in manufacturing firms. Particularly, one of these studies focused on ambidexterity in the retail banking industry because ambidexterity is particularly challenging for financial firms (cf. Lievens 2000; Nijssen, Hillebrand, Vermeulen & Kemp 2006; Groysberg & Lee 2009), whereas the financial industry has not received much attention in the literature on ambidexterity yet.

5.3 Main findings and implications of Chapter 3

The empirical study in Chapter 3 focused on the notion of ambidexterity in the service industry, to *empirically* advance our understanding of the key dimensions of ambidexterity developed in Chapter 2. In particular, the study reported in this chapter explored ambidexterity from an organizational design perspective. In this respect, this chapter examined the relationship between decentralization and ambidexterity, providing an in-depth understanding of the impact of decentralization on the dynamics entailed in the way ambidexterity is organized, balanced and connected in large service firms, incorporating the role of timing and interdependencies. As such, this chapter examines sub-research question 3: *How does a decentralized organizational structure impact the way ambidexterity is organized, balanced and connected in large service firms, and what role do timing and interdependencies play*? Overall, the main contribution of this chapter is to elaborate and

extend existing theory. In this respect, this chapter contributes to the literature by combining the literature on ambidexterity, organizational design and service innovation.

The literature review in Chapter 3 implied that decentralization may activate highly different generative mechanisms associated with positive outcomes: delegated decision making authority and increased autonomy, and incorporating the knowledge and creativity of a larger number of people (cf. Vancil 1979; Dessler 1986; Hales 1999; March 1991; Cummings 1995; Poitevin 2000; McGrath 2001; Burnes et al. 2003). Alternatively, decentralization may activate other generative mechanisms associated with negative outcomes: a loss of control by the principal, and departmental interdependencies (cf. Galbraith 1973; Keider 1976; Robbins 1990; Vayanos 2003).

Subsequently, the case study findings regarding two service innovations in a large decentralized retail bank in the Netherlands suggested that the generative mechanisms of decentralization and their outcomes gain and loose dominance in different phases of the innovation process (i.e. pre-history and initiation, development, testing and validation, and (post) launch). In particular, these findings indicated that these generative mechanisms were not activated simultaneously in each phase of the innovation process. While several generative mechanisms appeared to depend fully on the deployment of a decentralized structure, some occurred even when the service innovation was organized and executed centrally.

Second, the case study findings showed that the activation of these generative mechanisms depends on the actual use of the decentralized structure. Thus, one innovation program was developed at the central level until it was launched throughout the organization, whereas the other innovation program evolved by using a decentralized structure from the beginning of the program. As such, both a decentralized and centralized approach appeared to work effectively here. In addition, while Siggelkow and Levinthal's (2003) simulation findings suggested that a firm should start with decentralization and later reintegrate by centralization, this study thus shows that the opposite approach may work as well.

Third, the case study findings demonstrated that the effectiveness of the decentralized structure depends on the interdependence of exploitation and exploration activities. In this respect, these findings implied that decentralization is beneficial for experimenting with and

further developing exploration activities that are less dependent on, and integrated with, a firm's exploitation activities. The development of rather independent modules of innovation programs may thus benefit from decentralization. When an innovation depends on and is strongly integrated into the firm's exploitation activities from pre-history and initiation, the decentralized structure may not be effective. Therefore, a decentralized structure appears to be of limited help for ambidexterity if exploration involves complex service innovations that need to be integrated into the exploitative core of the organization.

By explaining the role of timing and interdependencies, the case study findings also implied how a firm can balance its organizational design. The effects associated with a particular organizational design were not static but dynamic, depending on its use. Firms should therefore deploy a decentralized structure according to need. These insights contributed to the work of Cummings (1995) and Siggelkow and Levinthal (2003), who argued that firms need to switch between decentralization and centralization. In addition, these insights extended Siggelkow and Rivkin's (2006) work, who argued that balancing between decentralization and centralization depends on interdependencies of departments. Here, the focus shifted to explaining the role of organizational design in relation to interdependencies between service innovations and existing business systems and processes. By explaining the role of interdependencies, the case study findings also implied that there is no trade-off between exploitation and exploration here (cf. Gibson & Birkinshaw 2004). Instead, service innovations developed along, and (will be) integrated in, the firm's exploitation activities (cf. Tushman & O'Reilly 1996; Gibson & Birkinshaw 2004; O'Reilly & Tushman 2004; Jansen, Tempelaar, van den Bosch & Volberda 2009; Simsek et al. 2009).

5.3.1 Implications for practitioners

Several implications for practitioners in service firms can be distilled from Chapter 3. In this respect, exploitation and exploration activities may co-exist within a single large service firm. Service innovations that are exploratory in nature (i.e. new to the firm) can be developed along the firm's existing business systems and processes, and can be integrated in these exploitation activities at a later point in time. For the development of a service innovation, the organizational design, and a decentralized structure in particular, may function as a supporting device. In order to obtain most benefits from a decentralized structure, (top) managers should decide on the optimal mix of decentralization and centralization.

In order to do so, these managers should deploy the decentralized structure according to need: when the use of a decentralized structure appears to be non-beneficial, one may consider moving towards developing the innovation program at the central level, and vice versa. However, one should bear in mind here that the effects of decentralization (involving both positive and negative outcomes) may occur in all phases of the innovation process, even when a service innovation is developed at central level where a decentralized structure is not being used.

In this respect, these managers should mainly account for the interdependencies involved. In this respect, for a service innovation that depends less on and is less integrated with the firm's existing business systems and processes, managers may prefer to adopt a decentralized structure from the beginning of the innovation program. In particular, it may be efficient to coordinate the testing and validation phase at the central level because technology support departments are generally located at the central office, while at the same time involving employees at lower hierarchical levels as they are close to their clients and able to sense clients' needs better. When the firm strongly depends on a service innovation, and is highly integrated with the existing business systems and processes, managers may prefer to draw on centralization until the innovation is launched, though incorporating the suggestions and feedback from employees at lower hierarchical levels may improve the quality of the service innovation considerably as these employees are closer to customers' needs.

5.4 Main findings and implications of Chapter 4

The empirical study in Chapter 4 also focused on the notion of ambidexterity in the service industry, to *empirically* advance our understanding of the key dimensions of ambidexterity developed in Chapter 2. In particular, this chapter explored ambidexterity from a managerial perspective, by examining the relationship between founders' employment models in organizations and ambidexterity. Hence, this study was conducted to provide an understanding of the impact of founders' employment models on the degree of ambidexterity in organizational practices of small-to-medium sized service firms, in terms of the dynamics entailed in the way competing demands of continuity and renewal in practices are performed. As such, this chapter examined sub-research question 4: *How do founders' employment models in organizations impact the degree of ambidexterity in organizational practices in small-to-medium sized service firms, in terms of the way the dynamics of organizational practices are organized, balanced and connected?* Overall, the main contribution of this

chapter is to build new theory. In this respect, this chapter contributes to the literature by combining the literatures on ambidexterity, founders' employment models and practice-based research.

The literature review in Chapter 4 introduced a dynamic practice perspective (Bourdieu 1990; Turner 1994; Schatzki, Knorr-Cetina & von Savigny 2001), that draws attention to practices' continuity and renewal through practising (cf. Antonacopoulou 2007; 2008). This review particularly provided a more detailed insight into the relationship between founders' employment models and the degree of ambidexterity in practices, as this relationship had not been established yet. Founders' employment models also refer to the potential to alter the founders' blueprints embedded in these models. As such, this review extends the work of Baron et al. (1999) and Hannan et al. (2003).

Subsequently, the case study findings of two practices in three management consultancy SME's (i.e. small-to-medium sized firms) in the USA, the Netherlands and the UK revealed how founders' employment models affect the way competing demands of practices' continuity and renewal are addressed. This extends particularly the work of Baron et al. (1999). Here, the case study findings showed that ambidexterity is driven by the firm's history: founders' blueprints, embedded in their employment models, affect the degree of ambidexterity in practices. Practices are more likely to remain largely unchanged in an autocracy-model, whereas practices are more likely to change if the founders' blueprints involve an engineering- and/or commitment-model (cf. Baron et al. 1999). Moreover, the case study findings suggest that a clear distinction between founders' employment models, as advocated by Baron et al. (1999), may not be feasible in some settings. In turn, the case study findings suggested that the level and nature of ambidexterity in practices may vary considerably in small or medium service-oriented firms in the management consultancy industry (in terms of a low, moderate, or high level of ambidexterity). A low level implies a strong focus of leadership on what worked well in the past (i.e. stressing practices' continuity). A moderate level tends to involve a sequential or simultaneous pursuit of practices' continuity and renewal (i.e. cyclical respectively harmonic ambidexterity), at the risk of inertia or adrift (cf. Simsek et al. 2009). Finally, a high level refers to a sequential or simultaneous pursuit of continuity and renewal of practices, without clear signs of these practices becoming inert or adrift (cf. Simsek et al. 2009).

The case study findings particularly underlined the importance of a firm's history, accounting for differences in the level of ambidexterity in practices, which primarily extends the work of Hannan et al. (2006). The founders' blueprints embedded in the founders' employment models were difficult to effectively alter (even years after the firm founder left the firm). As such, founders apparently have a strong and stable impact on marking the firm's future path by affecting the dynamics of practices over an extended period of time. In this respect, the findings suggested that practices are more likely to remain largely unchanged in an autocracy-model, and that practices are more likely to change if the founders' blueprints involve an engineering- or commitment-model (cf. Baron et al. 1999), confirming what we initially argued. In addition, the findings implied that firms drawing on employment models that emphasize practices' continuity (e.g. autocracy-model firms) are likely to face similar difficulties in altering the founder's blueprint as firms drawing on employment models that facilitate practices' renewal more (e.g. engineering- or commitment-model firms) (cf. Hannan et al. 2006). However, when the founder's employment model emphasizes change in practices and when firm's employees are key participants in these practices, the founder's blueprint is more likely to alter as new employees have the potential to introduce new ways of performing practices.

5.4.1 Implications for practitioners

Several implications for practitioners in service firms can be distilled from Chapter 4. The balance of exploitation and exploration depends on the mix of 'doing more of the same' (i.e. continuity) and 'doing new things' (i.e. renewal). In this respect, small or medium service-oriented firms may become involved in stability and change simultaneously, alternate between long periods of stability and short and sporadic periods of change (thus stressing continuity), or alternate between short and sporadic periods of stability and long periods of change (thus stressing renewal). When the focus is on either continuity or renewal, (top) managers may expect inertia or adrift of (certain) organizational practices in terms of a persistant resistance or an oversensitive response to renewal. For example, managers may tend to stick to current modes of working based on what had worked well in the past, which may lead to a persistant resistance toward renewal attempts (i.e. inertia), whereas managers that tend to engage in accomplishing change regularly may face an oversensitive response to renewal (i.e. adrift).

This focus depends foremost on the founders' employment models that tend to have an enduring effect on organizational practices. In this respect, firm founders should be conscious of the blueprint and employment model(s) they have created in the early days of a new venture, because it will affect the future path of the firm, even after the founder leaves. The founders' blueprints and employment models that sustained the past of an organizational practice will thus shape the practice's future, involving a strong and stable influence of founders on the subsequent evolution of practices. In firms that have aged somewhat, (top) managers should try to identify and uncover the founder's blueprint and make the whole organization aware of its constraints, barriers and challenges. In addition, any change effort should be aligned with the historical blueprint of the organization. If the change effort requires a fundamental change in this blueprint, one should be aware that this type of change is not likely to be successful, even if it is conducted in a deliberate and focused manner. In this respect, the risk of failure is much larger for change efforts that also require interventions at the level of the organization's 'DNA' (cf. blueprint); in many instances, it may be more effective to eliminate the current firm, and then found and develop a new firm that draws on another blueprint.

5.5 Taxonomy of key dimensions of ambidexterity

Higher-order organizational capabilities in addressing situations of changing market and competitive conditions have not been treated as a coherent subject (cf. Collis 1994). A lack of clarity concerning basic understandings of these meta-organizational capabilities may "limit fruitful conversation, impede progress on the theoretical front, and prevent empirical work from cumulating" (Di Stefano et al. forthcoming: 3). Therefore, a taxonomy of the key dimensions of ambidexterity, that result from the systematic literature reviews and empirical studies in the previous chapters of this dissertation, is developed here (see figure 5.6). As such, this taxonomy integrates the previous chapters, and serves to answer the central research question in this dissertation.

In respect to this taxonomy, many scholars distinguish between organizational capabilities that permit a firm to 'earn a living' (e.g. Winter 2003) on the one hand, and higher-order organizational capabilities that allow the organization to adapt and evolve in dynamic business environments characterized by frequent, rapid and unpredictable change on the other hand (March 1991; Tushman & O'Reilly 1996). In Chapter 2, we suggested that ambidexterity serves to exploit current activities in existing domains and explore new

activities in non-existing domains so as to address changing environments and/or create market change. As such, ambidexterity involves the investment of assets, budget, and/or time in sustaining a firm's daily operations and in implementing change. The focus on exploitation respectively exploration activities may be equivalent or non-equivalent, and aligned to the firm's resource base and the market and competitive conditions. In addition, to generate synergistic outcomes, exploitation and exploration activities need to be connected in a systematic manner by means of particular designs. As such, we defined ambidexterity as a higher-order organizational capability that…

- *serves to exploit current activities in existing domains as well as explore new activities in domains that are new to the firm;*
- *creates a balance between exploitation and exploration activities that is aligned to the firm's resource base and the market and competitive conditions;*
- *and systematically connects exploitation and exploration activities.*

This definition also introduced the concept of a firm's resource base, and the market and competitive conditions. As has been suggested in Chapter 2, a firm's resource base involves tangible resources, including specific physical assets such as plant, stock of raw materials, equipment, geographic location and financial capital; and intangible resources, including specific human assets such as know-how of manpower and the management team, employee training and loyalty, and specific organizational assets such as product/service quality, brand image and reputation (Grant 1991; Javidan 1998; Eisenhardt & Martin 2000). In addition, we have argued in Chapter 2 that the market and competitive conditions account for stable or dynamic markets (cf. Eisenhardt & Martin 2000). According to Eisenhardt and Martin (2000), markets are moderately-dynamic when change occurs frequently along roughly predictable and linear paths in the context of stable industry structures, involving clear market boundaries and well known competitors and customers. Markets are high-velocious when change occurs frequently along less predictable and nonlinear paths in the context of blurring industry structures, involving ambiguous market boundaries and ambiguous and shifting competitors and customers (Eisenhardt & Martin 2000).

Drawing on the empirical studies in Chapter 3 and 4, our empirical understanding of the key dimensions of ambidexterity has been extended by studying the dynamics entailed in the way

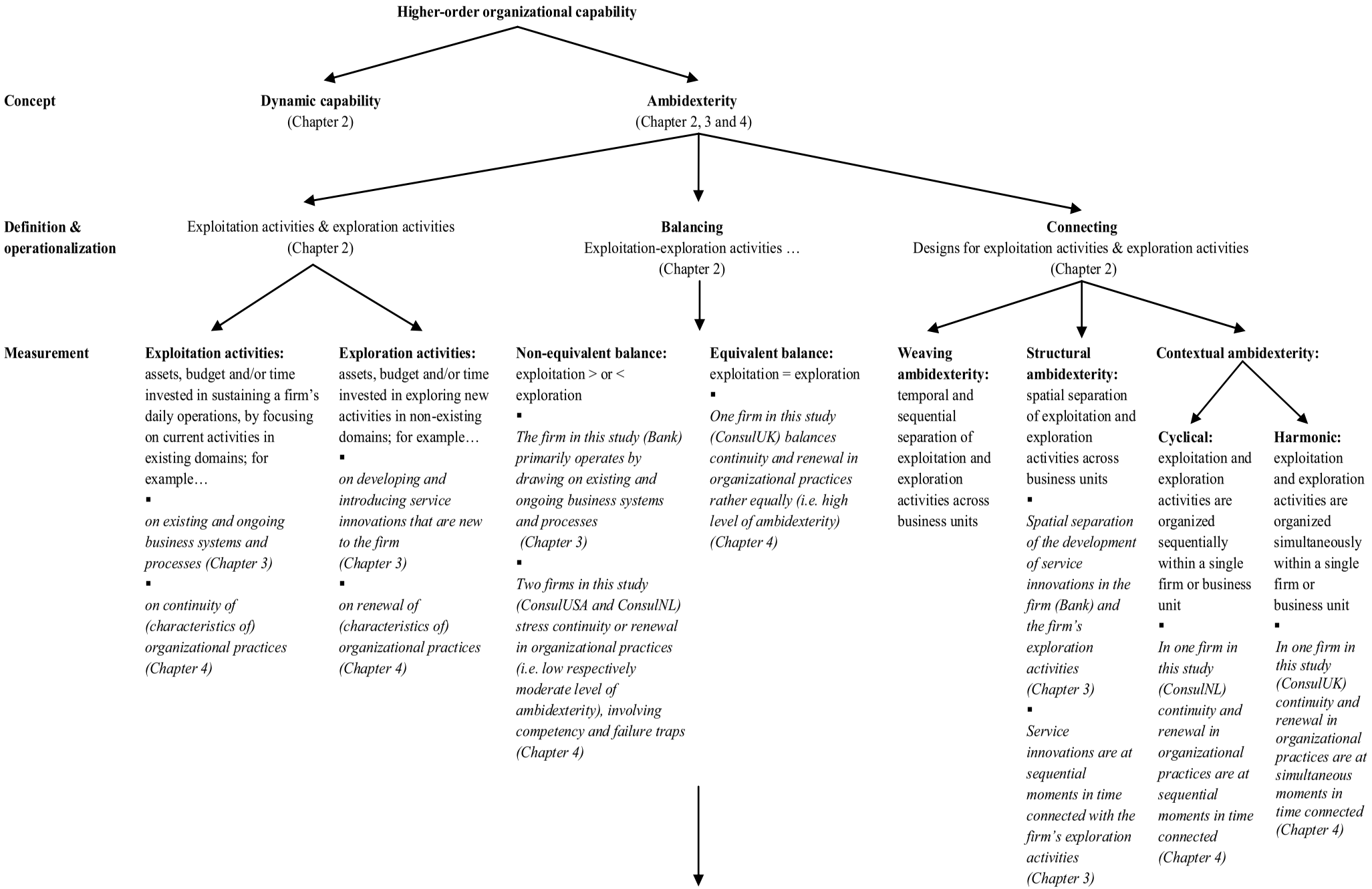
ambidexterity is performed in service firms. In this respect, the empirical study in Chapter 3 showed that:

1. exploitation activities in terms of existing and ongoing business systems and processes, and exploration activities in terms of developing and introducing service innovations that are new to the firm, were organized separately (in a spatial sense);
2. the balance between exploitation and exploration activities was non-equivalent (exploitation > exploration), involving a decentralized structure for exploration activities; and
3. exploration activities were sequentially connected with exploitation activities; that is, after developing and introducing service innovations, the service innovations were integrated in the firm's existing and ongoing business systems and processes.

In addition, the empirical study in Chapter 4 showed that:

1. exploitation activities in terms of the continuity of organizational practices, and exploration activities in terms of renewing organizational practices, were organized in a sequential or simultaneous way in two of the three cases;
2. the balance between exploitation and exploration activities was rather equivalent in one case (i.e. high level of ambidexterity, in the form of how the firm mastered the capability of harmonic ambidexterity), but non-equivalent in the two other cases (i.e. low or moderate level of ambidexterity), partly as a result of the founders' employment models (here, a low level of ambidexterity resulted from the strong focus on what had worked well in the past, whereas a moderate level of ambidexterity resulted from not yet fully mastering the capability of cyclical ambidexterity: evident from efforts to change its business development and acquisition activities going adrift over an extended period of time, involving competency and failure traps in terms of a persistant resistance or oversensitive response to renewal of the firm's employment model); and
3. exploitation and exploration activities were connected at sequential or simultaneous moments in time; that is, one firm alternated between periods of practices' continuity and renewal by switching or shifting emphasis between both, whereas the other firm stressed both practices' continuity and renewal at the same time.

Figure 5.6 provides a taxonomy of the key dimensions of ambidexterity.


Higher-order organizational capability
Concept
Dynamic capability
(Chapter 2)
Ambidexterity
(Chapter 2, 3 and 4)
Definition & operationalization
Exploitation activities & exploration activities
(Chapter 2)
Balancing
Exploitation-exploration activities …
(Chapter 2)
Connecting
Designs for exploitation activities & exploration activities
(Chapter 2)
Measurement
Exploitation activities:
assets, budget and/or time invested in sustaining a firm's daily operations, by focusing on current activities in existing domains; for example…
▪ on existing and ongoing business systems and processes (Chapter 3)
▪ on continuity of (characteristics of) organizational practices (Chapter 4)
Exploration activities:
assets, budget and/or time invested in exploring new activities in non-existing domains; for example…
▪ on developing and introducing service innovations that are new to the firm (Chapter 3)
▪ on renewal of (characteristics of) organizational practices (Chapter 4)
Non-equivalent balance:
exploitation > or < exploration
▪ The firm in this study (Bank) primarily operates by drawing on existing and ongoing business systems and processes (Chapter 3)
▪ Two firms in this study (ConsulUSA and ConsulNL) stress continuity or renewal in organizational practices (i.e. low respectively moderate level of ambidexterity), involving competency and failure traps (Chapter 4)
Equivalent balance:
exploitation = exploration
▪ One firm in this study (ConsulUK) balances continuity and renewal in organizational practices rather equally (i.e. high level of ambidexterity) (Chapter 4)
Weaving ambidexterity:
temporal and sequential separation of exploitation and exploration activities across business units
Structural ambidexterity:
spatial separation of exploitation and exploration activities across business units
▪ Spatial separation of the development of service innovations in the firm (Bank) and the firm's exploration activities (Chapter 3)
▪ Service innovations are at sequential moments in time connected with the firm's exploration activities (Chapter 3)
Contextual ambidexterity:
Cyclical:
exploitation and exploration activities are organized sequentially within a single firm or business unit
▪ In one firm in this study (ConsulNL) continuity and renewal in organizational practices are at sequential moments in time connected (Chapter 4)
Harmonic:
exploitation and exploration activities are organized simultaneously within a single firm or business unit
▪ In one firm in this study (ConsulUK) continuity and renewal in organizational practices are at simultaneous moments in time connected (Chapter 4)

… aligned to the firm's resource base
and market & competitive conditions

The firm's resource base:

specific physical assets (e.g. plant stock of raw materials, equipment, geographic location and financial capital), human assets (e.g. know-how, training and loyalty), and organizational assets (e.g. product/service quality, brand image and reputation)

Market and competitive conditions:

Stable / moderately-dynamic markets:	**Dynamic / high-velocity markets:**
change occurs frequently along predictable and linear paths, in the context of stable industry structures	change occurs frequently along less predictable and nonlinear paths, in the context of blurring industry structures

Figure 5.6: Taxonomy of key dimensions of ambidexterity

5.6 Limitations and suggestions for future research

The limitations of the systematic literature reviews in Chapter 2 and of the empirical studies in Chapter 3 and 4 are discussed in this section. In addition, suggestions for future research are provided here.

The systematic literature reviews of dynamic capability and ambidexterity in Chapter 2 showed that a variety of antecedents driving dynamic capability respectively ambidexterity have been suggested in the literature, but that an integrative framework is missing. As such, there is a need to further shift the research focus from 'why' dynamic capability and ambidexterity matter, to 'how they emerge'. In addition, there have been a variety of research domains that influenced the dynamic capability and ambidexterity literature. This most likely has created tensions that may explain why research in these fields continues to struggle over fundamentals, and why so many different views exist (Di Stefano et al. forthcoming). Future research should therefore focus on explaining these tensions in an in-depth manner (cf. Di Stefano et al. forthcoming), for example by examining the way the different levels of analysis of ambidexterity can be spanned in order to explain their interrelatedness. Moreover, future research should focus on how dynamic capability and ambidexterity are generalizable across industries in order to be useful as a guide to managerial action.

In addition, our understanding of dynamic capability should be grounded in empirical research. As such, future research can operationalize and measure the notion of dynamic capabilty by drawing on the proposed definition of dynamic capability (see section 2.3.5 and 5.2). However, operationalizing and measuring become rather difficult, as (the key dimensions of) dynamic capability may be difficult to grasp and account for. In this respect, it seems particularly difficult to examine on which knowledge the firm draws to question purpose and effectiveness of the firm's resource base, and where this knowledge comes from.

Similarly, future studies of ambidexterity can draw on the proposed definition of ambidexterity (see section 2.4.6, 5.2 and 5.5) as a means for operationalizing and measuring ambidexterity. This definition introduced the concept of a firm's resource base and the market and competitive conditions. Future research should start by focusing on how a firm's resource base and the market and competitive conditions align the balance between exploitation and exploration activities. In this respect, future research should also further elaborate and explain the relation between ambidexterity, a firm's resource base, and the market and competitive

conditions, and its effect on (sustainable) competitive advantage. In particular, there is a need to study the generative forces that drive the co-evolution between these relationships. Studies that draw on qualitative data will be more likely to advance the theory of ambidexterity. Given the lack of consensus on definitions, operationalizations and measurements, scholars can not yet exclusively rely on quantitative data to establish causal relationships here. However, as has been shown, most research on ambidexterity does focus on quantitative data.

With respect to the proposed definition of ambidexterity, the main challenge lies in distilling a firm's 'appropriate' balance for exploitation and exploration activities; should a firm focus at both, or at either exploitation or exploration activities in order to say that it succeeded in developing ambidexterity? In any case, potential tautological problems continue to undermine the further development of the proposed definition of ambidexterity.

Chapter 2 also discussed the literature suggesting that the notions of dynamic capability and ambidexterity are interrelated: dynamic capability is at the heart of the ability to become ambidextrous, whereas ambidexterity may as well become a dynamic capability. However, in this chapter, it was argued that a firm may draw on either dynamic capability or ambidexterity, or that both high-order organizational capabilities may co-exist within a firm (i.e. when exploration involves dynamic capability). This raises the question whether these meta-organizational capabilities are interrelated per definition. Future research should therefore (empirically) elaborate on these insights, particularly in terms of how dynamic capability and ambidexterity may co-exist in organizations, as this relationship has not been empirically established yet.

Regarding the empirical study in Chapter 3, a first limitation arises from differentiating the broad notion of 'effects' (of decentralization) into 'outcomes' and 'generative mechanisms'. Future explanatory research should sort out what activates particular generative mechanisms, and how those generative mechanisms affect eventual outcomes (cf. Sayer 1992). A second limitation arises from the unconventional nature of the organizational setting in this study: the firm studied in this study has a much more decentralized structure than most other (non-cooperative) banks. This served to identify specific mechanisms and outcomes generated by decentralization, but does not imply that our findings can be directly generalized to similar or comparable non-cooperative banks. Third, research on organizational structures needs to be complemented by additional process research. Any effect of a particular organizational

structure does not occur spontaneously, but is triggered by actions and events in unfolding processes. Thus, additional process research is needed on the actual use and reproduction of structures. Fourth, focusing on decentralization as one of the organizational antecedents for ambidexterity neglects a variety of other organizational antecedents, environmental conditions, and moderators. Organizational antecedents may comprise leadership, informal social relations in coordinating the development of exploitation and exploration activities, and a context of support and trust. Environmental conditions may involve static or dynamic market conditions. And moderators may include market orientation and firm scope (cf. Gibson & Birkinshaw 2004; Raisch & Birkinshaw 2004; Jansen et al. 2006).

Regarding the empirical study in Chapter 4, a first limitation is that the organizational setting in this study involved small-to-medium sized management consultancy firms. Selecting SME's served to examine the role of founders' employment models in relation to the practices under study. Our case study findings, however, can not be easily generalized to larger (management consultancy) firms. Second, previous research suggested that, apart from the start-up phase, most SME's owners/managers are more concerned with survival and independence as primary motives than growth per se. Therefore, SME's often stop acting entrepreneurially once the firm becomes established (Foley & Green 1989), which will likely affect the dynamics of its practices. Third, conducting case studies in one industry is likely to show similar employment models (cf. Baron et al. 1999). As such, this research could be extended with case studies from multiple industries, other than management consultancy. Fourth, a clear distinction between founders' employment models, as advocated by Baron et al. (1999), may not be feasible in some settings. This also raises the hypothesis (for future research) that ambidexterity is more likely to be found in combination models, or what can be called mixed blueprints. An interesting question for future work in this area thus may be whether such combined models tend to constitute conditions positively affecting the degree of ambidexterity. Fifth, this research needs to be complemented by additional process studies. Continuity and renewal do occur spontaneously, triggered by actions and events in unfolding processes other than founders' employment models (cf. Kelly & Amburgey 1991; DuBrin 2009). As such, the focus on founders' employment models as an antecedent for ambidexterity can be extended to other organizational antecedents in future work.

In general, this dissertation contributes to our understanding of the key dimensions of dynamic capability, and ambidexterity in particular, as higher-order organizational

capabilities. As the conceptual and empirical examinations in this dissertation illustrate, these meta-organizational capabilities are fuzzy and ambiguous in nature. Therefore, designing and measuring these higher-order organizational capabilities will continue to constitute an enormous challenge to organizations operating in an increasingly dynamic and complex environment. However, scholars in organization science and strategic management will need to fully engage in meeting this challenge to further develop the theory and practice of dynamic capability and ambidexterity, in the interest of the viability and performance of many firms.

Appendices

Appendix A Selection of papers and books on dynamic capability

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Appendix B Selection of papers and books on ambidexterity

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Appendix C Empirical studies on dynamic capability

Author(s) (year)	Approach	Study	Key issue	Results or conclusion	Operationalization and measurement of dynamic capability
Iansiti & Clark (1994)	Qualitative and quantitative	Longitudinal case studies of Nissan in the automobile industry, and of NEC in the mainframe computer industry	Examine the impact of internal and external integration on dynamic capability	The ability to integrate diverse knowledge bases through problem solving is the basic foundation of knowledge building, and thus a critical driver of dynamic performance that estimates the level of dynamic capability based on the consistency of its performance	Not available
Helfat (1997)	Quantitative	Longitudinal study of 26 largest USA energy firms, primarily in the petroleum industry	Examine the role of complementary technological knowledge and physical assets in dynamic capability accumulation	Firms with larger stocks of complementary technological knowledge and physical assets experience greater increase in R&D capabilities, and thus in dynamic capability accumulation	Not available
Tripsas (1997)	Qualitative	Longitudinal case study of Mergenthaler Linotype in the typesetter industry	Examine the development of dynamic technical capability	The combination of external integrative capability and geographically distributed research sites enable the firm to successfully identify and integrate knowledge outside its boundaries, which contribute to dynamic technical capability	Dynamic technical capability is operationalized and measured as external integrative capability (i.e. captured by internal investments that develop absorptive capacity and an external cummunication infrastructure), and geographically distributed research sites
Deeds et al. (1999)	Quantitative	Sample of 94 pharmaceutical biotechnology firms	Examine the determinants of new product development from a dynamic capability perspective	The choice of geographic location, the quality of the firm's scientific team, and leadership that understands and has experience in new product development (but which is separate and distinct from the scientific team), is critical for the capability of new product development	Not available
Griffith & Harvey (2001)	Quantitative	Sample of 250 Canadian, 250 Chilean, 100	Introduce global dynamic capabilities to	A firm's power, derived from internal and external assets is critical for	Not available

		Great Britain, and 100 Filipino overseas USA distributors	enhance understanding of a firm's power in international business relationships	effectively implementing global dynamic capabilities Asset specificity and predictability (i.e. resource-based assets), and market knowledge gap (i.e. market-based assets) influence a distributor's power	
Rindova & Kotha (2001)	Qualitative	Longitudinal case studies of Internet search engines Yahoo! and Excite	Examine the way continuous morphing regenerates competitive advantage in dynamic environments in terms of the co-evolution of organizational form, function and competitive advantage	Continuous morphing is one of the contributing forces for developing dynamic capability, as firms rely on continuous morphing to regenerate competitive advantage under conditions of rapid change	Not available
King & Tucci (2002)	Quantitative and qualitative	Sample of 208 BU's, representing 174 firms in the disk drive industry	Examine the effect of static and transformational experience on market entry, and the role managers play in moderating the effect of such experience	Static and transformational experience are contributing forces for dynamic capabilities; experience in previous markets increases the propability that a firm would enter a new market (this experience has greater value if the firm entered the new market) Managers chose to enter these markets to obtain this increase in value	Dynamic capability is operationalized and measured as static experience (i.e. captured by firm's experience in producing and selling to existing markets), and transformational experience (i.e. captured by firm's experience with major change)
Adner & Helfat (2003)	Quantitative	Longitudinal study of 30 largest USA firms in the petroleum industry	Introduce dynamic managerial capability to explain variances in firm performance	Dynamic managerial capability explains the effect of managerial decisions on firm performance	Dynamic managerial capability is operationalized and measured as managerial human capital, managerial social capital, and managerial cognition
Daniel & Wilson (2003)	Qualitative	Five case studies of UK firms in e-business transformation	Identify dynamic capabilities for e-business transformation, as well as practices for developing	Identify eight dynamic capabilities for e-business transformation; one group is associated with the need for innovation due to the	Dynamic capability is operationalized and measured as rapid strategy/implementation cycle, developing business case

			these dynamic capabilities	characteristics of the environment, the other group relates to the need to incorporate or integrate e-business in existing operations of the business	incorporating substantial changes to the business model with uncertain information, building internal and external commitment to a strategic change, iterative development of the value proposition melding planning and experience, ability to reconfigure the sales/service process, integration with existing systems without stifling innovation, integration across channels to enable multi-channel service, and tautly coupled corporate strategy and e-business strategy formulation
Verona & Ravasi (2003)	Qualitative	Longitudinal case study of Oticon A/S in the hearing-aid industry	Unbundle dynamic capabilities by clarifying the nature of processes that foster continuous innovation	Dynamic capabilities are knowledge-based; continuous innovation requires the simultaneous presence of knowledge creation and absorption, knowledge integration, and knowledge reconfiguration	Dynamic capability is operationalized and measured as knowledge creation and absorption, knowledge integration, and knowledge reconfiguration
Macpherson et al. (2004)	Qualitative	Longitudinal case study of RWL in the manufacturing industry (core business is the supply of personal protective equipment)	Examine the way dynamic capabilities are created in a firm with limited managerial and technical skills (i.e. knowledge-dependent firms)	Relationships with suppliers and customers renew a firm's dynamic capabilities by creating a structure and associated routines that focus on opportunity recognition and exploitation; competitive advantage can thus be created by acting as a knowledge-integrator	Not available
Sher & Lee (2004)	Quantitative	Sample of 142 of the top 1000 Taiwanese firms in the manufacturing, service and financial industry	Examine the impact of knowledge management on dynamic capability, as controlled by types of IT application	Endogenous and exogenous knowledge impact dynamic capability; IT applications (i.e. enterprise resource planning, email, document management, on-line knowledge search, data warehousing) influence this impact	Dynamic capability is operationalized and measured as enhanced learning effectiveness of new knowledge, enhanced decision quality, enhanced capabilities of communication and coordination, enhanced responsiveness, enhanced integration in new product development, enhanced

					accumulation of knowledge, enhanced capabilities of resource deployment, enhanced customer relationships, enhanced trust with vendors, and enhanced unimitability of strategic asset
Newbert (2005)	Quantitative	Sample of 817 (18 years or older) USA nascent entrepreneurs	Examine new firm formation from a dynamic capability perspective	New firm formation satisfies the four dynamic capability conditions: (1) new firm formation is a specific, identifiable organizational process, (2) a unique set of activities common to all successful nascent entrepreneurs exist, (3) increasing market dynamism appears to reduce the complexity of new firm formation, and (4) learning appears to have an impact on the likelihood of success (in high-velocity markets), suggesting that new firm formation is evolutionary in nature	Not available
Menguc & Auh (2006)	Quantitative	Sample of 242 managers of large-sized Australian firms in the manufacturing industry	Examine the dynamic capability-generating capacity of market orientation on firm performance	The dynamic capability-generating capacity of market orientation (the effect of market orientation on firm performance) is enhanced when market orientation is adequately complemented with other internal complementary resources, such as innovativeness	Dynamic capability-generating capacity of market orientation is operationalized and measured as customer orientation, competitor orientation, and interfunctional coordination
Prieto & Easterby-Smith (2006)	Qualitative	Longitudinal case study of one of the global leaders in the chemical industry	Examine the nature of and interaction between knowledge management and dynamic capability	Knowledge, particularly when transmitted via social interactions, can act as a source of dynamic capability as (1) social forms of knowledge exchange produces a sceptism of and resistance to undue formalization of information systems, and (2) social forms of knowledge exchange can support a decentralized and empowered model; power	Not available

				and politics affect this relationship	
Cepeda & Vera (2007)	Quantitative and qualitative	Sample of 107 Spanish firms in the information and communication industry	Capture knowledge management processes behind dynamic capabilities, as well as examine their impact on operational capabilities	Knowledge-enabled dynamic capabilities impact operational capabilities through the interaction of strategic context (mission/value proposition), articulation and codification of a desired knowledge configuration, use of a knowledge management infrastructure to replicate/retain the new knowledge, and articulation/codification of actual knowledge configuration	Not available
Wilson & Daniel (2007)	Qualitative	Four case studies of (global) USA and UK firms in the manufacturing and service industry	Identification of dynamic capabilities for channel transformation	Identify seven dynamic capabilities for channel transformation; four are associated with innovation, and three with integration between channels	Dynamic capability is operationalized and measured as channel strategy presents firms with a tension between two distinct groups of dynamic capabilities that must be balanced: one the one hand, managers need to develop innovative channels that change the way the firm operates and how it interacts with its customers, on the other hand, managers need to keep the firm operating as a single, coherent entity so as to create innovative channel combinations and deliver consistent service
Bruni & Verona (2009)	Qualitative	Sample of high-performing pharmaceutical firms: two global R&D-oriented USA firms, two global European firms (one more R&D-oriented), and two local European firms (less R&D-	Introduce dynamic marketing capabilities to examine how market knowledge can benefit science-based firms	Dynamic marketing capabilities can benefit science-based firms as market knowledge helps initiate the innovation process, especially when market knowledge is combined with technical knowledge Market knowledge can be an important source of capability reconfiguration	Dynamic marketing capability is operationalized and measured as human capital, social capital, and the cognition of managers involved in the creation, use and integration of market knowledge and marketing resources

		oriented)			
Chen & Jaw (2009)	Qualitative	Longitudional case study of innovative Taiwanese firms in the hand puppetry industry	Identification of global dynamic capabilities from the viewpoint of sustainable development	Identify six global dynamic capabilities as the driving forces behind the creation of new cultural products that revitalize a firm through continuous innovation	Global dynamic capability is operationalized and measured as applying enabling technologies creatively, seizing market opportunities, aligning routes to markets, utilizing absorptive capacity, enhancing organizational innovation, and staying cultural/aesthetic productions
Fang & Zou (2009)	Quantitative	Sample of 126 Chinese equity-based international joint ventures in the manufacturing industry	Introduce dynamic marketing capabilities, and study their development in international joint ventures as well as their effect on international joint ventures' performance and competitive advantage	Dynamic marketing capabilities effect an internation joint venture's performance and competitive advantage Dynamic marketing capabilities are found to be influenced by resource magnitude, resource complementarity, organizational culture, and organizational structure	Dynamic marketing capability is operationalized and measured as customer relationship management, product development management, and supply chain management
McKelvie & Davidsson (2009)	Quantitative	Longitudinal study of 108 new Swedish firms in the manufacturing, service, and wholesale/retail industry	Examine to what extent firm resource conditions and changes to these influence the development of dynamic capabilities in new firms	Resources and changes to these are important in the development of dynamic capabilities; access to human resources (i.e. founder human capital, employee human capital), access to technology, access to specific expertise, and access to tangible resources, have different effects on the development of dynamic capabilities, depending on the type of dynamic capability	Dynamic capability is operationalized and measured as opportunity idea generation capability, market disruptiveness capability, new product development capability, and new process development capability
Newey & Zahra (2009)	Qualitative	Longitudinal study of two collaborating firms in the pharmaceutical biotechnology industry	Examine how operational and dynamic capabilities interact through endogenous changes	Firms build absorptive capacity in value networks during their product development experiences; when this learning is captured and transformed, product portfolio planning	Dynamic capability is operationalized and measured as creation, extension or modification of operating capabilities (i.e. absorptive capacity)

acts as a dynamic capability, reconfiguring operating capabilities

Under conditions of endogenous change, dynamic capabilities are guided by a pro-active entrepreneurial logic, complementing the need for re-active adaptive responses in circumstances of exogenous change

Appendix D Empirical studies on ambidexterity

Author(s) (year)	Approach	Study	Key issue	Results or conclusion	Operationalization and measurement of ambidexterity
Gibson & Birkinshaw (2004)	Qualitative and quantitative	Longitudinal study of 41 BU's, representing 10 global firms	Examine the relationship between organizational context, contextual ambidexterity, and firm performance	An organizational context (characterized by a combination of stretch, discipline, support and trust) is associated with contextual ambidexterity, as well as with firm performance (i.e. contextual ambidexterity mediates the relationship between organizational context and firm performance)	Contextual ambidexterity is operationalized and measured as alignment and adaptability at business-unit level (i.e. drawn on a three-item scale for each)
He & Wong (2004)	Quantitative	Sample of 206 Azian firms in the manufacturing industry	Examine the way exploitation and exploration innovation strategies can jointly influence firm performance in the context of a firm's approach to technological innovation	The interaction between exploitative and explorative innovation strategies is positively related to sales growth rate, whereas the relative imbalance between exploitative and explorative innovation strategies is negatively related to sales growth rate	Ambidexterity is operationalized and measured as the interaction between exploitative and explorative innovation strategies (i.e. drawn on an eight-item scale, which captures the improvement of existing product-market efficiency respectively the entering of new product-market domains)
Holmqvist (2004)	Qualitative	Longitudinal case study of Scandinavian PC Systems	Examine the way experiential learning processes of exploitation and exploration generate interorganizational exploitation and exploration, and the way exploitation and exploration between organizations generate interorganizational exploitation and exploration	Introduce an integrated framework that conceptualizes how exploitation is interlaced with exploration within and between organizations	Ambidexterity is operationalized and measured as exploitation and exploration modes of experiential learning (i.e. captured by opening-up extension, opening-up internationalization, focusing extension, and focusing internationalization)
Kyriako-poulos & Moorman (2004)	Quantitative	Longitudinal study of 96 Dutch BU's in the food	Examine the way market orientation allows to combine marketing	A strong market orientation facilitates a complementarity of high levels of marketing	Ambidexterity is operationalized and measured as marketing exploitation and

		processing industry	exploitation and exploration strategies effectively	exploitation and marketing exploration strategies, which results in improved new product financial performance, whereas a weak market orientation engaging in high levels of both strategies display a significant reduction in new product financial performance	exploration strategies (i.e. captured by improvement in marketing skills and procedures, and challenging the mental model of the firm's interaction with the market)
Rothaermel & Deeds (2004)	Quantitative	Sample of 325 new firms with an alliance-history in the biotechnology industry	Examine the link between the exploitation-exploration framework of organizational learning and a technology venture's strategic alliances	A product development path in such firms begins with exploration alliances predicting products in development, which in turn predict exploitation alliances, and concludes with exploitation alliances leading to products on the market This integrated product development path is moderated negatively by firm size	Ambidexterity is operationalized and measured as exploitation and exploration alliances (i.e. captured by focus on downstream/upstream activities of the value chain)
Auh & Menguc (2005)	Quantitative	Sample of 260 CEO's/senior executives in the manufacturing industry	Examine the role of competitive intensity in the relationship between ambidexterity and firm performance for two strategy typologies: prospectors and defenders	When competitive intensity increases, exploration is positively related to effective firm performance, while exploitation is negatively related to efficient firm performance, for defenders When competitive intensity increases, exploration is negatively related to effective firm performance, whereas exploitation is positively related to efficient firm performance, for prospectors	Ambidexterity is operationalized and measured as exploitation and exploration (i.e. drawn on a three-item scale respectively four-item scale)
Jansen et al. (2005)	Quantitative	Longitudinal study of 363 unit managers of an European firm in the financial	Examine the way environmental antecedents (i.e. dynamism and competitiveness) and organizational	Multi-unit firms develop ambidextrous units to compete in dynamic environments; units with decentralized and densely connected social	Ambidexterity is operationalized and measured as exploitative and exploratory innovation (i.e. drawn on a six-item scale for each,

		service industry	antecedents (i.e. decentralization, formalization and connectiveness) affects a unit's level of ambidexterity	relations are able to pursue exploitative and exploratory innovations simultaneously	which captures the extent to which units build on/departed from existing knowledge/skills or existing customers, markets, and products)
Jansen et al. (2006)	Quantitative	Longitudinal study of 283 unit managers of an European firm in the financial service industry	Examine the differences of exploration and exploitation, the implications for using formal (i.e. centralization and formalization) and informal (i.e. connectedness) coordination mechanisms, and the way environmental aspects (i.e. dynamism and competitiveness) moderate the effectiveness of exploratory and exploitative innovation	Centralization affects exploratory innovation negatively, whereas formalization affects exploitative innovation positively Connectedness within units is an important antecedent of exploratory and exploitative innovation Pursuing exploratory innovation is more effective in dynamic environments, whereas pursuing exploitative innovation is more effective in competitive environments	Ambidexterity is operationalized and measured as exploratory and exploitative innovation (i.e. drawn on a six-item scale for each, which captures the extent to which units build on existing knowledge and meet the needs of existing customers respectively the extent to which units departed from existing knowledge and pursue innovations for emerging customers and markets)
Lubatkin et al. (2006)	Quantitative	Longitudinal study of CEO's/top management team members from 139 small-to-medium sized firms	Examine the role of top management team behavioral integration in facilitating ambidexterity in small-to-medium sized firms	Top management team behavioral integration is essential in achieving ambidexterity orientation in small-to-medium sized firms, affecting firm performance positively	Ambidexterity is operationalized and measured as exploitative and exploratory orientation (i.e. drawn on a six-item scale for each)
Han (2007)	Qualitative	Longitudinal case studies of Merrill Lynch Europe (UK) and Comdirect Bank (Germany) in the security industry	Examine the role of strategic ambidexterity in achieving superior performance in internationalization	Firms that pursue strategic ambidexterity in their internationalization effort achieve above-average internationalization performance in the short term, as well as above-average firm-level performance in the long term	Strategic ambidexterity is operationalized and measured as pro-profit and pro-growth strategies
Mom et al. (2007)	Quantitative	Sample of 104 managers of a global firm in the electronics	Examine the influence of managers' knowledge	Top-down knowledge inflows of managers positively relate to the extent to which managers	Managers' ambidexterity is operationalized and measured as a manager's exploration and

		industry	inflows on managers' exploitation and exploration activities	conduct exploitation activities, while they do not relate to managers' exploration activities Bottom-up and horizontal knowledge inflows of managers positively relate to managers' exploration activities, while they do not relate to managers' exploitation activities	exploitation activities (i.e. drawn on a seven-item scale for each)
Sidhu et al. (2007)	Quantitative	Samples of 85 and 155 managing directors/top management team members of Dutch firms in the metal and electrical engineering industry	Examine the way managers face the challenge of balancing exploitation and exploration, in light of firm differences in supply-side, demand-side and spatial search decisions which benefits greater or lesser amounts of nonlocal search	Demand-side search (exploitation) is positively related to innovation in less-dynamic environments, and negatively related to innovation in dynamic environments Supply-side search (exploration) is positively related to innovation in dynamic environments, and negatively related to innovation in less-dynamic environments Spatial search contributes to innovation is both dynamic and less-dynamic environments	Ambidexterity is operationalized and measured as exploitation and exploration (i.e.drawn on a eight-item scale for demand-side search, a nine-item scale for supply-side search, and a six-item scale for spatial search)
Han & Celly (2008)	Quantitative	Sample of 70 Canadian international new ventures	Examine the way international new ventures achieve superior performance by strategic ambidexterity	International new ventures that are capable of pursuing and implementing paradoxical strategies achieve superior performance over those lacking such capability	Strategic ambidexterity is operationalized and measured as paradoxical strategies (i.e. captured by standardization versus innovation strategy, and few investments versus many countries strategy)
Im & Rai (2008)	Quantitative	Sample of 238 account managers of a USA firm in the logistics industry	Examine the impact of exploitative and explorative knowledge sharing on the performance of long-term interorganizational relationships	Both exploitative and explorative knowledge sharing lead to interorganizational relationship performance gains, such knowledge sharing is enabled by the ambidextrous management of the interorganizational relationship, and such	Ambidexterity is operationalized and measured as exploitative and explorative knowledge sharing (i.e. drawn on a four-item scale for each)

				knowledge sharing is facilitated by ontological commitment	
Jansen et al. (2008)	Quantitative	Sample of 89 executive directors and 305 senior team members of branches of an European firm in the financial service industry	Examine the role of senior team attributes and leadership behaviour in reconciling conflicting interests among senior team members and achieving ambidexterity	A senior team shared vision and contingency rewards are associated with a firm's ability to combine high levels of exploitative and exploratory innovations An executive director's transformational leadership increases the effectiveness of senior team attributes in ambidextrous organizations, and moderates the effectiveness of senior team social integration and contingency rewards	Ambidexterity is operationalized and measured as exploitative and exploratory innovation (i.e. drawn on a six-item scale for each, which captures the extent to which units build on existing knowledge and pursue incremental innovations that meet the needs of existing customers respectively the extent to which units departed from existing knowledge and pursue radical innovations for emerging customers or markets)
Li et al. (2008)	Quantitative	Sample of 227 Taiwanese firms in the high-technology industry	Examine the way a responsive and pro-active market-oriented firm is able to align incremental (exploitative) innovations and radical (exploratory) innovations	Both types of market orientation provide different managerial efforts to develop and foster different types of innovations, moderated through external and organizational factors	Ambidexterity is operationalized and measured as incremental and radical innovation (i.e. drawn on a six-item scale for each, which captures the degree to which the firm build upon/departed from existing knowledge/skills or existing customers, markets, and products
Menguc & Auh (2008)	Quantitative	Sample of 260 CEO's/senior executives in the manufacturing industry	Examine the relationship between ambidexterity and firm performance for two strategy typologies: prospectors and defenders	Ambidexterity does not have a negative effect on firm performance for either prospectors or defenders; for both strategy typologies, exploration has a greater positive effect on firm performance than exploitation Exploration and exploitation are complementary only in conditions of high market orientation; this applies only to prospectors (i.e. market orientation moderates the relationship between	Ambidexterity is operationalized and measured as exploitation (i.e. drawn on a three-item scale respectively four-item scale)

				ambidexterity and firm performance for prospectors)	
Nemanich & Vera (2008)	Quantitative	Sample of 71 teams of a global firm, in which one division acquired and integrated a competitive firm	Examine the role of transformational leadership and the values incorporated in a learning culture in promoting ambidexterity in teams involved in acquisition integrations	Transformational leadership behaviors and the development of a learning culture, characterized by psychological safety, openness to diverse opinions, and participation in decisionmaking, are associated and promote ambidexterity at the teamlevel	Ambidexterity is operationalized and measured as exploitation and exploration (i.e. drawn on a four-item scale, which captures team members' efforts to make incremental revisions to team practices and to learn from others by adopting best practices and standard procedures respectively a three-item scale, which captures team members' creation and integration of new ideas into the team)
Tiwana (2008)	Quantitative	Sample of 142 individual team participants of 42 innovation-seeking project alliances in a major American services conglomerate	Examine the tensions and complementarities between structural hole-bridging ties and strong ties in influencing ambidexterity in innovation-seeking project alliances	There is a positive relationship between strong ties and knowledge integration; their influence on alliance ambidexterity is mediated by knowledge integration There is no negative relationship between bridging ties and knowledge integration There is a positive interaction effect between strong and bridging ties, supporting the idea that strong ties complement bridging ties, and that their influence on alliance ambidexterity is mediated by knowledge integration	Alliance ambidexterity is operationalized and measured as alignment and adaptation (i.e. captured by the product of alignment with project alliance objectives, and adaptation to new information that emerged over the course of the project)
Andrio-poulos & Lewis (2009)	Qualitative	Longitudinal case studies in the new product design industry	Examine ambidextrous organizations in the new product design industry	Introduce a framework that present nested paradoxes of innovation (i.e. in strategic intent, customer orientation, and personal drivers); integration and differentiation tactics	Ambidexterity is operationalized and measured as exploitative and exploratory innovation (i.e. captured by paradoxes in strategic intent (profit-breakthroughs), customer

				help manage these interwoven paradoxes and fuel virtuous cycles of ambidexterity	orientation (tight-loose coupling), and personal drivers (discipline-passion))
Groysberg & Lee (2009)	Quantitative	Sample of 4200 analyst-year combinations (3514 in equity and 686 in fixed income) in firms in the investment banking industry	Examine exploitation and exploration by focusing on the individuals who carry out these activities; particularly examine the performance of star security analysts who join new firms in exploitation versus exploration roles	Stars hired to explore (initiate new activities) experience a short- and long-term performance decline; stars who join new firms to exploit (reinforce existing activities) suffer only a short-term performance decline Stars hired to explore can preserve some of their performance by moving with a group of colleagues from the originating firm	Ambidexterity is operationalized and measured as exploitation and exploration (i.e. captured by hired for exploitation, hired for exploration, hired solo for exploitation/ exploration, and hired as a team for exploitation/ exploration)
Güttel & Konlechner (2009)	Qualitatitive	Longitudinal case studies in firms in the research industry	Examine idiosyncratic characteristics of contextually ambidextrous organizations, examine the way knowledge transmission occurs in exploitative and exploratory domains	Fluid project structures and semi-structures, as well as commonly shared cultural values and norms, provide stability for the performance of exploitation and exploration, emphasizing the role of loose-tight structures Contextual ambidexterity facilitates the knowledge transfer between exploitative and exploratory domains; i.e. between projects that are dedicated to knowledge application and projects that are committed to knowledge creation	Contextual ambidexterity is operationalized and measured as exploratory and exploitative learning experiences
Jansen, Tempelaar, Van den Bosch & Volberda (2009)	Quantitative	Longitudinal sample of 230 executive directors in multiple industries	Examine the way formal and informal senior team integration mechanisms (e.g. contingency rewards and social integration), and formal and informal organizational integration	There is a direct effect of structural differentiation on ambidexterity, operating through informal senior team (i.e. senior team social integration) and formal organizational (i.e. cross-functional interfaces) integration mechanisms	Ambidexterity is operationalized and measured as exploitative and exploratory innovation (i.e. drawn on a four-item scale for each, which captures the extent to which organizations depart from existing knowledge and pursue radical

			mechanisms (e.g. cross-functional interfaces and connectedness) mediate the relationship between structural differentiation and ambidexterity		innovations for emerging customers or markets respectively the extent to which organizations build on existing knowledge and pursue incremental innovations that meet the needs of existing customers)
Jansen, Vera & Crossan (2009)	Quantitative	Sample of 89 executive directors and 305 senior team members of branches of an European firm in the financial service industry	Examine the link between transformational and transactional behaviors of strategic leaders, regarding to two critical outputs of organizational learning: exploitative and exploratory innovation	Transactional leadership behaviors facilitate improving and extending existing knowledge and are associated with exploitative innovation; transformational leadership behaviors contribute significantly to adopting generative thinking and pursuing exploratory innovation; Environmental dynamism needs to be taken into account to fully understand the effectiveness of strategic leaders	Ambidexterity is operationalized and measured as exploitative and exploratory innovation (i.e. drawn on a six-item scale for each, which captures the extent to which branches depart from existing knowledge and pursue radical innovations for emerging customers or markets respectively the extent to which branches build upon existing knowledge and pursue incremental innovations that meet the needs of existing customers)
Mom et al. (2009)	Quantitative	Sample of 716 BU and operational level managers of five large firms in the manufacturing and service industry	Examine the way direct and interaction effects of formal structural and personal coordination mechanisms affect manager's ambidexterity	Regarding the formal structural coordination mechanisms, a manager's decision-making authority positively relates to a manager's ambidexterity, whereas formalization of a manager's tasks has no relationship with a manager's ambidexterity Regarding the personal coordination mechanisms, both the participation of a manager in cross-functional interfaces and the connectedness of a manager to other organization members positively relate to a manager's ambidexterity Positive interaction effects occur between the formal structural and	Managers' ambidexterity is operationalized and measured as a manager's exploration and exploitation activities (i.e. drawn on a seven-item scale for each)

				personal coordination mechanisms on managers' ambidexterity	
Rothaermel & Alexandre (2009)	Quantitative	Sample of 141 USA firms in the manufacturing industry	Examine the relationship between a firm's technology sourcing strategy and its performance, and examine the way absorptive capacity moderates this relationship	The relationship between technology sourcing mix and firm performance is an inverted U-shape Higher levels of absorptive capacity allow a firm to more fully capture the benefits resulting from ambidexterity in technology sourcing	Ambidexterity is operationalized and measured as exploitation and exploration (i.e. captured by known technologies which involve technologies that are being used by the firm for some time and that are not new to the firm or the industry respectively new technologies that are the inverse of known technologies)
Uotila et al. (2009)	Quantitative	Longitudinal study of 279 firms in the manufacturing and the information technology industry	Examine the tradeoff between exploitation and exploration, and examine the way their optimal balance is affected by environmental conditions	An inverted U-shaped relationship exists between the relative share of explorative orientation and financial performance; this relationship is moderated by the R&D intensity of the industry in which the firm operates	Ambidexterity is operationalized and measured as the relative amount of exploitation and exploration orientation in business activities

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Summary

Today's business environments have become fast-moving, involving frequent, rapid and unpredictable change. As such, firms are struggling to (find new ways to) create and sustain competitive advantage. Scholars in organization science, and strategic management in particular, have shifted focus towards competing on higher-order (i.e. meta-) organizational capabilities in fast-moving business environments; organizational capabilities that may define a firm strategically as being key drivers of long-term business performance. However, the main question that needs to be answered refers to what the key dimensions of such higher-order organizational capabilities in dynamic business environments are. This doctoral dissertation therefore examines the following central research question: *What are the key dimensions of higher-order organizational capabilities in addressing situations of changing market and competitive conditions?*

This dissertation builds upon the notions of dynamic capability and ambidexterity. The notion of dynamic capability explains how organizations may develop competitive advantage in fast-moving business environments, by focusing on the dynamic processes of assembling, deploying and integrating a firm's resource base. Dynamic capabilities stress the importance of the history of a firm's current capabilities, and the importance of revising and reconfiguring these in the future. As such, firms are able to address changing environments and/or create market change. However, in situations of changing market and competitive conditions, firms need to demonstrate the ability to timely response to new circumstances, along with the ability to address existing environments. In this respect, scholars introduced the notion of ambidexterity, which refers to performing different and often competing challenges. Here, competitive advantage may result from being efficient in managing today's business demands, while at the same time being effective in adapting to changing business environments and/or in creating market change. As such, firms need a focus on both exploitation and exploration; that is, on their current activities in existing domains along with developing new activities in non-existing domains.

The current literature comprises a variety of conceptualizations and interpretations of dynamic capability and ambidexterity, providing a significant challenge for both scholars and practitioners to understand and develop these meta-organizational capabilities. In order to assess the collective understanding of both concepts, Chapter 2 introduces a systematic literature review approach. Such an approach involves a comprehensive search of potentially relevant papers and books of dynamic capability and ambidexterity, and the use of explicit, reproducible criteria in the selection of papers and books for review. Drawing on systematic

literature reviews, the foundations, antecedents and consequences of dynamic capability and ambidexterity are explored in terms of definitions, operationalizations and measurements of their key dimensions. As a result, a (re-)definition of dynamic capability and ambidexterity is proposed. These definitions point at ways in which dynamic capability and ambidexterity can be operationalized and measured more effectively in future research. As such, Chapter 2 develops a definition and operationalization of dynamic capability and ambidexterity in terms of their key dimensions. Chapter 2 therefore contributes to the development of a theoretical understanding of the key dimensions of dynamic capability and ambidexterity, providing a starting point for future theoretical and empirical studies that advance our collective understanding of dynamic capability and ambidexterity.

The insights from the systematic literature reviews provide a theoretical basis for the empirical studies in this dissertation. The empirical studies in Chapter 3 and 4 extend our empirical understanding of the dynamics entailed in the way ambidexterity is performed in service firms. Empirically studying ambidexterity in the service industries contributes to previous studies that have mainly been conducted in manufacturing firms, whereas relatively less attention has been paid to the challenges of exploitation versus exploration in service firms. As such, this dissertation extends and builds (new) theory in the field of dynamic capability, and ambidexterity in particular, which lead to main findings and implications that are of general scientific value for scholars and provide valuable insights for practitioners (in service firms).

The empirical study in Chapter 3 studies ambidexterity from an organizational design perspective by examining the relationship between decentralization and ambidexterity. As such, this study provides an in-depth understanding of the impact of decentralization on the dynamics entailed in the way ambidexterity is organized, balanced and connected in large service firms, incorporating the role of timing and interdependencies. Recently, scholars have suggested that a decentralized structure facilitates ambidexterity. However, comparative case studies of two service innovations in a large decentralized retail bank in the Netherlands paint a more complex picture. First, a literature review implies that decentralization may activate highly different generative mechanisms. Subsequently, the case study findings show that these generative mechanisms and their outcomes gain and lose dominance in different phases of the innovation process. Moreover, the case study findings show that the activation of these generative mechanisms depends on the actual use of the decentralized structure. In particular, the effectiveness of the decentralized structure depend on the interdependence of exploitation

and exploration activities. A decentralized structure appears to be of limited help for ambidexterity if exploration involves complex service innovation that needs to be integrated into the exploitative core of the organization. In other words, a decentralized structure does not support ambidexterity when exploitation and exploration activities are strongly interdependent. Overall, the main contribution of chapter 3 is to elaborate and extend existing theory. In this respect, Chapter 3 contributes to the literature by combining the literature on ambidexterity, organizational design and service innovation.

The empirical study in Chapter 4 studies ambidexterity from a managerial perspective by examining the relationship between founders' employment models in organizations and the degree of ambidexterity in organizational practices in SME (i.e. small-to-medium sized) service firms. As such, this study extends our understanding of the dynamics entailed in the way competing priorities are performed, especially when these priorities demand both continuity and renewal. More specifically, this study explores the way founders' employment models impact organizational practices, and in particular the capability to change these practices. The findings of comparative case studies of two practices in three management consultancy SME's in the USA, the Netherlands and the UK reveal how founders' employment models affect the way competing demands of continuity and renewal are addressed. The case study findings primarily suggest the importance of founders' blueprints, embedded in their employment models. These blueprints are difficult to alter, and as such mark the firm's future path by impacting the level of ambidexterity in practices over an extended period of time. Overall, the main contribution of Chapter 4 is to build new theory. In this respect, Chapter 4 contributes to the literature by combining the literature on ambidexterity, founders' employment models and practice-based research.

Finally, Chapter 5 summarizes the main findings and (practical) implications of the studies described in previous chapters of this dissertation. Subsequently, a general conclusion regarding the central research question is given. In this respect, by drawing on the systematic literature reviews and empirical studies, this chapter describes a taxonomy of key dimensions of ambidexterity as a higher-order organizational capability. As such, this taxonomy integrates the previous chapters, and serves to answer the central research question in this dissertation. Finally, this chapter describes the main limitations of this dissertation and makes suggestions for future research.

Samenvatting

De omgeving van bedrijven zijn vandaag de dag in continue beweging en worden daarbij in toenemende mate gekenmerkt door frequente, snelle en onvoorspelbare veranderingen. Ondernemingen zijn daarom genoodzaakt om (nieuwe manieren van) competitief voordeel te creëren en vast te houden. In deze context ligt binnen de organisatiewetenschappen, en het vakgebied strategisch management in het bijzonder, de nadruk op concurreren door middel van 'hogere-orde' organisatievermogens; dat wil zeggen, de vermogens welke een organisatie strategisch kunnen definiëren en die daarmee de lange-termijn prestaties van bedrijven sterk kunnen beïnvloeden. Echter, één van de belangrijkste onderzoeksvragen in de literatuur welke tot nu toe onbeantwoord is gebleven behelst wat de belangrijkste dimensies van hogere-orde organisatievermogens in dynamische bedrijfsomgevingen zijn. Dit proefschrift onderzoekt daarom de volgende centrale onderzoeksvraag: *Wat zijn de voornaamste dimensies van hogere-orde organisatievermogens in het adresseren van veranderende markt- en competitieve condities?*

Dit proefschrift bouwt in dit kader voort op the noties van 'dynamisch vermogen' en 'ambidexteriteit'. Een dynamisch vermogen van een organisatie geeft weer hoe een onderneming competitief voordeel kan ontwikkelen in sterk fluctuerende bedrijfsomgevingen, waarbij de nadruk wordt gelegd op het dynamische proces van het samenbrengen, aanwenden en integreren van hulpbronnen van een organisatie. Hierbij wordt het belang van de historie van de huidige organisatievermogens van een bedrijf benadrukt, evenals de noodzaak tot herziening van deze vermogens voor de toekomst. Op basis van zo'n dynamisch vermogen wordt een organisatie in staat geacht om veranderende bedrijfsomgevingen te adresseren, dan wel een verandering in de markt te creëren. In situaties van veranderende markt- en competitieve condities dient een onderneming echter in staat te zijn om tijdig te reageren op nieuwe omstandigheden, tezamen met het vermogen om de bestaande bedrijfsomgeving te exploïteren. In dit opzicht introduceert de literatuur de notie van ambidexteriteit: het organisatievermogen om verschillende en vaak tegenstrijdige belangen te stroomlijnen. Competitief voordeel kan in dit opzicht resulteren uit het op een efficiënte wijze voldoen aan de huidige marktvraag, en tegelijkertijd het op een effectieve wijze aanpassen aan veranderende omstandigheden, dan wel het creëren van veranderingen in de markt. Dit maakt dat organisaties zich dienen te richten op zowel exploitatie als exploratie; een focus op huidige activiteiten in bestaande domeinen, tezamen met het ontwikkelen van nieuwe activiteiten in niet-bestaande domeinen.

De huidige literatuur omvat echter een variëteit aan conceptualisaties en interpretaties van dynamisch vermogen en ambidexteriteit, wat een significante uitdaging oplevert voor zowel wetenschappers als professionals ten aanzien van het inzichtelijk maken en ontwikkelen van deze hogere-orde organisatievermogens. Om het collectief begrip van beide concepten in kaart te brengen omvat Hoofdstuk 2 een systematische analyse van de literatuur. Deze systematische aanpak houdt een gedetailleerde zoektocht in naar potentieel relevante artikelen en boeken met betrekking tot dynamisch vermogen en ambidexteriteit, en het gebruik van expliciete, reproduceerbare criteria in de selectie van artikelen en boeken. Op basis van de systematische analyses van de literatuur worden de uitgangspunten, antecedenten en uitkomsten van dynamisch vermogen en ambidexteriteit onderzocht in termen van definities, operationalisaties en metingen van de voornaamste dimensies van deze concepten. Dit resulteert in een (her-)definitie van dynamisch vermogen en ambidexteriteit. Deze definities maken inzichtelijk op welke wijze dynamisch vermogen en ambidexteriteit effectiever kan worden geoperationaliseerd en gemeten in toekomstig onderzoek. Hoofdstuk 2 ontwikkelt daarmee een definitie en operationalisatie van dynamisch vermogen en ambidexteriteit in termen van de belangrijkste dimensies van deze concepten. Hiermee levert Hoofdstuk 2 een bijdrage aan de ontwikkeling van theoretisch inzicht in de voornaamste dimensies van deze hogere-orde organisatievermogens, wat een startpunt vormt voor toekomstig theoretisch en empirisch onderzoek naar dynamisch vermogen en ambidexteriteit.

De inzichten van de systematische analyses van de literatuur resulteren in een theoretische basis voor het empirische onderzoek in dit proefschrift. De empirische studies in Hoofdstuk 3 en 4 verdiepen het inzicht in ambidexteriteit van dienstverlenende organisaties. Empirisch onderzoek naar ambidexteriteit in dienstverlenende organisaties levert een bijdrage aan de bestaande literatuur, die voornamelijk betrekking heeft op productiebedrijven waarbij relatief weinig aandacht wordt besteed aan de uitdagingen van exploitatie en exploratie door dienstverlenende ondernemingen. In dit kader breidt dit proefschrift de huidige theorie uit en introduceert nieuwe theorie ten aanzien van dynamisch vermogen, en ambidexteriteit in het bijzonder. Dit leidt tot de volgende bevindingen en inzichten voor professionals (in dienstverlenende organisaties).

De empirische studie in Hoofdstuk 3 onderzoekt ambidexteriteit vanuit een organisatie-ontwerp perspectief, waarbij de relatie tussen decentralisatie en ambidexteriteit wordt onderzocht en geanalyseerd. Deze studie verschaft inzicht in het effect van decentralisatie op

de wijze waarop ambidexteriteit wordt georganiseerd, gebalanceerd en samengevoegd in grote dienstverlenende organisaties, de rol van tijd (op welke momenten exploitatieve en exploratieve activiteiten plaatsvinden) en de rol van afhankelijkheden tussen exploitatieve en exploratieve activiteiten inbegrepen. Recentelijk suggereerden verschillende wetenschappers dat een decentrale organisatiestructuur ambidexteriteit faciliteert. Echter, een vergelijkende gevalsstudie van twee diensteninnovaties in een grote gedecentraliseerde bank binnen Nederland schetst een complexer beeld. Het literatuur overzicht in dit hoofdstuk impliceert dat een decentrale structuur verschillende generatieve mechanismen kan activeren. De bevindingen in dit hoofdstuk wijzen uit dat deze generatieve mechanismen en haar uitkomsten dominantie winnen en verliezen in verschillende fasen van het innovatieproces. Bovendien, de activatie van deze generatieve mechanismen hangt af van het eigenlijke gebruik van de decentrale structuur. Specifiek hangt de effectiviteit van de decentrale structuur af van afhankelijkheden tussen exploitatieve en exploratieve activiteiten. Een decentrale structuur lijkt van weinig nut te zijn voor ambidexteriteit indien exploratie complexe diensteninnovaties impliceert die in de exploitatieve kern van een organisatie dienen te worden geïntegreerd. Met andere woorden, een decentrale structuur ondersteunt ambidexteriteit niet wanneer exploratieve en exploitatieve activiteiten sterk met elkaar samenhangen. In dit opzicht draagt Hoofdstuk 3 bij aan de literatuur door het combineren van literatuur met betrekking tot ambidexteriteit, organisatie-ontwerp en diensteninnovatie.

De empirische studie in Hoofstuk 4 onderzoekt ambidexteriteit vanuit een management-perspectief, waarbij de relatie tussen condities ten tijde van de oprichting van een organisatie en de mate van ambidexteriteit in organisatiepraktijken in kleine-tot-middelgrote (SME) dienstverlenende organisaties wordt onderzocht en geanalyseerd. Deze studie breidt ons begrip uit ten aanzien van de wijze waarop fundamenteel verschillende prioriteiten ten uitvoer worden gebracht, met name wanneer deze prioriteiten continuïteit en vernieuwing omvatten. Specifiek onderzoekt deze studie de wijze waarop de oprichting-condities van een organisatie de organisatiepraktijken beïnvloeden, en specifiek het vermogen om deze organisatiepraktijken te veranderen. De bevindingen van de vergelijkende gevalsstudies van twee organisatiepraktijken in drie management consultancy SME's in the Verenigde Staten, Nederland en het Verenigd Koninkrijk onthullen hoe de oprichting-condities van een organisatie de wijze beïnvloeden waarop met continuïteit en vernieuwing wordt omgegaan. De bevindingen van dit hoofdstuk wijzen met name op het belang van de blauwdruk van de organisatie (door de oprichters), ingebed in mentale modellen van organiseren. Deze

blauwdruk blijkt moeilijk te veranderen en markeert daardoor het toekomstige pad van een organisatie; de blauwdruk beïnvloedt daarmee de mate van ambidexteriteit in organisatiepraktijken over een langere periode. De primaire bijdrage van Hoofdstuk 4 wordt gevormd door het introduceren van nieuwe theoretische inzichten in de relatie tussen de blauwdruk van een organisatie ten tijde van de oprichting en de ontwikkeling van ambidexteriteit van deze organisatie. In dit opzicht draagt Hoofdstuk 4 bij aan de literatuur door het combineren van literatuur met betrekking tot ambidexteriteit, oprichting-condities van een organisatie en praktijk-gebaseerd onderzoek.

In Hoofstuk 5 worden de voornaamste bevindingen en (praktische) implicaties van de studies uit voorgaande hoofdstukken van dit proefschrift samengevat. Tevens wordt een algemene conclusie ten aanzien van de centrale onderzoeksvraag gegeven. Op basis van systematische analyses van de literatuur en de bevindingen uit de empirische studies in dit proefschrift wordt een taxonomie van de voornaamste dimensies van ambidexteriteit als een hogere-orde organisatievermogen samengesteld. Deze taxonomie integreert de voorgaande hoofdstukken, en vormt de response op de centrale onderzoeksvraag in dit proefschrift. Ook worden in dit hoofdstuk de voornaamste beperkingen van het onderzoek in dit proefschrift beschreven, en worden aanbevelingen voor toekomstig onderzoek gegeven.

About the author

Deborah E.M. Mulders was born on May 26 1983, in 's-Hertogenbosch, the Netherlands. She graduated from pre-university education at Gymnasium Beekvliet in Sint Michielsgestel in 2001. After her graduation, she studied Economics at the Faculty of Economics and Business Administration at Tilburg University for one year. From 2002 to 2005, she studied Policy- and Organisation Studies at the Faculty of Social and Behavioural Sciences at Tilburg University, in which she obtained her Master of Science degree in 2005.

In 2005 Deborah started her PhD at the School of Industrial Engineering - Innovation, Technology Entrepreneurship & Marketing Group - at Eindhoven University of Technology, under supervision of prof.dr. A.G.L. Romme. In her doctoral dissertation, Deborah contributed to an understanding of higher-order organizational capabilities through which firms may create and sustain a competitive advantage in today's changing business environments. Her research has been published amongst others in:

- Mulders, D.E.M., & Romme, A.G.L. 2009. Unpacking dynamic capability: A design perspective. In A. Bøllingtoft, D.D. Håkonsson, J.F. Nielsen, C.C. Snow and J.P. Ulhøi (Eds.). *New approaches to organization design: Theory and practice of adaptive enterprises*, 61-78. New York: Springer.
- Mulders, D.E.M., Berends, P.A.J., & Romme, A.G.L. Dynamic capability and staff induction practices in small firms. *Society and Business Review*, forthcoming.

Besides her PhD, Deborah worked from 2005 to 2007 as a research assistant in the international research project 'Practice and practising: A comparison across organizations, industries and countries' of the Advanced Institute for Management (AIM) Research. In addition, she taught seminars in the course Innovation Management in 2007/2008 and 2008/2009, supervised Bachelor final Projects, and coached Bachelor students on developing competencies in collaborating, presenting and writing.