

CRANFIELD UNIVERSITY

Alessandro Giudici

**SENSING TOGETHER:
AN EXPLORATION OF THE SUPPORT
OF NETWORK INTERMEDIARIES
TO FIRMS' AND ENTREPRENEURS'
SEARCH FOR NEW OPPORTUNITIES**

**SCHOOL OF MANAGEMENT
PhD Programme**

**PhD THESIS
Academic year: 2012-2013**

**Supervisor: Professor Patrick Reinmoeller
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for the degree of Philosophiae Doctor

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ABSTRACT

This PhD thesis uses the lens of dynamic capability theory to explore how network intermediaries can support firms and entrepreneurs in their search for new opportunities, in the context of networking initiatives. Drawing on an extensive assessment of the literature and on rich evidence from multiple sources, it presents two interconnected empirical studies which offer several contributions to knowledge.

The literature review systematically assesses dynamic capability research and contributes to it by demonstrating that, despite the challenges arising from a process of conceptual reification signaled in the literature, the dynamic capability construct is consolidating and needs more focused empirical investigation. It also identifies promising research gaps and offers suggestions to advance dynamic capability theory.

Study 1 contributes to dynamic capability research by developing an outward-looking relational perspective which details how firms can deploy and further develop sensing dynamic capabilities in collaboration with network intermediaries. The study also confirms the importance of organizational self-awareness, brings managerial intentionality back to consideration, and sheds empirical light on the role of affective processes in dynamic capability research.

Study 2 discusses how entrepreneurs participating in networking initiatives sensed for new opportunities by strategically using a richer repertoire of networking behaviors than prior research suggested. The study also contributes to entrepreneurship research by demonstrating that the networking behavior of all actors – not just the orchestrator/broker hosting the initiative – may be based on a combination of *gaudens* and *iungens* approaches. In addition, it discusses how two activity-based mechanisms, i.e. preparation and participation, may be influenced by hosts when designing

networking initiatives to facilitate the emergence of new interorganizational relationships. Finally, the study argues that the combination of structured preparation and participation activities may support participants' ambidextrous efforts to explore and exploit opportunities in networking events.

**to Luigi, Enzo, Julián
and my family**

Hic et Nunc

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DISSEMINATION AND COMMUNICATION

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- Lanzolla G, Giudici A. 2010. *Digital technological change and capability reconfiguration mechanisms. An empirical study in the TMT industries.*

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Strategic Management Society Conference (Rome, Italy, September 2010).

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- January 2013: *Cranfield Doctoral Colloquium* (Cranfield, UK)
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CHAPTER 1

INTRODUCTION

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

This Chapter proceeds as follows. After a self-reflective foreword on my personal PhD journey, Section 1.3 presents the purpose of my research by identifying the phenomenon of interest, the underlying research problem and the specific research questions. In Section 1.4 I offer an executive summary of the thesis in which I outline its positioning within the relevant literature and its main contributions and practical implications. Finally, in Section 1.5 I provide a thesis overview, outlining the structure of each chapter.

1.2 PERSONAL FOREWORD: REFLECTIONS AND REFLEXION FROM A JOURNEY ON THE ROLLERCOASTER

A PhD is often described as a journey, yet people see a journey in many different ways – some are alternative, some complementary. Some are very pragmatic, such as the first step for a new career; some very idealist, such as the first step to change the world. I am not very keen on categorizations, so I am not sure where I really stand.

I see my PhD journey as a vocation, something that you accept to do following the suggestion of reality and which reveals itself through emergent action as being much more fulfilling than what you might have actually imagined. Of course, behind any acceptance there is a decision. I started the PhD by deciding to follow the suggestion of my master thesis's supervisor, someone I esteem very much. It made sense at my

graduation, it made sense when I left my job, it made sense when I started – but I’m not sure it always made sense all through the journey!

So I got into my PhD car and started off down a certain road, I travelled as fast as I could for the first year or so – everybody seemed happy, I certainly was. Then the road seemed going nowhere, the car was pretty much knackered. An additional passenger – my daughter – came on board, and common sense, responsibility and a strong mix of tiredness and frustration forced me to slow down. My car got flat tyres – often: so my emotions went up and down. I am not sure where my PhD supervisor (and my wife too!) found the patience to keep me going.

In the end you just have to continue to follow the people you esteem. Up or down, the rules don’t change. “Stay hungry, stay foolish”, Steve Jobs argued while taking a degree. Surely I am hungry, possibly I am foolish. But I am sure I will be able to connect the dots. Up or down, reality teaches you how to adapt and to change – above all, how to keep going!

In faith, something happened: the engine started up again – and has kept running ever since. What happened? – “Friends!” my wife says; “Perseverance!” my supervisor observes. Family, friends, (colleagues) and supervisor: this thesis tells a story of how relations are key to any human searching in a rapidly changing – and amazingly unexpected – reality.

1.3 PURPOSE OF THE RESEARCH

In this research, I explore how the relation with network intermediaries can support firms and entrepreneurs in their search for new opportunities. I focus, in particular, on

the support provided by network intermediaries through networking initiatives. Although most firms and entrepreneurs are often engaged in relations with network intermediaries – such as ventures associations, chambers of commerce, and government agencies – they are a type of external linkage which has received very scarce attention in strategy research (Howells, 2006; McEvily and Zaheer, 1999; Zhang and Li, 2010). In particular, and despite its clear relevance for practice as a very common business activity (Hara and Kanai, 1994; Ingram and Morris, 2007; Ozgen and Baron, 2007; Stam, 2010), there is a paucity of research on how firms and entrepreneurs leverage regular participation in networking initiatives – conferences, professional gatherings, trade shows, and the like – in their search for new opportunities. And I suggest we know very little about how such networking initiatives can be designed to foster this search for new opportunities.

In this thesis, I argue – and demonstrate – that investigating firms’ relations with network intermediaries, and the support they offer firms and entrepreneurs through networking initiatives, can contribute considerably to both management theory and practice. Based on two rich qualitative studies, I provide detailed insights into how one large network intermediary supported the search for new opportunities of a sample of the over 2,000 firms and entrepreneurs who attended its innovative networking initiative. Formally, my *overarching research problem* is:

“How can network intermediaries support firms and entrepreneurs in their search for new opportunities?”

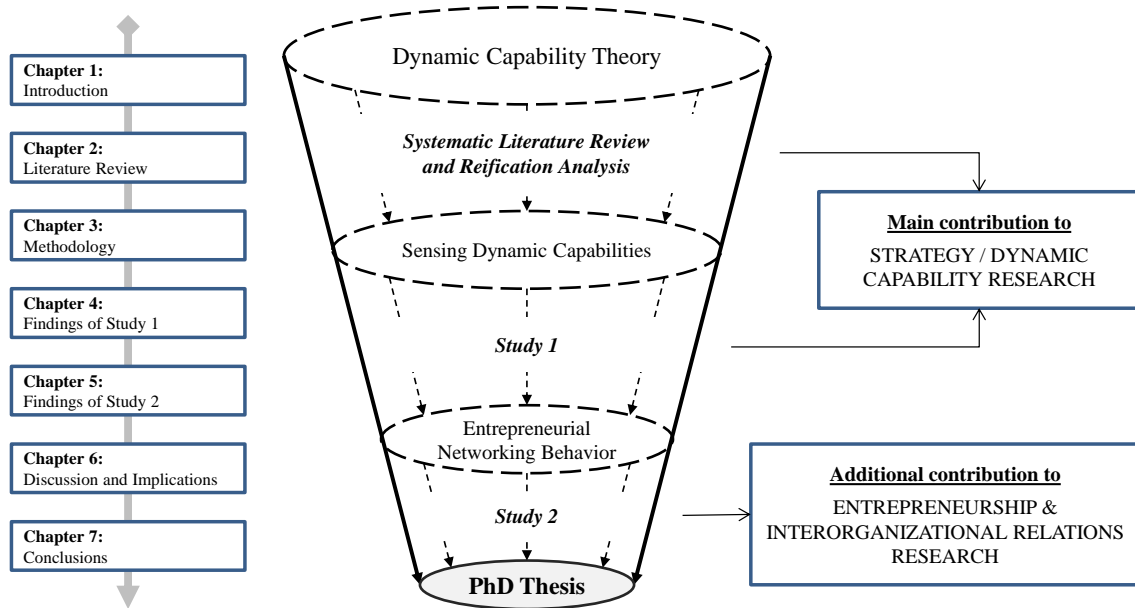
This thesis is positioned theoretically within mainstream strategy research on dynamic capabilities (e.g., Ambrosini and Bowman, 2009; Helfat and Peteraf, 2009;

Sirmon and Hitt, 2009; Teece, 2007), but benefits substantially from contributions from the domains of entrepreneurship and interorganizational relations. From a structural point of view, this work takes a ‘funnel-shape’, reflecting an endeavor to achieve a progressive focus (Figure 1). I first review thoroughly the extant research on dynamic capabilities using the systematic literature review methodology (Rousseau *et al.*, 2008). I then follow the reification analysis approach (Lane, Koka, and Pathak, 2006) to reveal that the field is afflicted by a theoretical ‘fuzziness’ caused by an underlying conceptual reification process. Subsequently, due to concerns expressed in the literature about the usefulness of using dynamic capability theory as a fruitful theoretical lens for my PhD research, I deepen my investigation of the literature by assessing the longitudinal unfolding of the reification process and the development of the dynamic capability construct. In doing so, I offer a first important contribution to knowledge – published in journal paper format by *Strategic Organization* in November 2012 (i.e., Giudici and Reinmoeller, 2012) – by demonstrating promising signs of the construct’s consolidation and suggesting a strong need for further and more targeted research, rather than supporting calls for its abandonment (e.g., Arend and Bromiley, 2009).

Next, I focus in Study 1 on sensing dynamic capabilities – i.e., the capacity of an organization to search for new opportunities – and the intersection between dynamic capability and entrepreneurship research to investigate how network intermediaries can support sensing dynamic capabilities of firms and entrepreneurs participating in networking initiatives. Then, in Study 2, I draw also on research on interorganizational relations to examine how entrepreneurs’ networking behaviors influences their sensing activities in networking initiatives, and how network intermediaries can design such initiatives to enhance and develop entrepreneurs’ networking behaviors to promote their

sensing activities. Both my empirical studies allow me to offer several other contributions to strategy research on dynamic capabilities and to entrepreneurship and interorganizational research, as detailed in Section 1.4 below and in Chapter 6.

Figure 1: ‘Funnel-shape’ structure of the PhD Thesis



Building on these theoretical foundations, the *specific research questions* I address in this thesis are as follows:

- Chapter 2: Questions for the Systematic Literature Review and Reification Analysis
Systematic Literature Review. “What do we actually know about dynamic capabilities?”
Reification analysis. “How have scholars applied, extended and tested Teece et al.’s seminal dynamic capability construct?”, based on three concurring indicators of reification:

- 1) First indicator of reification: How has the dynamic capability construct been used?
- 2) Second indicator of reification: How close is the use of the dynamic capability construct to the original conceptualization?
- 3) Third indicator of reification: How cohesive is the dynamic capability research community?

- Chapters 3 and 4: Question for Study 1

“How can network intermediaries support firms and entrepreneurs in the deployment and further development of their existing sensing dynamic capabilities?”

- Chapters 3 and 5: Questions for Study 2

“How do entrepreneurial networking behaviors influence entrepreneurs’ sensing of new opportunities in networking initiatives?”

“How can network intermediaries design networking initiatives to support entrepreneurs’ dynamic capability to sense new opportunities?”

1.4 THESIS STRUCTURE

Besides this introduction, this thesis is structured into six further Chapters (see Figure 1). In *Chapter 2* I present an extensive and systematic literature review and a reification analysis of dynamic capability research, together with a detailed overview of relevant research on sensing dynamic capabilities, entrepreneurship, and interorganizational

relations. The attention paid to each literature domain reflects the ‘funnel-shape’ structure illustrated in Section 1.2 (see Figure 1). Since the main contribution of this thesis is to dynamic capability theory, through the approaches of a systematic literature review (Macpherson and Jones, 2010; Pittaway *et al.*, 2004; Rousseau *et al.*, 2008; Tranfield *et al.*, 2003) and a reification analysis (Lane *et al.*, 2006), I assess the flourishing academic production on dynamic capabilities in detail, discussing its main authors and themes and disentangling its evolution over time. Despite demonstrating clear signs of confusion within the literature – signaling a process of conceptual reification – my findings suggest that the construct is now on a path of progressive consolidation and I identify a number of research opportunities, thus supporting a robust call for further empirical research. They also allow me to propose to the broader research community three key safeguards against the drawbacks of the abovementioned reification process, which I follow in my empirical studies. An article based on selected content from this section was recently published in *Strategic Organization* – i.e., Giudici and Reinmoeller (2012). I next define the scope of Study 1 with a specific discussion of the argument underlying the sensing dynamic capability construct. Finally, I define the scope of Study 2 by presenting the argument and reviewing the relevant literature on entrepreneurial networking behavior and interorganizational relations which complements the theoretical background.

In **Chapter 3** I examine in detail the methodological approaches I have applied in Study 1 and Study 2. I first present my personal philosophical stance and then describe the research context. With respect to the former, I clearly position my research within the philosophical paradigm of realism by advocating realist ontology and epistemology. For this purpose I review the relevant literature on realism and detail how the main unit

of analysis of the PhD is represented by the *relation* between actors – i.e., between the network intermediary and the participants in the networking initiative – and the unit of observation by the *account* provided by those actors of their relations with the intermediary, and with each other. Subsequently, I build on these foundations to employ a retroductive research strategy ((Buchanan and Bryman, 2009) and for the extended case study (Burawoy, 1991; Danneels, 2002; 2011) and embedded case study (Yin, 2008) methods as the main methodological approaches I chose for the research. With respect to the research context, I then provide a detailed explanation of both the network intermediary and the networking initiative.

Next, I detail my data collection approach, which followed the extended case study method (Burawoy, 1991; Danneels, 2002; 2011). I explain, in particular, how I benefited from extensive data access and how my data collection evolved from being based primarily on exploratory questions to a more semi-structured format, reflecting the progressive emergence of empirical evidence and the deepening of the underlying theoretical knowledge based on prior academic research. I also discuss how I pursued effective data triangulation in a number of ways, including multiple data sources, cross-checking of informants' responses, and constant member and academic check. In total, Study 1 and Study 2 are based on 81 interviews – 54 with entrepreneurs and other firm informants and 27 with managers and staff members of the network intermediary – plus a rich array of other external and internal sources. Finally, I explain in detail the differences in how the same data were analyzed in Study 1 and Study 2. In particular, I describe how, in Study 1, I followed the extended case study method (Burawoy, 1991; Danneels, 2002; 2011) for my data analysis with the main aim of refining dynamic capability theory, whereas in Study 2 I re-analyzed the data using a more traditional

embedded case study approach (Yin, 2008). This reflects the ‘funnel-shape’ structure of the thesis (see Figure 1), because in Study 2 I focus specifically on entrepreneurs within the broader sample and so only claim the typical exploratory contribution of case study research with less emphasis on targeted theory refinement.

In *Chapter 4* and *Chapter 5* I first refine and extend mainstream strategy research on dynamic capabilities by providing rich and structured empirical evidence on how the network intermediary supported participants in deploying and in further developing their existing sensing dynamic capabilities. Consistent with the extended case study method, in Chapter 4 I present the empirical evidence as tightly intertwined with existent research. In Chapter 5, I then contribute to entrepreneurship and interorganizational relations research by shedding empirical light on the rich repertoire of networking behaviors entrepreneurs participating in the network initiative leveraged to sense new opportunities and establish valuable new relationships with other business parties. Next, I examine how the network intermediary intentionally designed its networking initiative so as to facilitate participant entrepreneurs’ sensing activities by shaping specific drivers of interorganizational relations which influenced their networking behaviors. Consistent with the embedded case study method, this Chapter includes a more traditional presentation of empirical findings without them being intertwined with the literature. Finally, I conclude the thesis with *Chapter 6*, in which I discuss the several contributions to knowledge I am able to offer on the bases of my research, and with *Chapter 7* where I summarize the main aspects of my PhD thesis, outline its main practical implications, and suggest promising areas for further research.

CHAPTER 2

LITERATURE REVIEW AND REIFICATION ANALYSIS

CHAPTER 2: LITERATURE REVIEW AND REIFICATION ANALYSIS

2.1 INTRODUCTION

The content – and the length – of this Chapter reflect the ‘funnel-shape’ structure discussed in Chapter 1 (see Figure 1), and proceeds as follows. In Section 2.2, I first review thoroughly dynamic capability research and outline a number of implications for the PhD thesis, including a discussion of the theoretical definition I use as the keystone of my empirical studies. More specifically, using the systematic literature review (Macpherson and Jones, 2010; Pittaway *et al.*, 2004; Rousseau *et al.*, 2008; Tranfield *et al.*, 2003) and reification analysis (Lane *et al.*, 2006) approaches, I find that dynamic capability theory is affected by conceptual reification – i.e., a process which often leads researchers to cease “to specify the assumptions that underlie the concept or construct and treat it like a general-purpose solution to an increasing range of problems” (Lane *et al.*, 2006: 835) – which hinders its full potential and creates theoretical fuzziness. To overcome such challenges, and verify the robustness of conducting further research, I extend my systematic assessment of the literature to present an assessment of how the dynamic capability construct has developed over time and a detailed thematic analysis. These additional analyses reveal a number of promising areas for further research and demonstrate a strong need for more focused empirical research. Second, I draw on the results of the systematic assessment of the literature, complemented by those from further relevant literature – to build my theoretical argument for Study 1. Third, I develop the theoretical argument for Study 2, with the support of contributions from additional literature streams in entrepreneurship and interorganizational relations. I

conclude with a summary of the key points of the literature review and of the arguments underlying my two empirical studies.

2.2 DYNAMIC CAPABILITIES: A SYSTEMATIC ASSESSMENT

The dynamic capabilities view of the firm (Teece, Pisano, and Shuen, 1997) has an ambitious research agenda. Helfat and Peteraf (2009: 99) suggest it aims to address that “Holy Grail of strategic questions: How to sustain a capabilities-based advantage in the context of environmental change”. Teece *et al.*’s (1997: 516) definition of dynamic capabilities as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” has generated a flourishing body of research. Their discussion of dynamic capabilities as being based on firm-specific processes, paths and positions – widely known as the “dynamic capability construct” – is extensively cited and has been the central theme of a surprising number of literature reviews (see Table 1).

Yet, despite this impressive assessment effort, many questions remain surprisingly open, questioning the potential relevance of the construct for management research (Peteraf, Di Stefano, and Verona, 2012): in consequence, dynamic capability research appears to have become an academic conversation polarized between equally passionate supporters and critics. Peteraf *et al.*, argue that one of the main sources of this polarization might be “the fact that the field has developed under the strong influence of two papers (i.e., Teece, Pisano, and Shuen, 1997; Eisenhardt and Martin, 2000) that, while complementary in many respects, represent not only differing but contradictory views of dynamic capabilities” (2012: 1). Perhaps a paramount example is the exchange

between Arend and Bromiley and Helfat and Peteraf on the future of dynamic capabilities published in *Strategic Organization* in 2009: while Arend and Bromiley (2009) suggested the dynamic capability construct should be abandoned because of its

Table 1: Published reviews on dynamic capabilities

| <i>Year</i> | <i>Source</i> | <i>Author(s)</i> | <i>Title</i> |
|-------------|--|---|---|
| 2006 | <i>Journal of Management Studies</i> | Zahra SA, Sapienza HJ, and Davidsson P | Entrepreneurship and dynamic capabilities: A review, model and research agenda. |
| 2007 | <i>International Journal of Management Reviews</i> | Wang CL and Ahmed PK | Dynamic capabilities: A review and research agenda. |
| 2009 | <i>International Journal of Management Reviews</i> | Ambrosini V and Bowman C | What are dynamic capabilities and are they a useful construct in strategic management? |
| 2009 | <i>British Journal of Management</i> | Easterby-Smith M, Lyles, MA, and Peteraf MA | Dynamic capabilities: Current debates and future directions |
| 2009 | <i>Strategic Organization</i> | Arend RJ and Bromiley P | Assessing the dynamic capabilities view: spare change, everyone? |
| 2010 | <i>Industrial and Corporate Change</i> | Di Stefano G, Peteraf, MA, and Verona G | Dynamic capabilities deconstructed: A bibliographical investigation into the origin, development, and future directions of the research domain. |
| 2010 | <i>Journal of Management</i> | Barreto I | Dynamic capabilities: A review of past research and an agenda for the future |
| 2012 | <i>Strategic Organization</i> | Giudici A and Reinmoeller P | Dynamic capabilities in the dock: A case of reification?* |
| 2012 | <i>International Journal of Management Review</i> | Vogel R and Güttel WH | The dynamic capability view in strategic management: A bibliometric review |
| 2012 | <i>Strategic Management Journal</i> | Peteraf M, Di Stefano G, and Verona G | The elephant in the room of dynamic capabilities: Bringing two divergent conversations together |

* This article is based on a revised selection of the content presented in this Section.

weak theoretical foundations and inconsistencies, Helfat and Peteraf (2009) called for further developmental efforts, given the infancy of the field and its growing relevance.

Arend and Bromiley, in particular, concluded by claiming that if the dynamic capability construct “does not quickly develop a theoretical foundation, the field should move away” (2009: 87). Other reviewers also argued that at least two major limitations affect the debate. On one side, it is still unclear what a dynamic capability precisely is and which concrete properties it has (Easterby-Smith, Lyles, and Peteraf, 2009: S3). On the other, with few notable exceptions such as Harrel, O’Reilly III, and Tushman (2007) and Teece (2011), after nearly two decades of research, the managerial relevance of the dynamic capability construct is rather limited (Ambrosini and Bowman, 2009: 45). But – noting that breakthrough ideas often take a long time to develop (e.g., Williamson, 1999) – Helfat and Peteraf defended the need for more focused research, and suggested that “terms that are vague and elastic may offer the advantage of facilitating a more flexible developmental path” (2009: 92). In the same vein, Peteraf *et al.* observed that the persistence of contradictory positions in the conversation “is not in and of itself problematic, since the framework is still under development” (2012: 1).

In this Section, I subject the burgeoning research on dynamic capabilities to the systematic literature review methodology (e.g., Macpherson and Jones, 2010; Pittaway *et al.*, 2004; Rousseau *et al.*, 2008; Tranfield *et al.*, 2003), a type of assessment that has “the potential to develop a significant contribution to [...] research” (Macpherson and Jones, 2010). In this respect, my work is closely aligned to the high quality approach outlined by Tranfield, Denyer and Smart (2003) in that: 1) I use a stepwise approach where I start by clearly stating the review questions and their relevance; 2) I detail and justify my analytical methods and quality criteria for the inclusion or exclusion of articles in the final sample; 3) I discuss and refine both review questions and protocol with an academic panel of experts in the areas of both dynamic capabilities and of

systematic review. Aiming to create more certainty “about what we actually know” (Newbert, 2007: 142; Boyatzis, 1998) about dynamic capabilities, I therefore assess systematically an extensive sample of 578 papers in 132 academic journals from 1997 to 2009, rather than focusing just on a consensus list of key papers (e.g., Arend and Bromiley, 2009; Wang and Ahmed, 2007; Zahra, Sapienza, and Davidsson, 2006). Following the systematic review methodology (Macpherson and Jones, 2010; Tranfield *et al.*, 2003), the question I specifically ask is:

What do we actually know about dynamic capabilities??

Given the peculiar complexity of the literature on dynamic capabilities, I adopt a ‘fit for purpose’ approach (Macpherson and Jones, 2010) and further improve the emerging systematic review practice (e.g., Birnik and Bowman, 2007; Lee, 2009; Pittaway *et al.*, 2004; Rashman, Withers, and Hartley, 2009) by refining it with complementary methodologies. Specifically, I integrate my protocol with the sampling approaches used by Newbert (2007) and Lane *et al.* (2006) in their assessments of the resource-based view and absorptive capacity literatures. I believe that this approach can help the management research community keep pace with the increasing number of articles, special issues and conference presentations on the topic which are running at “a rate of more than 100 per year” (Di Stefano, Peteraf, and Verona, 2010: 1188). Ambrosini and Bowman (2009: 46), for instance, concluded their review by voicing doubts about the consistency of knowledge about dynamic capabilities that we share as a community of scholars.

Based on my extended systematic review, I provide evidence in what follows that much of the confusion still surrounding the dynamic capability construct is related to a

process of conceptual reification that may endanger its potential relevance. Recent observations such as Arend and Bromiley's that "these questions of foundation and clarity render the dynamic capabilities view susceptible of halo effects (...) (it) may become a talisman" (2009: 83) suggest that dynamic capabilities may be affected by reification. I assess this by closely replicating Lane *et al.*'s (2006) reification analysis and investigating how scholars have engaged with the seminal dynamic capability construct. Surprisingly, while prior reviews have focused on conceptual inconsistencies and contradictions (Ambrosini and Bowman, 2009; Wang and Ahmed, 2007; Zahra *et al.*, 2006), they have not taken into full account the effects of the process "by which we forget the authorship of ideas and theories, objectify them (turn them into things), and then forget that we have done so" (Lane *et al.*, 2006: 835). In my view, a mindful and rigorous scrutiny of how formulaic usage can lead to reification is important to fully understand what has been achieved by, and what should be retained from, the dynamic capability construct.

2.2.1 Reification analysis of dynamic capabilities

In 1997 David Teece and colleagues specified the definition of dynamic capabilities suggesting that "the competitive advantage of firms lies with its managerial and organizational processes, shaped by its (specific) asset position, and the paths available to it" (1997: 518). An important point to understand the consistency of knowledge generated related to the dynamic capability construct is thus to analyze whereas scholars have tended to discuss its original meaning and dimensions or just fit it to their paper's needs or personal preferences (Lane *et al.*, 2006; Latour, 1987). Put differently, the

dynamic capability construct is likely of being affected by reification if scholars simply take the seminal (broad) discussion as a fashionable panacea for use in rapidly changing environments (Lane *et al.*, 2006). These concerns are reinforced by the fact that that other research streams closely related to dynamic capabilities have already been found reified (e.g.: absorptive capacity in Lane *et al.*, 2006), ‘mystified’ (e.g.: organizational learning in Friedman, Lipshitz, and Popper, 2005) or still lacking strong empirical bases (e.g.: the resource based view in Armstrong and Shimizu, 2007; Newbert, 2007). Since the literature on dynamic capabilities incorporates considerable insights from these ‘cousin’ streams, it is likely to suffer similar problems. Consistent with this argument, I have formulated the general research question for my reification analysis as follows (Lane *et al.*, 2006):

How have scholars applied, extended and tested Teece et al.’s seminal dynamic capability construct:

Although all previous reviews of the dynamic capability construct offer some insights into the conceptual development and empirical support for the construct, no systematic assessment of the literature has been conducted to date. Taken together, the risk of reification and the literature’s generally unsystematic assessment of the construct give rise to concerns about the content of prior research, and therefore about its conclusions. Although they present some discussions of empirical works, existing traditional reviews of dynamic capabilities focus mainly on conceptual “inconsistencies, overlapping definitions, and outright contradictions” (Zahra *et al.*, 2006: 2) – little is said about how the construct has been tested, and thus confirmed and extended, or disconfirmed. If the construct has now become reified, our common understanding of

dynamic capabilities could just be the result of a theoretical patchwork of weakly related academic researches (Tsang and Kwan, 1999). Thus one of the dangers of reification is that the rigor and credibility of dynamic capabilities literature could be affected by too many “claims that earlier studies made claims or demonstrated evidence they did not” (Arend and Bromiley, 2009: 83). Another example of the lack of common understanding in the research community is the fact that some reviewers call for more quantitative research (Wang and Ahmed, 2007), while others for more qualitative papers (Ambrosini and Bowman, 2009), both suggesting that the opposite demand is being overlooked.

2.2.1.1 *Analytical methods*

In this section I investigate whether the dynamic capability construct is presenting any signs of conceptual reification. By integrating Lane *et al.*'s (2006) and Newbert's (2007) approaches into the systematic review methodology (Macpherson and Jones, 2010; Pittaway *et al.*, 2004; Rousseau *et al.*, 2008; Tranfield *et al.*, 2003), I aim to build a more objective sample and mitigate some of the common limitations of traditional reviews (Kerlinger and Lee, 2000; Newbert, 2007). As formulating clear and adequate questions is critical in systematic reviews (Macpherson and Jones, 2010), I decomposed my general reification question into the analysis of three specific indicators which follow Lane *et al.*'s (2006) reification analysis closely. These indicators are discussed in detail below.

2.2.1.1.1 First indicator: How has the dynamic capability construct been used?

I first assessed whether the construct was of central importance to each paper's core focus or whether it was simply "a grace note that embellishes a paper without adding substance" (Lane *et al.*, 2006: 834). To define the notion of 'substantial usage', I counted articles in three categories (see Table 2 for my sampling methodology). The first category contains papers where the authors claim, as their central contribution, to extend the theory or definition of dynamic capabilities: examples include Eisenhardt and Martin (2000) and Winter (2003). In the second, I included papers where the construct was directly incorporated in authors' hypotheses, propositions and/or models, or where it was clearly instrumental in developing them: examples here include Blyler and Coff (2003) and Salvato (2009). I coded the remaining papers into a third category, where dynamic capabilities were used in other substantial ways, embracing such studies as those by Newbert (2007), whose review of the resource-based view formally covered dynamic capabilities, and Nightingale (2008), who discussed the construct within the theme of meta-paradigm change and the theory of the firm. Despite attempting to be very inclusive (see Lane *et al.*, 2006), I only ended up with a sample of 104 articles that made substantial use of the dynamic capability construct.

2.2.1.1.2 Second indicator: How close is the use of the dynamic capability construct to the original conceptualization?

Second, I considered the extent to which prior research built incrementally on the seminal conceptualization of dynamic capabilities. In their widely cited paper¹, Teece, Pisano, and Shuen (1997: 518) proposed three basic components of the dynamic

¹ At the time of my final revision of this thesis (March 2013), Teece *et al.* (1997) had received over 4,000 citations in the ISI Web of Science.

capability construct as a firm’s “managerial and organizational processes, shaped by its (specific) asset position, and the paths available to it” – i.e., usually summarized as ‘processes, paths, and positions’ (see also Arend and Bromiley, page 79 and Helfat and

Table 2: Sampling methodology (adapted from Lane *et al.*, 2006)

| Step | Action taken | Sample |
|-------------|--|--|
| 1 | <ul style="list-style-type: none"> • I searched for published journal articles in the ISI Web of Science database for the period 1997-June 2009. • I ensured comprehensiveness by using one single primary keyword (“dynamic capability” OR “dynamic capabilities”) in ‘Title’ OR ‘Topic’. • I read all titles and abstract to exclude articles using dynamic capabilities with unrelated meaning (e.g., as a technical term in engineering). | 642 articles found – 65 articles eliminated |
| 2 | <ul style="list-style-type: none"> • I excluded all the articles from journals that published less than six papers in the timeframe because an average rate of one dynamic capability paper every two years “was the minimum needed to consider the construct a part of the journal’s research domain” (Lane <i>et al.</i>, 2006: 839). | 577 articles left – 188 articles eliminated |
| 3 | <ul style="list-style-type: none"> • I downloaded and read all the remaining articles in depth. • I classified each article according to the importance of the dynamic capability construct in the paper’s core topic^(a). I used four categories, the first three indicating substantial usage and the last ritual usage: <ol style="list-style-type: none"> 1. The paper directly extends the theory or the definition; 2. The construct is directly incorporated for theoretical or empirical development; 3. The construct is used substantially in other ways (residual category); 4. The paper uses the construct in the background or as a minor citation with little or no discussion. • I excluded the papers classified in the fourth category as not substantially using the construct. | 389 articles left – 286 articles eliminated |
| 4 | <ul style="list-style-type: none"> • I included in the sample one review paper, i.e., Di Stefano <i>et al.</i>, 2010, published soon after we run Step 1 by a journal respecting the criterion outlined in Step 2. | = 104 articles left in final sample |

^(a) In line with Lane *et al.* (2006), I conducted a conservative assessment of reification. I was thus very inclusive by considering all papers which mentioned our keywords at least once, irrespectively of them referencing any specific prior contributions such as Teece *et al.* (1997) or Eisenhardt and Martin (2000). It is important to clarify that I did not assess the intrinsic quality of each paper but I only did pay attention to how the construct of dynamic capabilities was used.

Peteraf, page 96). To verify the extent to which later studies “have sought to make incremental improvements” (Helfat and Peteraf, 2009: 94), I compared how the substantial papers in my sample built on Teece *et al.*'s (1997) components. Table 3 summarizes the findings, categorizing them by type of article, and shows that only the 79 papers (13.6%) in the first seven columns directly discussed processes, paths or positions (or equivalent constructs, such as routines, trajectories and strengths) in relation to the dynamic capability construct.

The breakdown of results offers clearer information. For example, 15 conceptual papers and 1 simulation (2.8 percent of the total literature) directly extended the theory or the definition of dynamic capabilities and 55 empirical papers (9.6 percent) operationalized the construct substantially. Similarly, despite of the relevant number of reviews in the sample (12), closer investigation reveals that only 7 focused on the topic of dynamic capabilities while the others just mentioned them within broader discussions. In addition, only 12 conceptual contributions and 3 reviews built on all the three dimensions – processes, paths and positions – that characterize the seminal dynamic capability construct (Teece *et al.*, 1997). Surprisingly, although 38 empirical papers mentioned at least one dimension, only 3 qualitative papers directly applied the dynamic capability construct in its original formulation while the others loosely discussed one or more dimensions. Further investigation also shows that researchers have focused particularly on mature medium/large firms or on cross-size and cross-age samples, mainly at the organizational level, as well as giving some attention to network relationships (Table 4). Interestingly, research in ‘traditional’ highly dynamic settings (such as ICT, high-tech, pharmaceutical and biotech) accounts for no more than 31

Table 3: Analysis of the usage of the dynamic capability construct and its seminal components

| | | Total = 578 ^a | All three dimensions | Processes | Positions | Paths | Processes and positions | Processes and paths | Positions and paths | None discussed | Type | | |
|--|---|--------------------------|----------------------|-----------|-----------|-------|-------------------------|---------------------|---------------------|----------------|-------|--------------|--------|
| Number of papers for each usage of the construct | Theory or definition directly extended (24 papers; 4,2%) | 8 | 2 | 0 | 0 | 2 | 2 | 0 | 1 | 15 | 2.6% | Conceptual | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0.3% | Qualitative | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.2% | Quantitative | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | Mixed | |
| | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.2% | Simulation | |
| | | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 5 | 0.9% | Review |
| | Used directly for theoretical or empirical development (70 papers; 12.1%) | 3 | 4 | 1 | 0 | 1 | 2 | 1 | 3 | 15 | 2.6% | Conceptual | |
| | | 3 | 5 | 1 | 0 | 4 | 4 | 0 | 8 | 25 | 4.3% | Qualitative | |
| | | 0 | 8 | 2 | 0 | 4 | 1 | 0 | 6 | 21 | 3.6% | Quantitative | |
| | | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0.7% | Mixed | |
| | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0.3% | Simulation | |
| | | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0.5% | Review | |
| | Others, with substantial use (10 papers; 1.7%) | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0.7% | Conceptual | |
| | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.2% | Qualitative | |
| | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.2% | Quantitative | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | Mixed | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% | Simulation | |
| | | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 4 | 0.7% | Review | |
| Total | | 21 | 25 | 6 | 0 | 14 | 12 | 1 | 25 | 104 | 18.0% | | |
| | | 3.6% | 4.3% | 1.0% | 0.0% | 2.4% | 2.1% | 0.2% | 4.3% | 18.0% | | | |

^aTotal = 642 articles found – 65 articles eliminated because clearly irrelevant + 1 sample review paper added = 578 (see Table 1).

percent of the sample with articles focusing on manufacturing and SMEs totaling instead 44 percent.

Table 4: Empirical research on dynamic capabilities by size, age, and level of analysis

| | Size | | | | | | | | | |
|-----------------------|-------------------|------------|-----------------------|------------|-------------|------------|--------------|------------|--------------|-------------|
| | Cross size | % | Medium / Large | % | SMEs | % | Unsp. | % | TOTAL | % |
| Age | | | | | | | | | | |
| Cross age | 12 | 22% | 4 | 7% | 6 | 11% | 0 | 0% | 22 | 40% |
| Mature | 0 | 0% | 24 | 44% | 1 | 2% | 0 | 0% | 25 | 45% |
| New | 0 | 0% | 0 | 0% | 2 | 4% | 0 | 0% | 2 | 4% |
| unspecified | 0 | 0% | 0 | 0% | 0 | 0% | 6 | 11% | 6 | 11% |
| | | | | | | | | | | |
| Level | | | | | | | | | | |
| Organizational | 9 | 16% | 24 | 44% | 7 | 13% | 4 | 7% | 44 | 80% |
| Industry | 0 | 0% | 2 | 4% | 0 | 0% | 2 | 4% | 4 | 7% |
| Network | 2 | 4% | 0 | 0% | 2 | 4% | 0 | 0% | 4 | 7% |
| Multilevel | 1 | 2% | 2 | 4% | 0 | 0% | 0 | 0% | 3 | 5% |
| TOTAL | 12 | 22% | 28 | 51% | 9 | 16% | 6 | 11% | 55 | 100% |

2.2.1.1.3 Third indicator: How cohesive is the dynamic capability research community?

The taken-for-grantedness of a construct reflected by the first two indicators is not sufficient to determine its reification: the third critical indicator is a low degree of cohesion within a research community, with different studies or authors sharing labels but not meanings (Lane *et al.*, 2006). I assessed the degree of cohesion by utilizing a specific type of bibliometric approach that can assess “present and past activities of scientific work”, particularly in scholarly communities (Schildt, Zahra, and Sillanpää, 2006: 400). More specifically, I analyzed the citation patterns in my final sample, and verified whether the literature presented a strong and interdependent citation network. In

other words, the less tightly interlinked the 104 papers in our final set were, the more that would signal the reification of the dynamic capability construct. Latour (1987) notes that such loose linkages can be considered an important sign of reification, because it represents “the extent to which authors have adapted the construct to meet their own needs” (Lane *et al.*: 841).

Using two software tools (SITKIS [Schildt, 2006] and UCINET [Borgatti, Everett, and Freeman, 2002]), I created a database of the references in the final sample’s substantial papers, and then determined how often each paper had cited (‘Citations Sent’) or been cited by others (‘Citations Received’) in the sample (excluding review studies), and the average annual numbers of such links (Lane *et al.*, 2006). I found that nearly half (51 articles) of the final sample papers had not been cited by any other sample article and that over half (53 articles) produced less than 0.5 average links per year (Table 5). Overall only 16 papers averaged more than 1.0 link per year and the number of citations received (25.1 on average) was significantly higher than citations sent (3.7 on average).

2.2.1.2 Implications of the reification analysis

It is hard to deny that my assessment of the construct’s reification casts a shadow on its past development and the previous analyses suggest that dynamic capabilities have become a taken-for-granted construct, so raising concerns about the usefulness of further research based on dynamic capability theory. Only a rather limited number of papers used dynamic capabilities in substantial (i.e., non ritual) ways and “the cross-citations between the papers in this body of literature show little evidence of an

accumulated body of knowledge” (Lane *et al.*, 2006: 858). Overall, Teece *et al.*’s (1997) seminal construct is one of the most cited papers in management studies over the last

Table 5: The most central and substantial papers in the dynamic capability literature^a

| | Author(s) | Year | Title | Journal | Cit. Received | Cit. Sent | Ave. Links /Year^b |
|----|---------------------------------|-------------|---|------------------------------|----------------------|------------------|-------------------------------------|
| 1 | Teece DJ, Pisano G, and Shuen A | 1997 | Dynamic capabilities and strategic management | Strategic Management Journal | 99 | 0 | 8.3 |
| 2 | Eisenhardt KM and Martin JA | 2000 | Dynamic capabilities: What are they? | Strategic Management Journal | 79 | 2 | 6.8 |
| 3 | Zollo M and Winter SG | 2002 | Deliberate learning and the evolution of dynamic capabilities | Organization Science | 44 | 2 | 3.8 |
| 4 | Winter SG | 2003 | Understanding dynamic capabilities | Strategic Management Journal | 33 | 3 | 3.0 |
| 5 | Helfat CE and Peteraf MA | 2003 | The dynamic resource-based view: Capability lifecycles | Strategic Management Journal | 32 | 4 | 3.0 |
| 6 | Makadok R | 2001 | Toward a synthesis of the resource-based and dynamic-capability views of rent creation | Strategic Management Journal | 21 | 1 | 1.8 |
| 7 | Helfat CE | 1997 | Know-how and asset complementarity and dynamic capability accumulation: The case of R&D | Strategic Management Journal | 18 | 0 | 1.5 |
| 8 | Zott C | 2003 | Dynamic capabilities and the emergence of intraindustry differential firm performance: Insights from a simulation study | Strategic Management Journal | 15 | 3 | 1.5 |
| 9 | Teece DJ | 2007 | Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance | Strategic Management Journal | 11 | 5 | 1.3 |
| 10 | Adner R and Helfat CE | 2003 | Corporate effects and dynamic managerial capabilities | Strategic Management Journal | 12 | 2 | 1.2 |
| 10 | Benner MJ and Tushman ML | 2003 | Exploitation, exploration, and process management: The productivity dilemma revisited | Academy of Management Review | 12 | 2 | 1.2 |

| | | | | | | | |
|----------------|--------------------------------------|------|---|-------------------------------|-------------|------------|------------|
| 12 | Danneels E | 2002 | The dynamics of product innovation and firm competences | Strategic Management Journal | 10 | 2 | 1.0 |
| 13 | Lavie D | 2006 | Capability reconfiguration: An analysis of incumbent responses to technological change | Academy of Management Review | 8 | 4 | 1.0 |
| 14 | Schreyoegg G and Kliesch-Eberl M | 2007 | How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization | Strategic Management Journal | 5 | 7 | 1.0 |
| 15 | Ambrosini V, Bowman C, and Collier N | 2009 | Dynamic Capabilities: An exploration of how firms renew their resource base | British Journal of Management | 1 | 11 | 1.0 |
| 15 | Easterby-Smith M and Prieto IM | 2008 | Dynamic capabilities and knowledge management: An integrative role for learning? | British Journal of Management | 1 | 11 | 1.0 |
| Average | | | | | 25.1 | 3.7 | 2.4 |

^(a) The table is based on the final sample of 104 papers making substantial usage of the construct. I included only papers with at least an average of one link per year to other papers in the final sample. Review papers are not included in the table.

^(b) Average Links per Year = (Citations Received + Citations Sent)/12 years.

decade – but only 3 qualitative papers (i.e., 0.5 percent of the total literature on the topic) have empirically researched the construct directly. Although the research community relies on a strong core of contributions to maintain some coherence, the literature on dynamic capabilities presents a scattered pattern of “research methods, measurement instrument, definition of key constructs, population of subjects, nature of phenomenon investigated, and so forth” (Tsang and Kwan, 1999: 771).

2.2.2 Revealing the need for more focused research on dynamic capabilities

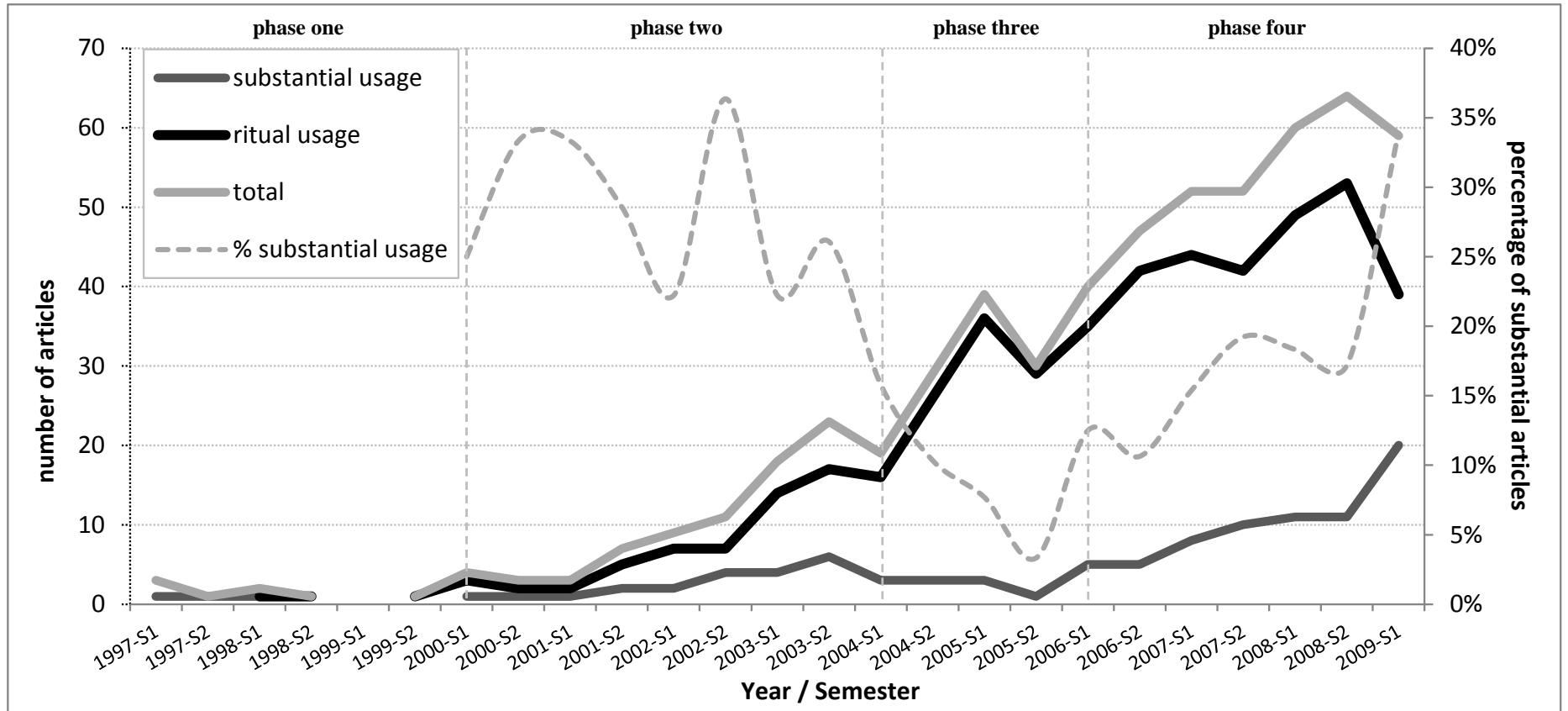
Given this evidence of reification, Arend and Bromiley’s suggestion that the construct should be abandoned seems justified. However, Helfat and Peteraf argued that “theory

concerning dynamic capabilities has had little time to develop... as a field of inquiry, it is still in its infancy” (2009: 92) and claimed to see “strong signals in terms of scholarly interest regarding dynamic capabilities potential” (2009: 99). The attractiveness of dynamic capabilities is a matter of fact (see Di Stefano *et al.*, 2010), but this very attractiveness may carry the risk of confining the construct to the realm of academic fashion (Abrahamson, 1996; Bort and Kieser, 2011; Starbuck, 2009). While Helfat and Peteraf’s argument that time would rectify the construct’s defects seemed compelling, it was supported by little evidence. In what follows, I discuss two indicators that I found probing my data which might imply that the reification of dynamic capabilities was not irreversible, and so confirming Helfat and Peteraf’s recognition that the construct’s development path is far from complete, and that there are promising early signs of consolidation.

2.2.2.1 *Evolution of the usage of the dynamic capability construct*

A curious aspect of Lane *et al.*’s (2006) methodology is the definition of reification as a dynamic process, but its assessment as a static outcome, a drawback which they addressed by proposing a thematic analysis and a reconceptualization of their focal construct of absorptive capacity. Given the nature of the debate on dynamic capabilities, I also looked at the reification of dynamic capabilities as a process, exploring how it unfolded over time, and found that, far from being uni-directional, it passed through at least four phases (as illustrated in Figure 2). Crucially for my purposes, this suggests that, at the time of the debate between Arend and Bromiley, and Helfat and Peteraf, a static assessment of past literature would have produced the ‘mirage’ of a problematic

Figure 2: The diffusion of the dynamic capability construct and reification phases



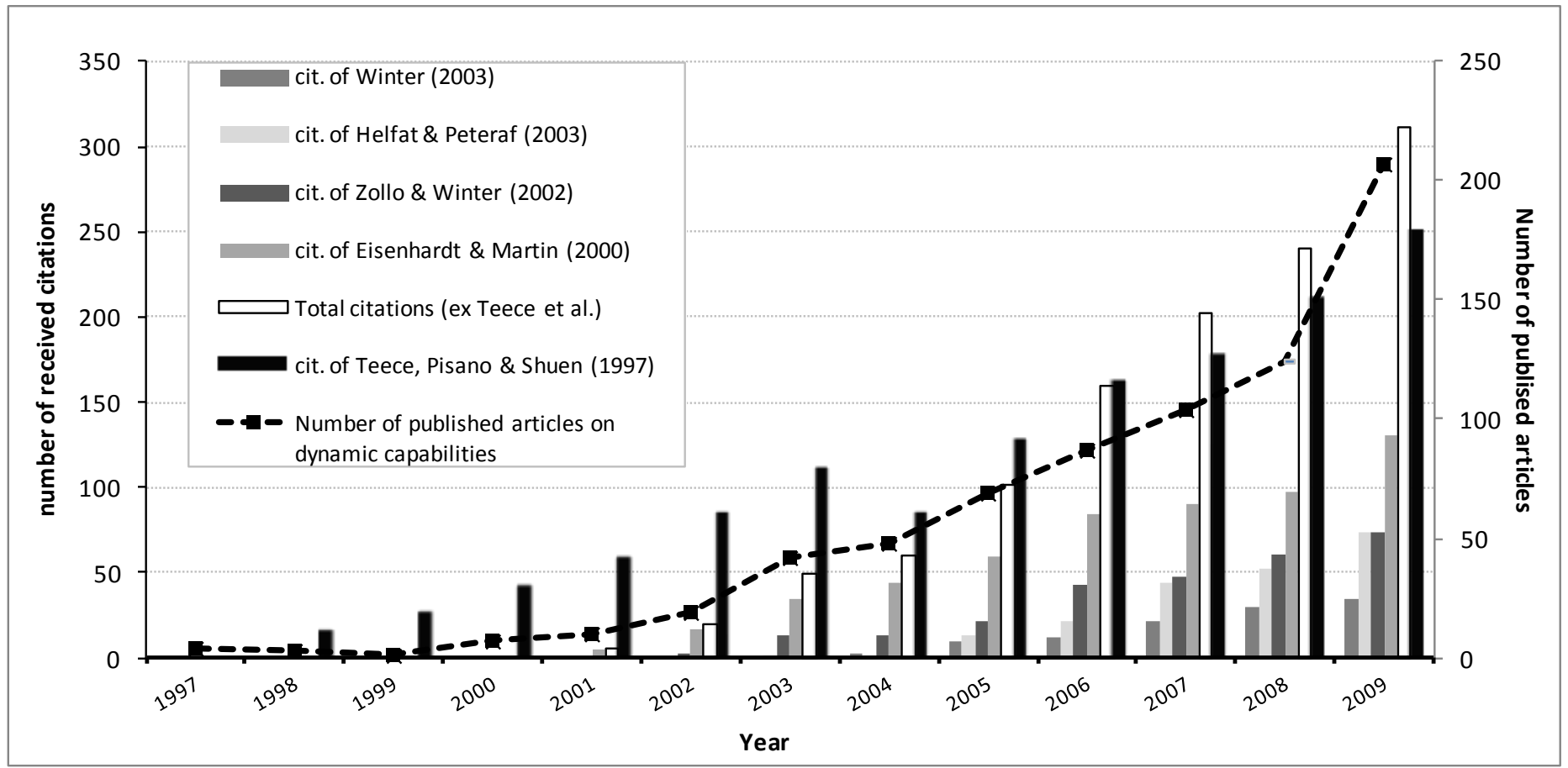
conversation about dynamic capabilities, which was actually the persistent lagged consequence of earlier excitement about the construct (Hirsch and Levin, 1999).

However, a closer look at the diffusion of dynamic capabilities shows that the proportion of substantial contributions (i.e., represented by the dotted line in Figure 2) had grown significantly by 2009, and had already climbed beyond its very low levels in 2005 (e.g., Hirsch and Levin, 1999).

2.2.2.2 *The influential role of leading authors in the research community*

The second element of evidence which concurs with Helfat and Peteraf's view is that dynamic capability literature has built a strong and recognized core of several fundamental papers over time. Despite the literature's general lack of cohesion, the construct has been nurtured by many influential scholars, who have helped the community to better understand specific aspects. We can observe successful efforts towards incrementally specialized research on dynamic capabilities from those who have focused on routines (e.g., Helfat and Peteraf, 2003; Winter, 2003), or have paid attention to path dependence and cognitive boundaries (e.g., Posen and Levinthal, 2012), to mention just a few streams. More specifically (as Figure 3 shows) the collective reputation of such important voices as Eisenhardt and Martin (2000), Zollo and Winter (2002), Helfat and Peteraf (2003) and Winter (2003) has helped shape the diffusion of dynamic capabilities within academic circles (Bort and Kieser, 2011). I found the cumulative influence of these important contributions after 2006, coupled with the appearance of the first published reviews on dynamic capabilities literature (i.e., Zahra *et al.*, 2006; Wang and Ahmed, 2007), constituted a retrenchment which began to counterbalance the negative effect of reification.

Figure 3: The role of influential authors in diffusing the dynamic capability construct



2.2.2.3 *Implications: Reification is retrenching*

Helfat and Peteraf pointed out that “emerging and evolving theories develop slowly, over long periods of time” (2009: 92), reinforcing this defense in their essay title². But, while devoting much effort to addressing Arend and Bromiley’s conceptual worries, Helfat and Peteraf offered little support for their own temporal argument. Nonetheless, my close examination of the reification of dynamic capabilities seems to substantiate their claim in two ways. First, I found that the ‘ritual’ use of the construct appears less prominent recently than at earlier stages of its diffusion. Second – in contrast to the lack of cohesion that signals a truly reified construct – the dynamic capability research community recognizes a strong group of intellectual touchstones, and its leading authors have proactively engaged in driving the consolidation of the construct (Hirsch and Levin, 1999). Considering this evidence carefully, it seems that the construct’s reification has retrenched over time, is now less obviously a risk, and so less justified as a reason for abandoning it.

2.2.3 *Thematic findings of the systematic literature review*

Lane *et al.*, (2006) advocated mindful and rigorous scrutiny as the basis for constructive research in order to counterbalance the negative effects of reification in academic studies. To begin to answer this call, and to contribute to further integrating the academic conversation on dynamic capabilities (Peteraf *et al.* 2012), I now turn to an in-depth thematic analysis of academic research on dynamic capabilities and present the

² The title of Helfat and Peteraf’s essay was “Understanding dynamic capabilities: Progress along a development path”.

results of such analysis of the papers in my final sample. Thematic analysis “can provide crucial insights to scholars in their review of ‘what is known’ to guide their research” (Boyatzis, 1998; see also Berg, 1995) and – with respect to dynamic capabilities – has allowed me to identify several gaps in the extant literature. My findings suggest that theory building and empirical research share several common themes, but that these have only low mutual influence. Specifically, scholars who engaged in the conceptual development of dynamic capabilities paid a great degree of effort to their origins – i.e., the processes which create such capabilities – and outcomes – i.e., their impact on organizational performance. Empirical testing directed its attention instead to the entrepreneurial and managerial characteristics of dynamic capabilities, and to managerial systems and networks as their common locus of existence in business practice.

Following Lane *et al.* (2006), I proceeded in the following way. First, I wrote short – 10-20 lines – summaries of the content of each paper, with a particular focus on how dynamic capabilities were discussed, and then uploaded these summaries on NVivo, a software specifically used for analyzing qualitative and textual data. Third, I codified the content of these summaries, creating several free nodes, and finally aggregated those nodes into main themes. I followed these steps sequentially for both conceptual and empirical papers in the final sample, with the aim of clarifying additional gaps that could be fruitful in suggesting future research possibilities.

2.2.3.1 Conceptual papers

My sample contained 49 conceptual papers on dynamic capabilities with a broad spectrum of positions and topics. Over the years, scholars have challenged seminal

assumptions such as the direct relationship with high-velocity environments (Zahra *et al.*, 2006) and with organizational performance (Ambrosini and Bowman, 2009). Other authors have instead looked at dynamic capabilities from a system perspective (McCarthy, 2004; O'Connor, 2008) and highlighted their role in interorganizational relationships (Holcomb and Hitt, 2007; Smart, Bessant, and Gupta, 2007). The recognition of the role of top management teams is increasing (Augier and Teece, 2009; Helfat and Peteraf, 2003; Teece, 2007), as is the importance of managerial choices and cognition (Ambrosini, Bowman, and Collier, 2009; Breslin, 2008; Zahra *et al.*, 2006). Dynamic capabilities are no longer conceptually seen as pertaining only to large and mature companies, but also as important for new and small organizations (e.g., Bessant *et al.*, 2001, Breslin, 2008, Zahra *et al.*, 2006). As already observed, the evolving characteristics of dynamic capabilities from new to mature firms generate opportunities for further discussions.

Two main themes emerged from my thematic analysis. First, an important line of inquiry concerns how dynamic capabilities are created. For example, Ambrosini and Bowman (2009) and Eisenhardt and Martin (2000) suggested that dynamic capabilities involve creation processes which have common features but also idiosyncrasies in practice. In the same vein, others authors have observed that each dynamic capability can be seen as a mix of different basic and measurable components (e.g., Wang and Ahmed, 2007). I identified these common features as related to stand alone constructs which are increasingly being related to dynamic capabilities such as: the ability to balance exploitative and explorative activities (e.g., Adler *et al.*, 2009; Benner and Tushman, 2003; Bessant *et al.*, 2001; Chadwick and Dabu, 2009; Easterby-Smith and Prieto, 2009; Graetz and Smith, 2008; O'Connor, 2008; Smart *et al.*, 2007), often

named ambidexterity; the ability to sense and seize opportunities (e.g., Augier and Teece, 2009; Jacobides, 2006; Li, Chen, and Huang, 2006; Ng, 2007; Pandza and Thorpe, 2009; Teece, 2007, 2008; Wiltbank *et al.*, 2006), sometimes named agility (e.g., Sambamurthy, Bharadwaj, and Grover, 2003); and the ability to gain access to and to learn from external knowledge, traditionally named absorptive capacity (Chi and Seth, 2009; Lavie, 2006; Smart *et al.*, 2007; Wang and Ahmed, 2007; Zahra and George, 2002). The resonance of such studies back to Teece's (2007) clarification of dynamic capabilities as classes of sensing, seizing, and transformational activities is evident and calls for further investigation.

The second theme is an interest in theorizing about the impact of dynamic capabilities on organizational performance. In particular, scholars have paid a great deal of attention to the role of cognition and prior resources as moderators of such impact (e.g., Ambrosini and Bowman, 2009; Helfat and Peteraf, 2003; Zollo and Winter, 2002). For example, Pandza and Thorpe (2009) discussed strategic sense making and creative search as two fundamental cognitive processes underlying dynamic capabilities. A common topic in this line of inquiry is how their cognitive limits affect managers' perceptions of environmental uncertainty (e.g., Easterby-Smith *et al.*, 2009). It follows that dynamic capabilities are no longer seen as only relevant in rapidly changing environments (Zahra *et al.*, 2006) because the pace of change is intrinsically a matter of managerial perception (Ambrosini *et al.*, 2009).

Interestingly, such contributions are partly related to contributions on the nature of dynamic capabilities in small and new firms (e.g., Bessant *et al.*, 2001, Breslin, 2008, Zahra *et al.*, 2006), where dynamic capabilities are considered as expressions of highly entrepreneurial processes, and as involving activities generally conducted by a single

owner-manager or a small team of founders (Breslin, 2008; Zahra *et al.*, 2006). In such cases, the prior experience of the entrepreneurial team and the venture's resource endowment at the time of its foundation act as a substitute for more developed high level organizational processes (Sapienza *et al.*, 2006). The underlying idea is the suggestion that dynamic capabilities move from loose, entrepreneurial forms in new firms (Breslin, 2008) to more structured and (to a certain extent) more routine-based phenomena in multinational enterprises (Augier and Teece, 2009).

2.2.3.2 *Empirical papers*

My sample contains 55 empirical articles that cover a complex and varied range of topics. The analysis shows that their content partly overlaps with conceptual developments, despite their considerably different reference base. However, it is worth noting the persistence of seminal assumptions, such as that dynamic capabilities are only useful in “rapidly changing environments” (Teece *et al.*, 1997), and instances of tautological sampling selection (i.e., only successful firms). I found four main themes in the empirical literature: (1) an acknowledgment of dynamic capabilities as being embedding an organization's entrepreneurial and (2) managerial function; (3) a recognition of them as being embedded in complex managerial systems; and (4) a clear appreciation of the role of strategic networks in their development.

In respect to the first theme, there is increasing consensus that dynamic capabilities are not only relevant in multinational enterprises (e.g., Kolk and Finske, 2008), but are more related to the entrepreneurial side of any firm (Newey and Zahra, 2009). Katzy and Crowston (2008), for instance, discussed agility in entrepreneurial activities as a dynamic capability and analyzed the creation of collaborative networks

for marshalling operational capabilities. Macpherson, Jones, and Zhang (2004) also highlighted the importance of entrepreneurial networks in creating dynamic capabilities that can open up new entrepreneurial spaces for innovation. Other studies have explored how founding conditions shape dynamic capabilities: for example, Buenstorf and Murmann (2005) presented a deep account of how the Carl Zeiss Foundation's statute, still based on its founder's legacy, helps the organization adapt by enhancing its dynamic capabilities, while McKelvie and Davidsson (2009) offered an insightful analysis into how founders' different human capital impacts dynamic capabilities in new firms. Importantly, empirical research seems to support conceptual suggestions that the characteristics of dynamic capabilities evolve in relation to firm size and age (e.g., Newbert, Gopalakrishnan, and Kirchhoff, 2008) – this area of research needs further investigation and in this respect I suggest it would be fruitful to build on the notion of capability lifecycles (Helfat and Peteraf, 2003).

Second, empirical research strongly highlights the role of managers in orchestrating dynamic capabilities. Such capabilities are created by intentional managerial actions that incorporate prior and external knowledge to shape current organizational routines and structures (Salvato, 2009). For example, Lee and Kelley (2008) investigated the deployment and nurturing of entrepreneurial resources as an important managerial task that fosters innovative dynamic capabilities. This view sees dynamic capabilities as multilevel phenomenon (Rothaermel and Hess, 2006), where organizational processes and resources set the stage on which individuals generate performance (Salvato, 2009). The heterogeneity of managers' human and social capital, and cognition is at the core of this line of empirical research on dynamic managerial capabilities (Adner and Helfat, 2003; Buenstorf and Murmann, 2005; George, 2005;

Ireland, Hitt, and Vaidyanath, 2002; Sirmon and Hitt, 2009). Managerial cognition, in particular, is considered critical because it shapes how managers perceive and respond to uncertainty within the constraints of their firm's strategy (e.g., Azadegan, Bush, and Dooley, 2008; Eggers and Kaplan, 2009; Keil, 2004; Julian, Ofori-Dankwa, and Justis, 2008; Narayanan, Colwell, and Douglas, 2009). Dynamic managerial capabilities have received special attention in marketing (Bruni and Verona, 2009), banking (Sirmon and Hitt, 2009), and R&D contexts, which suggests there is a good opportunity for exploring other specific functional areas.

Third, scholars have paid much attention towards the 'hard' features of dynamic capabilities (e.g., Mitchell, 2006), suggesting they are often embedded in complex managerial systems (e.g., Doving and Gooderham, 2008; Mosey, 2005; O'Connor, Paulson, and De Martino, 2008; Petroni, 1998; Woiceshyn and Daellenbach, 2005), and in structures for managing ambidextrous activities (Capron and Mitchell, 2009; Danneels, 2008; Luo, 2002; Madhok, and Osegowitsch, 2000; Newbert *et al.*, 2008). Other illustrations of this approach are Witcher, Chau, and Harding's (2008) case study which views *hoshin kanri*, a systematic way of conducting top management audits at Nissan South Africa, as a dynamic capability and Ma and Loeh's (2007) investigation of dynamic capabilities in the context of ERP implementation programs.

Finally, strategic networks are an important theme that has been related to dynamic capabilities in the literature (e.g., Rothaermel and Hess, 2007), and have been described as "essential organizational entities for building radical innovation capabilities" (O'Connor *et al.*, 2008: 188). Networks may be used to source or outsource capabilities that cannot be successfully accessed, developed or deployed internally (e.g., Macpherson *et al.*, 2004; Montealegre, 2002). The main areas empirical

works explored were partnerships, alliances, strategic purchasing, acquisitions, corporate venturing, and logistics management (e.g., Chen, Paulraj, and Lado, 2004; Collins and Hitt, 2006; Griffith and Harvey, 2001; Hallorsson and Skjott-Larsen, 2004; Keil, 2004; Marcus and Anderson, 2006; Sawyer, Pretorius, and Oerlemans, 2008; Williams and Lee, 2009). Importantly, empirical research on dynamic capabilities and strategic networks has often built on the construct of absorptive capacity (e.g., Blomqvist *et al.*, 2004; Buenstorf and Murmann, 2005; Newey and Zahra, 2009; Soosay and Hyland, 2008; Verona and Ravasi, 2003), but cross reference to conceptual articles on the same line of inquiry is rather limited. Overall, the strategic networks theme presents several research gaps which may be investigated. Much more research, for instance, is needed on dynamic capabilities in different contexts such as within buyer-supplier relations, or in relation to complementary intermediaries (Teece, 2011) such as universities, voluntary associations, and venture capitalists (Bierly III and Paul, 2007; Lee, Lee, and Pennings, 2001).

2.2.4 Findings and contribution of the systematic literature review and of the reification analysis

In this section I have presented an extended systematic review of “what we actually know” (Newbert, 2007: 142) about dynamic capabilities. My results suggest that the dynamic capability construct, as originally advanced by Teece *et al.* (1997), is undergoing a process of conceptual reification, raising concerns about its usefulness as a theoretical lens for further research. However, my findings make me lean towards suggesting the construct deserves more focused research, rather than to be prematurely

abandoned. I argue that, in the early days of excitement about dynamic capabilities (Hirsch and Levin, 1999), research on the construct suffered from “a scattered pattern of knowledge accumulation” (Lane *et al.*, 2006: 859) which led to its extensive but ‘ritual’ usage. Increasing perceptions of the detrimental effects of reification on dynamic capabilities have led to widespread concerns in the academic community and to early attempts to review the construct (e.g., Zahra *et al.*, 2006; Wang and Ahmed, 2007), culminating in Arend and Bromiley openly throwing down the gauntlet and challenging its very validity (Hirsch and Levin, 1999). At the same time, however, I have found evidence which suggests that the dynamic capability construct is becoming consolidated “along a developmental path” (Helfat and Peteraf, 2009: 91; see also Peteraf *et al.*, 2012), and believe that, if their argument had not been grounded in a static picture of past reification phases, Arend and Bromiley might have tempered their overall condemnation.

There are two main reasons that strongly suggest the dynamic capability construct may escape becoming just another (academic) fashion (Abrahamson, 1996). First, in contrast to absorptive capacity (Lane *et al.*, 2006), the dynamic capabilities literature has built a strong and recognized core of fundamental papers, e.g., Eisenhardt and Martin (2000), Teece *et al.* (1997) and Zollo and Winter (2002), and these contributions have nurtured and fostered the initial diffusion of dynamic capabilities so that the construct is now “far from being confined to this domain (of strategic management)” (Barreto, 2010: 258). However, these works also present remarkable conceptual differences (Schreyögg and Kliesch-Eberl, 2007) that beg questions about their possible future integration (Peteraf *et al.*, 2012): I therefore believe substantial research is needed

to bring further clarity to the conceptual foundations of dynamic capability theory (e.g., Di Stefano *et al.*, 2010; Peteraf *et al.*, 2012).

Second, the field is still emerging (Helfat and Peteraf, 2009) and several of the seminal characteristics of dynamic capabilities are still being questioned (Peteraf *et al.*, 2012). This is the case, for example, in terms of the link with performance, or the idea of dynamic capabilities being only of value in rapidly changing environments (Teece *et al.*, 1997; Zahra *et al.*, 2006). In the same vein, I note that scholars have offered insights that have not yet been widely included in conceptual or empirical work on dynamic capabilities. For example, although Helfat *et al.*'s (2007: 4) definition of dynamic capabilities as “the capacity of an organization to purposefully create, extend, or modify its resource base” is quickly rising in the citation count, other important ideas advanced in the same book – i.e., “evolutionary fitness” and “technical fitness” as performance yardsticks of dynamic capabilities – have only been discussed and operationalized in a few recent works (e.g., Malik, 2008; Newey and Zahra, 2009). Similarly, ten years after his first paper on dynamic capabilities, Teece (2007) revised the original construct, suggesting an organization’s set of sensing, seizing, and transformational activities as the main conceptual classes of dynamic capabilities. While this conceptualization may again need further refinement (Easterby-Smith *et al.*, 2009), it is increasingly being adopted by scholars (e.g., Harreld *et al.*, 2007; Pavlou and El Sawy, 2011). Considering this on-going development path (Helfat and Peteraf, 2009), Arend and Bromiley’s (2009) critiques should be understood as an important warning of detrimental effects of reification in general. I agree that scholars should pay careful attention when engaging with the dynamic capabilities view, because it is still affected by inconsistencies and confusion – and there is clearly a risk that the construct’s level of reification will start

increasing again to the point where its significance is lost. However, my analysis suggests that this promising construct needs more focused research, rather than abandoning.

2.2.4.1 *Limitations and research gaps*

Despite the methodological rigor, the findings of my systematic assessment of the literature are not immune from limitations. First of all, my sample of the literature on dynamic capabilities is not fully exhaustive. For instance, I utilized the same database, i.e., ISI Web of Science, as Lane *et al.*(2006) and Di Stefano *et al.*(2010) but this database may not contain all possible contributions on dynamic capabilities: so, as Newbert (2007: 142) suggested, “to the extent that other articles (...) may have been identified via alternative databases, the results reported herein will vary”. Second, my keywords excluded foundational book chapters (e.g., Helfat *et al.*, 2007) as well as constructs with different names, but similar or even identical meanings. But, to the best of my knowledge, the sample does not miss any critical contributions, and I argue that it shows a representative mirror of the whole population of the relevant literature, and that these exclusions do not affect substantially the conclusions of my assessment. Third, although I integrated Newbert’s (2007) sampling methodology, I did not assess the empirical literature in the same way he did. Since he was interested in the level of empirical support for the resource based view, he considered a substantial sample of quantitative contributions with $p\text{-value} < 0.05$. Given that the number of quantitative articles on dynamic capabilities is rather limited, a similar investigation would not be as useful and I suggest that an exact replication of Newbert’s (2007) methodology will

become very important once the field developed a more substantial body of empirical research.

Notwithstanding these limitations, my systematic assessment suggests other promising research areas that, if further investigated, may help answer Helfat and Peteraf's question (2009: 99): "How to sustain a capabilities-based advantage in the context of environmental change?" more precisely. I highlight those I consider the most pressing:

- 1) **First**, there is a need for empirical research to address the seminal dynamic capability construct directly: more recent research building on Teece's (2007) revised construct is surely promising in this respect, so I suggest that further similar efforts may represent a fruitful mitigating strategy for the research community to avoid the negative consequences reification entails.

- 2) **Second**, based on my findings, I believe it is important to de-emphasize critiques arguing that dynamic capabilities have been mostly contextualized in limited or unusual settings (Arend and Bromiley, 2009; Easterby-Smith *et al.*, 2009). My analysis provided evidence that theoretical and empirical work on dynamic capabilities has not, in fact, been constrained to either 'high-velocity' environments nor to large and mature organizations. At the same time, while this development shows the versatility of the construct, it also raises questions about how context influences what dynamic capabilities are, and the extent to which they are contingent on different context variables (e.g., Spender, 1989). I highlight in particular the

potential for research on dynamic capabilities at the interorganizational level, in cross-age medium/large new organizations, as well as in mature SMEs.

3) **Third**, I have identified three high-level constructs that are commonly considered as underpinning the development and the deployment of dynamic capabilities. These are: *agility* – an organization’s capacity to sense and seize entrepreneurial opportunities; *ambidexterity* – its capacity to balance exploitation and exploration activities; and *absorptive capacity* – its ability to incorporate and make use of external knowledge from different sources. These constructs do exist in management studies with their own literature, yet scholars are increasingly bridging them with dynamic capabilities literature to make use of them. I suggest that further research with a specific focus on these dynamic capabilities elements may be fruitful.

2.2.4.2 *Safeguards against reification in dynamic capability theory*

In conclusion of this systematic assessment of the dynamic capability construct, it is worth observing that once a validity challenge starts its outcome may be quite uncertain. As Hirsch and Levin (2009: 205) suggest, “scholars either make the construct coherent (override of challenges), agree to disagree over its definition (permanent issue), or call for its demise (construct collapse)”. In other words, dynamic capabilities might be at the crossroads between establishing itself as a robust strategic management theory and being abandoned, just as innumerable fashionable constructs have been in the past (Bort and Kieser, 2011). But Arend and Bromiley’s rigorous criticisms cannot just be ignored, as they include important warnings of the potential detrimental effects of reification, such as a loss of significance and theoretical fragmentation. I view the growing number

of articles aiming to develop and refine the construct as a promising sign, but nonetheless I acknowledge the importance of paying careful attention when engaging with the dynamic capability construct for this research, as it is still affected by many inconsistencies and much confusion. In this respect, I believe that my analysis suggests the adoption of one or more of three basic safeguards against reification:

1) **Striving for clarity of definition(s)**. First and foremost, avoiding the effects of reification requires definitional clarity, which helps build incremental knowledge and facilitates the establishment of a ‘winning path’. In practice, it is important researchers state openly and upfront which definition a specific research project they are utilizing and why, and, more decisively, that they incorporate specific components of their chosen definition into their proposed theoretical and/or empirical structures. Recent instances of exemplary practice include Danneels (2011), who clearly builds on Eisenhardt and Martin’s (2000) work, and Hodgkinson and Healy (2011), who expand on Teece’s (2007). No matter which definition is chosen, I strongly believe theoretical cherry-picking and mixing sub-elements from competing definitions will be the surest route to the construct’s collapse. In addition, given the construct’s burgeoning definitional complexity, “perhaps the largest source of confusion” (Cepeda and Vera, 2007: 426), dynamic capability research would probably benefit from a profound scrutiny of the numerous underlying meanings that have become attached to the construct over time (Suddaby, 2010).

2) **Standing on the shoulders of ‘engaged giants’**. With the caveat that the central definition should be transparently selected, I suggest the research community would

benefit from directly engaging with the foundational core of the dynamic capability construct (see Table 5). In practice, I call for authors (and reviewers) to discuss openly how their work confirms, extends, refines or challenges the key papers in the field. At worst, by encouraging critical reviews of the core literature, this will reduce the number of ritual contributions; at best, I believe this route can foster the construct's consolidation and substantial incremental refinement. In either case, I suspect the threat of the collapse of the dynamic capability construct becoming a permanent issue will be reduced. At the same time, however, counterbalancing reification pleads for 'engaged giants' (such as those in our Figure 2) to continue their integrative theorizing effort. If it is probably too much to expect dynamic capabilities to develop "like Athena springing forth from Zeus's forehead fully armed" (Helfat and Peteraf: 2009: 92), it seems reasonable to demand Zeus to nurture his other children a bit more. Contributions such as Helfat *et al.*'s (2007) book have clearly showed an impact, but the persistency of reification requires constant attention on how the dynamic capability construct develops.

- 3) **Engaging in empirical research.** Despite the construct's progress, we need much more empirical research on dynamic capabilities. Arend and Bromiley and Helfat and Peteraf both placed considerable emphasis on arguing about the empirical support of a discussion which had not yet been fully theorized. My investigation found excellent pieces of empirical research, but only very few (see Table 2), making it impossible to assess dynamic capability research's empirical support. I maintain that an increase in carefully crafted empirical work would both strengthen the recognition of dynamic capabilities in academia and supporting its relevance for

external practitioners (Hirsch and Levin, 1999), thus enhancing the chances of challenges to its validity being overcome. I suspect I need not call for more theoretical contributions: in proportion to other constructs, dynamic capabilities seem to be naturally fruitful in this respect.

2.3 BUILDING THE CONCEPTUAL FOUNDATIONS FOR THE RESEARCH: SELECTING THE REFERENCE DEFINITION

In Section 2.2, I have investigated the burgeoning body of literature on dynamic capabilities and have found it affected by a process of conceptual reification that is hindering its full potential as a research lens. However, the deeper analysis I conducted provides an important contribution to knowledge – which was published as a journal paper in *Strategic Organization* in November 2012 (i.e., Giudici and Reinmoeller, 2012) – unveiling promising signs of conceptual consolidation and demonstrating the strong need for more focused research on the dynamic capability construct, rather than supporting calls for its abandonment (e.g., Arend and Bromiley, 2009).

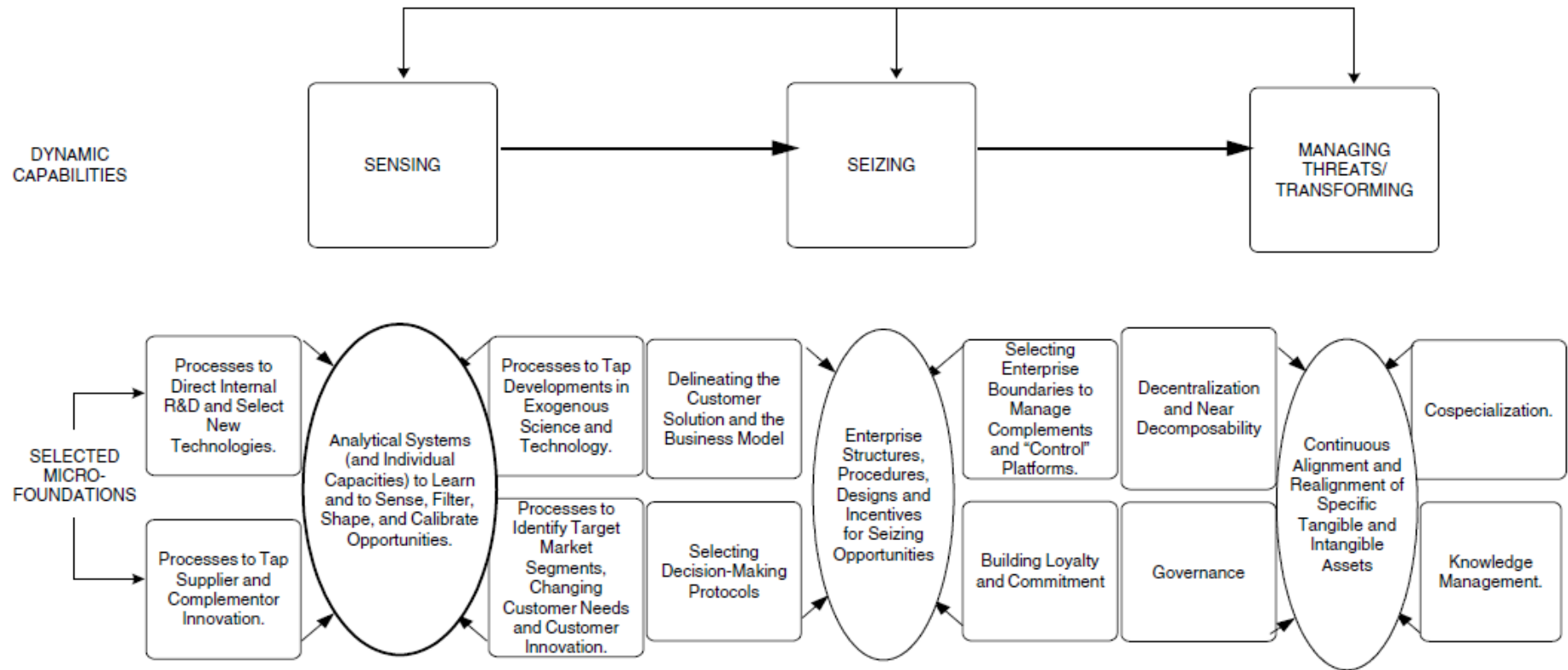
To start addressing this need, consistent with the safeguards against reification in dynamic capability research as discussed in Section 2.2.4.2 – such as the importance of minimizing risks of definitional confusion (Arend and Bromiley, 2009; Cepeda and Vera, 2007) – I build closely on Teece's (2007) explication, where three classes of dynamic capabilities – sensing, seizing, and transforming – are discussed in detail. I do so because his rejuvenation of the dynamic capability construct in that work, which was firmly rooted in the original conceptualization (see Teece *et al.*, 1997), is seen as “the most comprehensive to date” (Hodgkinson and Healey, 2011: 1501) and its influence is

quickly gaining ground (e.g., Harreld *et al.*, 2007; Hodgkinson and Healy, 2011; Pavlou and El Sawy, 2011). To complement my literature review, I therefore think it useful to provide a brief overview of Teece's conceptualization which sees dynamic capabilities as classes of strategic activities designed to "(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 [an organization]'s intangible and tangible assets" (Teece, 2007: 1319). Figure 4 provides a visual representation of the main elements of this conceptualization.

2.3.1 Sensing dynamic capabilities.

Sensing dynamic capabilities represent classes of strategic activities which an organization's key decision makers must employ, often simultaneously, to sense new opportunities (Barreto, 2010; Teece, 2007). Sensing entails "an inherently entrepreneurial set of capabilities that involves exploring technological opportunities, probing markets, and listening to customers, along with scanning the other elements of the business ecosystem" (Teece, 2011). It means conducting entrepreneurial search and sense-making activities (Pandza and Thorpe, 2009) in a mindful way (Dew, 2009; Gartner, 2011) so as to recognize new opportunities. As Denrell, Fang, and Winter observe, sensing valuable opportunities is indeed "often a matter of 'serendipity'" (Denrell, Fang, and Winter, 2003: 978), a combination of prior knowledge, purposeful search and contingencies (Dew, 2009; Pandza and Thorpe, 2009). Entrepreneurial firms need to be creative (Schumpeter, 1934) and always alert (Kirzner, 1973; 2009). Creative search is "an enterprising decision that requires intuition and imagination and must

Figure 4: Main elements of Teece's revised conceptualization of dynamic capabilities (source: Teece, 2007: 1342)



precede any decision to go ahead with the exploration of an opportunity” (Pandza and Thorpe, 2009: S122; Penrose; 1959). Alertness “refers to a sense of what might be ‘around the corner’, i.e., the sense to notice that which has hitherto not been suspected of existing at all” (Kirzner, 2009: 151).

2.3.2 Seizing dynamic capabilities.

Seizing dynamic capabilities pertain to the creation of new product or services – as well as new business models – which can transform recognized opportunities into valuable outcomes (Harreld *et al.*, 2007; Teece, 2007). If sensing dynamic capabilities can provide access to external knowledge and “strategic flexibility to change and reconfigure firm operations” (Zahra and George, 2002: 198), seizing dynamic capabilities focus on the realization and exploitation of this knowledge. This often entails forging new relations with customers, complementors, suppliers and distributors because “companies that successfully build and orchestrate assets within the ecosystem stand to profit handsomely” (Teece, 2011). In networked environments, in fact, seizing dynamic capabilities allow firms to absorb knowledge from external parties and transform it via valuable innovations (e.g., Zahra and George, 2002).

2.3.3 Transforming dynamic capabilities.

Once opportunities are recognized and have been seized, transforming dynamic capabilities are needed to achieve “semi-continuous asset orchestrations and corporate

renewal” (Teece, 2007: 1335). Strategic renewal includes “the process, content, and outcome of refreshment or replacement of attributed of an organization that have the potential to substantially affect its long-term prospects” (Agarwal and Helfat, 2009: 282). Semi-continuous asset orchestration includes processes such as coordination/integrating, learning and reconfiguring which are core elements of dynamic capabilities (Teece, 2007; Teece *et al.*, 1997) and are fundamental to achieving evolutionary fitness (Helfat *et al.* 2007; Teece, 2011). In networked environments, integrating and recombining knowledge assets is essential, and learning must be promoted both within the firm and via linkages with other organizations and supporting institutions (Teece, 2007). Learning processes, in particular, build closely on knowledge absorbed from external parties by a firm’s sensing and seizing activities, which may contribute substantially to its performance (Lavie, 2006). Evolutionary fitness, in fact, often depends on value-enhancing opportunities based on network co-specialized assets (e.g., Gimeno, 2004), i.e., a particular class of complementary network assets “where the value of an asset is a function of its use in conjunction with other particular assets” (Teece, 2007: 1338).

2.4 DEFINING THE SCOPE OF STUDY 1: THE RELATIONAL DEPLOYMENT AND DEVELOPMENT OF SENSING DYNAMIC CAPABILITIES

In Study 1 I advance the emerging dynamic capability theory (Danneels, 2011; Helfat and Peteraf, 2009; Peteraf, Di Stefano, and Verona, 2013; Sirmon and Hitt, 2009; Stadler, Helfat, and Verona, 2013; Teece, 2012) by investigating a fundamental ‘*how*’

that is too often overlooked in the literature (Helfat *et al.*, 2007): *How can one organization support another in deploying its existing dynamic capabilities and in further developing them?* A substantial body of research argues that organizations must both deploy and develop their dynamic capabilities internally so to exploit their strategic benefits fully (Ambrosini and Bowman, 2009). In Teece *et al.*'s words, dynamic capabilities “typically must be built because they cannot be bought” (1997: 518). However, the permeability of an organization's boundaries (Chesbrough, 2003; Parmigiani and Mitchell, 2009; Santos and Eisenhardt, 2009) to customers, suppliers, and complementors (even to competitors) is also critical in shaping capability-based competitive advantage (Capron and Mitchell, 2009; Lee *et al.*, 2001; McEvily and Marcus, 2005; Mindruta, 2012; Teece, 2007). Building on the so-called ‘relational view’ (Dyer and Singh, 1998; Kale, Singh, and Perlmutter, 2000), scholars have paid considerable attention to dynamic capabilities in alliances (Collins and Hitt, 2006; Heimeriks and Duysters, 2007; Kale and Singh, 2007), in partnering (e.g., Ettlé and Pavlou, 2006), in supply chain and logistics management (e.g., Halldorsson and Skjott-Larsen, 2004; Marcus and Anderson, 2006), and in outsourcing (e.g., Parmigiani and Mitchell, 2009; Weigelt and Sarkar, 2009). The extensive literature on absorptive capacity (Cohen and Levinthal, 1990; Zahra and George, 2002) has shed further light on how dynamic capabilities may help firms leverage external knowledge sources (see also Eisenhardt and Martin, 2000).

Notwithstanding their importance, these studies have mostly adopted an inward-looking lens, focusing on how particular firms leverage their dynamic capabilities to orchestrate knowledge and capabilities possessed by their external partners. With few recent exceptions – mainly relating to the role of consultants (e.g., Doving and

Gooderham, 2008) and service organizations (e.g., Agarwal and Selen, 2009) – the case where external parties directly support a focal firm’s abilities to adapt and to change (i.e., its dynamic capabilities) has been overlooked. As Teece (2012: 1397) observed, “there are almost no studies... directly on this topic, which makes it an obvious candidate for future research”. Taking stock of the literature, whereas conceptualizing dynamic capabilities as prêt-à-porter entities on the market remains problematic (Winter, 2003), there is undoubtedly a growing consensus that strategy researchers should “revisit the implicit assumptions [...] that firms are atomistic and that capabilities are internally generated” (McEvily and Zaheer, 1999: 1152). But it remains surprisingly unclear how this actually happens, and I follow Lavie (2006) and Teece (2007; 2012) in seeing this as an important research gap to fill if the explicative power of dynamic capability theory is to be enhanced.

I focus in particular on how firms can enhance their competitive advantage by deploying and further developing their existing sensing dynamic capabilities when supported by their relationships with network intermediaries (Howells, 2006; McEvily and Zaheer, 1999; Zhang and Li, 2010). As noted in Section 2.3.1, sensing dynamic capabilities represent a firm’s capacity to perform a set of entrepreneurial activities that its strategic decision makers must conduct – often simultaneously – in their quest for new opportunities (Barreto, 2010; Teece, 2007; 2012). Deploying sensing dynamic capabilities involves processes to tap into both internal and exogenous technological developments, to leverage supplier and complementor innovation, and to identify market segments and customer needs (Teece, 2007). Activities such as R&D (Helfat, 1997; Kor and Mahoney, 2005), partner selection (Harrison *et al.*, 2001; Kale and Singh, 2009; Sirmon *et al.*, 2011) and marketing (Bruni and Verona, 2009; Fang and

Zou, 2009) are examples of such processes that have been well studied in the dynamic capability literature. While there is some quantitative evidence that network intermediaries can help firms sense new opportunities, for example “by broadening the scope of their external innovation search and reducing their search cost” (Zhang and Li, 2010: 89), understanding the fine-grained process through which such external relations can support firms in deploying and further developing their sensing dynamic capabilities is an area of inquiry where more research is needed (Howells, 2006; McEvily and Zaheer, 1999; Zhang and Li, 2010).

I ground my case-based analysis on detailed field research in the setting of a structured, annual networking initiative organized for over 2,000 participant firms by a large Italian network intermediary, a research context which offers a unique opportunity to “explore a significant phenomenon under rare or extreme circumstances” (Eisenhardt and Graebner, 2007: 27), allowing for richer theory development (Graebner, Martin, and Roundy, 2012). Whereas participation in formal networking initiatives such as conferences, trade fairs, and other social events is not uncommon for firms (Stam, 2010), the practice has received little attention from strategy researchers. The considerable size of this initiative, and the fact that the network intermediary involved designed it with the specific aim of supporting participants’ sensing of new opportunities, gave me the opportunity to explore the relational deployment and development of sensing dynamic capabilities in detail. I benefited from an exceptional level of research access, which enhanced my ability to study the relations between the network intermediary and participants in a single networking initiative, and afforded me the chance to investigate multiple dyadic relations with firm-intermediaries as the sub-units (Yin, 2008). I analyzed the data using the extended case study method (Burawoy,

1991; Danneels, 2002; 2011), which I found appropriate to gather a rich description of a salient empirical phenomenon (Siggelkow, 2007) and to establish a strong base for refining and extending dynamic capability theory (Ridder, Hoon, and McCandless, 2009). In doing so, I contribute to further opening the process ‘black box’ of dynamic capabilities (Danneels, 2011; Pavlou and El Sawy, 2011) in terms of the processes of developing and deploying dynamic capabilities in networked environments (Lavie, 2006; Teece, 2007). I also contribute to strategic management research by providing a robust qualitative investigation aimed primarily at theory development and testing. As Hitt, Boyd, and Li argued, “more and better qualitative research is needed” in strategic management research and “such research should be accepted and, indeed, encouraged” (2004: 26).

2.5 DEFINING THE SCOPE OF STUDY 2: ENTREPRENEURS’ NETWORKING BEHAVIORS IN SENSING NEW OPPORTUNITIES AND THE DESIGN OF NETWORKING INITIATIVES

In Study 2, I focus my investigation on the specific networking behaviors – in terms of sensing new opportunities – of the entrepreneurs participating in a particular networking initiative. Half way through the data collection for Study 1, I was surprised to realize how entrepreneurs conducted their sensing activities using a particular networking behavior which seemed to differ from that of non-entrepreneurs (i.e., senior managers, commercial staffs). I decided to pursue this as a more focused line of inquiry (see my Methodology in Chapter 3) to enrich this PhD study with a targeted review of relevant literature from streams such as entrepreneurship and interorganizational relations.

2.5.1 Developing the argument

A substantial body of entrepreneurship research suggests that entrepreneurs often sense new opportunities and gain valuable ideas, information and resources from their personal networks (Aldrich and Zimmer, 1986; Hoang and Antoncic, 2003; Slotte-Kock and Coviello, 2009; Teece, 2007). Whereas entrepreneurs' networking behavior has often been characterized as non-intentional in nature (see, for a discussion, Sarasvathy and Venkataraman, 2011; Stuart and Sorensen, 2007), scholars have recently highlighted how entrepreneurs sense new opportunities while strategically building their strategic networks (Elfring and Hulsink, 2007; Hallen and Eisenhardt, 2012; Phillips, Tracey, and Karra, 2013; Vissa, 2011; 2012).

In light of the emerging consensus regarding “the centrality of networks in every aspect of the entrepreneurial process” (Stuart and Sorensen, 2007: 211), it is interesting to note that relatively little is known about entrepreneurial networking initiatives, even though they are an important context where entrepreneurs conduct their search for new opportunities. Regular participation in networking initiatives such as conferences, professional gatherings, and similar initiatives is indeed a common activity for many entrepreneurs (Stam, 2010). Hara and Kanai (1994), for example, emphasize how conventions and international symposia give small and medium-sized enterprises important opportunities to identify potential international partners. Although recent studies by Ozgen and Baron (2007) and Stam (2010) support the importance of entrepreneurs' participation in networking initiatives, overall there is a paucity of research on how entrepreneurs harness the potential of the networking initiatives in which they participate, nor is much known about how such initiatives can be

purposefully designed to foster the emergence of valuable relationships between entrepreneurs, and to facilitate their recognition of new opportunities.

In Study 2, I present an embedded case study (Yin, 2008) in which I investigate the networking behavior of 40 entrepreneurs participating in the large entrepreneurial networking initiative which also formed the context of Study 1. In doing so, I also disentangle how this particular initiative was designed by the network intermediary involved both to enable the emergence of new relationships between entrepreneurs and to facilitate their sensing of new opportunities. Prior research suggests that network intermediaries such as voluntary venture associations, chambers of commerce, and government agencies, can play brokering roles as ‘network orchestrators’ to facilitate interorganizational relationships among network participants (Davis, Renzulli, and Aldrich, 2006; Dubini and Aldrich, 1991; Human and Provan, 2000; Knoke, 1986; McPherson, Smith-Lovin, and Cook, 2001). Such intermediaries also often intentionally seek to expand the number of their networks’ members as a means of creating additional value for the networks themselves and for those members (Dhanaraj and Parkhe, 2006; Paquin and Howard-Grenville, 2012). In what follows, I provide a targeted theoretical background on entrepreneurs’ networking behaviors and the drivers of interorganizational relationships.

2.5.2 Complementary theoretical background

2.5.2.1 Entrepreneurs’ networking behavior

Scholars have long investigated how entrepreneurs can grow their firms by leveraging their portfolio of relationships (see, for a review, Hoang and Antoncic, 2003; Slotte-

Kock and Coviello, 2009), and the importance of network relationships in facilitating opportunity recognition and exploitation is also widely recognized (e.g., Ardichvili, Cardozo, and Ray, 2003; Bhagavatula *et al.*, 2010). There is little doubt that entrepreneurs can use their networks of professional and personal ties (e.g., Kota and George, 2012), to gain access to a rich array of ideas, information, and tangible and intangible resources (e.g., Aldrich and Fiol, 1994; Ferriani, Fonti, and Corrado, 2013; Grossman, Yli-Renko, and Janakiraman, 2010; Phillips *et al.*, 2013) which can enhance their ability to sense new opportunities (Teece, 2007).

While earlier research has generally assumed entrepreneurs' networking behavior to be rather non-strategic (Sarasvathy and Venkataraman, 2011; Stuart and Sorensen, 2007), more recent scholarly work has demonstrated the intentional nature of their actual networking behavior (e.g., Elfring and Hulsink, 2007; Hallen and Eisenhardt, 2012; Phillips *et al.*, 2013). For instance, Vissa (2011) provided evidence of Indian entrepreneurs employing specific criteria (such as social similarity and task complementarity) when screening new connections, and, in the same vein, Dew (2009) observed that experienced entrepreneurs' social networking behavior promoted their exposure to serendipitous opportunities.

As part of this conversation about how entrepreneurs strategically leverage their network of relationships, two distinct literature streams have emerged. The first stream concentrates on the logics entrepreneurs use when sensing new opportunities. Scholars associated with this stream have revealed how opportunity recognition entails a tension between a predominantly planned type of behavior, in which entrepreneurs take "a particular effect as given and focus on selecting between means to create that effect" and a more serendipitous (effectual) type of behavior that takes "a set of means as given

and focus[es] on selecting between possible effects that can be created with that set of means” (Sarasvathy, 2001: 245; see, for a review, Perry, Chandler, and Markova, 2011). With respect to networks for example, Dew *et al.* (2009) found that experienced entrepreneurs were more likely to use an effectual logic based on a predisposition towards partnering, whereas ‘novice’ entrepreneurs tended to prefer planned approaches. Heuven *et al.* (2011), exploring evidence from a sample of new German ventures based in technology parks and incubators, suggested that a more balanced approach between planned and effectual behavior might lead to better performance.

The second literature stream has started to disentangle how entrepreneurs’ networking behaviors translate in practice into networking actions aimed at creating new relationships. Using a mixed-method approach to investigate the networking actions of Indian entrepreneurs, Vissa (2012) showed how they could be categorized as aimed either at broadening or at deepening entrepreneurs’ portfolios of relationships. The first set of actions refers to “the extent to which an entrepreneur reaches out to new people and establishes interpersonal knowledge about them”, while the second identifies “the extent to which an entrepreneur strengthens ties to existing personal network contacts by time pacing interactions with them, overlaying friendships over purely business relations, and preserving existing ties” (Vissa, 2012: 494). Building on these findings, Vissa and Bhagavatula (2012) demonstrated the positive influence of network deepening actions on the stability of entrepreneurs’ portfolios of relationships and the impact of network broadening actions on the growth of those portfolios.

Finally, additional insights about entrepreneurs’ networking behaviors may be found in recent social network research. In particular, Ferriani *et al.* (2013), studying firms located in an Italian multimedia cluster, found that networking behaviors that are

primarily based on social relations carry higher potential of enhancing future economic exchanges than more transactional approaches. These findings align with research on networking behavior in triads (Obstfeld, 2005; Obstfeld and Davis, 2012) that emphasizes two distinct orientations – *gaudens* (Burt, 1992) and *iungens* (Obstfeld, 2005). In a *gaudens* orientation one actor tries to exploit the other two actors in the triad to the single actor's benefit (Burt, 1992) – in contrast, parties pursuing an *iungens* orientation tend to act as catalysts to the benefit of the whole group (Obstfeld, 2005; Obstfeld and Davis, 2012).

2.5.2.2 *Drivers of interorganizational relationships*

Whereas academic research dealing specifically with entrepreneurs' networking behavior has emerged only recently, an established body of knowledge exists about the sociological drivers of network relationships (Kilduff and Brass, 2010; Provan, Fish, and Sydow, 2007). In particular, this body of work deals with the topics of homophily (Ingram and Morris, 2007; Lazarsfeld and Merton, 1954; McPherson *et al.*, 2001; Phillips *et al.*, 2013; Vissa, 2011) and propinquity³ (Knoben and Oerlemans, 2006; Whittington, Owen-Smith, and Powell, 2009). Homophily refers to the fact that individuals interact more easily with others with whom they share such characteristics as status and values (Lazarsfeld and Merton, 1954; McPherson *et al.*, 2001). Status homophily includes characteristics such as demographics, occupation, or nationality (Phillips *et al.*, 2013; Turner, 1987; Vissa, 2011), whereas value homophily reflects similarities between individuals' attitudes, abilities, beliefs and aspirations (Ingram and

³ Whereas prior literature sometimes prefers the term 'proximity,' for the purpose of clarity in this work I use the term 'propinquity' to identify spatial (physical and virtual) closeness among actors, as the notion of proximity may involve some conceptual overlap with that of homophily, e.g., 'cultural', 'social' or 'cognitive' proximity (see, for an example and a review, Knoben and Oerlemans, 2006).

Morris, 2007; Phillips *et al.*, 2013). With respect to networking behaviors, for instance, this may mean that entrepreneurs are more likely to establish new business relationships with others of similar age, race, language or who are otherwise similar, e.g., are also business founders (Davis *et al.*, 2006; Phillips *et al.*, 2013; Saxenian, 1994; Stam, 2010; Vissa, 2011).

Propinquity in time and space is important because it increases the likelihood of “repeated exposure [which] provides individuals with an opportunity to discover mutual or compatible interests or because individuals become more appreciative or tolerant of their differences” (Reagans, 2011: 837). In the past, network scholars have generally paid attention to how spatial propinquity facilitates the growth of new interorganizational relationships (Knoben and Oerlemans, 2006; Whittington *et al.*, 2009). Given the recent diffusion of web-based social networks, the concept of propinquity has started also to encompass the concept of virtual propinquity – the closeness between actors involved in regular interactions in virtual spaces such as online communities, forums, chat-rooms and the like (e.g., Britt and Matei, 2011; Porter and Donthu, 2011).

To an extent, homophily and propinquity are interconnected, since organizations and individuals are more likely to establish new relationships with others with whom they have more frequent contacts (McPherson *et al.*, 2001) or share a location (e.g., Florida, 2002) and those with whom they share status or values. More importantly, homophily and propinquity can both result in the growth of collective identities among actors (e.g., Ackland and O’Neil, 2011; Di Gregorio, 2012; Friedman and McAdam, 1992), which have been described as “one way cooperative groups form between entrepreneurs and others [and] refers to an individual’s cognitive, moral, or emotional

attachment to a group based on similar attributes” (Webb *et al.*, 2009: 497), suggesting that such collective identities may play prominent roles in shaping how entrepreneurs create their portfolios of relationships (e.g., Ruef, 2010; Wry, Lounsbury, and Glynn, 2011).

Whereas propinquity and homophily are well-explored drivers of the emergence of new relationships, more recent empirical research suggests that the reciprocal business priorities of interacting parties may also influence how entrepreneurs pursue new relationships. As an example, Vissa (2011), studying entrepreneurs’ networking behavior in the Indian IT and service industries, found that task complementarity – defined as “the extent of overlap between entrepreneurs’ current task priorities and the resources potentially available from a new person” (2011: 138) – influenced the establishment of new business relationships more than homophilous characteristics. In other words, entrepreneurs’ business priorities, in terms of their search for customers, suppliers, partners and so forth, may be another critical driver of their behavior in networking initiatives.

2.6 CHAPTER SUMMARY

In this Chapter, I have first thoroughly assessed the flourishing academic production on dynamic capabilities by using the systematic literature review and reification analysis approaches. The opening set of results of the systematic literature review – particularly the reification analysis – suggests that the construct has become reified, hindering its potential and putting it at risk of becoming another (academic) fashion. However, they also demonstrate the recent retrenchment of that process, suggesting that reification is

becoming less of a problem than in the past, and that the construct requires more focused and precise research.

My analysis allows me to put forward three basic methodological safeguards against reification which would be beneficial for my Study: (1) research on dynamic capabilities needs to be based on a definition from among the many advanced in the literature which should be clearly stated upfront; (2) it is important to discuss openly how the research builds on and develops existing core contributions by leading authors; (3) in general, there is a need for more empirical research based on the chosen definition of dynamic capabilities, through which scholars can expand and refine the existing body of knowledge and thus advance it in a coherent way.

The systematic assessment of the literature has also helped me shed light on a number of research opportunities. In particular, I argue that Teece's (2007) recent reconceptualization of dynamic capabilities as set of strategic activities which enable firms to sense and to seize new opportunities, and to reconfigure their resources accordingly, seems to be the most promising definition on which to build new research. I have also highlighted the need for more empirical research on dynamic capabilities at the interorganizational level, in cross-age medium/large organizations as well as in both young and mature SMEs. Finally, I have discussed how research on dynamic capabilities may benefit from the integration of other literature streams, such as those pertaining to agility – i.e., the capacity of an organization to sense and seize entrepreneurial opportunities, – ambidexterity – its capacity to balance exploitation and exploration activities, – and absorptive capacity – i.e., to incorporate and make use of external knowledge from different sources.

Following the results of my systematic assessment of the literature – and besides the contribution to dynamic capability theory I have already provided in demonstrating its consolidation path (e.g., Giudici and Reinmoeller, 2012) – I have decided to further contribute to research on dynamic capabilities in my PhD by focusing specifically on the investigation of how external parties may support the deployment and further development of an organization’s sensing dynamic capabilities. To do so, in Study 1 I follow closely Teece’s (2007) definition of dynamic capabilities, employing the extended case study method (Danneels, 2002; 2011), which is particularly suitable to extend and refine complex bodies of knowledge such as that on dynamic capabilities. For this reason, I have also presented a detailed overview of Teece’s (2007) conceptualization in this Chapter. With respect to the research context – discussed more in detail in Chapter 3 – my PhD focuses on how a specific type of external parties – i.e., network intermediaries – can support the sensing activities of firms in the network through structured networking initiatives. This focus offers an interesting research opportunity because of the limited attention network intermediaries and networking initiatives have received in strategy research, and a number of calls prior research has made for further investigation.

In Study 2 I ‘zoom in’ to examine how the sensing activities of the entrepreneurs in my sample were influenced by their networking behaviors, and how the network intermediary designed specific drivers of interorganizational relations to shape this networking behavior and, consequently, facilitate entrepreneurs’ sensing activities. This Study 2 ties in closely to research on entrepreneurial networking behavior, effectuate entrepreneurship, and interorganizational relations theories, as well as those on interorganizational sociology. For this reason, I have presented a focused literature

review in this chapter on these literature streams to complement the systematic literature review on dynamic capabilities. Having thus provided an extensive assessment of the literature and developed the scope of investigation for both Study 1 and Study 2 in this chapter, I now turn – in Chapter 3 – to discuss in detail the philosophical perspective underlying my research, the aligned research design, and the specific methodologies I adopted.

CHAPTER 3

**METHODOLOGY
OF STUDIES 1 AND 2**

CHAPTER 3: METHODOLOGY OF STUDIES 1 AND 2

3.1 INTRODUCTION

This Chapter proceeds as follows. In Section 3.2 I first discuss the ontological and epistemological dimensions of my philosophical perspective by clearly positioning my research within the realist paradigm (Archer, 2010), by reviewing four influential realist lenses – Roy Bhaskar’s (2008) Critical Realism; Margaret Archer’s (1995) Morphogenetic Approach; Pierpaolo Donati’s (2010) Relational Sociology; and Bernard d’Espagnat’s (2006) Open Realism – and outline how these lenses have informed my ontological stance. I then present the epistemological implications for my research design in Section 3.3, and justify the use of a retroductive research strategy (Buchanan and Bryman, 2009). I also explain how, consistent with my realist perspective, the relation between actors represents my main unit of analysis, whereas the unit of observation of the PhD is the account provided by these actors of their relations, as those observations occurred during their social interaction. Next, in Section 3.4 I give an extensive account of the research context, by describing in detail the network intermediary which granted me access, and the networking initiative from which I collected my data. Finally, in Section 3.5 and Section 3.6, I conclude with a presentation of the data collection and analysis processes, which includes an explanation of the choice of the extended case study (Burawoy, 1991; Danneels, 2002; 2011) and the embedded case study (Yin, 2008) methods as the main methodological approaches chosen for the PhD, in line with the abovementioned retroductive strategy.

3.2 PHILOSOPHICAL PERSPECTIVE

Academic research is “located within the broader framework of theoretical and philosophical perspective, commonly referred to as *paradigms*” (Blaikie, 2007: 12; *italics in the original*). A paradigm “stands for the entire constellation of beliefs, values and techniques, and so on shared by the members of a community” (Kuhn, 1970: 175). Blaikie (2010) distinguishes paradigms with respect to their ontological assumptions about the nature of reality and their epistemological assumptions about how knowledge of this reality can be obtained. In this respect, one of the most animated debates in social science research relates to the question of whether natural and social worlds are intrinsically similar or fundamentally different in their natures – in other words, whether they are based on the same ontological and epistemological assumptions and thus whether or not they can be studied using the same methods. My philosophical perspective – as detailed in what follows – is grounded in the realist paradigm (Archer, 2010) which see natural and social worlds are complementary and mutually informing expressions of the same underlying reality.

3.2.1 Different paradigms in philosophy of science

Bhaskar (2008) identifies three main paradigms in philosophy of science. The first, Classical Empiricism (also called Positivism) claims that “the ultimate objectives of knowledge are atomistic events” (Archer *et al.*, 1998: 18). The second, Transcendental Idealism, originally formulated by the German philosopher Immanuel Kant in the 18th Century, suggests that “the objects of scientific knowledge are models, ideals of natural order, etc [that] are artificial constructs [...] not independent of men and human activity

in general” (Archer *et al.*, 1998: 18). In this view, both the natural and the social world are a construction of the human mind or, in Kuhn’s terms, of the scientific community supporting a particular paradigm. The third position is called Transcendental Realism, and “regards the objects of knowledge as the structure and mechanisms that generate phenomena; and the knowledge as produced in the social activity of science” (Archer *et al.*, 1998).

A version of Transcendental Realism well-known in management research is Bhaskar’s ‘Critical Realism’, which sees reality as composed of three overlapping domains, i.e., the ‘empirical’, the ‘actual’ and the ‘real’ (Bhaskar, 2008; Collier, 1994). ‘Empirical’ reality consists of experiences that can be observed both directly or indirectly; ‘actual’ reality includes all possible events, whether observed or not; and the domain of the ‘real’ is the expression of the processes, causal mechanisms and structures that generate actual events and empirical experiences and can only be investigated in its tendencies:

“[...] Real structures exist independently of and are often out of phase with the actual patterns of events [...] I will argue that what I will call the domains of the real, the actual and the empirical are distinct.[...] The real basis of causal laws are provided by the generative mechanisms of nature. Such generative mechanisms are, it is argued, nothing other than the ways of acting of things. And causal laws must be analysed as their tendencies.” (Bhaskar, 2008: 3)

Table 6 summarizes Bhaskar’s domains of reality. Importantly, from a critical realist perspective, the ‘real’ is not fully knowable through scientific research but is “concerned with the generative mechanisms that produce actual events manifested in empirical sensations” (Mutch, 2010: 508). The task of social scientists is therefore “to uncover these mechanisms and so approach better understanding, albeit that such understanding is always provisional, reversible, and corrigible (Mutch, 2010: 509).

Table 6: Bhaskar's domains of reality (adapted from Bhaskar, 2008)

| | <i>Domain of Real</i> | <i>Domain of Actual</i> | <i>Domain of Empirical</i> |
|--------------------|-----------------------|-------------------------|----------------------------|
| <i>Mechanism</i> | ● | | |
| <i>Events</i> | ● | ● | |
| <i>Experiences</i> | ● | ● | ● |

3.2.2 *Personal ontological stance*

There are several points of contacts between my conception of reality – both natural and social – and Bhaskar’s notion of Critical Realism. In this sense, I position my philosophical stance as being part of the broader realist paradigm (e.g., Archer, 2010; Archer *et al.*, 1998; Bhaskar, 2008), and share the key tenet of this paradigm – that all emergent properties of social reality are *relational* in nature, that is, social reality originates from combinations of relations which can produce effects which transcend the agency and characteristics or capacities of the subjects involved (Archer, 1995).

However, Bhaskar’s Critical Realism mostly focuses on the duality between structure and human agency, and gives particular emphasis on contrasts arising in such duality, based on the theoretical influence of Marxist works (e.g., Bhaskar and Callinicos, 2003). The main interest of this line of inquiry lies in that “the relational *derives from seeking to link structure and agency in a non-reified manner*” (Archer, 2010: 201; *italics in original*) and it is mostly concerned with “the possibility of different and antagonistic interests, of conflicts within society, and hence of interest-motivated transformation in social structure” (Archer, 2010: 201).

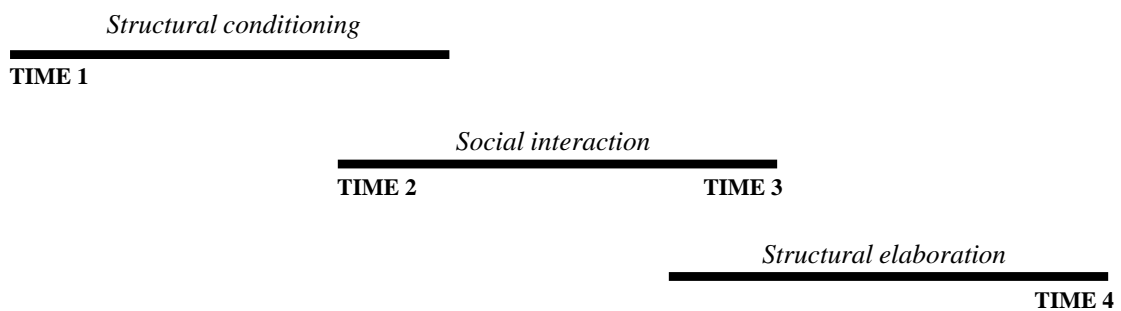
However, I do not share this emphasis: within the realist paradigm, my conception of reality is closer to other lenses, such as the Morphogenetic Approach proposed by the British sociologist Margaret Archer (1995), the so-called Relational Sociology proposed by the Italian sociologist Pier Paolo Donati (2010) and ‘the Veiled Reality Conception’ – also known as ‘Open Realism’ – proposed by the French quantum physicist and philosopher of science Bernard d’Espagnat (2006). Since Relational Sociology and the Veiled Reality Conception are less well-known in American and British academic communities than Bhaskar’s and Archer’s ideas, I provide an overview of the main characteristics of all these realist lenses below and then I highlight their implications for my PhD research.

3.2.2.1 *Margaret Archer’s Morphogenetic Approach*

Archer’s Morphogenetic Approach expands on Bhaskar’s Critical Realism by highlighting the importance of concepts such as ‘*stratification*’ and ‘*emergence*’. In this view, “reality is held to be stratified, with phenomena emerging from a particular level, but not being reducible to that level. [...] That is, once [a phenomenon has] emerged it has properties that are proper to it as a system at that level and not reducible to biological components. In such emergence, *time* is of central importance. The consequence is that the methodological injunction is to construct analytical narratives in which the unfolding of events over time is the key to the isolation of causal mechanisms” (Mutch, 2010: 509; *italics added*). She then elaborated the concept of morphogenetic cycle as an analytical approach to the study of social life, and tries to reconcile the traditional dichotomy between agency and structure (e.g., Giddens, 1984) by using the concept of ‘*social interaction*’ (Figure 5). As she explains:

“[...] every morphogenetic cycle distinguishes three broad analytical phases consisting of (a) a given structure (a complex set of relations between parts), which conditions but does not determine (b), social interaction. Here, (b) also arises in part from action orientations unconditioned by social organization but emanating from current agents, and in turn leads to (c), structural elaboration or modification—that is, to a change in the relations between parts where *morphogenesis* rather than *morphostasis* ensued. (Archer 1995: 91; *italics added*)

Figure 5: Archer's morphogenetic cycle (adapted from Archer, 1995)



Social relations emerge into existence through social interaction among actors conditioned yet not determined by the interplay of social structure – as structural conditioning to social interaction – and agency – as individual orientation to social interaction. For the purpose of my PhD research, this means that actors’ inter-relations may be influenced by structural elements as well as by each actor’s relational orientation, yet they may also have peculiar properties which transcend such influences and are worth specific investigation.

3.2.2.2 Pierpaolo Donati’s Relational Sociology⁴

Relational Sociology was developed by the Italian sociologist Pier Paolo Donati in parallel with Bhaskar since 1975, but has only recently been translated into English

⁴ In this sub-section, given the rather relatively recent translation of Donati’s work into English, I mainly draw from the contribution of Archer (2010) on the complementarities and synergies between Relational Sociology and Critical Realism.

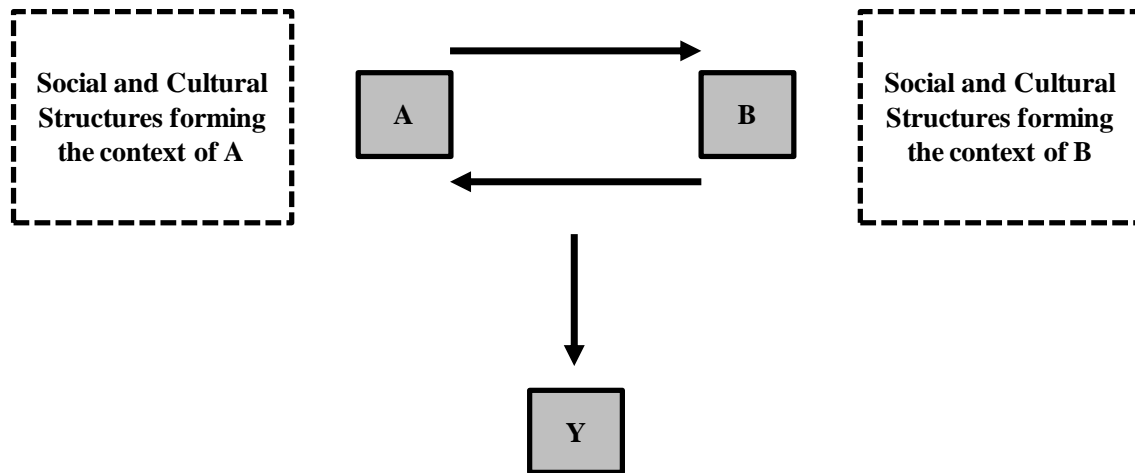
(Donati, 2010)⁵. The basic formulation of Relational Sociology is that “social reality is social relationality” (Donati, 2009: 2): put differently, that social relations are “a cause of social reality” (Morandi, 2010: 214) and thus “the subject matter of sociology is not ‘social facts’ but, rather, ‘social facts’ as social relations” (Archer, 2010: 201). Margaret Archer has presented Donati’s work to the wider English-speaking academic community explaining:

“For Pierpaolo Donati social relations are primary, rather than social systems or social action. (Thus he builds mainly upon the heritage of George Simmel and, to a lesser extent, that of Karl Marx and Max Weber). [...] The key to this approach is that it is concerned exclusively with *rel-azione*, that is, reciprocal interaction (rather than with rapport, such as the statistical relations established between independent variables at the empirical level). The direct and crucial implication is that *social relations can never be reduced to interpersonal relations*. [...] Thus the relation “is not merely the product of perceptions, sentiments and inter-subjective mental states of empathy, but is both a *symbolic* fact, (“a reference to”) and a *structural* act (“a link between”). As such, *it cannot be reduced to the subjects even though it can only “come alive” through these subjects*”. It is in them that the relation takes on a peculiar life of its own.” (Donati, 2010: 130-131; *italics in original*)” (Archer, 2010: 201-202; Figure 6)

Donati’s emphasis on the primacy of social relations as transcending the interaction between agency and structure represents the conceptual building block which justifies my choice of the relation between actors as the main unit of analysis for my PhD research.

⁵ “In the natural sciences ‘simultaneous invention’ is quite a common occurrence but one virtually unknown in social science. [...] a striking exception [is] the convergence of two remarkably similar realist approaches from entirely independent sources: Roy Bhaskar’s transcendental or critical realism, first formulated as a philosophy of science but then working ‘downwards’ by under labouring for the social sciences, and Pierpaolo Donati’s relational sociology, developing ‘upwards’ from social theorizing to formulate a realist meta-theory” (Archer, 2010: 199-200).

Figure 6: Relations between A and B generating the emergent effect Y (Archer, 2010: 203, adapted from Donati, 1998: 50)



3.2.2.3 Bernard d'Espagnat's Veiled Reality Conception ('Open Realism')

Whereas Archer's Morphogenetic approach and Donati's notion of Relational Sociology pertain directly the domain of social reality, and thus have clear implications for any academic social science enquiry (e.g., Mutch, 2010), d'Espagnat's Veiled Reality Conception represents a recent philosophical contribution based on natural science, quantum physics in particular. It is worth noting that the realist tradition generally acknowledges the importance of physics as the foundation of modern philosophy of science. Bhaskar, for example, observes:

“[Philosophy of science's] capacity for autonomous growth is limited. For the critical or analytical philosopher of science can only say as much as the philosophical tools at his disposal enable him to say. [...] Our present age contrasts unfavourably with both Ancient Greece and Post-Renaissance Europe, where there was a close and mutually beneficial relationship between science and philosophy. [...] Those philosophers of the present who insist upon their total autonomy from the natural and human sciences not only impoverish, but delude themselves. For they thereby condemn themselves to living in the shadow cast by the great scientific thought of the past. Anyone who doubts that scientific theories constitute a significant ingredient in philosophical thought should consider what the course of intellectual history might have been [...] if the phenomena of electricity and magnetism had come to be regarded as more basic than those of impact and gravity [...]. Suppose further that philosophers had taken biology or economics as their paradigm of a science rather than physics; or 16th

not 17th century physics as their paradigm of scientific activity. Would not our philosophical inheritance have been vastly different?" (Bhaskar, 2008: XXVII-XXIX)

In developing his Veiled Reality Conception, d'Espagnat built on the premise that traditional ontological positions are partly or fully inconsistent with contemporary physics. In line with Bhaskar's remarks about the influence of physics on philosophy of science, d'Espagnat observes that, wherever they are on the conceptual continuum between Realism/Positivism and Idealism, modern philosophies build on the ideas of classical physics (e.g.,: space, time, etc.), but that these traditional ideas now need to be reconsidered in the light of new quantum mechanics discoveries. In his Veiled Reality Conception he therefore sees reality as twofold: (Mind/Observer) Independent Reality and Empirical Reality. The first pre-exists concepts such as time and space, whereas the second results from the co-emergence of consciousness and objects which are not separable from a quantum physics point of view.

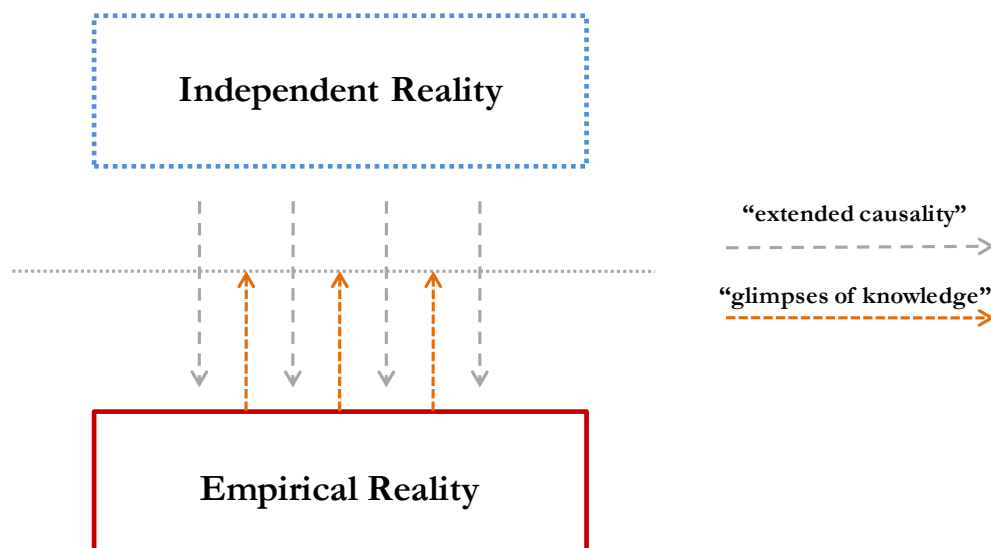
In this conception, while Independent Reality resembles Kantian Transcendental Idealism – and thus cannot be fully known – d'Espagnat argues that we can gain some knowledge of such Independent Reality in what he terms 'glimpses of knowledge', a possibility which is allowed by the quantum concept of 'extended causality', by which Independent Reality is reflected in Empirical Reality⁶. However, as this reflection is 'veiled', our knowledge of Independent Reality is only partial and within the domain of

⁶ "(...) I believe in the existence of an 'extended causality' that acts, not between phenomena but *on* phenomena *from* 'the Real.' Of course [the 'Real'] does not involve events like efficient causes (in Aristotle's sense) since such efficient causes bring time in. But it may involve structural causes and the latter, in this approach, do not boil down to mere regularities observed within sequences of phenomena. In fact these structural 'extended causes' – which vaguely bring to mind Plato's ideas – are structures of 'the Real'. [...] In my eyes, they constitute the ultimate explanation of the fact that physical laws – hence physics – exist." (d'Espagnat, 2006: 454, *italics in original*).

empirical concepts. Graphically, the Veiled Reality Conception may be represented by Figure 7.

d’Espagnat’s realist lens suggests a view of reality as stratified into a component which is independent from the observer, yet cannot be fully known, and a component which can be known/understood by the researchers as ‘glimpses of knowledge’ framed through their consciousness. In my PhD research I investigate such glimpses in the form of relatively stable mechanisms underlying the unfolding of social relations.

Figure 7: The 'Veiled Reality Conception' (personal representation of the author, based on d’Espagnat, 2006)



3.3 IMPLICATIONS FOR THE RESEARCH DESIGN

3.3.1 Epistemological foundations

A common element of the realist lenses outlined above is their emphasis on the role of models and theories in explaining the emergence of properties of social reality. They also endorse a stratified social ontology and epistemological relativity (Archer, 2010:

2000), while stressing the impossibility of obtaining knowledge that is fully independent from the observer. The goal of the researchers – who must be aware of the role of their own beliefs and contingent influences in the process – is to formulate and verify theoretical frameworks by investigating regularities and the underlying mechanisms of social reality (Blaikie, 2007). Blaikie calls this ‘epistemological neo-realism’ and emphasizes its tentative and theory-dependent status, observing that:

“Neo-realism accepts that knowledge of structures and mechanisms is always *tentative*. Knowledge obtained of the domain of the empirical, and the models that are produced to discover structures and mechanisms, must be regarded as tentative (transitive) rather than absolute. This knowledge is constrained by the limitation of humans to be able to represent definitively both the surface and the hidden domains. This is due to the fact that our observation and measurements are always theory-dependent; we cannot eliminate the effects of language and culture, preconceptions and expectations, and scientific perspectives and theories, on the way we both see and interpret the world around us” (Blaikie, 2007: 24)

In my thesis I build on this realist epistemological foundations to tentatively investigate how extant dynamic capability, entrepreneurship, and interorganizational relations theories can shed light on and – at the same time – be advanced through the glimpses empirical knowledge I am able to obtain by focusing on the unfolding of social relations between one network intermediary and participants engaged in searching for new opportunities in one large networking initiative. In the next section, I discuss the specific research strategy I employ to pursue this objective.

3.3.2 Research strategy

Consistent with my stated realist ontology and epistemology (e.g., Blaikie, 2004), I employ in this thesis a retroductive strategy which involves “the construction and application of theoretical models that uncover the real and unobservable mechanisms or

structures that are assumed to be causing actual events and experiences” (Buchanan and Bryman, 2009). As Blaikie observes, building on Bhaskar:

“Retroduction entails the idea of going back from, below, or behind observed patterns or regularities to discover what produces them. [...] Retroduction identifies this process. Building these hypothetical models is a creative activity involving disciplined scientific imagination and the use of analogies and metaphors. Once a model has been constructed, the researcher’s task is to establish whether the structure or mechanism that is postulated actually exists. This may involve testing predictions based on the assumption that it does exist, and perhaps devising new instruments to observe it. The major value of the hypothetical model is that it gives direction to research: the retroductive researcher, unlike the inductive researcher, has something to look for.” (Blaikie, 2004: 972)

Researchers following the retroductive strategy are mainly data driven (Langley, 1999) and have to creatively construct and apply theoretical models while being disciplined in examining and judging between competing theoretical explanations in the light of empirical evidence (Buchanan and Bryman, 2009). This “leads to further rounds of creative model building whereby the improved understanding emerging from previous rounds, through the application of disciplined imagination and empirical investigation and analysis, are incorporated into the next round of theoretical abstraction and elaboration” (Buchanan and Bryman, 2009: 438). Retroductive research can be seen as “an organic entity which is continuously developing and re-formulating itself as a result of the interchange and dialogue between emergent (data-embedded) theory and prior theory (models, concepts, frameworks)” (Layder, 1998: 156). A retroductive strategy requires an ‘intensive’ research design “that starts with the attempt to produce an in-depth, ethnographic understanding of how the social actors in a specific context ‘see’ the constraints and opportunities that it embodies” (Buchanan and Bryman, 2009: 439).

Accordingly and answering calls for more qualitative research in strategic management (Hitt et al., 2004; Hitt, Gimeno, and Hoskisson, 1998) and dynamic capabilities (Teece, 2012), in this thesis I have chosen to use the extended case study method (Burawoy, 1991; Danneels, 2002, 2011) as the main guide for both data collection and analysis in Study 1. Building on an extension of the same data collection approach, I then follow the embedded case study method (Yin 2008) to analyze the data in Study 2. Importantly, given the realist perspective I have adopted, the overarching unit of analysis of the thesis is the *relation*⁷ between actors, and the unit of observation is the *account* these actors offer of those relations (Donati, 2010) as they unfold in their social interactions (Archer, 2010). In fact, Donati argues that:

“The relation is made up of diverse components which can be further distinguished by the effect of ego on the other (consistency in the behaviour of the ego towards others), the other on ego (the responsiveness of a person to different egos), and *the effect of their interaction (the behaviour that none of the actors ‘brings’ to the relation, but which results from their mutual conditioning of each other)*. These effects can be observed and measured, given suitable methods. The first two effects can be analysed at the level of the individual, *the third can only be examined by taking the relation as the unit of analysis*” (Donati, 2010: 126; *italics in original*).

3.4 RESEARCH CONTEXT

I focus in this thesis on how firms and entrepreneurs were supported in their search for new opportunities by their relations with a large Italian network intermediary during their participation in a large, structured networking initiative. At this point, it will be

⁷ For the sake of theoretical consistency, it is also worth noting that, throughout the text, I will use the term ‘*relation/s*’ to identify the unit of analysis and the term ‘*relationship/s*’ to identify the outcomes of social interaction among actors.

helpful to provide a brief description of the network intermediary and of the networking initiative where these relations unfolded in practice⁸.

3.4.1 The network intermediary

Established in Milan in 1986 as a non-profit voluntary association with the purpose of promoting mutual collaboration among businessmen, the ‘Compagnia delle Opere’ (CDO – the ‘Companionship of Works’) is a cross-sector, membership-based network intermediary with more than 34,000 corporate members, mostly SMEs (see Figure 8). CDO is active in a wide variety of initiatives, including financial and commercial services in cooperation with partners such as banks, IT and energy companies, universities, and other institutions. As is the case with many other such intermediaries (Human and Provan, 1997; McEvily and Zaheer, 1999), CDO also coordinates lobbying activities similar to trade and industry associations (Spillman, 2012). Although firmly rooted in Northern Italy, CDO has a total of 38 primary local branches throughout Italy⁹ (see Figure 9), 17 formal branches abroad (e.g., Brazil, France, Israel, Kenya, etc.), as well as non-geographical units focusing on the Agri-food, IT, and Social Enterprises sectors, and thematic departments on e.g.,

⁸ Sections 3.4.1 ‘The network intermediary’ and 3.4.2 ‘The networking initiative’ are primarily based on internal and external documentation, subsequently corroborated during interviews with the network intermediary’s managers and staff.

⁹ The CDO local branch in Lecce (Southern Italy) closed in 2012, while I was conducting the research, due to some organizational issues that I was unable to investigate further. Since then, member firms have been serviced by the Bari local branch.

Figure 8: Profile of CDO member organizations by macro-sector, legal form, number of employees, and annual revenues (source: CDO, 2011)

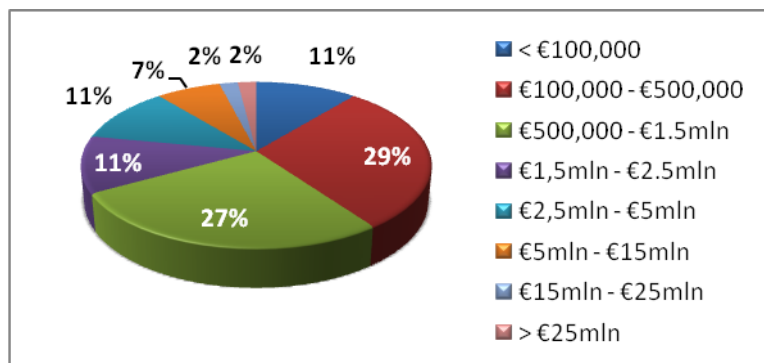
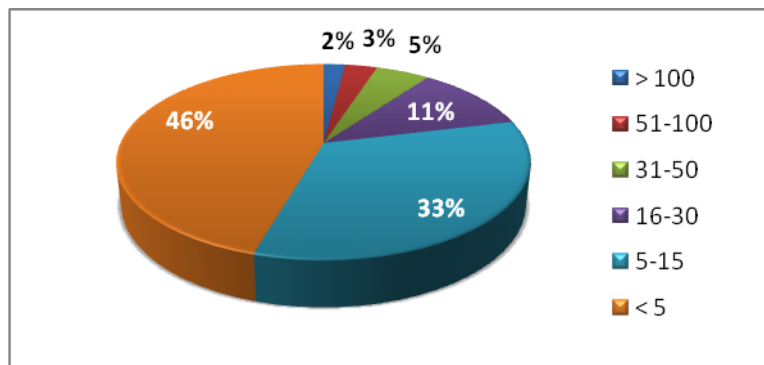
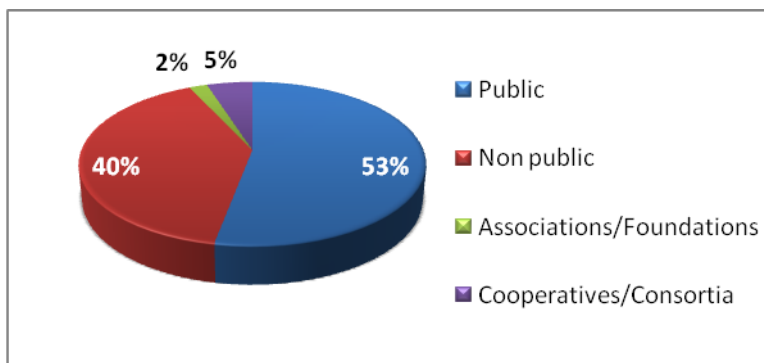
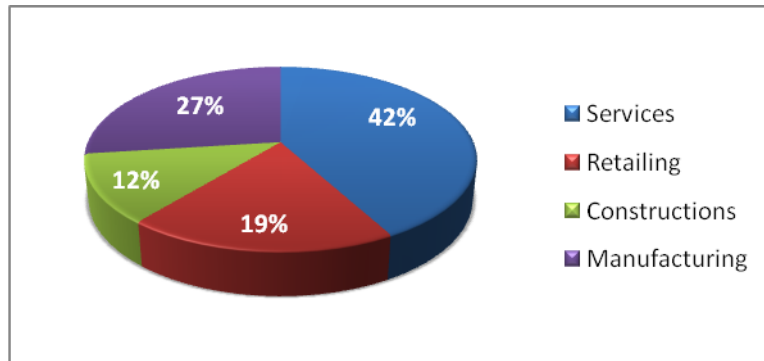


Figure 9: CDO local branches in Italy



entrepreneurial education and non-profit sectors. CDO defines itself as ‘an association between businessmen’: its steering committees, made up of owner-entrepreneurs or senior managers of member organizations, are responsible for deciding activities and interacting with institutions at both the local and national levels. Local presidents and vice-presidents are also generally businessmen periodically elected by local members,

whereas its managers and staff are employed full-time by CDO. Finally, a subsidiary arm – ‘CDO Network’ – focuses on supporting internationalization processes, and maintains offices in 25 Countries and substantial presences in Russia and China.

3.4.2 The networking initiative

In 2005, for the first time, CDO organized ‘Matching’, an innovative networking initiative designed around a 3-day business-to-business event held in Milan in November, together with a set of supporting, complementary and preparatory activities during the year. The first edition of the event involved over 500 participants, since then, Matching¹⁰ has grown steadily in scope and in terms of number of participants and of bilateral meetings. The 2011 Matching-event, for instance, was attended by nearly 2,400 firms – 300 from overseas – across 18 sectors and generated over 50,000 bilateral business meetings over the three days (see Table 7). As well as its predominantly SME members, participants included large international groups – such as Bombardier, DMG, Electrolux Professional, Honeywell, Microsoft and Unicredit – who were often directly involved in the event’s 115 thematic workshops. The reach of the Matching-event was also expanded by a series of partnerships with regional institutions, local chambers of commerce, and other Italian business associations.

3.4.2.1 Historical background

Matching started in 2001 as a small entrepreneurial networking event – similar in form to a cross-sector trade-show, but closed to the general public – organized by a local

¹⁰ Matching is a complex networking initiative composed of a 3-day event supported by a set of structured activities organized by CDO throughout the year. While both CDO and participant firms often use the initiative’s overall title to refer to both components, for the purpose of clarity, this paper refers to the year-round program as ‘Matching’ and the specific 3-day event as the ‘Matching-event’.

CDO branch in which around 100 participants gathered for a day to explore new business opportunities. At the time, no formal preparation was involved and CDO acted just as a passive host. From the third edition (in 2003) the event was renamed ‘Matching’ and replicated by other local branches building on the experience of the first organizers, though in a rather disconnected way. As a CDO informant from the local branch where Matching was born remembers:

“For two years we organized a very simple initiative called ‘Workshop’... with around 100 firms. For each participant, we had prepared an area with a table, a chair on one side and two on the other and a sign with the name of the firm... nothing else... In 2002... we started exporting the format, proposing it to other CDO branches. We realized that we had know-how which we could put at disposal of other branches. The following year we did it in [three other branches]... Then the entrepreneurs started saying: ‘Ok, we meet other member firms from [this local branch] yet I have a product or service which can be of interest for firms from [many other cities], so we decided to propose it to CDO at the national level... which clearly recognized Matching as an interesting initiative”

The first national Matching-event was organized in 2005 with around 500 participants over a period of three days. Due to the novelty of the Matching idea, it was difficult to communicate its value – most of the participants were long-standing members which accepted to attend the event as an act of trust in CDO. From the second edition, local CDO branches started to help local participants to prepare for Matching, and the importance of this supportive service in driving the creation of new relationships surprised national CDO managers. This also marked the beginning of an internal process of change within CDO itself, which renewed and strengthened the degree of collaboration between the center and local branches. As a national CDO manager explains:

“The first national edition helped us understand that the formula had real value in addressing our entrepreneurs’ needs. The value – recognized by all – was in our careful supporting service... a robust service, which did not leave entrepreneurs alone but

sustained them during the event and in the months before and helped them benefit from all the opportunities Matching offered... This supporting service is still evolving; it is relentless work for us... We now have 7 people working full-time exclusively on Matching at our national headquarters, plus a series of national staff members who give Matching professional attention part-time... Then we have a local structure... with around 100 people dedicated to that support service...”

Table 7: 'Matching' sectors^(a) (2011 edition of the event)

| Sector | Number of participant organizations |
|--|--|
| Agri-food | 146 |
| Automotive | 24 |
| Chemicals, Rubber and Plastic | 36 |
| Commercial Services | 19 |
| Construction and Plant | 296 |
| Electronics and Electro-technics | 61 |
| Energy, Environment and Sustainability | 130 |
| Finance, Credit and Insurance | 28 |
| Foreign Firms | 107 |
| Health | 146 (inc. 37 public & private hospitals) |
| Innovation | 6 |
| IT and Telecommunication | 188 |
| Manufacturing | 33 |
| Marketing and Advertising | 108 |
| Mechanics, Metallurgy and Steel | 164 |
| Non-profit | 6 |
| Public Bodies | 35 |
| Services | 175 |
| Studies and Consultancies | 85 |
| Textile and Clothing | 21 |
| Tourism, Catering and Well-being | 40 |
| Transport and Logistics | 53 |
| Wood and Furniture | 58 |
| Work and Formation | 29 |
| Total | 1,994 |
| Others directly invited | n.a. (in the region of 300) |

^(a) The table uses the official sectoral division employed by CDO to organize participants during Matching. As one may expect, however, the business of many participants was often cross-sectoral.

“Matching also helped us... discover the value of our associative capital in practice... it gave us the opportunity to pool the experience of many CDO members who were interested in sharing their entrepreneurial endeavors with others. This willingness to share, besides having an ideal content, had an operative potential which Matching developed and whose efficacy and convenience it showed in practice... Matching has now become a real fact in the economic life of the Country”

3.5 DATA COLLECTION

I conducted my field study over twenty-two months beginning in January 2011, and collected a substantial amount of evidence via interviews, direct observation, and from external and internal documentation. This allowed me to actively triangulate different data sources to gain “a rich and solid foundation for... theory development” (Danneels, 2002: 1098). My supervisor served as second investigator, focusing mainly on secondary data, in order to crosscheck and challenge the evidence as it emerged.

I was granted access to the full network of Matching participants after being formally introduced to them by the CDO president and managing director, whom I contacted via a personal contact with an entrepreneur in a local CDO branch. Since “selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings” (Eisenhardt, 1989: 537), I specifically tried to select a diverse sample of network participants in terms of their organizational size, sector, and geographical distribution (Gersick, 1988; Harris and Sutton, 1986), starting from suggestions from national and local CDO staff members, and building sample numbers and diversity from direct contacts I made during the events (Table 8 presents an overview of the sample’s firms and informants). I generally approached the owner-entrepreneur or key senior managers of participant firms in order to gain “a thick

Table 8: Profile of the sample of firms

| Type of firm | Average number of employees ^(a) | Average turnover ^(b) | Sectors | Role of the informants | No. of firms (interviews ^(c)) |
|--|--|---------------------------------|---|--|---|
| Micro firms | 6 | € 578,000 | Automation; Business services consultancy (x2); Communication and training consultancy; Design tiles; Digital print and graphic services; Document management; Logistics; Office supplier; Software development and social deals; Health and safety training consultancy | Commercial director; Entrepreneur (x8); Partner (x2) | 11 (11) |
| Small firms | 18 | € 2,550,000 | Applied research; Architecture; Automatic beverage distributors; Automation; Baking products; Digital services and training; Dried fruit; Environmental services; Independent R&D laboratory; Industrial coating and metal surface treatment; Industrial machinery; Industrial pavements; Insurance services (x2); IT and logistics; Organic baking products; Pickle and in– oil products; Real estate development; Telco, energy and green management services | Business development manager; Commercial director (x3); Commercial and R&D director; Entrepreneur (x10); Entrepreneur and local CDO president; Managing director; Partner (x4) | 19 (21) |
| Medium firms | 81 | € 19,936,000 | Business Services consultancy; Construction; Flour mill; Environmental services; IT and multimedia; Road construction; Salami and oil; Weighing systems | Commercial director; Entrepreneur (x5); Partner; Group marketing director | 8 (8) |
| Large Italian firms | 478 | € 103,750,000 | Design wooden windows; Fresh-cut fruit, vegetables, and chilled fresh ready meals; Oil and beer; Sustainable accumulators and vehicles | Commercial director; Entrepreneur (x3); Entrepreneur and local CDO president | 4 (5) |
| Large international firms | 2,081 | € 510,000,000 | Healthcare; Professional food service and laundry equipment | Business unit managing director; Marketing manager | 2 (2) |
| Multinational firms | 111,000 | € 39,064,000,000 | Diversified technology; ITC and business services | Key account manager; Marketing manager | 2 (2) |
| Others (e.g., consortia, cooperatives, etc) | 403 | € 11,667,000 | Architecture; Chemical, IT and medical engineering; Multi-services; Wine producers | Entrepreneur; Entrepreneur and local CDO President; Partner (x2); Founder/President | 4 (5) |
| Total = 50 (54) | | | | | |

^(a) Data not provided by two small firms and one consortium.

^(b) Data not provided by one micro firm, three small firms, and one consortium.

^(c) To clarify some of the responses, in four firms I interviewed two informants. In three cases, the second informant was a relative of the entrepreneur in a family-run business: in the fourth he was an additional founding partner of a consortium.

description of practitioners' perspectives and experiences" (Danneels, 2002: 1101). I enhanced the effectiveness of my triangulation efforts by conducting interviews with local CDO staff members who directly managed the association's relations with sample firms, always scheduling these interviews after those with the relevant participant firms so as to be able to cross-check their responses. In total, I collected data from 81 interviews, 27 with CDO informants and 54 with entrepreneurs or senior managers from 50 participant firms, over the period from after the 2010 edition of the Matching-event through to the preparation phase for the 2012 edition. Interviews, which lasted one hour on average, were all tape-recorded (apart from two because of technical problems and one due to lack of authorization), producing a total of 917 single-spaced pages of verbatim transcripts.

All participants were fully briefed before each interview on the academic nature of the research, on the support CDO had given my study and on the fact that my research feedback reports to CDO would help shape the Matching initiative's future development. Interviewees were also explicitly told that the interviews would be confidential, and reassured that personal and business names would be anonymised in both academic outputs and CDO feedback reports. These safeguards – and the combination of interviewing techniques such as 'courtroom questioning', 'event tracking', and 'nondirective questioning' I employed (Ozcan and Eisenhardt, 2009) – encouraged informants to provide both positive and counterfactual evidence, as I report in the findings section.

The interview questions evolved from being purely exploratory to semi-structured over several rounds of comparison between the emerging evidence and the literature in four runs of coding (Danneels, 2002, 2011; Saldaña, 2011). The interviews were

triangulated with a variety of other sources. For example, I was able to take extensive notes during three full-day meetings of national CDO managers also attended by local presidents, directors, and staff members where either the preparation or the results of Matching were assessed. I also attended (as passive observer) two half-day training sessions on the use of Matching's online portal and a three-hour internal coordination meeting, both attended by local staff members. I had regular contacts with CDO throughout the whole study period, and was able to monitor (as a guest member) its private online community where firms shared experiences, projects, and needs. As the core of my data gathering, I spent the three days of the 2011 edition of Matching observing, taking pictures and making extensive field notes, and also attended one day of a local initiative in Florence with over 200 participant firms. All these actions allowed me "to gain first hand exposure to the processes under study, instead of solely relying on interviewee accounts" (Danneels, 2002: 1098). I triangulated the emerging evidence with external documentation – including over three hours of transcripts of a press conference and nearly seven hours of YouTube interviews by CNBC and other regional media – as well as with several internal documents, such as brochures, newsletters, magazines, presentations, and web pages, as well as official transcripts of the association's annual general meeting.

3.6 DATA ANALYSIS

I analyzed the data differently in my two studies, in the light of each study's purpose, its main reference sample, and the interconnections between the findings and the literature relevant to each. In particular, in Study 1 I followed the extended case study method

(Burawoy, 1991; Danneels, 2002; 2011) for both data collection and data analysis, whereas in Study 2 I re-analyzed the data using a more traditional embedded case study approach (Yin, 2008): this reflects the ‘funnel-shape’ structure of the thesis (see Figure 1).

3.6.1 Data analysis in Study 1

In Study 1, I used the extended case method (Burawoy, 1991; Danneels, 2002; 2011) to analyze my data, an approach which supports a particular type of theory building (Eisenhardt and Graebner, 2007; Graebner *et al.*, 2012; Yin, 2008), i.e., theory refinement (Ridder *et al.*, 2009), whose purpose is to “integrate and synthesize existing bodies of work” (Danneels, 2002: 1101). Existing theories and cognitive structures shape researchers’ activities and thus “theory generation does not necessarily mean generating theory from scratch; [...] theory refinement can include theoretical extension, but it can also occur independent from it through new evidence that is used to further develop theory” (Ridder *et al.*, 2009: 153). Given the burgeoning literature on dynamic capabilities (Barreto, 2010; Di Stefano *et al.*, 2010; Vogel and Güttel, 2012), the extended case method was therefore especially suited to revealing the “elusive black box” of dynamic capabilities (Pavlou and El Sawy, 2011: 240).

I followed Danneels closely in going “through many cycles of confrontation between data and theory in each iteration” (2011: 4). In developing this method, Burawoy (1991: 10-11) observed that it requires “a running exchange between field notes and the analysis that follows them. [...] But there is a second running exchange, that between analysis and existing theory, in which the latter is reconstructed on the

basis of emergent anomalies. Analysis, therefore, is a continual process, mediating between field data and existing theory". I therefore started with an extensive literature review of dynamic capability theory that led me to some initial conjectures. I then conducted the first ten exploratory interviews with this theoretical knowledge in the back of my mind, but let the interviewees – which involved both intermediary and firm respondents – give me a broad account of the relations and firm participation in the networking initiative. I constantly asked for illustrations of specific statements and encouraged the clarification of several answers. After reading the transcripts, documents, and personal notes carefully, I returned to theory, and explored new literature related to emerging themes on business networks, opportunity recognition, entrepreneurial new tie formation, and relational sociology, while continuously refreshing and updating my theoretical knowledge from new contributions on dynamic capabilities.

Next, I completed another round of eight interviews, this time asking more specific questions – informed by my prior analysis and new literature – to improve my emerging empirical knowledge. This iterative process of constantly comparing data and theory generated preliminary evidence about the relational deployment and development of dynamic capabilities that I subsequently investigated via two further interviews conducted during the local Matching-event. After each interview round, I recoded all the interviews looking specifically for reasons to confirm, to refine, or to refute emerging theory. Given the results that emerged from these twenty preliminary interviews, I obtained the final approval of CDO and retained the same approach for the final and largest round of 61 interviews, to purposefully deepen my analysis to the point where it reached a stable degree of theoretical saturation (Danneels, 2011; Lee, 1999;

Strauss, 1987). Throughout the entire process I checked the credibility of the emerging evidence via extensive feedback sessions with two entrepreneurs, CDO management, and a panel of international academics to “[establish] the dependability and confirmability of the... findings” (Danneels, 2002: 1102; based on Lincoln and Guba, 1985).

3.6.2 Data analysis in Study 2

While I was analyzing the first set of 35 interviews for Study 1, a theme related to the specific networking behavior of entrepreneurs started to emerge which was distinct from the (unsurprisingly) static and predominantly commercially-oriented behavior of other participants (i.e., senior managers and commercial staff), which generally resembled that common in traditional trade-show events. After a careful analysis of the pertinent literature – with particular attention to contributions on entrepreneurial new tie formation (e.g., Vissa, 2011) and the overall entrepreneurial process (e.g., Sarasvathy, 2001; Stuart and Sorensen, 2007) – I developed some initial conjectures. I then re-coded the interview transcripts focusing on participants’ networking behavior and grouping together comparable actions, which began to reveal a clear difference between the behavior on entrepreneurial and non-entrepreneurial participants, and also allowed me to identify a separate theme related to the actions of CDO aimed at influencing how Matching participants networked during the event. Finally, I decided to pursue this additional line of inquiry with additional questions and a purposeful expansion of the number of entrepreneurs in my overall sample. As the primary data source for this study, I used a sub-sample of semi-structured interviews with 40 entrepreneurs and

founding members of 38 firms, consultancies and consortia participating in the Matching networking initiative. I then triangulated the evidence emerging from these interviews with the other interviews with CDO and other firm informants, as well as using the same mechanisms as in Study 1. Following the embedded case study approach (Yin, 2008), I only claim the typical exploratory contributions of case study research for this Study 2, with less emphasis on targeted theory refinement.

3.7 CHAPTER SUMMARY

In this Chapter, I have provided a detailed discussion of the research methodology used in my PhD. First, I have grounded my research on a realist philosophical perspective, which I have clearly positioned within different paradigms in philosophy of science. More specifically, I have justified my philosophical stance as based on a realist ontology and epistemology. With respect to my ontological view of reality, I have explained thoroughly its position as part of the broader paradigm of realism, with characteristics shared by realist lenses such as Critical Realism (Bhaskar, 2008), the Morphogenetic Approach (Archer, 1995), Relational Sociology (Donati, 2010), and the Veiled Reality Conception (d’Espagnat, 2006). I have also explained how, consistently with this realist ontology, the main unit of analysis of the PhD is the relation between actors, and its unit of observation is the account provided by these actors of their relations, as they unfolded in their social interactions. Next, in line with epistemological realism, I have justified the use of a retroductive research strategy (Buchanan and Bryman, 2009) and my choice of the extended case study (Burawoy, 1991; Danneels, 2002; 2011) and the embedded case study (Yin, 2008) methods as the main

methodological approaches chosen for my research's two field studies. I have then presented a detailed explanation of the research context from which I draw the empirical evidence, by presenting the main characteristics of the network intermediary which granted me access, and of the networking initiative where I obtained the data both studies. I have concluded the Chapter with a discussion of the data collection and data analysis procedures which I followed. In the next two Chapters, I present the actual findings of the two Studies.

CHAPTER 4

STUDY 1 FINDINGS

CHAPTER 4: STUDY 1 FINDINGS

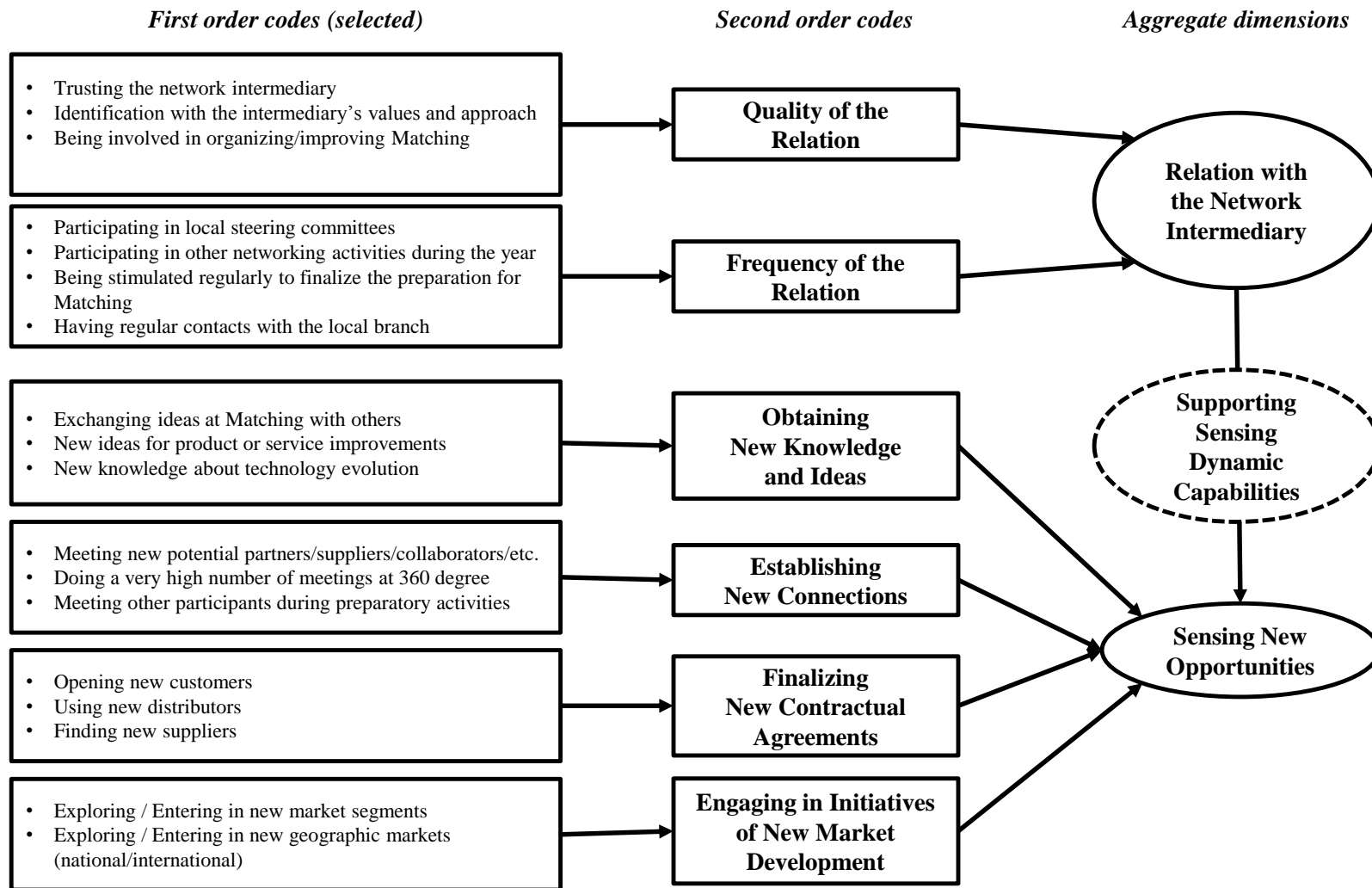
4.1 INTRODUCTION

In this Chapter, I build on the methodology presented in Chapter 3 to provide a detailed account of how the network intermediary supported the deployment and further development of the existing sensing dynamic capabilities of its member organizations through a structured networking initiative. It is worth noting that the main unit of analysis of this study is the relation between the network intermediary – CDO – and 50 participant firms in the context of the Matching networking initiative.

As might be expected, the influence of these relations was different depending on the participant's idiosyncratic characteristics: in other words, how each firm prepared for Matching and how they interacted with CDO clearly differed and mattered. For instance, similar to McEvily and Zaheer's (1999) findings in the context of supporting activities organized by regional institutions, not all organizations experienced the same type of results from Matching – nor did they want to. But they were all exposed to the same basic process underlying the networking initiative and, notably, all those that actively interacted with CDO reported results that reflected what Teece (2007) conceptualized as the outcomes of sensing dynamic capabilities. Figure 10 provides an overview of how their relation with CDO supported participants in sensing new opportunities, showing the quality and frequency of the relation helped firms to sense new opportunities during the Matching-event.

I next 'zoom into' the process of supporting participants' existing sensing dynamic capabilities; to do this, I structure my findings in three parts where, following

Figure 10: Overview of data structure in Study 1 after fourth round coding



Danneels (2011), ample interview quotations are used to “describe the case in sufficient descriptive narrative so that readers can experience these happenings vicariously and draw their own conclusions” (Stake, 1995: 450). The final data structure of the process underlying the relational deployment and development of sensing dynamic capabilities is presented in Figure 11. Table 9 illustrates my coding structure through a number of examples of confirmatory and counterfactual evidence.

4.2 THE MECHANISM OF MATCHING

Matching is based on an agenda of pre-arranged business-to-business appointments organized via a dedicated online platform, and CDO plays an explicit and proactive role in shaping the agendas of these ‘matched-appointments’, in preparing participant firms before the event and in supporting them during and after the event. The appointment agenda mechanism requires firms to spend substantial time and effort to prepare themselves during the three months before Matching-events. Specifically, each participating firm must first present itself accurately on a virtual showcase where company information, product/service offer, and development projects are made public, with customizable levels of openness. Next, the online portal obliges participants to select a minimum of five appointments with potential suppliers and partners before allowing them to book any appointment with potential customers, so there is a formal incentive for participating firms to conduct an active search process and to make their needs and search objectives explicit on the portal. In addition, in the preparation phase, local CDO staff members assess potential cross-branch synergies during regular national coordination meetings, and send participants online suggestions for additional

appointments. CDO actively stimulates participant firms in this preparation phase via frequent face-to-face and phone conversations, and by offering general and specific professional advice. The agenda mechanism and CDO's activities supporting its creation represent the 'rules of the game' of Matching and aim at encouraging participants to adopt proactive networking behaviors and at reducing the number of 'fake' appointments, where a participant tries to get around the rules by pretending to seek contacts 'with potential suppliers or partners' but is really only targeting potential customers. One participant observed:

“Matching has some strict ‘rules’... You have to prepare the company profile online, you have to select and create your contacts, etc... If I go to a normal tradeshow, I play my own game there... I do not have ‘rules’ to follow. [At Matching], instead, there are a common ‘rules’... which make all the participants behave the same [when they meet]”

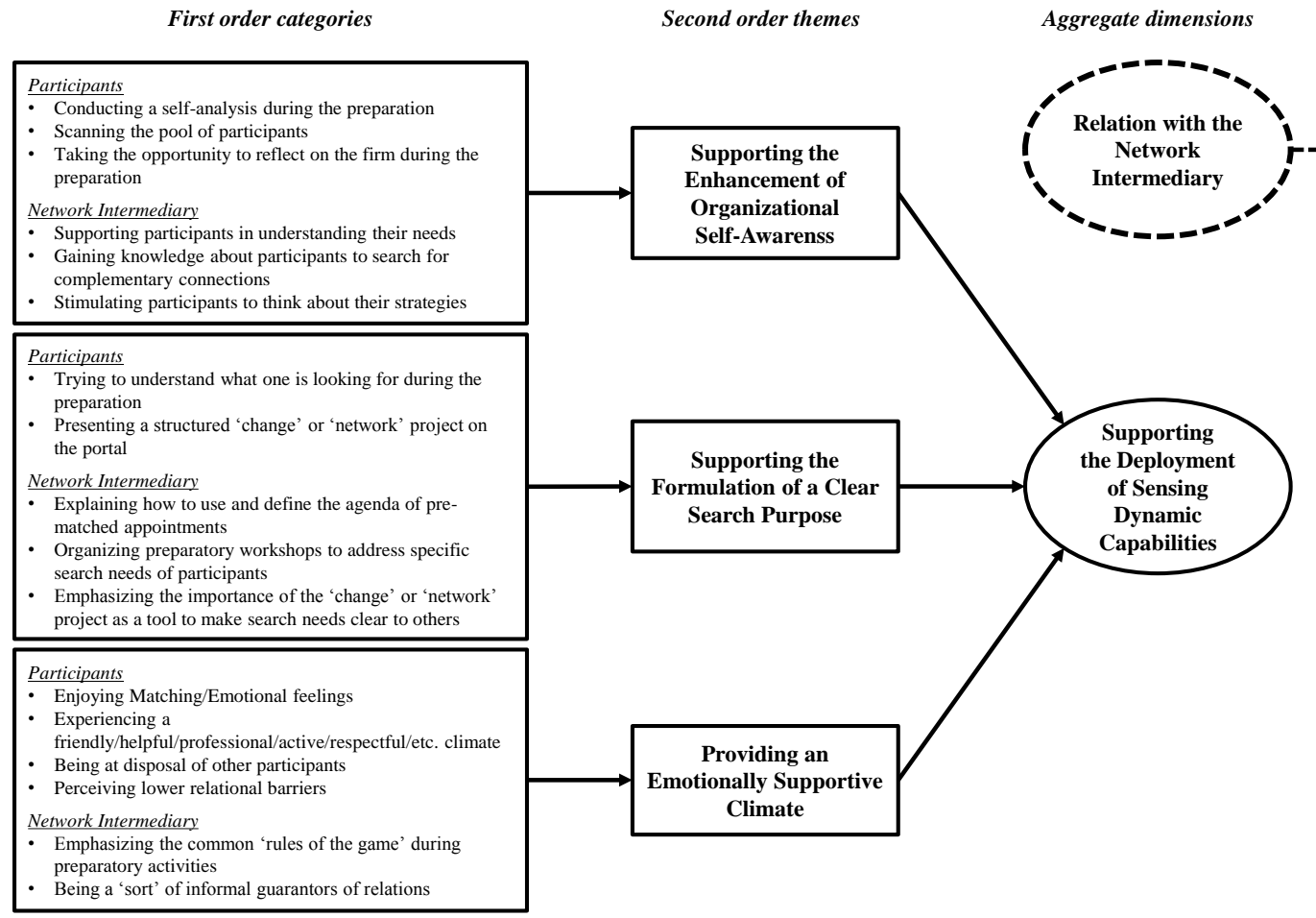
Throughout the year, CDO organizes a number of preparatory activities, such as social gatherings where participants from prior editions share their experiences with potential newcomers, and workshops on specific topics, such as dealing with large retailers, doing business overseas, and searching for funding. Voluntary modules on business education – e.g., on marketing, HR management, finance, etc. – offer further preparatory opportunities. Matching also includes a set of complementary networking activities designed by CDO that provide occasions for expanding and strengthening relationships among participants and creating new opportunities, some of which are organized as part of the Matching-event. Examples include the 100-plus thematic workshops and the so-called ‘Expert Help-Desk’ where participants can interact with professionals to address specific questions across a variety of themes. Recent years have found Matching being enriched by a series of smaller replica events at local and regional levels. Collectively branded as ‘Matching for the whole year,’ these local

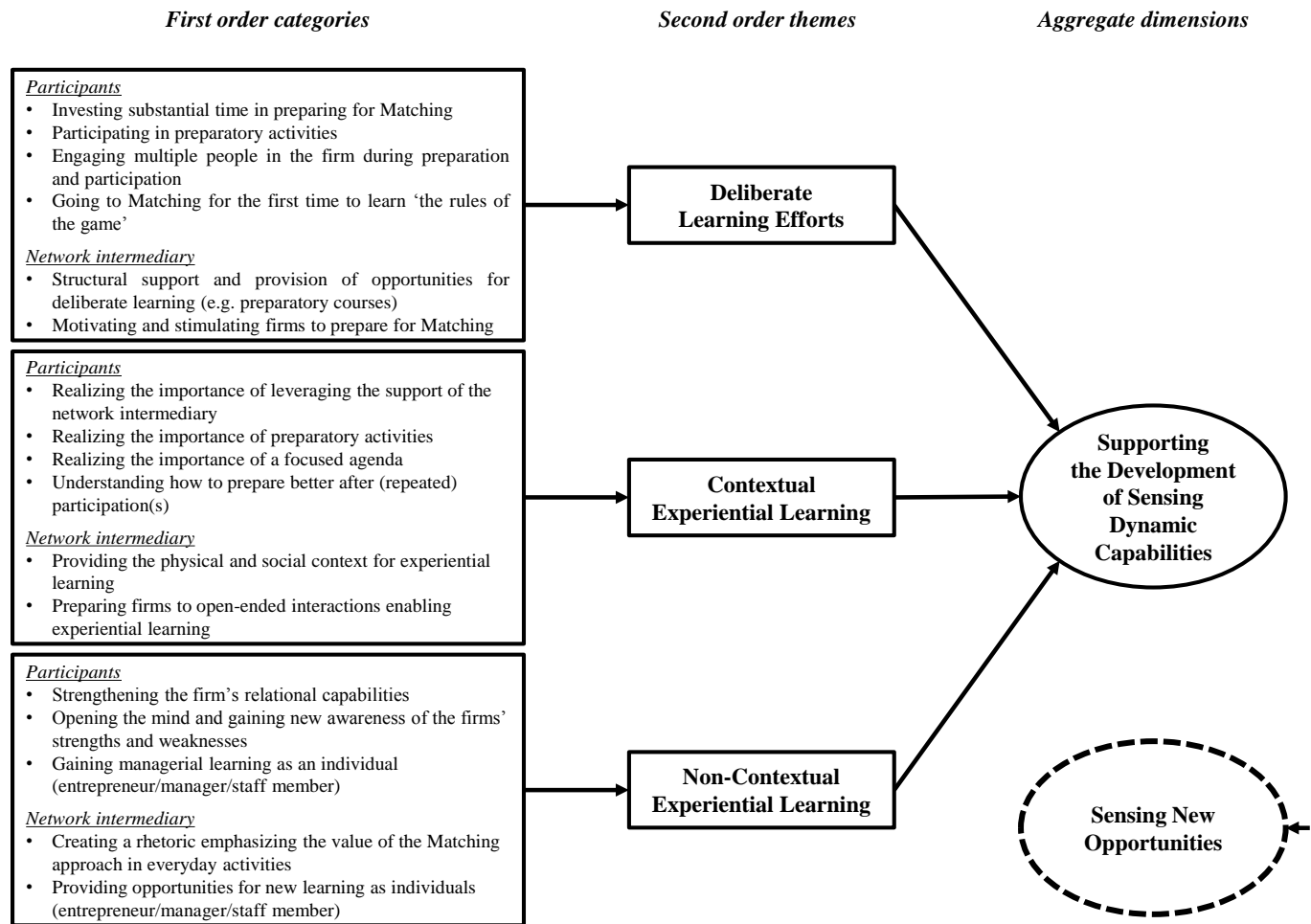
events, which typically involve between 150 and 300 participants, include, for example, ‘Expandere with Matching,’ organized in many Italian cities with the same cross-sector scope of the national event; ‘Costruendo,’ specifically designed for participants from the construction industry; ‘Matching Innovation,’ targeting innovation-oriented small and medium-sized enterprises; and foreign Matching-events in countries such as Brazil, China, Qatar, Russia, and Spain. Finally, to increase the number of relational opportunities, CDO invites large Italian and international firms as well as public and private hospitals, institutions, and buyers from international retailers.

4.3 SUPPORTING THE DEPLOYMENT OF DYNAMIC CAPABILITIES

Many of the firms in my sample exhibited activity patterns consistent with the detailed discussion of sensing dynamic capabilities presented by Teece (2007). Interacting with CDO made firms more conscious of who they were, of their resource base, and of their market and network potential (Danneels, 2011; Sarasvathy, 2001). Attending Matching with a clear focus – as a result of undertaking appropriate preparatory work – was generally a further driver of the successful deployment of their existing sensing dynamic capabilities. Organizational self-awareness allowed “for experimentation in the realm of the unknown” (van Krogh, Roos, and Slocum, 1994: 63), and a clear search purpose was critical in sensing new opportunities (Helfat *et al.*, 2007; Teece, 2007). In what follows, I refine dynamic capability theory by providing evidence of the importance of cognitive processes of organizational self-awareness (Danneels, 2011). I also shed fresh light on the purposeful nature of sensing dynamic capabilities, a central

Figure 11: Final data structure in Study 1 after fourth round coding





point that has been theoretically debated in prior literature, but which has been disregarded in practice as being empirically intractable (Barreto, 2010).

Importantly, I found evidence that participants involved in this networking initiative experienced an unusually positive inter-firm climate that enacted emotional processes which heightened their deployment of sensing dynamic capabilities. These findings provide first-hand evidence in support of recent theoretical developments proposing that affective and emotional processes can enhance the influence of dynamic capabilities (Hodgkinson and Healey, 2011). In addition, since all participants shared a common relation with CDO – so configuring all inter-firm relations at Matching as being Simmelian, i.e., triadic, in nature (Simmel, 1950) – my results also offer exploratory evidence of the role this particular type of relations (Tortoriello and Krackhardt, 2010) may play in dynamic capability theory.

4.3.1 Supporting the enhancement of organizational self-awareness

The effective deployment of sensing dynamic capabilities stems “from the interaction between reflexive (e.g., intuition, implicit association) and reflective (e.g., explicit reasoning)” processes (Hodgkinson and Healey, 2011). Here I focus on how the network intermediary supported participants’ reflective processes by enhancing their organizational self-awareness during their preparation for Matching (Danneels, 2010; Salvato, 2009; Schreyögg and Kliesch-Eberl, 2007). Prior research emphasizes that relationally embedded ties (Granovetter, 1973; Uzzi, 1997) can influence how firms think about their strategies, and suggests that external parties may shape how strategic decision makers think about their firms (Gray, 2007). The successful recognition and

Table 9: Empirical exemplars of main themes

| | Confirmatory exemplars | Counterfactual exemplars |
|--|--|---|
| | Supporting the deployment of sensing dynamic capabilities | |
| Supporting organization as self-awareness | <i>Network intermediary.</i> “We organized [a local mini-replica of Matching] with the same spirit and motivations. In a historic period where it is easier to point fingers or to clam up, we need to start building again based on a joint sense of responsibility. For entrepreneurs, this means starting from their own firms, with the awareness that the most important change is how they conduct their firms. To face these new scenarios they need to acquire new competences, to learn new criteria to look at their clients, and their products and their markets.” (Local CDO director, from the <i>CDO Magazine</i>) | <i>Network intermediary.</i> “We help them reflect in front of a blank sheet and we try to make them understand their strengths and weaknesses, and which ideas or projects they want to develop in the Matching context. Trust me: this is a very difficult talk – entrepreneurs are often self-centered and presumptuous, and think they already know everything ... In addition, many firms are now more structured... and helping them come to an agreement and making everybody perceive what value they can bring to and what they can gain from Matching is not easy!” (Local CDO staff member) |
| Supporting search purpose formulation | <i>Network intermediary.</i> “The advantage of Matching is that it is based on an explicit question, i.e., it has to be clear to the firm that it really needs to change something and is asking others for help. For instance, agri-food firms may have ‘relations with large retailers’ or ‘opening new foreign markets’ as their main aims. Once these have been clarified, we can organize a specific day of work on these two themes before or during Matching... In short, there needs to be an explicit question on the table!” (National CDO manager) | <i>Firm.</i> “I noticed some participants had put up signs on their stands saying ‘Matching: The value of a meeting – rubbish’ (and I’m just paraphrasing!) – as if Matching was a terrible initiative. For me it has been very useful! ...I think these participants were protesting because they were not well prepared for the event... [The brochure] creates huge expectations! But if your local staff members do not help you translate that brochure into practice effectively, if they don’t explain how you can best leverage the agenda... you end up sitting on your stand expecting 1,000 people to come up and ask for information! This is why some of them just left on the second day!” (Entrepreneur, Micro communication and training consultancy) |
| Providing an emotionally supportive climate | <i>Network intermediary.</i> “The difficult economic and financial situation should not obscure that fact that the market still offers possibilities. To seize them, however, it is essential that firms can count on reciprocal support to sustain them in going through necessary changes. The positive and trustful climate we all breathe at Matching has given many participant entrepreneurs concrete help in outlining the work they have to do in the near future.” (National CDO manager, from a <i>press release</i>) | <i>Firm.</i> “Some participants come and play ‘dirty’... they ask for meetings as potential customers and instead come and present themselves as perspective suppliers. I have to say that I do not like this behavior – but I’m there available to listen to everybody... When I notice somebody playing like this I always say very clearly: ‘... I apologize but I am not interested in your services’... and I close the meeting immediately.” (Entrepreneur, Micro business consultancy) |

| | Confirmatory exemplars | Counterfactual exemplars |
|---|---|---|
| Supporting the development of sensing dynamic capabilities | | |
| <i>Deliberate learning efforts</i> | <i>Firm.</i> “This is the third time we’ve been to Matching... The first time we realized it wasn’t a traditional trade show but a giant showroom and an opportunity to meet, to know and to get to know... We used our first participation to understand the mechanisms and the spirit of Matching and how we should participate in following years.” (Lawyer, Medium IP consultancy, from the <i>CDO Magazine</i>) | <i>Network intermediary.</i> “Entrepreneurs need to accept the demanding commitment involved in Matching and in CDO to work together with others to discuss the firm’s medium term outlook, its potential partners and whatever else they might find helpful to realize that outlook. It is evident that not everybody is willing to accept this commitment and not every year.” (National CDO manager, from the <i>CDO Magazine</i>) |
| <i>Contextual experiential learning</i> | <i>Network intermediary.</i> “I noticed a deeper awareness in participants of the potential of Matching... It was the appreciation that both establishing new relations and strengthening existing ones, always bring a deeper awareness of one’s own entrepreneurial endeavors and of the potential for change which one can develop.” (Local CDO director, from the <i>CDO Magazine</i>) | <i>Firm.</i> One participant we met by chance during the 2011 Matching-event was deeply dissatisfied by how his relations unfolded over the year... He explained that, on a couple of occasions, the other firm he had met at Matching 2010 had not delivered its services in a professional manner and they had ended up in court. He had expected more trustful relations from Matching. But, when prompted, he revealed that: a) he did not prepared for his participation in either event; b) he had not interacted with CDO at all during the year to make it aware of the issue and seek its support. (Author’s personal note, unrecorded conversation) |
| <i>Non-contextual experiential learning</i> | <i>Firm.</i> “This morning I asked one of my collaborators: ‘Why do you think Matching is interesting?’ – He said: ‘It’s a different mode to establish a relation’... It contributes to forming a new approach. My people have started doing Matching even outside Matching.” (President, Large sustainable accumulators and vehicles firm) | <i>Network intermediary.</i> “In my opinion entrepreneurs tend to overlook the formative value [of Matching]... In our local area... there isn’t a real willingness to do any real training. Matching instead has an educational-formative value in respect of an entrepreneur’s approach... Entrepreneurs surely do not have this perception and tend to come just to sell or buy, full stop!” (Local CDO director) |

exploitation of valuable opportunities require strategic decision makers to carefully reflect on “who they are, what they know, and whom they know” (Sarasvathy, 2001: 250). Organizational self-awareness includes “higher forms of cognition, such as logical reasoning, planning, and hypothetical thinking” (Hodgkinson and Healey, 2011: 1503). How strategic decision makers critically reflect about their firms is extremely important for the business’ long term prosperity (Laamanen and Wallin, 2009), and often involves “disbelieving what was previously held to be true” (Gray 2007: 496).

Firm. “My business partner and I – I say this without false modesty! – think that we are good; all our customers tell us that we are good. Yet often, going to Matching... we realized that it is not enough to be good... This means that... you can develop the sensibility and the capacity to wait and judge where to go, to ‘think about your firm’... I cannot say it in a different way!” (Entrepreneur, Small IT and logistics firm)

Network intermediary. “We often need to help participants focus on a reality which is rapidly changing. Not all of them are so reactive in understanding how to change the way they look at their firms and at the world around them.” (Local CDO manager at a *press conference*)

Building organizational self-awareness necessitates being able to develop fine-grained, reflective knowledge about the firm’s internal and external environments (Schreyögg and Kliesch-Eberl, 2007; Teece, 2007). For a firm, understanding the internal environment entails a careful analysis of its own resources and “is the result of a subjective process of self-conscious inquiry” (Danneels, 2011: 21), while assessing the external environment involves market intelligence gathering activities such as “the acquisition of information regarding lead users, customers, competitors, and relevant publics” (Song and Thieme, 2009: 47).

Firm. “While preparing for Matching... we asked ourselves: ‘[What] differentiates us from others?’ ... We realized that our advantage is not the device but the fact that we are able to co-design with the customer and [the quality of] our network of suppliers... before, it wasn’t crystal clear to us what were our core competences, our strengths!” (Entrepreneur, Large IT and multimedia firm)

Network intermediary. “We have defined a working method that gives our local branches better tools to understand each firm’s needs and to identify which areas they need to change... to help participants go down this path of self-analysis and search.” (National CDO manager)

What firms pay attention to cannot be overlooked (Ocasio, 1997). Organizational self-awareness “depends very much on ‘the point of observation’ [and] what you know determines what you see, or what you choose to be relevant” (von Krogh *et al.*, 1994: 58). Resources cannot be considered as ‘givens’ and their value is not always self-evident (Barney and Arikan, 2001; Danneels, 2011). The firm itself, the market, and the industry are, from an entrepreneurial point of view, “artefacts that begin as gleams in the eyes of individuals... [their creation] demands imagination, inspiration, and protracted endeavour, both cooperative and competitive” (Sarasvathy, 2001: 261). Strategic decision makers need to “improve their businesses through the creation of ‘strategic spaces’ [which may allow them] to engage in critical reflection” otherwise day-to-day activities become “all-consuming to the detriment of longer-term strategic development” (Jones, MacPherson, and Thorpe, 2010: 649-650).

Firm. “Doing Matching... we learnt how to take a rather destructive look at our [normal working approach]... We understood that sometimes... we need to take a step back and... look at ourselves, at what we are, and start thinking about what we want to become... We were used to doing a lot and thinking too little. The fact that we [recently] set up a new joint venture came out of this process of ‘re-thinking ourselves’.” (Entrepreneur, Small IT and logistics firm)

Network intermediary. “Before Matching... we organize a presentation with all the firms which attended the previous edition... it prepares the ground for Matching... it is one of those occasions where you are away from the office, your secretary is not there, the phone is not ringing, no emails are coming in... and you have the time to stop and chat for five minute with your competitors, to ask them how it is going, and so on. These moments of association, at the end of the day, are the best preparation for the Matching-event!” (Local CDO staff member)

4.3.2 Supporting the formulation of a clear search purpose.

Dynamic capabilities have generally been seen as incorporating a purpose, yet this aspect remains under-examined (Barreto, 2010). In Teece *et al.*'s (1997: 515) seminal conceptualization, the word 'capabilities' was used to emphasize the critical role of strategic decision makers in deliberately "adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment". Attributing a degree of intentionality to dynamic capabilities is a key aspect in differentiating them from operational activities and from accident and luck (Winter, 2003). Successful adaptation and strategic renewal require firms to "have some implicit aim, even if not fully planned" (Helfat *et al.*, 2007: 5). I found that the participants' formulation of a search purpose was a fundamental and distinct driver of the effective deployment of its existing sensing dynamic capabilities during Matching.

Firm. "Preparing for Matching means defining what we are looking for and that's not easy to do... For example, last year we were going to bid for some government funding... so we targeted firms that might be interested in doing R&D in several areas... We therefore prepared ourselves for this goal... Being clear about what you want, about why you are going there, is critical. It is a pre-requisite." (R&D and commercial director, Small independent R&D laboratory)

Network intermediary. "In general, SME entrepreneurs know in the back of their minds what they want to change, yet they approach the problem in very simplistic ways, such as phoning suppliers directly... you can do a lot of other things instead, for instance, such as understanding exactly what your ideas are and then searching for partners or new suppliers and starting a process that by itself can help you change much more than just making a phone call to a supplier." (National CDO manager)

Exploring new ideas, searching for new partners, customers, or complementors need to be purposefully pursued in the same way as achieving sustained growth. Even creative and serendipitous discoveries are not usually the result of simple luck but are "a combination of search (directed effort), contingency (favourable accidents), and prior

knowledge (sagacity)” (Dew, 2009: 736). Similarly, organizational self-awareness needs to be “pursued with intent [because] it is not idle meanderings or daydreaming, but purposive activity directed towards a goal” (Boud, Keogh, and Walker, 1985: 11). My findings suggest that their relation with the network intermediary played an important role in supporting participants in formulating a clear search purpose for their sensing dynamic capabilities.

Firm. “Having a clear purpose is fundamental! Last year... we made an ‘*a priori*’ choice saying: ‘What is the purpose this year? What are we interested in?’ ...As a result, we obtained a lot of contacts, our meetings were much less disparate and we capitalized on our experience more effectively. The support from our local CDO branch is the first ‘test-bed’... because there is a person who helps you think and stimulates you when you are lagging behind in formulating your proposal...” (Entrepreneur, Large IT and multimedia firm)

Network intermediary. “We struggled a lot with one of the firms you interviewed, despite it being their third participation in Matching... We made the effort to discuss: ‘What can sustain your development?’ with them. So they had to imagine what potential partners they could meet... We knew this firm’s business, so then we searched specifically for other firms which might perhaps have it in mind as a complementary partner when proposing an offer to their own customers.” (Local CDO director)

4.3.3 Providing a supportive climate.

Dynamic capabilities are closely related to the “process of exploration and discovery [that bridges] experience and learning [and involves] both cognition and feelings” (Gray, 2007: 496). Deploying their sensing dynamic capabilities requires firms “to harness the cognitive and emotional capabilities of individuals and groups to blend effortful forms of analysis with the skilled utilization of less deliberative, intuitive processes” (Hodgkinson and Healey, 2011: 1500). During the three days of the Matching-event networking initiative, participants generally found themselves immersed in an emotionally supportive climate of inter-firms relations.

Firm. “Being involved in Matching is an injection of optimism... It truly is an ‘emotion to live!’ ...We have always partnered to complement our inexperience, but... we were really surprised to find a natural tendency to compare at the event, so that even those firms that were less used to it were ‘infected’.” (Entrepreneur, Industrial components multinational firm)

Network intermediary. “One beautiful thing to highlight, in my opinion, is this generalized openness... an entrepreneur underlined [it] as ‘I am here to listen to everybody!’ Another member, when he entered the exhibition centre two years ago, looked around... and exclaimed: ‘This is not a fair! It is a social gathering where people meet to discuss their opportunities!’... [they also expect] great confusion, a lot of movement and clamor... instead there is an impressive order everywhere!” (Local CDO director)

A psychologically secure emotional climate, based on shared trust and fairness, may indeed be one of the most significant drivers of the effective deployment of sensing dynamic capabilities (Hodgkinson and Healey, 2011) and may encourage innovation (Schreyögg and Steinmann, 1987). Trust and fairness, which are partly based on emotional and affective processes, were widely understood as elements underlying the formation of new relations at the Matching-event.

Firm. “The Matching climate produces a sort of culture of trust and solidarity... I do not know how it happens technically ... I only know that, when I am there, when I look in the eyes of somebody who is tasting my wines... I generally understand immediately whether he appreciates the Matching approach ... Somebody asked me at a workshop: ‘Isn’t there the risk that somebody screws you over?’ Sure! ...but at Matching you do not start, as often happens, with that worry in mind.” (Entrepreneur, Wine producing consortium)

Network intermediary. “Over the years we have developed a very positive regular feature... that there is a sort of openness among participants... The climate is very open towards meeting others and this aspect is never missing... This positive and open climate has always been a characteristic of Matching-events... and it certainly helps the initial contact between two firms when they meet.” (National CDO manager)

In addition to a mutually trusting affective climate, the quality of inter-firm interaction at the Matching-event was significantly shaped by norms of reciprocity (Kenis and Knoke, 2002) – “a pattern of exchanges in which one partner receives a benefit from another partner in return for a benefit given previously to that partner” (Li

and Rowley, 2002: 1106). Shared norms of reciprocity can have a profound impact on how firms sense opportunities in networked environments (Das and Teng, 2002). But reciprocity-based relations were not a given at the Matching-event, and clearly depended on participants being willing to make the effort to be at others' disposal.

Firm. "I am very pleased to give, to feel competent to give part of my knowledge to others, because I hope that, perhaps, somebody does the same with me, no? In my opinion this is part of the CDO approach... I mean... if I want help from others first I [must] offer them help and then, perhaps, I get it as well, no? This approach is in line with our mentality... If everybody only asked, nobody would offer any help and there would be only demands and no offers!" (Entrepreneur, Small business services consultancy)

Network intermediary. "Even those firms which do not find their target customers at Matching, still go there to be at the disposal of other participants. They see it as an opportunity for enrichment, because they benefit from comparing themselves with other participants who share the same challenges. They are clearly willing to be at the disposal of others, because this enrichment can only happen if you talk to a person who is willing to be open and wants to compare experiences." (Local CDO manager at a press conference)

4.4 SUPPORTING THE FURTHER DEVELOPMENT OF DYNAMIC CAPABILITIES

Zollo and Winter (2002: 340) observed that "dynamic capabilities arise from learning" and distinguished between deliberate learning efforts and semi-automatic (experiential) learning. Individual and organizational learning are key processes "by which repetition and experimentation enable tasks to be performed better and quicker.... [and] new production opportunities to be identified" (Teece *et al.*, 1997: 520) – as such, they support sensing dynamic capabilities (Eisenhardt and Martin, 2000; Teece, 2007; Winter, 2003). The results of my study show that the network intermediary proactively stimulated both deliberate and experiential learning for participants to support the

further development of their existing sensing dynamic capabilities, both in their Matching-related and their day-to-day sensing activities after the event.

4.4.1 Deliberate learning

Investments in deliberate learning “take the form of time and resources spent and, as such, may directly influence the time (and resources) available for direct exposure to events that trigger experiential knowledge” (Romme, Zollo, and Berends, 2010: 1274). Firms that did not engage systematically in this preparatory work often failed to deploy their existing sensing dynamic capabilities fully in Matching. CDO supported the further development of participants’ sensing dynamic capabilities through processes designed to create specific learning opportunities for both individuals and organizations, with CDO providing participants with structured support that directly improved participants’ sensing dynamic capabilities during Matching.

Network intermediary. “The management of one of our member firms... was utterly [doubtful]. So I told them: ‘Look, I’ll write down what I propose you should do, but you have to follow it step by step... that is, every day you need to let me know how many other participants’ profiles you look at, and so on’. We did a continuous monitoring task together – [which was] very hard and intensive for me as well! ... This now happens nearly every week, and they always give me some feedback about the profiles they checked. [They] now employ someone to do this exclusively throughout the year” (Local CDO director)

Network intermediary. “What we cannot do face-to-face, we do by exchanging the list of those firms they want to meet by email, which guarantees a minimum level of support for each participant... There are, for example, those we need to help in terms of the quality of the appointments they request, because they do not understand the mechanism or did not prepare properly via the online portal, etc.” (Local CDO director)

4.4.2 Experiential learning

As Pandza and Thorpe (2009: S121) highlight: “The notion of experiential learning is based on the premise that the evolutionary loop of variation, selection, and retention (Van de Ven, 1992) will be a frequent one, where variation is largely informed by previous retention, and the results from any adaptation are based on straightforward interpretations of the selection”. My findings suggest that the relation of participants with CDO not only – as one may expect – enabled participants’ contextual learning experience by helping them understand how to better benefit from Matching year on year, but also facilitated their long term non-contextual learning by framing Matching as an opportunity for entrepreneurial education. By enabling such learning processes, CDO supported participants’ increasing ability to sense new opportunities during the Matching-event and to further develop their sensing dynamic capabilities in their every-day activities.

Firm. “Matching is an opportunity... It is a way to work, to act, to think out of the box... This is what I learnt. I changed my approach in searching for something of interest when I meet another firm... it is an approach which I then leverage in many other unrelated situations ... I have also learned a [new] way of analyzing opportunities others give me and I’ve internalized it as a systematic approach when I meet other entrepreneurs. For me it’s a constant – I exploit it every day.” (Partner, Small architecture firm)

Network intermediary. “Matching is a great school of entrepreneurial education. I mean, it allows you to compare how you act as an entrepreneur with others who face the same challenges. Matching offers a ‘gym’ of direct comparison between entrepreneurs, and demolishes all barriers of jealousy between firms... Speaking as an organizer of Matching, how to facilitate this has always been one of our main aims.” (Entrepreneur and local CDO president, Small Environmental services firm)

4.5 CHAPTER SUMMARY

In this Study 1, by using the extended case study method for data analysis, I contribute to refining and extending the flourishing dynamic capability theory by providing a detailed account of the process through which the network intermediary – CDO – supported the sensing dynamic capabilities of firms participating in the Matching networking initiative. My findings reveal that the network intermediary supported the deployment of firms' existing sensing dynamic capabilities 1) by helping them enhance their organizational self-awareness and formulate a clear search purpose, and 2) by providing a supportive inter-firm climate based on emotional and affective processes which facilitated the recognition of new opportunities. They also unveil how participant firms' relations with CDO unfolded through Matching, fostering the further development of their sensing dynamic capabilities via both contextual learning – i.e., improvements in their sensing activities during Matching – and non-contextual learning – i.e., improvements in their day-to-day sensing activities unrelated to Matching. In addition, by showing how all participants shared a common relation with the network intermediary, thus configuring new inter-firm relations established during the networking initiative as triadic, i.e., Simmelian (Simmel, 1950), in nature, my study offers exploratory evidence of the impact of such relations on sensing dynamic capabilities.

CHAPTER 5

STUDY 2 FINDINGS

CHAPTER 5: STUDY 2 FINDINGS

5.1 INTRODUCTION

In this Chapter, I use the embedded case study approach (Yin, 2008) – as discussed in Chapter 3 – to present a detailed account of the repertoire of networking behaviors entrepreneurs used while sensing for new opportunities during their participation in Matching, and the networking drivers CDO designed to intentionally shape such repertoire of networking behaviors. My findings demonstrate that participating in networking initiatives can allow entrepreneurs to intentionally leverage a rich repertoire of networking behaviors to sense new opportunities and to build their portfolios of relationships. They also reveal the important role network intermediaries – such as CDO, in this case – can play in influencing entrepreneurs’ repertoire of networking behaviors. Figure 12 illustrates the model that underpins my findings, and Figure 13 details the final structure of the data.

5.2 LEVERAGING ENTREPRENEURS’ REPERTOIRE OF NETWORKING BEHAVIORS

The entrepreneurs I observed participating in the Matching initiative followed an intentional approach to establishing new connections and sensing new opportunities. I found that they leveraged a rich repertoire of networking behaviors based on three dimensions – networking predisposition, entrepreneurial logic, and network development effort – each of which was determined by a combination of two concurrent

Figure 12: The conceptual framework underlying the findings of Study 2

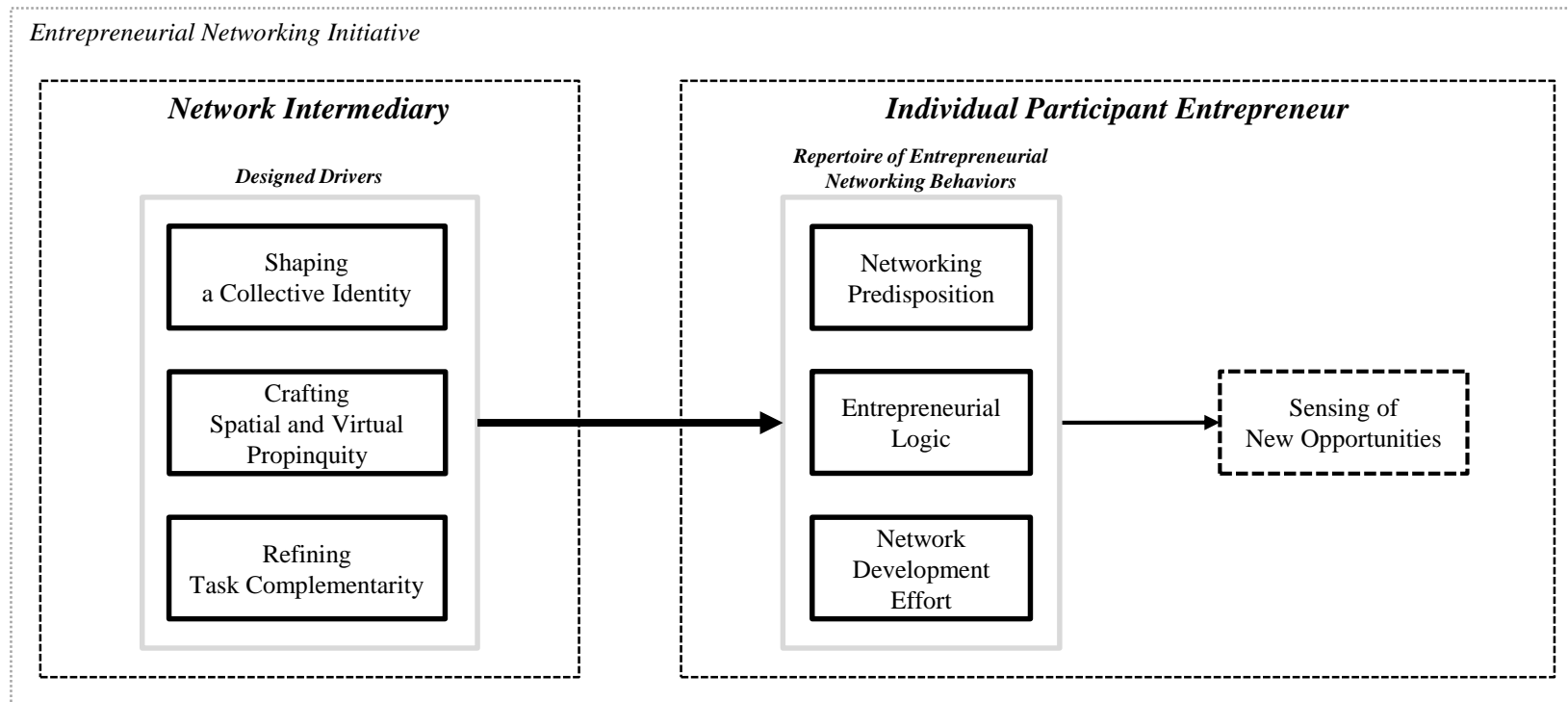
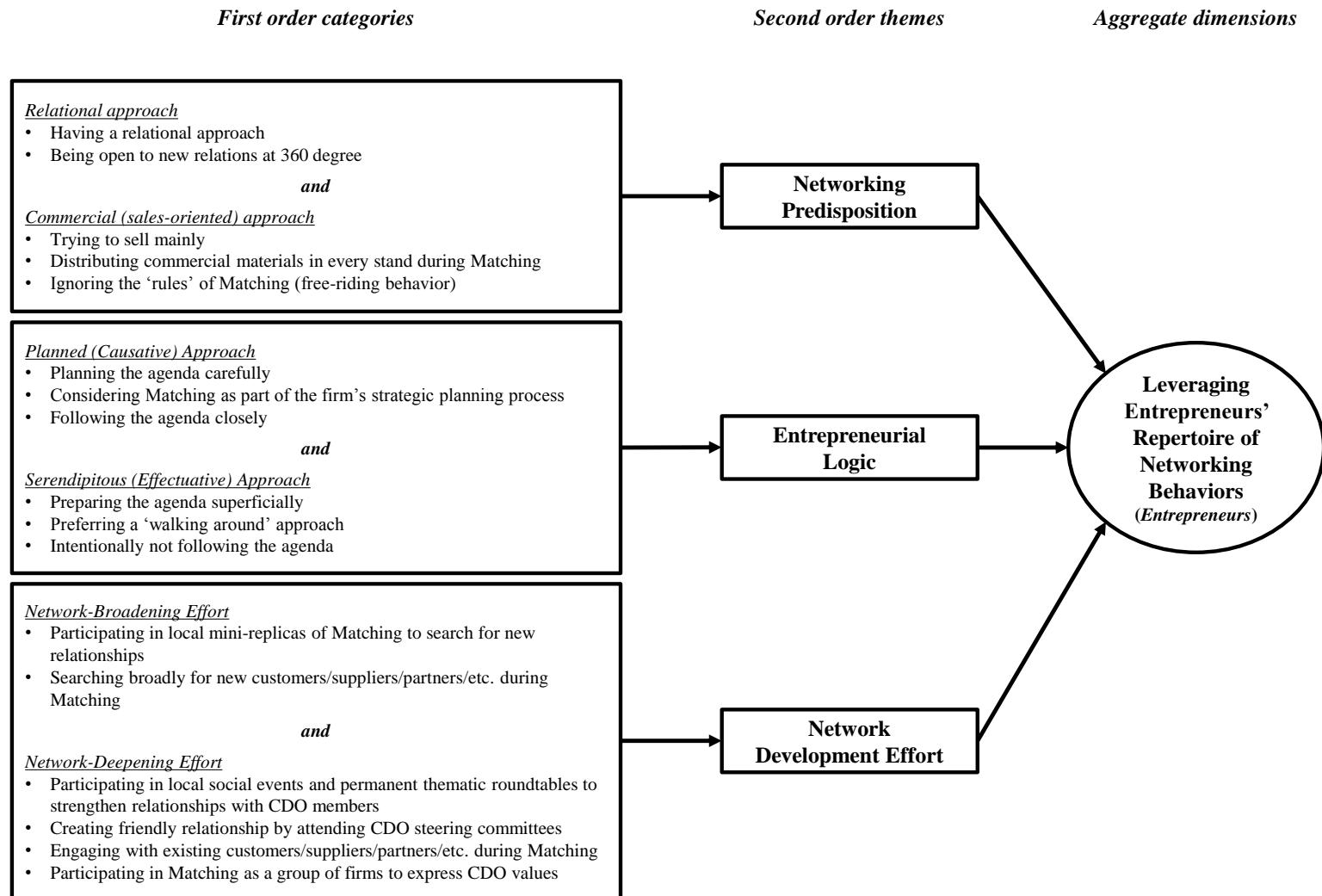
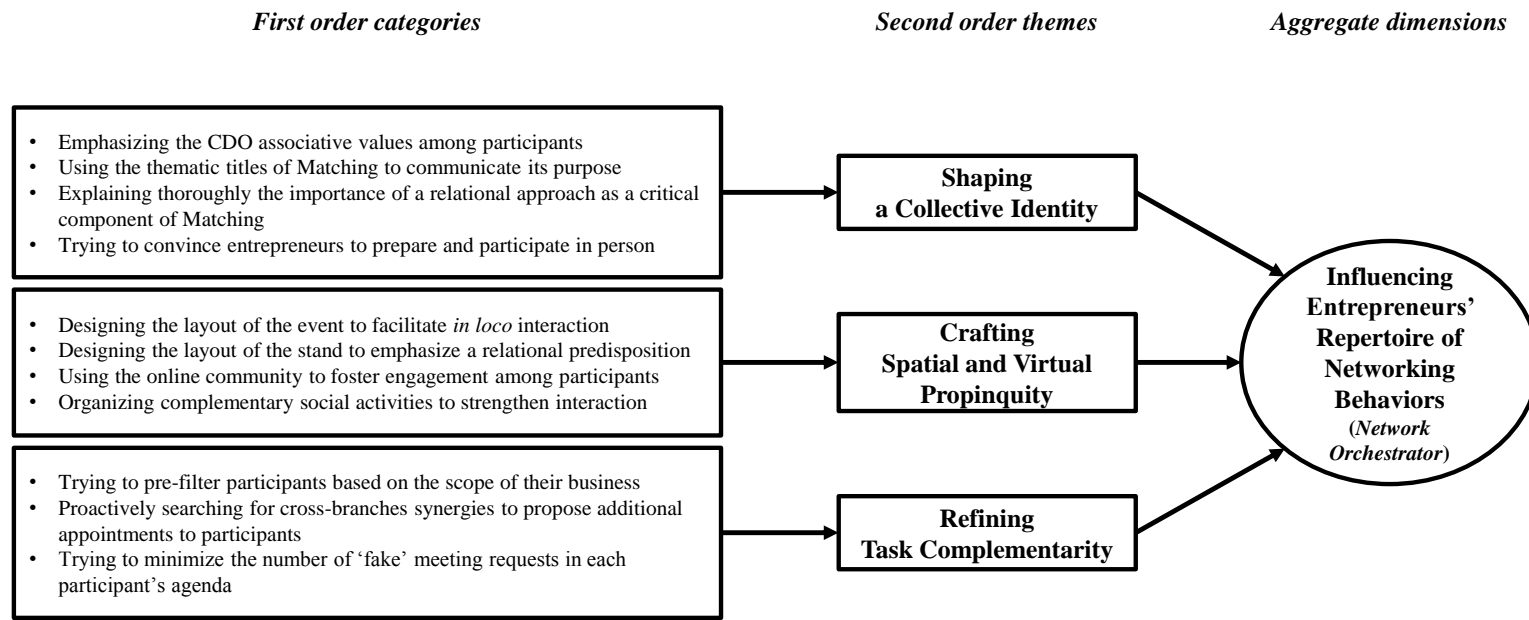


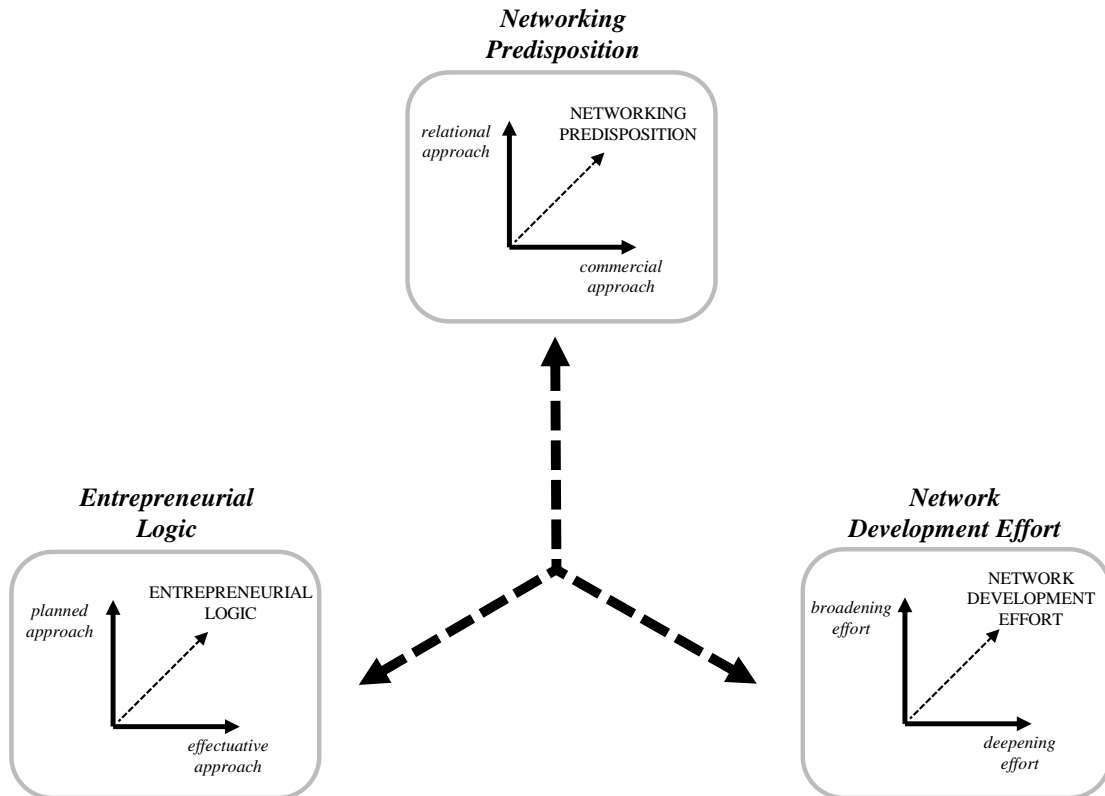
Figure 13: Final data structure in Study 2





approaches. Figure 14 provides a visual representation of these networking behavior dimensions, which I describe in more detail below.

Figure 14: Dimensions of entrepreneurs' networking behavior



5.2.1 Networking predisposition

The entrepreneurs participating in Matching generally displayed a predisposition to network with others that can be represented as a combination of behaviors which sought to seek commercial advantages and those which were open to the benefits of new relationships *per se*. Entrepreneurs who displayed predominantly commercial approaches focused mainly on direct searching for customers and, in many cases,

approached Matching as a traditional tradeshow. This approach often involved activities bordering on free-riding behavior, such as trying to get around the agenda-mechanism by camouflaging appointment requests to customers as if they were directed to potential suppliers or partners, and distributing unsolicited commercial brochures. Entrepreneurs who primarily employed such approaches often made widespread use of supporting individuals such as salesmen and hostesses. Two participants summarized these entrepreneurs' behavior as follows:

Firm. “This year we noticed a disturbance created by a series of people who were bluntly taking the opportunity to leave their cards [like spam] and promote their firms. This was very disturbing... If they do not share the Matching approach... their participation... was a waste of time, because they neutralized the basic premise of coming to Matching which is to be willing to establish new relationships” (Partner, Architecture consortium).

Network intermediary. “Whether we like it or not, many entrepreneurs always come just to sell, we cannot avoid it even though we tell them that Matching is not a place where you can sell because it is not a tradeshow... However, those who come only to sell [tend to] try Matching once and then not come back...” (CDO Local staff member)

Other entrepreneurs maintained an open predisposition, seeking to engage in new relationships irrespective of their sales potential. Although the search for customers was often among their goals as well, these entrepreneurs placed a specific emphasis on being open to initiating new relationships with suppliers, partners, investors, and others to obtain valuable knowledge about market and technological innovations, and new ideas about various aspects of organizational life. In the main, they sought this knowledge as a foundation for their own strategic development as entrepreneurial firms. Such relationally predisposed entrepreneurs usually engaged personally with Matching, both in preparing and in participating:

Firm. “[Our CDO local staff member] told us: ‘...You do not go to Matching to sell but to search... for opportunities, for new collaborations... for what you cannot normally find!’ I must say that, from the beginning, it was a serious cognitive effort –

being used to tradeshows – not to simply stay on your stand and wait for visitors you could ‘capture’... But we realized that the real opportunity of Matching was that everybody was willing to create mutual relationships...” (Entrepreneur [1], Small industrial pavements firm).

Network intermediary. “It’s [all to do with] the mindset of the entrepreneur. There are some firms where the entrepreneur does not come but sends their commercial people – [and] if they sell they are happy, if they do not, they are not. People with commercial [attitudes] want to sell full stop. But instead, entrepreneurs may sell a product, but also understand they might find something even more interesting by drinking a coffee with another entrepreneur!” (CDO Local Staff Member)

5.2.2 *Entrepreneurial logic*

The second dimension of an entrepreneur’s networking repertoire I observed was an ‘*entrepreneurial logic*’ in terms of searching for new opportunities. Again, this logic involved two extremes – a purely planned approach and a preference for serendipitous encounters. Some entrepreneurs spent a substantial amount of time preparing their agendas of pre-arranged appointments, and tended to prefer to stick to them when participating in the event, and minimize their searches for additional appointments. Some entrepreneurial firms even incorporated the whole set of their Matching activities as part of their firm’s strategic planning process. Two participants’ describe this entrepreneurial logic:

Firm. “Last year I considered the appointments in the agenda as the most important thing at Matching and I overlooked the possibility of searching for new contacts while we were there...” (Entrepreneur, Micro business services consultancy).

Firm. “We consider Matching as part of our strategy... It is at the end of the year but, more importantly, it represents the beginning of new relationships for the next year... It is useful to understand and assess our next year’s strategy... We do not go carelessly... We plan carefully for Matching and we go there focused on optimizing our time and resources... I focus more on operational issues and my father on strategic ones... he is the ‘mind’!” (Commercial director and son of the founder of a large oil and beer firm).

However, many other entrepreneurs employed a completely different logic, using what I term a ‘walking around’ approach, intentionally reducing their reliance on the planned agenda in favor of the chance to make unexpected encounters. Their ‘walking around’ involved exploring a large number of stands and pursuing unexpected opportunities. In many cases this behavior caused entrepreneurs to ignore some of the appointments in their agenda – or not to prepare for them properly (or even at all) – even though this annoyed the other parties involved in the scheduled meeting. The following participants observed this type of behavior:

Firm. “In my opinion... the agenda becomes in practice a rather limiting working tool... so we moved away from [CDO’s] format... we left a person at the stand and went and looked for new appointments stand by stand, doing a sort of ‘door to door Matching’ ... which was exactly the opposite of the idea of programming the event” (Entrepreneur, Micro communication and training consultancy).

Firm. “CDO pushes the idea of a Matching-philosophy based on planned appointments... but I do not agree with them, because that is just a starting point! I am an entrepreneur and I cannot spend the pre-Matching period thinking about where to go or who to meet: this is something that becomes very clear over the three days!” (Entrepreneur, Medium environmental services firm).

5.2.3 Network development effort

Finally, I found that entrepreneurs differed in how they engaged with the rich set of complementary activities organized by CDO before and during Matching. Whereas the Matching-event itself generally contributed to participants’ attempt to broaden their portfolio of relationships with new customers, suppliers and partners, many entrepreneurs also started participating in a number of thematic workshops during Matching to further expand their local and international networks. As one explained:

Firm. “A few years ago, we were thinking about how to network and develop our business in the healthcare and energy sectors and Matching was the natural answer. In three years of participation, we have developed a very important network of

relationships and we have also been awarded some contracts... We work with CDO by participating in two regular round-tables where we network within the healthcare... and energy sectors” (Entrepreneur, Small automation firm, from a CNBC interview)

Firm. “[I think] we took the right approach when we participated in Matching Russia ... I did not sell anything but I came back satisfied because I had some appointments that made me start on a path of [developing my] knowledge of that country and its context... We are following up some contacts... and we are trying to develop dialogues with them...” (Entrepreneur, Large fresh-cut fruit and vegetable and chilled fresh ready meals firm)

Firm. “I went to two pre-Matching workshops... Let’s say that I used them as a way to meet new people among the CDO members... if they talked about escallops I would have gone anyway, no! The workshop was about Matching, but I had already [done my homework] and they did not explain anything I did not know already... These were two opportunities to meet new people and my goal was to meet new CDO members... had they talked about cooking, I would have gone anyway!” (Entrepreneur, Small business services consultancy [2])

At the same time, some entrepreneurs invested in the same events – and in others organized by local CDO branches such as social gatherings and permanent thematic roundtables – as opportunities to deepen their existing relationships with other members. I also observed two other common occurrences during Matching – namely, some entrepreneurs spending their energy on re-affirming their existing relationships, rather than only focusing on making new ones, and some organizing their attendance as a group of firms, manifesting their sharing of CDO’s collaborative values, as the following responses demonstrate:

Firm. “These local mini-Matching are, in my opinion, a sort of intermediate milestone between one Matching-event and the next... many times you already know the firms there and it is a way to acknowledge one another once again... to say: ‘I am here too...!’” (Entrepreneur [2], Small industrial pavement firm)

Firm. “Last year, for the first time, some of our local members... organized their participation in Matching as a group... they wanted to participate like that so they could live the experience of ‘understanding how the market is evolving’ together ... It was more like a way of [educating themselves], of comparing themselves to others.” (Entrepreneur and local CDO President, Small environmental services firm)

5.3 INFLUENCING ENTREPRENEURS' REPERTOIRE OF NETWORKING BEHAVIORS

The previous section illustrates my results in terms of the repertoire of networking behaviors leveraged by entrepreneurs' sensing for new opportunities while participating in Matching. But I also observed CDO efforts to shape entrepreneurs' networking repertoire. In particular, I found that it sought to influence three specific drivers of interorganizational relations: collective identity; propinquity (spatial and virtual); and perceived task complementarity (see Figure 12).

5.3.1 Shaping a collective identity

CDO intentionally shaped the creation of a collective identity among Matching participants in two main ways: by emphasizing a common value-based narrative, and by increasing the status homophily among entrepreneurs. With respect to the former, CDO emphasized a common narrative based on collaborative values in line with its own official mission, leveraging its local staff members as well as the active support of long-term participants to guide newcomer entrepreneurs in understanding the Matching ethos and the importance of the relational approach, as these excerpts from three interview transcripts show:

Firm. “The pay-off which you can see in the CDO brochure says: ‘An ideal criterion, an operative friendship’. This slogan is intended to help all participants to understand our ethos, an approach which wants to be based on friendship, but also on the concrete openness of a new [style of] relations through which we can grow together. [This] is CDO, [so] Matching couldn't be [other than] the expression of this criterion [which] defines this initiative not as having the exposition – showing product – as its main objective, but that of privileging the encounter.” (Entrepreneur and Local CDO President, Large fresh-cut, vegetables, and chilled fresh ready meals, at a press conference)

Firm. “Although I am a new entrant in CDO with little experience, I think that the fundamental element which makes the difference is the preliminary work they do to try to make those who participate more friendly and collaborative ... I mean, their work and their teaching of a predisposition to help one another... are what predispose participants to manifest an openness [to others] which is different from traditional fairs. Se one is a bit more available and a bit more friendly – a difficult task which may be misunderstood! – but I think it is a mental availability to others which makes the difference...” (Entrepreneur, Medium flour mill firm)

Network intermediary. “Over time Matching has become a key way to express what CDO is, that is, its nature and the proposal [it makes] to its members ... It is the tool, the service, the proposal which allows us to open a conversation with our members at a higher level, not just talking about what we do, but about what we are, how we interpret the nature and function of the entrepreneur and the decisions of the firm... how we interpret what we propose to them, which is that other people are opportunities to do new business, for knowledge, for personal enrichment and so on.” (Local CDO manager)

CDO tried to stimulate the direct and explicit involvement of each firm’s owner-entrepreneur in both preparation and participation phases, for two reasons: because CDO fully appreciated the strong preference of owner-entrepreneurs for interacting and building relationships with their peers directly, and because it recognized that the presence of entrepreneurs was key to de-emphasizing the commercial side of Matching, in that they bring broader interests and responsibilities to the table than sales representatives. So CDO repeatedly urged entrepreneurs who were unavailable for some reasons to send senior managers with decision-making powers. Two respondents found the direct involvement of entrepreneurs and managers a major attraction of Matching:

Firm. “The most important thing is the underlying idea that it’s not a trade show ... that you can meet entrepreneurs there, ... So it’s clear that being open-minded to meeting others is essential, precisely because a priori one does not go for a product, but to meet other people, and hear their experiences... Often the most interesting results do not come from the exposition of a product, but from opportunities that are born only when you talk to other entrepreneurs.” (Entrepreneur, Micro automation firm)

Network intermediary. “An element which we pushed a lot is that we always try to have the entrepreneur coming to Matching, even from large firms, and not a senior manager unless he/she is particularly close to the entrepreneur because they have worked together for 30 years... It is the entrepreneur who can sense new [opportunities] and challenges, not an employee... [If the entrepreneur is not available, we want] an

experienced managing director who is really into the strategic process and the firm's investment strategy. For example, if we have an entrepreneur who produces salads, he/she can come, perhaps see something new which he/she likes and decide to launch a completely new business with the other entrepreneur! This is something that often not even a managing director can recognize!" (Local CDO staff member)

5.3.2 Crafting spatial and virtual propinquity

Propinquity, both spatial and virtual, was the second design driver CDO used to influence the networking behavior of participating entrepreneurs. The overarching setting grouping thousands of participants in the same space at the same time, and the rich variety of social activities organized both during the year and at the main Matching-event – including social mixers, dinners, tasting sessions, and happy hours – were the basic elements used to facilitate spatial propinquity. CDO further promoted this driver by organizing the layout of the event to favor sectoral clustering (e.g., Jenkins and Tallman, 2010; Tallman *et al.*, 2004), by designing architecturally identical stands to minimize the 'exhibition' side of Matching, and by setting a participation fee substantially lower than that of traditional trade shows. These last two elements were important in incentivizing the pro-active participation of small and medium-sized enterprises – which usually felt overshadowed by larger firms in similar networking initiatives – with consequential benefits for the overall interaction dynamics of Matching-events. The following remarks from three participants support this point:

Firm. "Another thing which struck me as soon as I entered the exhibition center was the disposition of the stands. It may seem stupid, but in all trade shows you can only see those who have the biggest stands ... At Matching no! Since what counts is not your size, but we are all on the same level, all equal, all stands are exactly the same ... [and] they are divided into areas such as agri-food, services, etc. The fact that we all have the same size is an a priori concept that does not put any participant in an inferior position vis-à-vis another – rather it visually communicates the parity of level of everybody." (Commercial director and daughter of the entrepreneur, Medium salami and oil firm)

Firm. “One of the reasons why we generally do not participate in trade shows is because they are very expensive and also ineffective in our sector. For this reason I initially snubbed Matching because I thought that it would be more expensive. But when I realized that the fee for Matching was more or less the cost of single advertisement page on a newspaper, I had a real incentive to participate. Matching has an attractive cost, so it makes sense to be there...” (Entrepreneur, Medium road construction firm)

Network intermediary. “The affordable fee favors the participation of micro and small firms which usually do not go to this kind of event. Given how Matching is organized, it also encourages them to manifest, to make their competences in their sectors explicit. At the same time, this makes the event more interesting, because more structured firms often do not even see smaller ones, and so don’t know how to benefit from their competences... This is why the fee must be affordable... Matching is already onerous in terms of time and preparation for micro firms, and this is why we reduced the fee” (National CDO manager)

Virtual propinquity was promoted via the online platform created for Matching and the dedicated online community that was open only to participants. In this respect, for example, I discovered that some entrepreneurs used the available information to contact other participants in advance for the purpose of establishing a more robust foundation for their Matching appointments.

Firm. “We took the information of all those who created online showrooms and called them directly... We did a telemarketing activity to book appointments with people who were really interested autonomously ... We probably called 600 firms... those which we booked in advance are now the hottest ones, because there was a clear interest upfront.” (Entrepreneur, Micro communication and training consultancy)

Virtual propinquity is also becoming more important for CDO and Matching participants and it is likely to play a more relevant role in the future – outside the scope of my research. In 2011, for example, CDO launched a dedicated online community where entrepreneurs could share information and look for perspective partners throughout the year, building on the Matching network of relationships. While use of the community was relatively low in the first year, I noticed a substantial increase in activities in 2012, particularly focused on international relationships. In addition, from the 2012 edition of Matching, CDO started providing participants with a badge with a

QR code and a tablet with an app synchronized with the online database so to allow the collection of reciprocal information about the appointment in real-time and favor follow-ups after the event.

Network intermediary. “[For the 2012 edition of Matching] each participant will have all the information from the online portal on their tablet and will be able to modify them as they wish ... The table will be displayed outside the stand... to give participants the possibility to see the online showcase, so that those passing by can consult it, download the contacts and ask for an ex-agenda appointment if they wish... In this way we can also track the appointments, even those ex-agenda, much better than the past!” (National CDO staff member)

Network intermediary. “[For the 2012 edition of Matching] each participant will be able to leverage a combined communication system, which will make all the information that may be useful to the business during Matching available on smartphones and tablets ... The tablet app will display the participants’ online showcases... the QR code printed on each participant’s badge will allow those who look at it to save this information into a dedicated area on the Matching portal... Next, a Matching App will provide easy access to the agendas of appointments, the database of participants, the program of workshops, [etc]... so each participant can use their QR code ... to acquire all contacts of everyone they’ve met.” (From an online webpage of a local CDO branch)

5.3.3 Refining task complementarity

The last driver of entrepreneurs’ networking behavior leveraged by CDO was entrepreneurs’ perceived task complementarity with others – that is, the overlap between their search priorities and the benefits they expected from others (Vissa, 2011). To refine task complementarity, CDO employed a process of pre-filtering participant firms and their agendas of pre-arranged appointments. Although the pre-filtering process differed somewhat depending on the local CDO branch involved, I observed a general tendency toward informally restricting participation in the national Matching-event to entrepreneurs of firms with a national or international business scope. CDO justified this pre-filtering process – which it pursued both via direct selection of target

firms and detailed explanation of the Matching mechanisms (and in some cases involving explicit disincentives to participation) – as an attempt to enhance the benefits each entrepreneur could bring to Matching and take from it. As CDO managers explained:

Network intermediary. “We start from the premise that we should invite every member to Matching-events, but Matching is not for everybody! It is only for those firms that have a valid reason to want to meet others... In other words, our local branches do a quite granular screening of all our members... Consider that we have over 2,000 participants... and we conduct a tutoring process with at least one person in every 20 firms. This means that each local branch... knows why [its member firms] are coming, who they are, what they do, what they are looking for, etc.” (CDO National Manager)

Network intermediary. “In our local branch, on average we bring 120-125 firms to Matching. As a focus, we try to select production firms as far as we can ... those which have a product... We filter participants on the basis of our knowledge of them... We start from production firms because in my opinion they are those who can give the most to Matching and take the most from it, because they have internal dynamics which are more complete than service firms... I prefer to start with production firms... because I realize that Matching is a more effective tool for them, and they are better for Matching itself.” (Local CDO staff member)

As noted above, CDO leveraged the agenda directly to support entrepreneurs in presenting themselves on the online portal, by screening the pool of participants and by actively suggesting additional cross-branch synergies. More importantly though, CDO actively tried to monitor and minimize the number of ‘fake’ requests – those where a participant attempts to bypass the rules and sends requests targeting potential customers but tagged as ‘for potential suppliers or partners’. In other words, it aimed proactively to counter free-riding behavior so as to increase the quality of each entrepreneur’s agenda, and also to promote the creation of new relationships, in a way these CDO managers believe was helpful to participants:

Network intermediary. “When I attend the pre-Matching meeting with other CDO staff members, I always try to spot interesting ideas for [my participants]... For example, this year a local staff member told me about one of his firms that makes utility poles that can also function as inner-city wireless transmitters ... one of my firms

produces CIS systems – i.e., ‘customer information systems’ used to integrate information within a specific area – so I told [my firm]: ‘Perhaps [...] you might be interested in using their poles for your systems!’ At first, they were perplexed... but [the entrepreneurs] met and had a very interesting appointment in Milan. Nowhere else, in no trade show, is there somebody who comes and tells you ‘perhaps it might be interesting for you to meet that other participant!’” (Local CDO manager)

Network intermediary. “We try to control the number of ‘fake’ request’... Before formally releasing the agendas to participants, [the CDO Matching Director] gets on everybody’s nerves to make us remove all these ‘fake’ appointments from participants’ agendas... This is the only thing we can do, apart from creating a ‘culture’ [against such free-riding]” (Local CDO manager)

5.4 CHAPTER SUMMARY

In the second study, focusing on entrepreneurs in the sample as multiple sub-units of analysis, I have conducted an embedded case study on the networking behavior employed by participants in the Matching networking initiative to sense new opportunities. Integrating incomplete and somewhat disconnected literature streams on entrepreneurship and interorganizational relations, my findings reveal how entrepreneurs strategically used a rich repertoire of intentional networking behaviors in sensing new opportunities and to shape the creation of new relations. My results show that this repertoire unfolded along three dimensions: (1) a networking predisposition which combined searching for new commercial exchanges and seeking new social relationships; (2) an entrepreneurial logic that emphasizes a combination of planned and serendipitous searches for new opportunities; and (3) a combination of network development efforts aimed at broadening and deepening existing portfolios of relationships.

Second, they reveal how the network intermediary – CDO – purposefully leveraged selected drivers of interorganizational relations aimed at influencing each

participant's repertoire of entrepreneurial networking behaviors. I have discussed, in particular, how the network intermediary focused its efforts 1) in diffusing a collective identity among participant entrepreneurs – based on their homophile characteristics – as well as 2) in establishing spatial and virtual propinquity, and 3) in supporting entrepreneurs' perceived task complementarity – i.e., the overlap between their search priorities and the benefits expected from others –in the networking initiative.

CHAPTER 6

DISCUSSION AND CONTRIBUTIONS TO KNOWLEDGE OF STUDIES 1 AND 2

CHAPTER 6: DISCUSSION AND CONTRIBUTIONS TO KNOWLEDGE OF STUDIES 1 AND 2

6.1 INTRODUCTION

In this Chapter, I extend the discussion of my Study 1 and Study 2 findings as detailed in Chapter 4 and Chapter 5. In doing so, I specify the contributions to knowledge that my results allow me to offer, in light of their theoretical significance in relation to a number of relevant bodies of literature. Consistently with the ‘funnel-shape’ structure presented in Chapter 1, I distinguish the contributions provided respectively by Study 1 and Study 2 of my PhD. In particular, since the goal of Study 1 was to extend and refine dynamic capability theory, my discussion in Section 6.2 concentrates on pointing out precisely how my findings allow me to make the contributions I claim. In discussing the results of Study 2 in Section 6.3 I focus clearly on how my research on entrepreneurs’ networking behaviors while sensing new opportunities in networking initiatives enriches the existing literature on entrepreneurial networking behavior, effectuate entrepreneurship, and interorganizational relations.

6.2 CONTRIBUTIONS TO DYNAMIC CAPABILITY THEORY

In Study 1, I have examined the important yet often overlooked question of how one organization can support others in deploying and further developing their existing sensing dynamic capabilities. By focusing on how a large network intermediary supported its member firms’ sensing dynamic capabilities through a structured

networking initiative, my findings allow me to refine and extend “dynamic capability theory by confronting it with an empirical case study” (Danneels, 2011: 25) in four ways.

6.2.1 An outward-looking relational view on dynamic capabilities

First and foremost, I contribute to further opening the process ‘black box’ of dynamic capability theory (Helfat *et al.*, 2007; Pavlou and El Sawy, 2011) in networked environments (Lavie, 2006; Teece, 2007). In contrast to prior research, which has generally maintained that firms can only fully exploit the strategic benefits of dynamic capabilities by developing them internally and then deploying them (Ambrosini and Bowman, 2009; Teece *et al.*, 1997), I have shown how sensing dynamic capabilities can be deployed in relation with network intermediaries, and how such a relation may contribute to develop them further. In this regard, I also contribute to the relational lens on dynamic capabilities (Dyer and Singh, 1998; Helfat *et al.*, 2007) by taking a new point of view. A substantial amount of research exists on dynamic capabilities in collaborations (e.g., Tripsas, 1997), in alliances (e.g., Collins and Hitt, 2006; Heimeriks and Duysters, 2007; Kale and Singh, 2007), in partnering (e.g., Ettlie and Pavlou, 2006; Sirmon *et al.*, 2011), and in buyer/ supplier relations (e.g., Halldorsson and Skjott-Larsen, 2004; Marcus and Anderson, 2006; Parmigiani and Mitchell, 2009; Weigelt and Sarkar, 2009). However, to date, scholars have mainly employed an inward-looking lens, conceptualizing dynamic capabilities as intended to modify a firm’s resource portfolio by augmenting it “to include the resources of its alliance partners” (Helfat *et*

al., 2007: 66). This lens assumes that, if firms have dynamic capabilities, they will act on them and develop them independently from others.

In this study, instead, I have built on recent quantitative evidence that has taken an outward-looking perspective on a focal firm's dynamic capabilities, investigating the influence of external linkages such as those with consultants (e.g., Doving and Gooderham, 2008) and service organizations (e.g., Agarwal and Selen, 2009). My research adds to this perspective by offering a study in the context of relations with network intermediaries, a type of external linkage (Lee *et al.*, 2001) about which, I argue, much more research is needed (Howells, 2006; McEvily and Zaheer, 1999; Zhang and Li, 2010). I have found that, by investing proactively in their relation with network intermediaries, firms can strengthen the deployment of their existing sensing dynamic capabilities by being supported in enhancing their organizational self-awareness and in formulating a clear search purpose, as well as benefiting from an emotionally supportive climate.

I have also detailed how firms can be supported in further developing those sensing dynamic capabilities through deliberate and experiential learning processes intentionally enacted by network intermediaries. These findings offer much needed empirical evidence for dynamic capability theory (Arend and Bromiley, 2009) that supports a complementary and more collaborative logic, in contrast to the atomistic view prevalent in the literature (McEvily and Zaheer, 1999), which maintains that firms act alone in developing and deploying their dynamic capabilities. It also starts to answer the recent call from Teece (2012), who speculated on the possibility of dynamic capabilities as lying outside as well as within the firm, yet pointed to the complete lack of research on the topic.

6.2.2 Organizational self-awareness and the relation with network intermediaries

Second, my empirical findings contribute to a growing body of knowledge which suggests that interorganizational relations with customers, suppliers, competitors, complementors, and supporting bodies can significantly influence firms' competitive advantage (Howells, 2006; Lee *et al.*, 2001; McEvily and Marcus, 2005; Mindruta, 2012; Teece, 2007). For example, Lee *et al.* (2001: 620) observed that "external contacts perform a very important role in the procurement of [complementary] assets and the identification of entrepreneurial opportunities". However, prior literature has generally been silent on the process via which this actually happens. With reference to sensing dynamic capabilities, I suggest that, besides the crucial support in clarifying firms' search purposes, one of the most important contributions network intermediaries can make to their deployment and development is in the support they can offer in enhancing a firm's organizational self-awareness. In my case setting, CDO organized a structured set of activities to help participants gain deeper cognition of their internal resources (Danneels, 2011), a more detailed understanding of their markets (Malhotra, Gosain, and El Sawy, 2005; Song and Thieme, 2009), and to be able to reflect more profoundly on their identity, knowledge, and web of relations (Gray, 2007; Hodgkinson and Healey, 2011; Sarasvathy, 2001). In this respect, my findings emphasize, for instance, that entrepreneurial and market orientation may not simply be traits that organizations acquire through imprinting in their early foundation phase (Stinchcombe, 1965), but also capabilities that they may develop through relational ties.

Moreover, I have shed light on the critical part played by the firms themselves in interacting thoughtfully so as to benefit from their relation with the network intermediary. I have found that thoughtful preparations for Matching were critical to

participants' ability to leverage the benefits offered by the network intermediary's support. Counterfactual evidence from my study suggests that those firms that did not prepare adequately, and did not leverage the relation to enhance their self-awareness or refine their search purposes, tended to have unsatisfactory experiences or report negative results. Some of those firms which did not leverage the network intermediary's support thoughtfully had failed to give the matter enough time or attention (Ocasio, 1997; Romme *et al.*, 2010), whereas others considered the Matching-event superficially, as a traditional commercial fair, instead of understanding it as an opportunity to deploy and further develop their sensing dynamic capabilities.

My results therefore contribute to a growing stream of investigation which proposes mindfulness as an important micro-foundation of dynamic capabilities (e.g., Gärtner, 2011; Romme *et al.*, 2010) by revealing what mindful interaction may actually mean in practice. In this respect, although research on mindfulness in management has increased (e.g., Argote, 2006; Levinthal and Rerup, 2006; Valorinta, 2009; Weick and Sutcliffe, 2006), only limited attention has been paid as yet to how a firm's mindful interactions with its external parties shapes its competitive advantage. One exception is McEvily and Zaheer's (1999) study, which reported considerable support for the relationship between participation in regional institutions and the assimilation of competitive capabilities, but only an insignificant relationship between such activities and how firms sense new opportunities. They demonstrated that "firm differences exist, in terms of network structure and the degree of participation in regional institutions, and that these differences do matter for understanding firms' acquisition of competitive capabilities" (McEvily and Zaheer, 1999: 1154). However, their study only considered the frequency of such participation as the focal variable of interest: I argue that the

quality of participation may matter as much, and could explain why (in my findings) more mindful firms benefited more from the structured support offered by the network intermediary. By linking mindfulness as a firm's deliberate sensemaking approach with the structured provision of a supporting environment, my research offers an exploratory connection of dynamic capability theory with a novel perspective on the agency-structure nexus that underlines the importance of more ecological enabling conditions (e.g., Whiteman and Cooper, 2011).

6.2.3 Managerial intentionality and the role of purpose formulation

Third, I refine dynamic capability theory by bringing managerial intentionality back into consideration. Since the origin of the construct, dynamic capabilities have emphasized the key role of strategic managers in purposefully adapting and changing their organizations to match the challenges of turbulent environments (Ambrosini *et al.*, 2009; Teece *et al.*, 1997), and this study closely follows Teece's (2007) rejuvenation of the construct in assigning the same intentionality to dynamic capabilities. Extant literature presents a variety of other definitions of dynamic capability which specifically include intentionality: Helfat *et al.* (2007: 1), for example, defined them as "the capacity of an organization to purposefully create, extend, or modify its resource base", while Zahra *et al.* (2006: 3) characterized them as "the abilities to re-configure a firm's resources and routines in the manner envisioned and deemed appropriated by its principal decision-maker(s)". Yet, with few exceptions (e.g., Augier and Teece, 2007; 2009; Pandza and Thorpe, 2009), theoretical and empirical research on dynamic capabilities has yet to investigate the role of intentionality thoroughly – Barreto (2010)

even concluded his review of the field with a call to abandon the concept of purpose in dynamic capability theory due to what he claimed was its theoretical and empirical intractability. Revealing how the formulation of a clear purpose was a fundamental driver of whether Matching participants succeeded in deploying their sensing dynamic capabilities effectively, my study has provided evidence of the crucial role of managerial intentionality in how firms sense new opportunities, thus reinforcing empirically the foundations of dynamic capability theory (Augier and Teece, 2007) and contributing to the consolidation of the field (Peteraf et al, 2012; Teece, 2012).

6.2.4 The role of emotional and affective processes

Fourth, I have shed empirical light on how affective processes may influence the deployment and development of sensing dynamic capabilities (Hodgkinson and Healey, 2011). Whereas an established stream of research exists on cognitive and behavioral micro-foundations – “typically understood as foundations that are rooted in individual action and interaction” (Foss, 2010: 1414) – of dynamic capability theory (e.g., Argote and Ren, 2012; Eisenhardt, Furr, and Bingham, 2010; Gavetti, 2005; Teece, 2007), several scholars have recently stressed the need for empirical research on the role of affective and emotional processes (e.g., Felin *et al.*, 2012; Hodgkinson and Healey, 2011; Salvato and Rerup, 2010). The evidence I collected – through a variety of sources – confirms that the Matching initiative was clearly characterized by an unusually supportive emotional climate among the participants, which helped them to (for example) lower inter-relational barriers and to deploy their sensing capabilities more effectively. In particular, I found that trust, frequent interaction, and mutual affection

were key elements behind the formation of relational capital (Collis and Hitt, 2006; Kale *et al.*, 2000) in the linkages with buyers, suppliers, and partners which participants typically created or reaffirmed during Matching-events. But this was not an automatic 'given' for the participants: as noted in the issue of intentionality discussed earlier, only those firms which actively prepared for Matching-events and which interacted actively with CDO really benefited from this emotionally supportive climate.

This climate was also shaped by the extent to which participants were willing to make the effort to be at others' disposal, thus generating norms of generalized reciprocity at Matching (Das and Teng, 2002; Kenis and Knoke, 2002; Li and Rowley, 2002). As Wincent *et al.* (2010: 599) observed: "Firms participating in strategic networks need to establish and reinforce generalized reciprocity that is designed to mitigate risks of opportunism and free-riding. [...] However, such norms do not emerge by themselves, but rather, they take time and effort to develop". More generally, my case study clarifies how, by enacting both cognitive and emotional processes, participation in networking initiatives can amplify the influence that social ties have on how firms conduct their sensing activities in networked environments (Cropanzano and Mitchell, 2005; Dulac *et al.*, 2008; Ferriani *et al.*, 2013). Social network research argues that weak ties – such as those resulting from social activities – are "often more influential and critical than strong ties in assisting an individual in gathering and taking advantage of information that is disseminated through the social network" (Krackhardt, 1998: 22). Referring to networks of professional and technical specialties, Granovetter (1973: 1373) also observed that "information and ideas ... flow more easily through [the network], giving it some 'sense of community', activated at meetings and conventions". Bridging theoretical insights from dynamic capability and social network

research, my empirical study thus starts to deepen the important insights about the psychological micro-foundations of dynamic capabilities proposed by Hodgkinson and Healey (2011).

6.3 CONTRIBUTIONS TO ENTREPRENEURSHIP AND INTERORGANIZATIONAL RELATIONS RESEARCH

My findings in Study 2 demonstrate that participation in networking initiatives can facilitate entrepreneurs in intentionally leveraging a rich repertoire of networking behaviors to sense new opportunities. They also reveal the important role network intermediaries – such as CDO, in this case – can play in influencing those repertoires. In what follows, I first discuss the theoretical implications of my results for existing research on entrepreneurs’ networking behavior and for the underlying entrepreneurship and interorganizational relations theories. I then examine the mechanisms that the network intermediary in this case designed deliberately to support entrepreneurs’ networking behaviors.

6.3.1 Entrepreneurial intentionality and entrepreneurs’ repertoire of networking behaviors

While the importance of networks in entrepreneurial processes has been widely studied (Hoang and Antoncic, 2003; Sarasvathy, 2001; Stuart and Sorensen, 2007), the actual behavior of entrepreneurs in nurturing their portfolio of network relationships has only recently received direct consideration in entrepreneurship research (e.g., Vissa, 2011,

2012; Vissa and Bhagavatula, 2012). This increased focus is due to scholars' growing awareness of the intentional nature of the actions via which entrepreneurs search for and exploit new opportunities. Drawing on social psychology research on planned behavior (Ajzen, 1991), part of the entrepreneurship literature has investigated intentionality as the keystone of entrepreneurs' sensing activities – i.e., their opportunity identification and exploitation processes (Fini *et al.*, 2010; Fitzsimmons and Douglas, 2011; Krueger Jr, Reilly, and Carsrud, 2000). But while most prior studies on entrepreneurial intentionality have examined the concept in relation to the establishment of new ventures, mainstream entrepreneurship research has developed on the assumption that entrepreneurs conduct their networking activities in rather non-strategic ways (Sarasvathy and Venkataraman, 2011; Stuart and Sorensen, 2007; Vissa, 2011).

My results expand current knowledge about entrepreneurs' networking behaviors by focusing on the particular setting of an entrepreneurial networking initiative. Specifically, I have provided detailed evidence of a richer repertoire of networking behaviors deployed by entrepreneurs than prior research suggests. While confirming Vissa's (2012) findings with respect to entrepreneurs' network development efforts aimed at expanding or reinforcing their existing portfolios of relationships, my study suggests that at least two additional dimensions of networking behavior – network predisposition and entrepreneurial logic – underpin how entrepreneurs sense new opportunities strategically in networking initiatives. In particular, I have shown how their networking behaviors may be based on intentional combinations of both planned and serendipitous activities to sense new opportunities on the one hand, and of seeking both new commercial exchanges and new social relations on the other.

6.3.2 Entrepreneurs' repertoire of networking behaviors and effectuate entrepreneurship

My theoretical results also contribute to further developing research on entrepreneurs' networking behaviors by linking it with other important literature streams on effectuate entrepreneurship (Perry *et al.*, 2011; Sarasvathy, 2001) and on interorganizational relations (Ferriani *et al.*, 2013; Obstfeld, 2005; Obstfeld and Davis, 2012). Effectuation literature focuses on the logic underlying entrepreneurs' sensing of opportunities, and emphasizes how this logic may be based on either causative – i.e., planned – or effectual – i.e., unplanned and serendipitous – approaches to opportunity recognition and exploitation. In general, effectuation research places much less emphasis on entrepreneurial intentionality than do more traditional entrepreneurship theories, which generally assume behaviors are planned (Sarasvathy, 2001).

My results reveal a more nuanced representation of the entrepreneurial logic entrepreneurs use in their involvement in networking initiatives. Whereas, for clarity of exposition, I have presented entrepreneurial logic as being based either on a purely planned or on a more serendipitous approach, my empirical results confirm that such approaches may be better conceptualized as orthogonal, and entrepreneurial logics as combining them (e.g., Perry *et al.*, 2011; see also Figure 14). I have also provided evidence of how the network intermediary crafted spatial and virtual propinquity and refined task complementarity among participant entrepreneurs, with the aim of simultaneously engineering both planned appointments and serendipitous encounters. For instance, by enforcing a minimum of planned appointments with suppliers or partners, CDO ensured a certain degree of planned activity, although it also created incentives to pursue opportunities to encounter other entrepreneurs unexpectedly.

6.3.3 Entrepreneurs' repertoire of networking behaviors and interorganizational relations theories

I am able to make a similar observation with regard to the apparent dichotomy between entrepreneurs driven by profit-maximization goals (Lumpkin and Dess, 2001) and those holding more socially oriented values (Tracey, Phillips, and Jarvis, 2011). Building on Phillips *et al.*'s recent observation that "the relationship between personal values and economic returns is itself socially constructed, and a complementary construction between partners may be a source of advantage" (2013: 148), I maintain that the networking predisposition held by entrepreneurs participating in the networking initiative is better conceptualized as composed of an orthogonal combination of commercially- and relationally-oriented approaches. In the context of entrepreneurs' networking behavior in networking initiatives, this confirms the co-existence of two distinct logics based on economic exchange and on social interaction, as recently proposed by Ferriani *et al.* (2013) in their investigation of network evolution mechanisms. Besides empirically integrating this perspective into research on entrepreneurs' networking behavior, my work provides evidence that network intermediaries can (at least partly) influence the evolution of participants' network intentionally by shaping a common collective identity among network members. In particular, by accentuating common associative values, and by trying to enhance value and status homophily, the network intermediary in the case setting I studied clearly tried to emphasize a more relational predisposition and its benefits over a purely commercial one. Such findings expand recent research on how network intermediaries may influence the evolutionary dynamics of a network (e.g., Capaldo, 2007; Human and Provan, 2000; Paquin and Howard-Grenville, 2012) by starting to reveal which specific

variables may be fine-tuned in the process.

The presence of a common third-party network intermediary sharing a network tie with each participant also allows me to integrate my findings about networking predispositions with interorganizational research streams dealing with triadic networking behaviors. A particular mechanism underlying the emergence of new interorganizational relationships is the presence of third parties acting as referral agents (Burt, 1992; Cartwright and Harary, 1956; Gulati and Gargiulo, 1999). Crucially, the commercial and relational predispositions I observed closely resembled the concepts of third party *gaudens* and *iungens* orientations as theorized by Burt (1992) and by Obstfeld (2005). Third parties in such settings may, in fact, play a sort of hosting role, facilitating the creation of a new relationship between two “guests” (Riesman, Potter, and Watson, 1960). In such situations – where two parties are connected via their ties to a common third party – the newly established interorganizational relationship differs from the simpler and more direct dyadic relationships (Krackhardt, 1998; Simmel, 1950). In particular, how each party involved approaches a triadic relationship fundamentally shapes its outcome – for instance, Gibson (2005) suggested that the goal of the two non-intermediary parties may clearly be one of ‘piggybacking’ i.e., of reinforcing their own relationships with the intermediary.

The network intermediary in my case held a straightforward *iungens* orientation, essentially reflecting its non-profit nature. My study allows me to add to this research stream by arguing that the networking behavior of all entrepreneurs in the sample – and not just the network intermediary – was based on a combination of *gaudens* and *iungens* approaches, in the attempt to both maximize sales *and* to search for new relationships on a broader front. I can thus extend the line of argument concerned with networking

behavior in triads by proposing that, at least in networking initiatives undertaken by entrepreneurs, each triadic party's networking predisposition may matter substantially for the emergence and establishment of new fruitful relationships. In other words, whether or not networking initiatives result in a fertile ground for entrepreneurial opportunities will depend to a great extent on the actions and orientation of the hosting organizer, and on combination of collaborative and exploitative orientations each participant displays when engaging with its triadic partners.

6.3.4 Mechanisms for designed emergence in networking initiatives

My rich empirical evidence also allows me to advance a number of contributions that may be generalizable to both networking and entrepreneurial initiatives. First, I suggest that network intermediaries can employ two activity-based mechanisms – preparation and participation – when designing and hosting networking initiatives intended to promote the emergence of new relationships among participants (Garud, Kumaraswamy, and Sambamurthy, 2006). One of the key characteristics of Matching was the combination of careful preparation and participation activities that were proactively supported by CDO, which designed the networking initiative as an on-going process rather than a stand-alone service (Hedberg, Nystrom, and Starbuck, 1976). My results indicate that both entrepreneurs and managerial participants recognized the importance of these activities. At first glance, Matching might appear similar to more conventional business-to-business tradeshows, but my thorough investigation reveals how CDO arranged “a mutually complementary and balancing set of initiatives” (Garud *et al.*, 2006: 285) that heeded the context and the underlying social dynamics of

Matching to influence – directly or indirectly – how participants interacted. As I have detailed, CDO clearly sought to impart its intent, method, and experience to participants regarding how to prepare well and participate successfully via intense sets of interactions with them prior to the organizational networking event. But, although these efforts were socially persuasive, CDO had no binding or contractual power over participants' preparation behaviors (e.g., Dhanaraj and Parkhe, 2006). Moreover, its efforts at shaping participation in the event were made even more challenging by the complex interaction dynamics that arise when thousands of businessmen meet in such a context (e.g., Stam, 2010). Despite these constraints, CDO's preparation for the Matching-event intentionally targeted drivers such as collective identity, spatial and virtual propinquity, and task complementarity to increase its influence on participants' networking behavior.

The interplay of these preparation and participation mechanisms may also explain the downward or upward co-emergence of new interorganizational relationships in such initiatives. Downward emergence (e.g., Haken, 1993), mainly driven by an organizer's initiative, utilizes preparatory rules, routines, and methods to influence participants' networking behavior (Liedtka, 2000). Using these methods tends to produce a stability in participant behaviors, which is important in organizational networking events because it supports more focused search and the better use of prior knowledge, thus optimizing participants' cognitive capacity and their ability to react productively to contingencies (Dew, 2009; Feltovich, Prietula, and Ericsson, 2006). Upward emergence refers instead to participants' proactive initiatives in sensing (Kirzner, 1999; Teece, 2007) and seizing opportunities (Schumpeter, 1934; Teece, 2007) during the networking initiative. Leveraging their capabilities in the face of changing situations during the

networking event allows participant entrepreneurs to counterbalance the constraints presented by the contextual setting and the hosts 'rules' for preparation and participation.

Finally, the suggestion that preparation and participation are closely intertwined relates to expanding streams of management research that consider complementary activities that are difficult to integrate. Ambidexterity is often argued as offering the solution to such difficulties (e.g., O'Reilly and Tushman, 2004; Raisch *et al.*, 2009; Simsek, Lubatkin, and Floyd, 2003). While debate about the interdependence of exploration and exploitation activities continues (e.g., Lavie, Stettner, and Tushman, 2010), my analysis of the preparation and participation practices involved in Matching provides a unique window into a complex activity-oriented solution to an ambidextrous challenge that has not been previously examined. In fact, previous studies have explored exploration and exploitation activities without considering the contexts that are needed for both kinds of actions to be implemented effectively. For instance, a recent review by Turner, Swart, and Maylor (2012) highlighted a number of different mechanisms for achieving ambidexterity, at organizational, group, and individual levels. In terms of group-level mechanisms in particular, they highlighted the importance of a "complex network of strong and weak ties for effective knowledge-sharing, supported by formal and informal behaviors" (2012: 6), yet the authors paid little attention to the contexts in which such networks might unfold. Based on my findings, I argue that firms' ambidextrous efforts to both explore and exploit valuable opportunities via networks may be made more effective by carefully balancing structured preparation activities with proactive participation practices, such as those my case study unveiled. More specifically, in contributing to further integrate dynamic capability and ambidexterity

literature (O'Reilly III and Tushman, 2008), I suggest that preparation could play a crucial part in reconciling this challenge of competing activities in networking environments: more specifically, my findings suggest that ambidexterity may favor the better prepared (e.g., Cohen and Levinthal, 1994).

6.4 CHAPTER SUMMARY

In this Chapter, I have discussed in detail the contributions to knowledge my PhD research offers in the light of a considerable number of relevant literature streams. In terms of Study 1, I have detailed how the extended case study method I used allowed me to confirm, refine, and extend dynamic capability theory with respect to the specific area of sensing dynamic capabilities, which flows from Teece's (2007) reconceptualization of the construct. The main contribution of my study is the conceptualization and empirical testing of an outward-looking relational perspective in dynamic capability theory with respect to how external parties – network intermediaries in this case – may support the deployment and further development of other organizations' sensing dynamic capabilities. This contribution fundamentally complements an extensive body of prior research – the so-called “relational view” (Dyer and Singh, 1998) – which to date has assumed that dynamic capabilities can only be built internally and deployed independently from others actors (e.g., McEvily and Zaheer, 1999; Teece *et al.*, 1997). In addition, I have confirmed prior suggestions about the importance of organizational self-awareness (e.g., Danneels, 2011), mindfulness (e.g., Gärtner, 2011; Levinthal and Rerup, 2006), and learning processes (e.g., Zollo and Winter, 2002) for the deployment and further development of dynamic capabilities.

Finally, I have helped refine extant theory by providing much needed empirical evidence about the importance of the formulation of purpose, as well as of emotional and affective processes, in dynamic capability theory.

With respect to Study 2, in contrast, I have discussed two sets of contributions. The first sheds fresh light on how entrepreneurs' networking behaviors may influence the deployment of their sensing dynamic capabilities – i.e., how they sense new opportunities – in networking initiatives. Integrating somehow disconnected research streams on networking behavior, effectuate entrepreneurship, and interorganizational relations theories, I found that entrepreneurs leveraged repertoire of networking behaviors which unfolded along three orthogonal dimensions: (1) a networking predisposition determined by the combination of seeking of new commercial exchanges and new social relationships; (2) an entrepreneurial logic emphasizing a combination of planned and serendipitous search for new opportunities; and (3) a combination of network development efforts aimed at deepening and broadening existing portfolios of relationships. In addition, I contribute specifically to research on networking behavior in triads (e.g., Obstfeld, 2005) by proposing that – at least in the context of entrepreneurial networking initiatives – the behavior of each party in the triad – and not simply that of those playing brokering roles – matters substantially for the emergence of new fruitful relationships.

The second set of contributions provides evidence of how a network intermediary purposefully influenced participants' repertoire of entrepreneurial networking behaviors by leveraging drivers of interorganizational relationships such as a collective identity, propinquity, and task complementarity. Building on my results, I have then suggested how two activity-based mechanisms – i.e., preparation and participation – can be

influenced by network intermediaries when designing networking initiatives and explained the downward or upward emergence of new interorganizational relationships. I have discussed how the combination of these two mechanisms may offer an activity-based solution to entrepreneurs' ambidextrous activities of exploration and exploitation, in networking events, and showed the important role network intermediaries can play in influencing such ambidextrous activities. This rich array of contributions I have been able to draw from my two studies offer substantial implications for practice: I turn my attention to these implications in Chapter 7, where I also reprise the main points of the whole PhD thesis.

CHAPTER 7

PRACTICAL IMPLICATIONS
AND
CONCLUDING REMARKS

CHAPTER 7: PRACTICAL IMPLICATIONS AND CONCLUDING REMARKS

7.1 INTRODUCTION

In the next section of this chapter (7.2) I first summarize this overall research effort by recalling the original research questions and main results of my PhD thesis. I also clarify how I have contributed to knowledge in the dynamic capability research field with the findings of my systematic literature review and the results of the reification analysis I conducted. In Section 7.3 I then recapitulate the several contributions to knowledge which my Study 1 and Study 2 findings allow me to offer. Next (in Section 7.4) I articulate a number of practical implications for firms, entrepreneurs, supporting bodies, and academics, and (in Section 7.5) several suggestion for further research. I then conclude (in Section 7.6) with some important remarks on the nature of the relation – i.e., firms/entrepreneurs-network intermediary – which represented the unit of analysis of my research.

7.2 SUMMARY OF THE RESEARCH AND CONTRIBUTIONS FROM THE SYSTEMATIC LITERATURE REVIEW AND REIFICATION ANALYSIS

In this PhD thesis I have explored the support which network intermediaries can provide to firms' – and particularly to entrepreneurs' – searches for new opportunities. To this end, I have conducted two studies set in the context of a networking initiative organized by a large network intermediary that has mounted a series of events to support the

search for new opportunities of an average of over 2,000 participant firms and entrepreneurs. The *overarching research problem* was:

“How can network intermediaries support firms and entrepreneurs in their search for new opportunities?”

The research I conducted has followed a ‘funnel-shape’ structure reflecting the progressive focus of my investigation (as illustrated in Figure 1). From a theoretical point of view, I have positioned the thesis within the main stream of strategy research on dynamic capabilities, and have drawn substantially from entrepreneurship and interorganizational relations research. To ground the study, I first conducted a systematic literature review (Macpherson and Jones, 2010; Pittaway *et al.*, 2004; Rousseau *et al.*, 2008; Tranfield *et al.*, 2003) of the large body of research on dynamic capabilities, exploring the following research questions:

“What do we actually know about dynamic capabilities?”

Given the burgeoning complexity of dynamic capability literature – as highlighted by the preliminary results of my systematic literature review (e.g., Di Stefano *et al.*, 2010) – and the risk of building my PhD research on unclear theoretical foundations (e.g., Arend and Bromiley, 2009), I have enriched that review with a detailed investigation of the use and diffusion of the dynamic capability construct in management research, thus addressing the following research question:

“How have scholars applied, extended and tested Teece et al.’s seminal dynamic capability construct?”

I have built on the so-called ‘reification analysis’ approach developed by Lane *et al.* (2006) to provide an important contribution to dynamic capability research. In this respect, whereas my findings have confirmed early suggestions (e.g., Arend and Bromiley, 2009) that the construct has been affected by a process of reification – i.e., taken-for-grantedness, – and they have also demonstrated the more recent retrenchment of such process, suggesting the decreasing negative influence of reification and a strong need for more focused and precise research on dynamic capabilities. This seems to suggest the construct is progressing along a positive developmental path (Helfat and Peteraf, 2009). Moreover, further contributing to making research on dynamic capabilities more robust, I have argued for the necessity of researchers choosing clearly which definition of the construct – among the many available – they intend to adopt earlier in their studies, and thus for the importance of engaging directly with the core foundational articles in the literature (which I have also identified) – as well as echoing calls in those articles for more empirical studies.

Consistent with the findings of my systematic review and reification analysis, I have justified the use – as my reference definition – of Teece’s (2007) reconceptualization of dynamic capabilities as sets of strategic activities to sense and to seize new opportunities, and to transform the firm accordingly: of these three, I have focused my study particularly on sensing dynamic capabilities. In addition, leveraging further suggestions revealed by my systematic literature review for more empirical research on dynamic capabilities at the interorganizational level and in SMEs, I have focused on the activities of an SME-oriented network intermediary – and particularly on a specific annual networking initiative this intermediary conducts – as my research

context. I have then developed the argument for Study 1 based on the following research question:

“How can network intermediaries support firms and entrepreneurs in the deployment and further development of their existing sensing dynamic capabilities?”

In this Study 1, I have used the extended case study method (Burawoy, 1991; Danneels, 2002; 2011) to provide a detailed account of how the network intermediary supported the deployment of participants’ existing sensing dynamic capabilities during the focal initiative by a) helping firms enhance their organizational self-awareness and formulate a clear search purpose, and b) providing an emotionally supportive climate. My findings have also revealed how the network intermediary supported the further development of firms’ sensing dynamic capabilities by c) enabling deliberate and experiential learning processes.

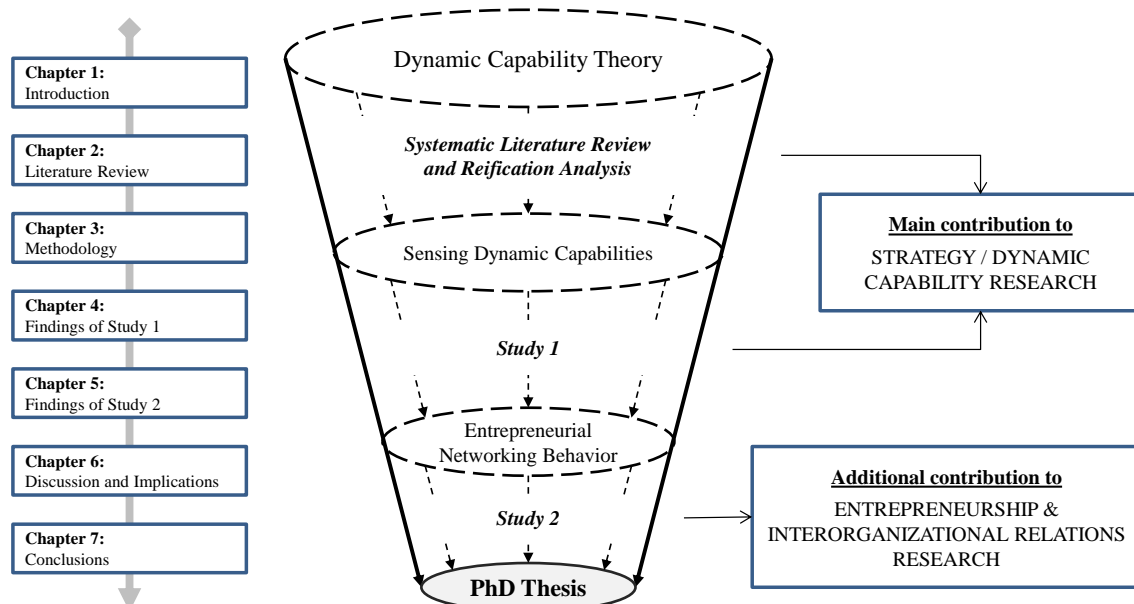
Next, in Study 2, I have ‘zoomed in’ to focus on the networking behaviors of entrepreneurs in the sample while sensing for new opportunities through the networking initiative. In addition, I have also investigated in this study how the network intermediary purposefully leveraged specific drivers of interorganizational relations to influence how entrepreneurs networked while sensing new opportunities. To support this Study, I have complemented the literature review in Chapter 2 with an assessment of further relevant research in entrepreneurship and interorganizational relations. Formally, in Study 2 I have addressed two research questions:

“How do entrepreneurial networking behaviors influence entrepreneurs’ sensing of new opportunities in networking initiatives?”

“How can network intermediaries design networking initiatives to support entrepreneurs’ dynamic capability to sense new opportunities?”

My Study 2 findings – obtained using the embedded case study method (Yin, 2008) – have allowed me to disentangle how entrepreneurs’ repertoire of networking behaviors when sensing new opportunities in the networking initiative unfolded along three dimensions – networking predisposition, entrepreneurial logic, and network development effort – as discussed in Chapters 5 and 6. Moreover, I have provided robust evidence of how the network intermediary in this case leveraged drivers of interorganizational relations such as a collective identity and spatial and virtual propinquity among entrepreneurs, as well as their perceived task complementarity – i.e., the overlap between their search priorities and the benefits they expected from others.

Figure 1. ‘Funnel-shape’ structure of the PhD Thesis (reprise from Chapter 1)



7.3 SUMMARY OF THE CONTRIBUTIONS TO KNOWLEDGE FROM STUDY 1 AND STUDY 2

Besides contributing to dynamic capability research with the findings of my systematic literature review and the results of my reification analysis, my PhD has also offered a number of contributions to knowledge grounded in Study 1 and Study 2, which I summarize here.

7.3.1 Contributions from Study 1

The main contribution of Study 1 pertains to the conceptualization and empirical testing of an outward-looking relational lens in dynamic capability theory, related to how external parties – such as network intermediaries – may support the deployment and further development of other organizations’ (sensing) dynamic capabilities. This contribution complements and extends extant research on dynamic capabilities, which has generally maintained that such capabilities can only be built and deployed internally, and independently from others actors (Dyer and Singh, 1998; McEvily and Zaheer, 1999; Teece *et al.*, 1997).

I have also provided a confirmation of the pivotal roles organizational self-awareness, mindfulness, and learning processes play in dynamic capability theory (e.g., Danneels, 2011; Gärtner, 2011; Levinthal and Rerup, 2006; Zollo and Winter, 2002). Crucially, I have also refined our common knowledge of dynamic capabilities by providing much needed empirical evidence of the importance of purpose formulation and of emotional and affective processes (e.g., Barreto, 2010; Helfat *et al.*, 2007; Hodgkinson and Healey, 2011).

7.3.2 Contributions from Study 2

In Study 2 I have provided two sets of contributions to knowledge. First, I have discussed how the rich repertoire of networking behaviors I discovered may influence how entrepreneurs conduct their sensing activities – i.e., how they deploy their sensing dynamic capabilities – and, in doing so, I have integrated several research streams on entrepreneurship and interorganizational relations theories which have been disconnected until now. In addition, my findings have generated new insights pertaining to research on networking behavior in triads (e.g., Obstfeld, 2005), because they have shown how – at least in entrepreneurial networking initiatives – the behaviors of all parties in a triadic relation – and not just that of the intermediary in a brokering position – can substantially influence the emergence of new and fruitful relationships.

Second, building on the detailed evidence of how the network intermediary purposefully influenced drivers of interorganizational relations – such as by structuring collective identity and spatial and virtual propinquity, and encouraging task complementarity among the entrepreneurs participating in the networking initiative – I have suggested that the organizers of networking initiatives can foster downward or upward emergence of new interorganizational relationships by leveraging two activity-based mechanisms – preparation and participation. I have also discussed how such mechanisms may offer a previously overlooked activity-based solution to entrepreneurs' attempts to behave ambidextrously – i.e., conducting exploration and exploitation activities at the same time – during networking initiatives. More specifically, contributing to the further integration of dynamic capability and ambidexterity literature (O'Reilly III and Tushman, 2008), I have highlighted the previously overlooked importance of structured preparation activities as a mechanism which has the potential

to enhance how ambidextrous entrepreneurs sense – and seize – new opportunities when participating in networking initiatives.

7.4 PRACTICAL IMPLICATIONS

My findings present evidence suggesting that the participants' relation with CDO in Matching substantially favored those who were more willing to leverage its support in their searches for new opportunities. I have also shown that this relation allowed many firms to strengthen their sensing dynamic capabilities beyond the boundaries of the Matching initiative, via their investments in deliberate learning in the preparatory period and in experiential learning over the three days of the actual event. Deliberate learning efforts are “essential to the evolution of firm capabilities” and significantly impact “member beliefs and actions, as well as strengthen[ing] innovative thinking and capability exploitation, resulting in an organization obtaining more growth energy” (Chen, Lee, and Lay, 2009: 1290), while experiential learning provides “the supportive culture and climate that enables conscious development and questioning of the current operational methods and cognitive models” (Kianto and Ritala, 2010: 94).

So, if learning was so important at Matching, what kind of implications can I draw for participants' day-to-day business lives after and beyond the Matching initiative? Despite the well-known limitations of single case study research with multiple sub-units of analysis (Yin, 2008), I believe I can offer three specific classes of insights with practical importance.

7.4.1 Implications for firms and entrepreneurs involved in networking initiatives

The first insight pertains to the importance for networking initiatives' participants of conducting honest self-assessments of their internal and external environments and of their repertoire of networking behaviors, as well as the criticality of defining a clear search purpose before starting their sensing activities. I argue that – at least in networking initiatives characterized by multiple and frequent interaction among actors – firms and entrepreneurs will be more effective in sensing new opportunities if their actions are based on a careful alignment between a thorough assessment of their internal and external environments, a clear purpose to their search activities, and their effective leveraging of appropriate networking behaviors.

A lack of such an assessment can put firms and entrepreneurs at risk of missing the benefits of emotional and affective processes and, in turn, can result in the time and energy they invest in preparing and participating being less impactful – or even wasted – and can substantially reduce both their chances of discovering serendipitous opportunities (Dew, 2009) and of benefiting from the learning potential which could further develop their sensing dynamic capabilities. Moreover, although my data do not allow me to make direct links between specific networking behaviors and different sensing outcomes, the anecdotal evidence I gathered during my study suggests that such direct relationships may indeed exist, and should be taken into account by participants when preparing for networking initiatives. The managerial time and attention, and organizational resources involved in attending networking initiatives – a common activity for many firms and entrepreneurs (Stam, 2010) – will probably be in limited supply, so I urge those who attend to prepare and plan their participation thoughtfully.

Second, strategic decision makers should consider carefully how they could best

benefit from building relations with network intermediaries to strengthen their sensing dynamic capabilities, so as to be better able to recognize new opportunities during (and beyond) such initiatives. The same advice could benefit such network intermediaries as government agencies, universities, venture associations, and innovation consultancies involved in organizing networking initiatives for both large and small firms. Whereas prior research has argued that network intermediaries may provide content such as “knowhow about the management of start-ups, intelligence about new market trends and opportunities, and the discovery of valuable partners through the informal network” (Lee *et al.*, 2001: 621), it has mostly remained silent about how this actually happens (or should happen) in practice. My findings reveal how careful preparation before attending networking initiatives, and crafting good relations with the specialized intermediaries who host them, will support how firms and entrepreneurs sense opportunities during those initiatives. They also show how such relations may amplify the long-term benefits for participant firms in terms of developing their sensing dynamic capabilities during their day-to-day activities post-event. This suggests that the return on the time and financial resources invested in building such relations may well yield more strategic benefits than previous arguments have indicated.

Importantly, my study shows how the preparation and participation of entrepreneurs in the networking initiative I studied was supported by a structured array of supporting activities provided as part of the event designed by the networking intermediary concerned, and aimed at fostering different drivers of interorganizational relationships. This was mainly made possible through the presence, dedication, and energy of the network intermediary’s local staff members, but I also observed many instances of the substantial direct involvement of a number of entrepreneurs (and senior

managers of other participant firms) in the organization of those supporting activities, and of the event itself. Together, the constant support of the intermediary's staff members and the direct involvement of participants with past experience of the initiative helped generate a strong collective identity and the design of suitable solutions to issues of propinquity and task complementarity, in turn influencing entrepreneurial networking behaviors. I therefore encourage practitioners and those intermediary bodies such as government agencies, universities, and policymakers who are interested in fostering entrepreneurship to think about networking initiatives as a valuable part of an on-going dialogue with participants, and not simply as one among many disconnected stand-alone services. In particular, I believe that the pre-assessment of each participant's repertoire of networking behaviors noted above can be effectively leveraged to design tailored supporting activities which can improve the outcomes for participants in such initiatives. In addition, my case findings highlights the importance of continuous coordination efforts among different organizational sub-units within network intermediaries to sustain the dialogues with their network members.

7.4.2 Implications for academic scholarship

My findings about the importance of preparation and participation mechanisms may also resonate in the context of academic scholarship. In this regard, I argue that scholars can be thought of as a special type of entrepreneurs – as a body of individuals who are involved in intellectual entrepreneurship – “a conscious and deliberate attempt on the part of the academics themselves to explore the world of ideas boldly and without the undue inhibitions of disciplinary restraints” (Chia, 1996: 411). Typically, academics

search for new ideas and connections by participating in scholarly conferences and symposia (Ford and Harding, 2008) where they find “window[s] of concentrated time before returning to the normal busy schedule” (Antal, 2006: 154). Indeed, there is some evidence that they tend to calculate the benefits and costs of sharing their papers with previously unknown colleagues carefully, although “they have more intent to share when they perceive the more general benefits of sharing and the stronger social norms of the academic community that encourage sharing” (Lee, Lee, and Wadhwa, 2010: 204). So, my results encourage the hosts of academic conferences not to overlook the criticality of preparation and participation mechanisms which may enhance participants’ collective identity – e.g., doctoral symposia, awards, reviewing process, etc., – spatial and virtual propinquity – e.g., conference dinners and receptions, social network engagement, etc., – and task complementarity – e.g., presentation sessions with well-matched papers, incentives to pre-read and to comment in advance on contributions from participants in the same session, etc.. Such mechanisms can function as “... form[s] of explicit or implicit rules and models and templates for behavior and interpretation” (Antal, 2006: 156) through which institutional hosts can “constrain action, define opportunity, and facilitate patterns of interaction” (Clemens and Cook, 1999: 445). In addition, I hope my findings contribute to the awareness of academic conference participants of the importance of proactive engagement with their respective academic communities based on a more collaborative logic of exchange. As Uzzi and Gillespie (1999: 33) observed, “this logic promotes the transfer of private information and resources and motivates [both parties] to search for integrative rather than zero-sum outcomes. In this way, embedded ties both created new collaborative opportunities and induced the mutual rather than selfish distribution of rewards.”

7.5 SUGGESTIONS FOR FUTURE RESEARCH

My results about the support provided by network intermediaries to firms' and entrepreneurs' sensing activities open a number of lines of inquiry for further research.

7.5.1 Suggestions for dynamic capability research

With respect to dynamic capability theory, my focus on sensing dynamic capabilities points to the need for further investigation of how network intermediaries – and external parties more generally – can support firms' and entrepreneurs' seizing and reconfiguration activities. While I have narrowed the boundaries of my inquiry in this PhD research to sensing dynamic capabilities and to networking initiatives, opportunities exist to explore the relational deployment and further development of any type of dynamic capability in a wider variety of networking environments. Further investigation of the roles consultants, service organizations, government agencies, and the like could play would be surely beneficial to advance dynamic capability theory (e.g., Teece, 2012).

I also maintain that the field would benefit substantially from further detailed investigation into how intentionality shapes the deployment and development of dynamic capabilities. In particular – again, extending my sensing dynamic capabilities focus – more research into the (potentially considerable) importance of intentionality in the development of the other dynamic capabilities – of seizing and transforming (Teece, 2007) – would provide opportunities to integrate dynamic capability theory more thoroughly with research streams on the role of organizational and entrepreneurial leadership.

Moreover, based on my first-hand empirical evidence on the contribution that emotional and affective processes can make to deploying sensing dynamic capabilities, I encourage scholars to explore further how such psychological micro-foundations might inform the design of processes and structures conducive to enhancing this (and the other) dynamic capabilities (e.g., Harreld *et al.*, 2007).

Finally, an interesting research angle may be to investigate the role of network intermediaries – such as venture associations, government and regional agencies, and universities as well – in creating and developing non-geographic clusters. Building on prior research which has mainly focused on the importance of geographic clusters (e.g., Jenkins and Tallman, 2010; Lorenzoni and Ornati, 1988), recent contributors have started to highlight how network intermediaries may play resource orchestration roles in assembling and nurturing interorganizational networks of complementary and competing firms who do not necessarily share geographic propinquity (e.g., Paquin and Howard-Grenville, 2012). I suggest that fruitful insights for dynamic capability theory – particularly in terms of seizing and transformational activities at the network level – may be gained by expanding on such emerging research streams and integrating theoretical insights from resource orchestration research (e.g., Hitt *et al.*, 2011; Sirmon *et al.*, 2011).

7.5.2 Suggestions for entrepreneurship and interorganizational relations research

First and foremost, disentangling my results from Study 2, I believe it would be fruitful for scholars to examine the existence of a direct relation between different combinations of networking behaviors and the outcomes participants gain from such initiatives. I

suggest approaches which leverage configurational thinking (e.g., Fiss, 2007; 2011) may be particularly suitable for this endeavor, due to their power to assess combinatory patterns of behaviors related to specific performance outcomes. This notion is reinforced by the provision in recent literature (e.g., Chandler *et al.*, 2011; Ferriani *et al.*, 2013; Vissa, 2011; 2012; Vissa and Bhagavatula, 2012) of more robust measurements of the different dimensions of entrepreneurs' networking behaviors I have identified.

Second, my results are based on the combination of the network intermediary's design efforts and entrepreneurs' commitments to prepare and participate effectively. To what extent can these factors and their associated processes be best managed to achieve the most effective results? Prior research has shown that networking relationships emerge between organizational members who work in dispersed units or teams. But do these relationships decay over time (e.g., Roberts *et al.*, 2009)? Will the fact that different entrepreneurs do not necessarily share similar networking predispositions or deploy complementary entrepreneurial logics inhibit them from benefiting as much from their networking interactions? Or will such dissimilarities help energize those outcomes?

Third, taking an evolutionary perspective may a fruitful approach to investigating such network dynamics as these. In my case, for instance, CDO's activities prior to and after Matching could be seen as selection and retention processes based on securing participants (and their behaviors) which represent a good 'fit' with a pre-designed collective identity, and on identifying complementary business priorities for the purpose of gathering firms with 'appropriate' network predispositions and the 'right' balance of network development efforts. The Matching-event itself could be seen as a place for

training and further selection which would result in an even more highly homogeneous set of participants – although the autonomous and intentional behaviors of participant entrepreneurs would – inevitably – introduce variation in terms of different combinations of networking behaviors. A challenge would be to investigate whether (and which) entrepreneurial opportunities arise from previously connected or previously un-connected actors, or the effects of alternative attempts to either restrict or enhance participant diversity. Would, for example, general diversity be irrelevant to increasing entrepreneurial opportunities, but specific diversity – in terms of task and resource complementarity – be fundamental to outcomes? Or would trying to achieve homogeneity of participants and their behaviors actually deprive the event of some essential energy stemming from the inescapable and natural variety of those factors? Whereas I may speculate that what I observed was an interaction between a network intermediary and entrepreneurs aimed at reducing the ‘noise’ of irrelevant diversity and focusing on the power of complementarities, I believe scholars in network dynamics research may be interested to pursue such lines of inquiry further.

Fourth, I have investigated the networking behaviors of participant entrepreneurs in my study and left the activities of participants in other roles (e.g., senior managers or commercial staff) somewhat in the background. As discussed, I found that sets of networking behaviors displayed by entrepreneurs participating in Matching generally differed from those of other participants. But anecdotal evidence from non-entrepreneurial attendees makes me wonder whether the peculiarity was partly driven by the contextual characteristics of Matching as a predominantly entrepreneurial networking initiative – or, indeed, if my findings point to a special case of a more general entrepreneurial networking behavior that any type of participants in networking

initiatives could deploy. Whereas my data do not allow me to make the case for such a broad generalizability of my results, there is clear potential for further research to investigate how different types of business participants network, which sorts of behaviors they prefer, and which sorts of ties are most beneficial to them. I suggest that expanding on my results might also yield novel insights, e.g., by comparing findings from entrepreneurial networking initiatives (such as Matching) with those from networking events mainly aimed at professionals (such as the research clubs and forums regularly organized by universities and professional associations to develop participants' managerial capabilities).

Finally, I have assumed that networking predispositions exist among entrepreneurs, and persist over time. However, the origins of an entrepreneurial predisposition towards networking would be an intriguing area for further examination. In my study, the network intermediary was consciously committed to 'leading' its member firms' approaches towards a relational networking predisposition. My data did not allow me to investigate in more detail what CDO's rationale was or how it came to be; or whether it felt it had succeeded in its efforts with all – or most – participant entrepreneurs. I do believe, though, that exploring (for instance) whether entrepreneurs' networking predisposition result from their experience of previous entrepreneurial networking initiatives would be worthwhile: in other words, can such predispositions be shaped – or even fundamentally changed – through repeated social interaction in structured networking initiatives or is there something essential about an entrepreneur's make-up that fundamentally predisposes them towards a networking mindset? I suggest consideration of the dynamics of entrepreneurs' networking behavior grounded in a learning perspective would be a fruitful area for future research.

7.6 CONCLUDING REMARKS

In this PhD thesis I have investigated the support network intermediaries offer via networking initiatives to firms' and entrepreneurs' capabilities to search for new opportunities, grounding my research in contributions from dynamic capability, entrepreneurship, and interorganizational relations theories. My results have demonstrated how their relations with network intermediaries may substantially help how firms and entrepreneurs enhance their capacities to sense new opportunities.

I conclude my PhD investigation by highlighting a particular aspect of my research setting which relates to the type of relations involved. As all participants shared a common relation with the network intermediary, I emphasize the triadic nature of the new inter-firm relationships established during the networking initiative I studied. Recent network research has suggested that triadic relations may facilitate "the formation of common knowledge and shared meanings, reduce frictions due to differences in understanding, and promote the cooperation and coordinated actions that are necessary to integrate and take advantage of diverse sources of knowledge" (Tortoriello and Krackhardt, 2010: 168). In an increasingly networked world, where interorganizational relationships are gaining ever increasing importance, I invite future research to deepen our knowledge of the impact of these particular types of relations on firms' and entrepreneurs' opportunity searches. I suggest understanding how to foster interorganizational entrepreneurial collaboration represents both a valuable endeavor and an opportunity that we cannot afford not to seize.

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