The role of ostensive and performative routine aspects in dynamic capability deployment at different organizational levels

Christopher Biesenthal

University of Technology Sydney, Australia

WHU – Otto Beisheim School of Management, Germany

Siegfried Gudergan

University of Newcastle, Australia

University of Waikato, New Zealand

Véronique Ambrosini

Monash University, Melbourne, Australia

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Abstract

This study clarifies how dynamic capabilities work in modifying operational capabilities at different organizational levels. While there is good understanding that routines that make up operational capabilities possess *ostensive* and *performative* aspects, whether the same applies to dynamic capabilities is unclear. In addition, there is only a limited understanding of how dynamic capabilities link to operational capabilities in terms of these two routine aspects, in general, and at different organizational levels, in particular. Our findings suggest that *ostensive* and *performative* routine aspects explain the way in which dynamic capabilities work in modifying operational capabilities. They also reveal that the characteristics of the *ostensive* or *performative* routine aspects in dynamic capability deployment at a selected organizational level correspond with those associated with operational capabilities at the same level.

Keywords: Dynamic capabilities; Strategic change; Organizational capabilities; Routines; Organizational change

1. Introduction

Dynamic capabilities help organizations deal effectively with strategic and operational changes (e.g., Anand et al., 2009; Helfat et al., 2007; Su et al., 2014; Vanpoucke et al., 2014); they produce change in operational—also referred to as ordinary or substantive—capabilities, so that organizations retain or improve their competitiveness, even in dynamic environments (Helfat et al., 2007). Put simply, dynamic capabilities *"extend, modify or create ordinary [operational] capabilities"* (Winter, 2003: 991). They are composed of routines that encompass rules and systems, on the one hand, and courses of action and behaviors, on the other. They are all aimed at modifying operational capabilities. Empirical studies demonstrate the relevance of dynamic capabilities for modifying firms' operational capabilities, such as their marketing, technology (e.g., Wilden and Gudergan, 2015), new product development, supplier integration (Huang et al., 2013; Pavlou and El Sawy, 2011), services (Gebauer et al., 2012), or manufacturing (Koufteros et al., 2014) activities. These studies share the implicit assumption that operational capabilities, on which dynamic capabilities have a bearing, reside at the firm level.

Operational capabilities do not exist at a single organizational level (Salvato and Rerup, 2011). For instance, many organizations operate portfolios of projects, which then require a variety of operational capabilities to achieve long- and short-term objectives (Dasari et al., 2015; Scott-Young and Samson, 2008; Verma and Sinha, 2002). Operational capabilities are those capabilities that help organizations 'make a living' (Winter, 2003) and deal with day-to-day operational matters. For instance, at the firm level, the organizations have capabilities to manage their project portfolio (Dai and Wells, 2004), but at the project level, they also have capabilities to facilitate the successful completion of each project (Browning, 2010; Ramasesh and Browning, 2014). At both levels, the key to success is project management capabilities, but these capabilities differ: Firm-

level capabilities are consistent, with little variation in their deployment, whereas project-level capabilities vary and are deployed to fit specific project characteristics. Each form of project management capability—as is true of any operational capability—may become ineffective if the internal, external, or both environments change, such that the capabilities must change to remain effective (Ramasesh and Browning, 2014).

Despite some recent attempts, existing dynamic capability literature has not yet explained how dynamic capabilities might facilitate such modifications of operational capabilities at different organizational levels. Previous studies note generally that organizational capabilities can reside at multiple levels (e.g., Laamanen and Wallin, 2009; Salvato and Rerup, 2011) and that dynamic capabilities can reside at various organizational levels too (Brauer and Laamanen, 2014; Helfat and Martin, 2015; Martin, 2011; Rothaermel and Hess, 2007; Teece, 2007). However, no research has provided a detailed understanding of how dynamic capabilities link to operational capabilities at the firm versus project levels.

This study seeks to clarify how dynamic capabilities function to effect changes to operational capabilities at different organizational levels. According to Feldman and Pentland (2003), the routines that make up capabilities consist of recursively related *ostensive* and *performative* aspects; with the former aspects of routines encompassing rules and systems, and the latter courses of action and behaviors. In turn, this study considers the following central research question: *How do ostensive and performative aspects of routines that make up dynamic capabilities modify an organization's operational capabilities at the project level and at the firm level?*

Following an abductive research approach, we draw on in-depth analyses of case studies of three organizations that use projects in their operations (e.g., Laamanen and Wallin, 2009) to

investigate linkages between dynamic and operational capabilities through examining the ostensive and performative aspects of sensing, seizing and reconfiguring routines at different levels. The findings reveal that, at the firm level, the *ostensive* aspects of the routines of both dynamic and operational project management capabilities are followed in a systematic fashion and structured in formalized units to manage the firm's project portfolio. Those pertaining to dynamic capabilities encompass few stable rules and systems that outline standardized ways of modifying operational capabilities. Similarly, the *performative* aspects of the routines of dynamic capabilities at the firm level embody confined courses of action and behaviors in a fairly standardized use of rules and systems.

In contrast, at the project level, the routines of dynamic as well as operational project management are deployed in context-specific ways to suit the projects' particularities. We find that the *ostensive* aspects of the routines of dynamic capabilities at this level encompass many fairly stable rules and systems that outline reasonably standardized ways of modifying project-level operational capabilities. Regarding the *performative* aspects of the routines of dynamic capabilities at the project level, we find that they embody many courses of action and behaviors in a flexible use of rules and systems. At both levels, we identify that dynamic capabilities work through the deployment of sensing, seizing and reconfiguring routines that modify operational capabilities; with these three types of routines being characterized by their *ostensive* and *performative* aspects. The way these dynamic capabilities routines are characterized corresponds to that of the operational capabilities at their respective organizational.

We contribute to the dynamic capability literature in three ways. First, by highlighting that the sensing, seizing and reconfiguring routines that make up dynamic capabilities possess *ostensive* and *performative* aspects we provide a more detailed understanding of how dynamic capabilities

work, in general. Leaning on work by Feldman and Pentland (2003), we argue that it is important to understand both the ostensive and performative aspects of the routines to understand it as considering only one or the other paints an incomplete picture of the deployment of dynamic capabilities. Specifically we show that while the *ostensive* aspects indeed provides the rules and systems that make up the routine, it is important to understand the role of *performative* routine aspects that characterize the deployment of dynamic capabilities in terms of related courses of action and behaviors.

Second, by showing that the way dynamic capabilities link to operational capabilities differs at different organizational levels, in terms of the *ostensive and performative* aspects of the dynamic capabilities' underlying routines, we provide a more nuanced understanding of how dynamic capabilities are deployed at different organizational levels. For instance, our findings reveal that the more standardized use of *ostensive* and *performative* routine aspects in dynamic capability deployment at an organizational level corresponds with the more standardized occurrence of these elements in operational capability deployment at the same level. Third, these insights confirm that dynamic capabilities are context specific (Fainshmidt and Frazier, 2016) and that they include different aspects of routines, which constitute parts of the bigger picture that describes how firms modify their existing operational capabilities (Achtenhagen et al., 2013). In particular, whether the *ostensive* and *performative* aspects of the routines that make up dynamic capabilities are more standardized or come with greater flexibility depends on the operational capabilities they are supposed to modify and the context in which this modification occurs. We therefore respond to Di Stefano et al.'s (2014) call to develop a more comprehensive picture of dynamic capabilities by illuminating how the *ostensive* and *performative* aspects of the routines that these capabilities are composed of, are deployed at different organizational levels.

In the next section, we discuss the nature of operational project management capabilities and dynamic capabilities in conceptual terms. After we outline the research design and cases we use to explore how dynamic capabilities function to change operational capabilities at different organizational levels, we present the empirical results from our case study analysis. Finally, we offer some theoretical insights and contributions, before addressing the study's limitations and managerial implications.

2. Capabilities in organizations

There are two main types of organizational capabilities: operational capabilities that enable a firm's normal daily operations (e.g., manufacturing, logistics) and dynamic capabilities that induce modifications to those operational capabilities (Helfat et al., 2007). Project management capabilities are operational; for example, they help firms operate on a daily basis. Irrespective of their type, capabilities consist of organizational routines (Dosi et al., 2001), such that sets of organizational routines make up capabilities (Eggers and Kaplan, 2013). Feldman and Pentland (2003: 95) clarify that routines are "repetitive, recognizable patterns of interdependent action, carried out by multiple actors," such that they highlight the differences between, and co-occurrences of, both *performative* and *ostensive* aspects of routines. The former refer to how those who use a routine do so in practice; the latter represent the more or less codified rules and systems that define the routine. As Feldman and Pentland (2003: 101) define them, *ostensive* aspects are an "abstract, generalized idea of the routine," whereas *performative* aspects consist of "specific actions, by specific people, in specific places and times."

In multilevel organizations, firm- and project-level contexts have different agendas, objectives, and temporal orientations that coexist in and across organizational levels (Sydow et al., 2004; Windeler and Sydow, 2001). They also exhibit a certain degree of interdependence (Larson,

2004). Because the purpose of project management capabilities varies at different organizational levels (Brady and Davies, 2004), their application in practice likely varies between organizational levels and projects too (Rerup and Feldman, 2011; Salvato and Rerup, 2011), influenced as well by the individual cognition of organizational actors (Laamanen and Wallin, 2009).

2.1 Operational project management capabilities at the firm and project levels

At the firm level, units such as a project management office (PMO) embody organizational entities that have been "established to assist project managers, teams and various management levels on strategic matters and functional entities throughout the organization in implementing [project management] principles, practices, methodologies, tools and techniques" (Dai and Wells, 2004: 524). The units deploy certain project management capabilities to support their organizational aim, namely, to manage a multitude of projects effectively (i.e., project portfolios), in terms of budget allocation, resource availability, and project selection (Aubry et al., 2007). Firm-level project management capabilities support strategic governance and control activities, to ensure the organization's strategic long-term objectives (Levin, 2013; Turner, 2009) and enable the organization to operate effectively (Mayer and Salomon, 2006). At this level, project management capabilities are applied in a standardized fashion, providing the frame within which the organization's project portfolio operates, which helps ensure a fit with the overall organization. Embedded routines are organizational activity patterns that the firm can repeat reliably and over time (Feldman and Pentland, 2003; Parmigiani and Howard-Grenville, 2011). Therefore, their *ostensive* routines likely provide strong guidance for the *performative* aspects of these capabilities. Displaying few variations, the standardized, *ostensive* routines strongly mold patterns of activities.

In contrast, at the project level, project management capabilities become shaped in response to the project context, though changes also can be induced by the PMO (Goodman, 1967; Pinto,

2000). Individual projects are unique, temporary, and predetermined, such that they must meet hard time, cost, and quality objectives (Shenhar et al. 2001). Such project management capabilities commonly draw on well-established methodologies (e.g., PMBOK, Prince2, Six Sigma, Lean) that offer templates for executing certain processes. For example, professional standards such as PMBOK contain routines that specify the human resource management requirements for projects, using a collection of templates that outline how to acquire, develop, and manage a project team. The assembly of such templates constitutes the routines that determine, in this example, human resource management in projects. Such templates represent what Feldman and Pentland (2003) call artifacts, which interact with and influence organizational routines—in our case, project management capabilities. Because a multitude of project management methodologies exists, and projects often take place in unique and varying contexts, different templates and applications are associated with project management capabilities at the project level. The constituent project management methodologies and associated capabilities offer a high degree of commonality and stability across similar projects and contexts (Davies and Brady, 2000), but they are assembled (i.e., configured) explicitly to allow for adaptability across different projects and contexts.

Therefore, the routines that result from standardized project management methodologies should shape the *ostensive* aspect, by defining "the ideal or schematic form of [the] routine" (Feldman and Pentland, 2003: 101), but the *performative* aspect is more relevant for understanding how individual projects in a portfolio may differ in their purpose and context, as well as in their involvement of different managers who draw on *ostensive* aspects. The ensuing *performative* aspects of the routines refer to "specific actions, by specific people, in specific places and times" (Feldman and Pentland, 2003: 101), so the ways that managers employ project management capabilities in practice can reflect their various interpretations of the *ostensive* element. For

example, the "ideal" process for developing a project team includes staff training, team-building activities, establishing ground rules, the colocation of team members, and personal assessment tools (PMI, 2013). But the ways project managers actually use the available templates that specify these activities may vary, according to differences in those managers' experiences, organizational constraints (e.g., time, budget), or project performance pressures.

Because project management capabilities at the firm and project levels serve different purposes and function in different contexts, they differ in their *ostensive* and *performative* elements too. The complex, transient character of operating environments implies that these operational capabilities might be short-lived. Therefore, it is critical to understand how organizations modify their existing project management capabilities to keep them relevant and effective. Some research suggests which aspects dominate different project management capabilities and the influences that require changes to these capabilities (Aubry et al., 2010), but we have few insights into how organizations facilitate changes to their operational capabilities at different levels of the organization.

2.2 Dynamic capabilities

Many reviews detail the nature and role of dynamic capabilities (e.g., Ambrosini and Bowman, 2009; Barreto, 2010); we do not go in detail about the origin or types of dynamic capabilities here but concentrate instead on aspects specifically relevant to our inquiry. The "increasingly frequent occurrence of major, discrete environmental shifts in competitive, technological, social, and regulatory domains" (Barreto, 2010: 257) requires organizations to manage their operational project management capabilities actively and refine them to keep up with the changing requirements (Goodale et al., 2011). That is, organizations must be able to modify their capabilities to keep them congruent with the changing environment (Zahra et al., 2006). As

noted, they do so by deploying dynamic capabilities (Eisenhardt and Martin, 2000; Teece, 2007) that "extend, modify or create ordinary [operational] capabilities" (Winter, 2003: 991).

Project management capabilities, as one type of operational capabilities, include embedded routines of repetitive activity patterns, but they are not necessarily fixed or unchanging (Feldman and Pentland, 2003). Scholars provide empirical evidence of both change and variability in organizational routines (e.g., Edmondson et al., 2001; Feldman, 2000; Naduzzo et al., 2000; Pentland, 2003; Pentland and Rueter, 1994), but even if existing conceptualizations of operational capabilities acknowledge the possibility of variability, they do not explain it (Pentland, 2003). Nor does extant literature describe how such variations occur, so research on dynamic capabilities remains in need of development (Dixon et al., 2014).

A main issue remaining with the dynamic capabilities framework is that it is abstract and that it fails to account for ostensive and performative elements of dynamic capabilities at different organizational levels (Wollersheim and Heimeriks, 2016). For example, Teece (2007: 1319) refers to dynamic capabilities as "skills, processes, procedures, organizational structures, decision rules, and disciplines" without specifying the practical nature of these capabilities (Wollersheim and Heimeriks, 2016). A large scholarly body focuses on abstract dynamic capability concepts (Salvato and Rerup, 2011), with ambiguous operationalizations (Barreto, 2010) and insufficient understanding of their constitutive elements in organizational settings or their business functions at different organizational levels (Teece 2007, Helfat and Peteraf, 2009; Schreyogg and Kliesch-Eberl, 2007).

In this paper we use Teece's (2007) conceptualization that shows that dynamic capabilities comprise sensing, sensing, seizing and reconfiguring routines to explain how dynamic capabilities link to operational project management capabilities. Each of these routines can occur sequentially

but this is not necessarily always the case. Moreover, although the reconfiguring stage is absolutely essential as it is where the ultimate outcome of dynamic capability deployment "happens" (Ambrosini and Bowman, 2009), seizing decisions that precede the reconfiguring can be made without having engaged in effortful sensing. Similarly, sensing opportunities can happen without proper seizing to follow but a firm can start implementing changes through reconfiguring efforts without seizing (in other words, detailed seizing may not necessarily reflect a conscious, effortful process).

Templates or artefacts that describe how a firm ought to engage in sensing, seizing, and reconfiguring, characterize the three routines. For example, the firm might have a formal knowledge management system within which it organizes information about best practices in project management, about lessons learned or about other inputs provided by project managers. Additionally, the firm might have a formal policy that specifies that all project managers should attend industry conferences on an annual basis, which exemplifies the ostensive aspects of this routine, in practice, however, performance differs each time when managers attend the conferences. For instance, they might go to meet their peers, to give key notes or listen to presentations. This highlights that artifacts of sensing routines (Teece, 2007) illustrate their ostensive aspects, but the idiosyncratic ways managers practice them describe the *performative* aspects. Then, for the purpose of evaluating whether to engage in certain projects or whether to (dis)continue them (seizing), the firm might prescribe 'strategic option based' procedures for the use in uncertain contexts or 'NPV based' procedures for the use in risky contexts. The latter two would be examples of the *ostensive* aspects of seizing routines that project managers are meant to use; however, they might use them differently representing the *performative* aspects of these seizing routines. Similarly, the firm might use certain 'change management frameworks' to guide

the process of reconfiguring operational project management capabilities; where this 'change management framework' represents' an *ostensive* aspect of a reconfiguring routine which, however, would be practiced by managers in different ways reflecting *performative* routine aspects.

Sensing involves identifying opportunities to improve operational project management capabilities—that is identifying existing and/or emerging 'gaps' in the current set of operational project management capabilities. Seizing specifies, firstly, which improvement opportunities the firm should take advantage of (which can include decisions on how much to invest in improving operational project management capabilities, for example, allocation budget to engage a consulting firm). Secondly, seizing specifies how the improved operational project management capability should look like, such as decisions about and/or descriptions of how existing operational project management capabilities should be changed. Reconfiguring entails the process through which operational project management capabilities are changed.

To bring this discussion into context and render the dynamic capabilities framework less abstract we can suggest the following examples. One, through sensing the firm might identify that the currently used project management methodologies (that are part of its operational project management capabilities) are less effective than a 'new methodology' that has been promoted by some consultants. Hence, the firm identifies a 'gap' in their current operational project management capabilities, which represents an opportunity to improve its operational project management capabilities. Two, through seizing the firm evaluates whether to use the 'new project management methodology' and develops a change management plan on how to implement the 'new methodology' into existing operational project management capabilities. Three, reconfiguring entails the actual implementation of changes to operational project management

capabilities. That is, the routines that make up the firm's operational project management capabilities are modified through, for example, replacing one 'methodology' with another one. The outcome of using (or deploying) these three sensing, seizing and reconfiguring routines is a modified operational project management capability for the firm.

However, although a common consensus accepts that dynamic capabilities modify operational capabilities through the deployment of sensing, seizing and reconfiguring routines, how this deployment functions remains subject to debate, especially in regards to the *ostensive* and *performative* aspects of dynamic capabilities at multiple organizational levels. Hence, we set out to explain how dynamic capabilities work in terms of the *ostensive* and *performative* aspects of these capabilities' underlying routines, and how these dynamic capabilities aspects link to operational capabilities at different organizational levels.

3. Research Design

Because research in this area is still nascent (Edmondson and McManus, 2007), we adopt a rigorous, qualitative, exploratory case study design (Yin, 2008) in form of an abductive research approach to address our research objectives. Abductive research aims to describe the characteristics and behavior patterns of individuals interacting within their context. The approach is particularly appropriate when one want to develop a deeper understanding of a particular, pre-determined phenomenon, such as dynamic capabilities. It also aims to establish some limited generalizations about the studied phenomenon (Blaikie, 2010).

An important distinction between abductive and inductive research is that after establishing the limited generalizations, the abductive approach goes further and pushes research to looks for causal explanation as to how the studied phenomenon occurs (Blaikie, 2010). Drawing on the

conceptual argument around a phenomenon as a starting point, this design helps us investigate changes in capabilities at different organizational levels, on a broad scale.

3.1 Methodology and method

To explore how dynamic capabilities work in terms of their *ostensive* and *performative* routine aspects, also in relation to the different organizational levels at which they are deployed, we adopt a qualitative research design, with which we "deliberately [sought] out information for answering questions about what structural factors influence individual actions, how those actions are constructed, and their structural consequences" (Flyvbjerg, 2001: 138). With a case study approach, we conduct in-depth analyses of multiple cases, to assess our theoretical assumptions and develop theoretical insights (Jarzabkowski, 2005; Kaplan, 2008). A case study is the most suitable approach to understand the complex, multilevel nature of organizational concepts, including dynamic capabilities. With our comparative, multiple case study approach (Eisenhardt, 1989), we build our abductive data analyses on a sample of three organizations. The aim is not to create generalizable results in a statistical sense but rather to validate empirically the appropriateness of our theoretical argument and its underlying concepts (Eisenhardt, 1991; Eisenhardt and Graebner, 2007; Yin, 2008).

3.2 Case selection

We choose three organizations that manage project portfolios and execute multiple, individual projects in circumstances that demand change, which provide opportunities to investigate capabilities at different organizational levels and across different projects with various (sometimes competing) agendas. The cases include a large IT-based company (XCOM), a government organization (YCOM), and an educational institution (ZCOM).

As a leading telecommunications and information services provider, XCOM encompasses multiple divisions that offer a wide range of products and services related to the fixed and mobile network infrastructure. Similar to other organizations in the industry, XCOM has experienced constant, significant changes since the 1990s, due to the emergence of the Internet and mobile phones. As a major national organization, it runs national initiatives, so it requires a solid capacity to manage both projects and portfolios of projects. This dynamic environment provides a suitable context to study change in operational capabilities within an organization, whose project management capabilities must evolve constantly at different organizational levels to meet the changing requirements of project-based work in this sector (Feldman, 2000; Helfat and Peteraf, 2003).

Next, YCOM buys and maintains physical assets and inventory to deliver infrastructure and services at a national level. It experiences significant complexity in its projects and operations; effective and efficient performance are crucial. As a very large, government organization, YCOM has a deep interest in project management excellence (Jugdev and Thomas, 2002) and also functions under a tight governance structure that affects many of its levels (Foss et al., 2010). Therefore, its project management capabilities reflect organizational routines that represent industry, national, or international best practices. This structure, combined with its high project complexity, makes YCOM an insightful case study.

Finally, ZCOM is a tertiary educational institution that recently established a department to deal with major internal projects. Among its various initiatives, it upgraded its facilities to address the future needs of a growing, state-of-the-art educational institution. Its portfolio consists of multiple major construction and design projects, all managed by teams of architects, planners, and project managers responsible for the design, timing, and location of new building works. The

multiplicity of projects, changing stakeholder demands, and nature of the strategic plan imply a high level of complexity, such that project management capabilities must adjust to internal and external changes, making ZCOM a relevant case for this research.

With these three case studies, we achieve a robust and valid means to explore our research objectives, because we can make comparisons across different cases to validate the appropriateness of our argument and its underlying concepts (Eisenhardt, 1991; Eisenhardt and Graebner, 2007; Yin, 2008). These cases share certain features, such as having a formalized entity that oversees the project portfolio within the organization, rigid control mechanisms, and a hierarchical organizational structure. However, they differ in their industry and project types, so the set of cases adheres to a replication logic (Eisenhardt, 1989), but each case also can stand on its own as an analytic unit. These characteristics support the validity of our findings, because we can cross-verify the identified issues through our case selection (Eisenhardt and Graebner, 2007; Kaplan, 2008).

3.3 Data collection and analysis

TABLE 1 AROUND HERE

Table 1 summarizes the cases, data collection methods (including interviews), and analyses. The most important source of data for this study were interviews conducted with employees involved in projects at different organizational levels, such as directors, portfolio managers, and project managers. To enhance the richness of the data accounts and triangulate the insights (Jick, 1979), we also used observations and secondary data, such as meeting minutes, project plans, websites, and company publications. However, we could not conduct field observations in all three cases, due to some data and information security concerns. Therefore, we draw on such data in our analyses solely to clarify the contextual understanding when assessing the interview transcripts.

The in-depth, semi-structured interviews lasted 60 minutes on average, and they were recorded and transcribed. Our point of contact in each organization suggested suitable participants for our interviews that are relevant in terms of position and experience to report about certain project management capabilities. We then used a snowballing' sampling technique (Miles and Huberman, 1994) to generate insights from others within the organizations. We then contacted additional colleagues whom we were referred to. The main aim in the selection of participants was to get a mix of participants that had adequate knowledge about the nature of dynamic capabilities and worked at different organizational levels (Table 1). Some participants were interviewed more than once, to obtain more detail about the nature of the organizational change processes and dynamic capabilities, especially at different times. During the interviews, participants discussed these aspects freely, asking questions from time to time, consistent with the flow of their thoughts. Each interview was conducted by at least two researchers and followed the methodological guidelines established by Strauss and colleagues (Strauss, 1987; Strauss and Corbin, 1998), as refined in recent comparative case analyses (e.g. Martin and Eisenhardt, 2010).

The research presented herein is part of a broader, five-year research project designed to investigate the antecedents of project blowouts, so we obtained rich data about the routines underlying project governance and management over time, including the nature of the routines of dynamic capabilities. Figure 1 highlights the timeframe and provides a visual timeline of the primary data collection. We worked with a project management advisory firm that audited project management capabilities and advised relatively large companies. The initial data gathering involved observations of four audit meetings between the management advisory firm and its clients. These observations provided some learning about the companies and their routines; we did not actively engage in any questioning. Next, we conducted six semi-structured interviews and one

focus group at XCOM and YCOM, concentrating on general aspects related to project management and project governance routines. The interviews were conducted with a selection of people involved in running either individual projects or the organization's portfolio of projects, to capture potential organizational-level differences. From this first stage, we determined that project management capabilities and organizations' efforts to address changes to their operational capabilities determine project success, in line with prior literature (Brady and Davies 2004; Davies and Brady 2000). In particular, the research team was able to identify initial concepts from the interview data, which we aggregated into more abstract categories, corresponding to dynamic capabilities.

FIGURE 1 AROUND HERE

In a second phase, we sought a more in-depth understanding of the deployment of dynamic capabilities at the firm and project levels and the corresponding project management capabilities. Therefore, we conducted supplementary observations in ZCOM during the following year (Garfinkel, 1967; Rawls, 2008) and investigated a variety of organizational and project management routines, such as improvisation in projects. For this data collection, one researcher shadowed project managers at ZCOM and observed weekly meetings and seminars in a non-participatory fashion. These insights supported the triangulation effort and suggested questions for the second round of interviews, together with the concepts established after the first round of interviews.

In addition, we conducted second rounds of semi-structured interviews at XCOM, YCOM, and ZCOM, using the process described previously. These interviews lasted between 30 and 75

minutes, and the questions were organized to probe the initial concepts further and then compare them at the two organizational levels. The data analysis was performed both manually and through NVIVO. Specifically, we focused on analyzing how dynamic capabilities affect operational capabilities in consideration of Teece's (2007) conceptualization of dynamic capabilities, by exploring (1) how firms use sensing, seizing and reconfiguring routines; (2) the ostensive and performative aspects of dynamic capabilities in regards to these three classes of routines, and (3) the way dynamic capabilities link to operational capabilities at different organizational levels. We used distinct terms to identify relevant patterns if they contained words or variations of words pertaining to a particular concept. For example, terms such as "doing," "implementing," and "pragmatic" identify *performative* elements; "formal," "recorded," and "documented" instead identify *ostensive* elements. Moreover, terms such as "identify" or "learning" were used to ascertain sensing routines; terms such as "decision making" were used to identify seizing routines; and, terms such as "improve" or "update" were used to isolate reconfiguring routines. We also account for each interviewee's role in the organization, to specify the organizational level to which he or she was referring. At this stage, we highlighted and stored quotes associated with relevant topics for further discussion. In the final coding stage, we also isolated all text with any kind of strategic intent, such as descriptions of changes in project management, and dropped all initially coded quotes that no longer seemed relevant.

Using these methods together allowed us to explore our research question from different perspectives and gain a broader perspective on how *ostensive* and *performative* routine aspects of dynamic capabilities link to operational capabilities at different organizational levels. Our purposefully designed and applied research strategy thus demonstrates the "trustworthiness" (i.e., credibility, transferability, dependability, and confirmability) of the inquiry (Lincoln and Guba,

1985). As a research team, we also reviewed one another's coding and analyses to increase the rigor of the research. Table 2 provides general and more level specific descriptions of all relevant concepts and a visual representation of the data structure. In addition, Table 3 provides illustrative quotes of our findings about dynamic capability deployment.

TABLE 2 AND 3 AROUND HERE
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4. Findings

To analyze how dynamic capabilities work, in terms of the *ostensive* and *performative* aspects of their underlying routines, and how these dynamic capabilities aspects link to operational capabilities at different organizational levels, we use as outlined, Teece's (2007) conceptualization of dynamic capabilities and assess the underlying sensing, seizing and reconfiguring routines.

4.1 Dynamic capabilities at the firm level

At a firm level, we find that a more standardized use of *ostensive* aspects in dynamic capability deployment throughout sensing, seizing and reconfiguring. In regards to the sensing of opportunities, we find evidence that firms have systemized formal routines, represented through ostensive aspects such as formal learning systems, which feed into centralized knowledge management systems. Firms possess deliberately set-up teams or organizational entities, such as a PMO to develop better understanding about the proficiency of operational project management capabilities and to facilitate learning, in general, and sensing improvement opportunities, in particular. These entities organize the collection of the reports to document lessons learned and document other relevant information about projects. In this sense, firm-level sensing capabilities are standardized, repeatable, and sustainable change capabilities, as highlighted in the following quotes:

> "So we have that office [project management office] that looks at—they've got a project management element ... that they look at exactly those things, how do we need to change and progress our business model, essentially…. I would say their job is to make sure that we're doing it the most effective way we can. The standardization element of it is specifically that we're doing it as much as we can the same way across the whole organization, rather than developing individual ways of doing it as projects or in certain technology areas, having this is the way we as an organization will manage our projects." YCOM2.3 (04.04.2012)

> "Most of the information we get is from our reporting systems. They are reporting on performance of individual projects. What I'm doing is aggregating the perimeters for those individual projects up to an organizational level to see where we need to improve." YCOM2.1 (04.04.2012)

> "We do a formal [knowledge management] which gets documented into the [centralized] system." XCOM1.6 (02.06.2010)

Prescribed participation at professional conferences and formal encouragement of senior management involvement in industry bodies represent additional *ostensive* aspects of a firm's sensing routines where information or opportunities on how to improve operational project management capabilities can be identified. These organizational policies, while also supporting networking, enable generation of insights about new project management methodologies.

> "They're [senior management are] involved in organizations like AIPM [Institute of Project Managers in Australia], so they go regularly to their meetings and then they go to

conferences and those sort of things to keep up to date with what's going on and where things are being developed." YCOM2.3 (04.04.2012)

The focus on a standardized use of *ostensive* routine aspects is similarly visible when it comes to making a decision to take advantage of an opportunity to change operational project management capabilities or not; that is when seizing. While it is standard practice that senior management ultimately make the decision to approve changes or not, we find that the involvement and role of senior managers is even more crucial. Our data show that in order for a change to take place, senior management has the formal authority to make such decisions and follows defined procedures when making them. They formally sign off on any decision that is proposed to them. In our cases, change decisions are made at the firm level following a set top-down approach. The following quotes support this finding:

> "For any change, really the trigger would come from the senior management. The PMO direction needs to be authorized by the senior management. I'm quite confident – I can't think of specific examples – but I'm confident from the outside I believe I've seen this happen where they've got an idea but because it's not supported, it stops." YCOM2.3 (04.04.2012)

> "So we moved towards the body because we used to use our main, what would you call it, system, our main system project management system, for want of a better term, it used to be PRINCE2. We used to follow PRINCE2; then we all moved away from PRINCE2 to the PMBOK because the leaders in the organization felt that was a better approach." YCOM2.3 (04.04.2012)

> "I think actually for any project to succeed it has to be a priority for the organization. Without actually having a mandate from senior management that it is important to the business, forget it. Close up shop. If it's not important for the business to do it, don't do it. Don't waste your time." XCOM1.6 (02.06.2010)

At the firm level, we also find evidence for the use of other *ostensive* routine aspects that represent formal, data-driven procedures to interpret and evaluate improvement opportunities in a firm's operational project management capabilities. Here, we find that successful projects and their reports are evaluated to identify which elements of the firm's operational project management capabilities work better or worse and, based on ensuing findings, decisions for changing them are made. In particular, our data show that some firms follow certain principles that draw on lessons learned reports as part of their decision making process before changes were made. This *ostensive* aspect of a seizing routine prescribes how a group of relevant stakeholders ought to sign off on a change initiative based on captured knowledge.

> "That was fed into our [project management] systems ... That knowledge was all captured in databases etcetera. It was part of the governance process that you had to go through a group that would sign off on the fit for purpose of a particular strategy … before you did it." XCOM1.2 (02.06.2010)

Ostensive aspects of the firm's change routine also exist when reconfiguring operational project management capabilities. These reconfiguring routines, in the form of formalized systems that specify the way in which certain changes ought to take place, prescribe how changes are facilitated and controlled. On the one hand, firms implement changes to their operational project management capabilities through formal programs, such as structured continuous improvement initiatives that

are inherently embedded in certain structures and processes. On the other, we find that firms use certain groups and individuals that are an active part of the reconfiguration process and make sure that changes are in line with firm's policy and with what was prescribed initially. In other words, there is a strong and formalized monitoring and controlling component when reconfiguring routines at the firm level.

> "There were … specific initiatives …, this was a continuous improvement and that meant that the same initiatives, good or bad, were building on each other and we were getting better plus the fact it takes a long time." YCOM2.1 (04.04.2012)

> "So there was a … project management focused centrally controlling, fairly large - relatively speaking - central group that really was very prescriptive, hands on, bureaucratic. You know, everything went through that process ... You get a yes, no to proceed with changes and then every stage of the process was handled the same way." XCOM2.3 (21.06.2012)

In addition, we also find some evidence of *performative* routine aspects when reconfiguring project management capabilities at the firm level. This *performative* aspect manifests itself in multiple forms. For instance, a change agent or champion develops and implements some changes. This change agent has particular knowledge of what needs to be changed, but the actions that come with the implementation vary depending on the context. This variation in how operational project management capabilities are changed reveals the existence of *performative* aspects of reconfiguration routines. In other cases, existing routines are rewritten retrospectively in order to accommodate new operational project management capabilities that are being used. Lastly, we find evidence that the actual modification is being done in a personalized way depending on the

group in which the change takes place, which supports the *performative* aspect of the reconfiguration routine. The following quotes support our findings:

> "The process [for the capability development improvement program (CDIP)] is being developed a little bit on the fly, and it's a learning by doing kind of approach. A lot of it is in J. C's head" YCOM2.2(04.04.2012)

> "[we have] a group really who manage [learning] processes if you like, both from a systems point of view - updating the system, and from all the processes that sit around that. So their kind of documentation […] changes to accommodate new approaches - when that's updated I guess my group's involved. There'd be teams working on changes, updates, et cetera and then being incorporated in documentation for their process." XCOM2.3 (21.06.2012)

> "We will handle the cons and the change activity very much group by group, person by person." XCOM1.1 (02.06.2010)

4.2 Dynamic capabilities at the project level

At the project level, *ostensive* and *performative* aspects of the sensing, seizing and reconfiguring routines that make up dynamic capabilities are slightly different. Generally, we find evidence for a strong use of *performative* aspects of routines at the project level where change is facilitated through an informal network of sharing relevant information with little prescription and much agency. Some respondents have also described this as an informal culture. However, this informal culture coexists with ostensive aspects of a change routine, such as planned regular forums in which stories and lessons learned are exchanged in a semi-formal environment.

> "So we've got our fortnightly coaches' forum which project managers come to and share their stories. Some of it is around the [centralized database], some of it is around what I experienced in the process last week." XCOM1.2 (02.06.2010)

At the project level, sensing of new opportunities on how to more successfully deliver a project often takes place through ad-hoc conversations between project managers that neither follow prescribed rules or regular meetings nor codification in project reports. Put simply, knowledge about how to best deliver projects is primarily transferred through informal channels and applied in various ways as individual project managers consider to suit certain project characteristics. This really highlights the *performative* aspect of this sensing routine.

> "It's like how most knowledge gets transferred, word of mouth. Someone going to remember we've done a project and we did it this way. That's how I've seen it happen." XCOM1.4 (02.06.2010)

> "We all learn from each other. It's a cross pollination and you leverage them […] informally. We're talking about things like Excel, we're talking Word, we're talking program management, we're talking tools. I saw that, you've got that. We plagiarise like hell." XCOM1.6 (02.06.2010)

There is also an *ostensive* sensing routine aspect at the project level in form of formal lessons learned reports, based on which working and non-working routines can be defined. These are the same reports that feed into the firm level knowledge management system discussed above. However, while they are produced at the project level, they are not disseminated at the project level across different project. Hence, this *ostensive* change component serves as a learning exercise

at a particular project that needs to be aggregated to the firm level first, before it can have an effect on other project and project management capability change in general.

> "There's also when a project manager finishes a project they do what we call a project completion report which says from a project management point of view how did it all go. Two slightly different focuses, one business value, did we deliver, how is it working as a team, project management, how did it go?" XCOM1.2 (02.06.2010)

In our data, the seizing element of dynamic capabilities at the project level very much resembles *performative* routine aspects. We find evidence that a decision to change the way an operational project management methodology is to be used is driven by the perceived usefulness of the methodology in the particular context of the project; a process that is manager-specific with heterogeneity across managers. Similar to the firm level, the decision to switch towards using a different methodology or to do things differently comes down to individual, context-specific decision making, but actions and behaviors are more diverse. Here it is the managers who have to do their job. This means seizing decisions do not draw much on *ostensive* routine aspects of the change process at the project level.

> "One of the reasons the process isn't followed is actually the process is no bloody good, and the people who know the job recognize that it's no good and they take a deliberate decision to not follow it. They've said to people they've highlighted that this really isn't any good, so I'm not going to follow it. The organization needs to be responsive to that as well." YCOM2.3 (04.04.2012)

> "Our [firm-level] learning becomes about writing those rules; not understanding those rules. The most experienced people understand the rules and can work with them, rather

than just comply to them. That's a tacit knowledge thing, not an explicit knowledge thing in the organization." YCOM1.1 (29.09.2011)

These contextual requirements of what constitutes good operational project management capabilities at the project level, then lead to the modification of a variety of methodologies.

"Different parts of the organization use different change methodologies. We've had Six Sigma, PMI versions of PMBOK, Prince, have all been adopted [recently] in various parts of the company." XCOM1.1 (02.06.2010)

In addition, the selected project management capabilities, at the project level, operate within a greater organizational structure. This means that the decision to do things differently or change their application is considered valid as long as it meets the requirements of the firm level governance structure that is in place. This is almost the exact replication of Feldman and Pentland's (2003: 102-103) music metaphor: *"In terms of music, the ostensive part is like the musical score, while the performative part is the actual performance of the music"* for project management. For instance, many firms use a stage gate system where project progress needs to be reported on a regular basis or certain milestones need to be met. As long as the new project management capability fits into this structure and delivers the milestones and reports, project managers can select the most appropriate project management capability for them.

"I think process [i.e., formal procedures] is there to be understood because obviously in a large company you don't get anything done unless you understand what the key points are, but then you use the little bits—understand well what you have to do and then in between that you do what you think is the right thing to do. Now that just is common sense." XCOM1.3 (02.06.2010)

At the project level, we find strong evidence for this existence of *performative* aspects of the reconfiguring routine. In particular, we find that project managers do what they need to do to deliver a successful project. A lot of the formality and use of rules and guidelines becomes secondary when targets need to be met and project management capabilities are reconfigured in accordance with the specific needs of the project.

> "What I say is, we've got all these great buckets of tools to draw from. […] Six Sigma is just a set of tools in theory. You pick and pack what works for you to get your project executed in the way that you want to execute it. When you have new tools you pick some of those" XCOM1.4 (02.06.2010)

> "So, I think you'll find what most people do - you say, we'll pick and choose the most relevant tool set. So, for example, some of us out there are trained in Six Sigma, in Lean, in normal project - you know, PMBOK, all of that, right? So, in terms of tool sets, you choose what's going to work best for you at that point. You're not slave to anyone." XCOM2.2 (21.06.2012)

> "It's not like someone will go well no, I'm doing it this way and I just like the formalization of it. Because it means that then informally within the project, you do have the ability to have the informal discussions. Maybe say look, let's do it this way but we'll use this part of the process to formalize that; so I think they're great. They definitely - they have to be there. I don't know how you would do a project or really work at all without them." XCOM1.4 (02.06.2010)

In summary, reconfiguring project management capabilities at the project level seems to be highly important and relevant to be successful. Project managers therefore appear willing and prepared

to change methodologies when necessary and engage in courses of action they consider most helpful, irrespective of prescribed rules or systems. As one of our respondents puts it bluntly:

> ”I’m a pragmatist when it comes to project tools. I’ve got … great buckets to draw from, whatever works, works.” (XCOM1.5).

5. Discussion

This study has set out to explain how dynamic capabilities work, in terms of the *ostensive* and *performative* aspects of these capabilities’ underlying routines, and how these dynamic capabilities aspects link to operational capabilities at different organizational levels (Andriopoulos and Lewis, 2009; He and Wong, 2004; Laamanen and Wallin, 2009). The routine aspects that characterize operational project management capabilities differ at the firm and project level. This is well established in the literature and supported by our data. With this consideration, we find that dynamic capabilities—and notably their *ostensive* and *performative* routine aspects—differ at the organizational levels. Our findings also imply that the way dynamic capabilities draw on these routine aspects corresponds to the way operational project management capabilities are deployed at the same level. The remainder of this section discusses this link between the *ostensive* and *performative* aspects of dynamic and operational project management capabilities first for the firm level and then for the project level.

At the firm level, we find a more standardized deployment of a confined set of *ostensive* routine aspects when sensing new ideas or opportunities for improvements, when making decisions about whether and, if so, how to take advantage of these opportunities, and when actually reconfiguring existing operational project management capabilities, due to the fact that firms put a large emphasis on standardization and formalization to increase efficiency. Increasing efficiency is achieved through creating a platform where learnings are captured, formalized and disseminated

at different organizational levels and projects to enhance operational project management capabilities (Zollo and Winter, 2002). Hence, formal knowledge management systems at the firm level that represent *ostensive* aspects of a firm's dynamic capabilities align with the requirements to continuously improve operational project management capabilities at that level. These systems allow storing and sourcing of information and enable comparing what elements of operational project management capabilities have worked within the firm in the past when planning and monitoring the firm's project portfolio. Hence, such systems provide guidance when critically assessing and supporting the actual process of changing operational project management capabilities. Indeed, formal knowledge management systems prescribe vital inputs when making a change decision since changes at the firm level are usually slow (i.e. continuous improvement) and bureaucratic (i.e. centralized consensus) and such systems provide justifications for decisions accounting for a specified us of certain data (Haas and Hansen, 2007). These findings suggest that, at the firm level, *ostensive* aspects play a prevailing role in the underlying routines of dynamic capabilities and describe how these capabilities, through a confined set of *ostensive* aspects that characterize their sensing, seizing and reconfiguring routines, link to operational project management capabilities.

This more standardized deployment of *ostensive* routines of dynamic capabilities at the firm level corresponds with the *ostensive* nature of operational project management capabilities at the firm level. As already outlined, our data show how dynamic capabilities link to operational project management capabilities at the firm level. Furthermore, as the literature suggests and our data support, at this level some few *ostensive* routine aspects also specify the way operational project management capabilities work (Patel, 2011). Hence, the more standardized deployment of a confined set of *ostensive* routine aspects of dynamic capabilities revealed in this study reflect the

pattern that also describes the way operational project management capabilities work at that level. Put simply, dynamic capabilities broadly mirror the pattern established for operational project management capabilities in that they strive for formality and standardization (Achtenhagen et al., 2013). In our cases, at the firm level, both the deployment of dynamic capabilities and the use of operational project management capabilities is characterized by some few fairly stable rules and systems, combined with some few and fairly standardized courses of action and. Hence, at the firm-level, both the *ostensive* and *performative* aspects are limited and provide little flexibility.

At the project level, we find a strong use of the *performative* routine aspects in dynamic capability deployment. Modifying existing project management capabilities is a key focus of dynamic capability deployment at the project level due to the unique nature of individual projects. Since project managers are often already working on the next project before finishing the current one – in many cases, the new project is not even within the same part of the company – makes knowledge transfer and knowledge codification very difficult, as the knowledge about the proficiency of certain project management routines leaves the organizational unit. Specifically, the ostensive routine aspects signified by structured and formalized knowledge transfer is very limited and the formal (lessons learned) reports that need to be completed and submitted are often a mere "ticking the box" exercise, performed a task often performed by a junior member of the project team. In line with what we stated above, the formal rules and systems exist at this level, but are merely complied with rather than effectively used in transferring knowledge.

Hence, despite a firm's information systems and formal change procedures, managers rely on identifying opportunities to modify operational capabilities on the spot when facing project challenges, on making ad-hoc decisions concerning possible changes to these capabilities, and on simply reconfiguring operational capabilities on the go (Bingham and Eisenhardt, 2011). These

often heuristic behaviors produce immediate, actual changes to project management capabilities. In short, use of *performative* routine aspects are prevalent at the project level where changes are a direct response to a particular problem that occurs during the completion of the project (Fainshmidt and Frazier, 2016, Hayward et al., 2016). These findings suggest that, at the project level, *performative* aspects are specially apparent in the underlying sensing, seizing and reconfiguring routines of dynamic capabilities and describe how these capabilities link to operational project management capabilities.

This more flexible *performative* routine deployment of dynamic capabilities at the project level corresponds with the *performative* routine use of operational project management capabilities at the project level. Furthermore, as the literature already points out and our data provide support for, at this level *performative* routine aspects also characterize the way operational project management capabilities work. Each case study firm uses versions of multiple project management methodologies that form their project management capabilities where managers choose what works best and apply them in idiosyncratic ways, according to the project requirements, which highlights the coexistence of *ostensive* and *performative* routine aspects. Because projects are fairly short and fast-paced, it is not only the selection of suitable operational project management capabilities from an existing bundle and their implementation in practice that matter but also—when dealing with considerable changes—the capacity to accomplish immediate modifications of existing operational project management capabilities through the performative routine aspects of dynamic capabilities. At the project level, dynamic capability deployment that is characterized by *performative* routine aspects is therefore the key to immediate, successful modifications to project management capabilities (Bingham and Eisenhardt, 2011; Eisenhardt and Tabrizi, 1995; Pavlou and El Sawy, 2010). Hence, our data suggest that the *ostensive* aspects of the routines of dynamic

capabilities at the project level encompass many fairly stable rules and systems that outline reasonably standardized ways to improve project-level operational capabilities. It is the *performative* aspects of these routines that embody most course of action and behaviors, using the rules and systems in a flexible way, adapting them as necessary.

In summary, our findings suggest that the way in which *ostensive* and *performative* routine aspects characterize dynamic capability deployment at each organizational level correspond with the way in which operational project management capability are deployed at the same level. At the firm level, both types of capabilities's *ostensive* aspects of the routines are composed of few rules and systems signifying the standardized nature of these routines and come with a limited course of action and behaviors that characterize the *performative* aspects of these routines. In contrast, at the project level, both types of capabilities's ostensive aspects encompass many rules and systems and the *performative* aspects of their routines, characterized by multiple project-specific applications of the same routine denotes fairly flexible courses of action and behaviors. In short, dynamic capabilities at the project level are context-specific, meaning there is no one way of deploying dynamic capabilities that necessarily exists within and across organizations or across contexts. Still, dynamic capabilities, like any other organizational capability, must be purposively deployed. Thus, including *ostensive* and *performative* aspects into the discussion of dynamic capabilities does not change the underlying idea, but allows us to develop a more detailed understanding of change that incorporates the purpose for their deployment and the context in which they are deployed.

5.1 Contributions

This study contributes to the dynamic capability literature as we investigate how dynamic capabilities link to operating capabilities. First, the paper extends the literature by answering the

question of how dynamic capabilities work, in terms of the *ostensive* and *performative* aspects of these capabilities' underlying routines, and how these dynamic capabilities aspects link to operational capabilities at different organizational levels. Leaning on work by Feldman and Pentland (2003), we suggest that it is important to distinguish the two aspects that characterize dynamic capability deployment, because considering only *ostensive* aspects paints an incomplete picture of the deployment of dynamic capabilities. Instead, it is important to understand the role of *performative* aspects that characterize the deployment of dynamic capabilities in terms of related courses of action and behaviors.

Second, our findings indicate differences at different organizational levels in terms of the *ostensive* and *performative* aspects, highlighting differences in the *ostensive* and *performative* aspects of the routines that characterize the dynamic capability deployment at the firm versus project levels. That is, at the firm level, dynamic capabilities link with operational capabilities through some few *ostensive* aspects and confined *performative* aspects that characterize sensing, seizing and reconfiguring routines; and at the project level through many *ostensive* aspects and varied fairly flexible *performative* aspects of these routines.

Third, we advance the idea that the *ostensive* and *performative* routine aspects that characterize the deployment of dynamic capabilities align with those of the use of operational capabilities that are to be modified, so that changes in operational capabilities occur through the deployment of appropriate dynamic capabilities, depending on the organizational level at which modifications occur. Our study confirms the general argument that dynamic capabilities modify operational capabilities, but we also suggest that there is correspondence in the *ostensive* versus *performative* aspects when modifying operational capabilities at the firm versus project levels. This notion is novel. Although previous research has affirmed that boundary conditions affect

dynamic capability deployment (Peteraf et al., 2013), the argument concerning correspondence that we put forward in this paper represents a condition that has not been examined previously. For example, prior studies consider the impact of dynamic capabilities according to the level of environmental dynamism (e.g., Eisenhardt and Martin, 2000; Schilke, 2014; Wilden and Gudergan, 2015) or the firm's internal organizational structure (Wilden et al., 2013), but not whether the way how dynamic capabilities work in terms of the *ostensive* and *performative* aspects of these capabilities' underlying routines corresponds with the way operational capabilities work.

Lastly, unpacking the deployment of dynamic capabilities, according to their embedded *ostensive* and *performative* aspects, responds to Di Stefano et al.'s (2014) call for a more detailed understanding and conceptualization of dynamic capabilities. Explaining how coupling, uncoupling, and linking mechanisms operate according to the deployment of dynamic capabilities and in consideration of their *ostensive* and *performative* routine aspectsbrings us a step further towards understanding the deployment of dynamic capabilities in practice.

Our findings also have implications for practitioners. A better understanding of how operational capabilities—project management capabilities in this case—can be modified can help managers better deal with changing organizational and project contexts. The findings also suggest that managers benefit from understanding the way operational capabilities are deployed when they seek to make improvements. That is, they should consider deploying dynamic capabilities in ways to ensure that it corresponds with the ways operational capabilities are used. For instance, at the project level many stable rules and systems exist to deliver successful projects, the performative aspects of the routine are an important contributor to the work of project managers at this level. Practically that means that the rules and systems deployed at this level should enable project managers to act and behave in ways that is project specific and allows them to do their job

successfully. Put simply, it is about finding the right balance between a stability and flexibility of particular routines in regards to their operational capabilities.

5.2 Limitations

Despite these contributions, this study has several limitations, especially with regard to the generalizability of the data collection and the mix of deductive and inductive approaches to extract rich data from the case studies. However, case studies usually employ a mix of induction and deduction, which makes it possible to generate and develop new theories (Strauss, 1987) that apply in various settings. Generating new concepts using a case study design involves identifying key dimensions in the empirical material, refining and configuring these concepts on the basis of a specific theoretical understanding, and comparing the concepts across organizations to provide the basis for potential generalizations (Glaser and Strauss, 1965). Further research might pursue longitudinal, large-scale studies to investigate whether our findings are context specific. Finally, while we find that the way how dynamic capabilities work in terms of the *ostensive* and *performative* aspects of these capabilities' underlying routines corresponds with the way operational capabilities are used, and while compatibility between dynamic capabilities and operational capability is likely to allow an easier and more efficient impact of dynamic capabilities on operational capabilities, further research could explore the benefit of compatibility between dynamic capabilities and operational capability and examine whether such fit allows for an easier deployment of the dynamic capabilities and a more efficient impact of dynamic capabilities on operational capabilities. Our paper has taken a relevant step towards clarifying how ostensive and performative aspects of routines modify an organization's operational capabilities at the firm level and the project level, something that has not only theoretical but also practical implications, especially in times where change is a constant companion rather than an occasional visitor.

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Tables and Figures

Table 1: Overview of cases and collected data

	XCOM	YCOM	ZCOM
Case Description	Australian telecommunication company with bureaucratic governance structure that manages a major intra- and inter-organizational capability change project.	Government organization that manages technologically and commercially complex capability projects and is greatly influenced by a rigid governance structure.	Educational institution with hierarchical governance structure that runs major building projects to align the strategic vision of the university with its teaching facilities.
Timeline	2009–2012	2009–2012	2011–2012
Data Collection	• Observations (2009) • 10 in-depth interviews (2 waves: 2009 & 2012) • Secondary data (e.g., internal and publicly available reports)	• Observations (2009) • Focus group (2010) • 5 in-depth interviews (2012) • Secondary data (e.g., internal and publicly available reports)	• Observations (e.g., weekly meetings, site visits) (2011) • 7 in-depth interviews (2012) • Secondary data (e.g., meeting minutes, university newsletters, internal and publicly available reports)

Participants

No	First wave	Second wave	Role
1	XCOM1.1	XCOM2.1	Lead – Transformation Office
2	XCOM1.2	XCOM2.2	Program Manager
3	XCOM1.3		Lead – Program Office
4	XCOM1.4		Project Manager
5	XCOM1.5		Manager Decision Support Group
6	XCOM1.6	XCOM2.4	Project Manager
7		XCOM2.3	Manager Investment Management Group

No	Focus group	Interviews	Role
8	YCOM1.1		5 employees from YCOM from various org. levels
9		YCOM2.1	Project Director
10		YCOM2.2	Director of Capability Support and Agreements
11		YCOM2.3	Senior Project Manager
12		YCOM2.4	Project Director
13		YCOM2.5	Project Manager

No	Interviews	Role
14	ZCOM1.1	Architects, Project Manager
15	ZCOM1.2	Client Site Project Manager
16	ZCOM1.3	Client Site Project Coordinator
17	ZCOM1.4	Client Site Senior Project Manager
18	ZCOM1.5	Client Site Senior Project Manager
19	ZCOM1.6	Client Site Project Coordinator
20	ZCOM1.7	Manager of Project Delivery ZCOM

Table 2: Ostensive and performative routine elements of dynamic capabilities: Insights from the firm- and project-levels

	Dynamic Capabilities					
	Sensing routines		Seizing routines		Reconfiguring routines	
	Ostensive elements	**Performative elements**	**Ostensive elements**	**Performative elements**	**Ostensive elements**	**Performative elements**
General descriptions	Ostensive elements of the sensing routines of dynamic capabilities encompass rules and systems that outline ways to identify opportunities aimed at improving operational capabilities.	Performative elements of the sensing routines of dynamic capabilities embody practices and behaviors when identifying opportunities aimed at improving operational capabilities.	Ostensive elements of the seizing routines of dynamic capabilities encompass rules and systems that outline ways to determine whether and, if so, how to take advantage of opportunities aimed at improving operational capabilities.	Performative elements of the seizing routines of dynamic capabilities embody practices and behaviors when determining whether and, if so, how to take advantage of opportunities aimed at improving operational capabilities.	Ostensive elements of the reconfiguring routines of dynamic capabilities encompass rules and systems that outline ways to specify how to implement actual improvements to operational capabilities.	Ostensive elements of the reconfiguring routines of dynamic capabilities embody practices and behaviors when specifying how to implement actual improvements to operational capabilities.
Specific descriptions of the firm-level	Ostensive elements of the sensing routines of dynamic capabilities at the firm level encompass some few fairly stable rules and systems that outline reasonably standardized ways to identify opportunities aimed at improving firm-level operational capabilities. Example: Organizational project portfolio knowledge management system.	Performative elements of the sensing routines of dynamic capabilities at the firm level embody some few courses of action and behaviors when identifying opportunities aimed at improving firm-level operational capabilities. Example: Impromptu discussion about new project management methodologies when networking with peers.	Ostensive elements of the seizing routines of dynamic capabilities at the firm level encompass some few fairly stable rules and systems that outline reasonably standardized ways to determine whether and, if so, how to take advantage of opportunities aimed at improving firm-level operational capabilities. Example: Organizational approval protocol for endorsement of a new project management methodology.	Performative elements of the seizing routines of dynamic capabilities at the firm level embody some few courses of action and behaviors when determining whether and, if so, how to take advantage of opportunities aimed at improving firm-level operational capabilities. Example: Senior management deliberations and decision making concerning changes to admissible project management methodologies.	Ostensive elements of the reconfiguring routines of dynamic capabilities at the firm level encompass some few fairly stable rules and systems that outline reasonably standardized ways to specify how to implement actual improvements to firm-level operational capabilities. Example: Organizational change management framework that specifies how to engage in modifying an organization's project reporting system.	Ostensive elements of the reconfiguring routines of dynamic capabilities at the firm level embody some few courses of action and behaviors when specifying how to implement actual improvements to firm-level operational capabilities. Example: System architects and programmers embed modifications in the organization's project governance system.
Specific descriptions of the project-level	Ostensive elements of the sensing routines of dynamic capabilities at the project level encompass many fairly stable rules and systems that outline reasonably standardized ways to identify opportunities aimed at improving project-level operational capabilities. Example: Project-based lessons-learned reporting template.	Performative elements of the sensing routines of dynamic capabilities at the project level embody many courses of action and behaviors when identifying opportunities aimed at improving project-level operational capabilities. Example: Impulsive knowledge transfer amongst colleagues involved in a project.	Ostensive elements of the seizing routines of dynamic capabilities at the project level encompass many fairly stable rules and systems that outline reasonably standardized ways to determine whether and, if so, how to take advantage of opportunities aimed at improving firm-level operational capabilities. Example: Project-based templates that guide allowable adaptations to project management methodologies.	Performative elements of the seizing routines of dynamic capabilities at the project level embody many courses of action and behaviors when determining whether and, if so, how to take advantage of opportunities aimed at improving firm-level operational capabilities. Example: Project manager conceives a solution to improving cross-functional collaboration through a modification of a project management methodology.	Ostensive elements of the reconfiguring routines of dynamic capabilities at the project level encompass many fairly stable rules and systems that outline reasonably standardized ways to specify how to implement actual improvements to project-level operational capabilities. Example: Institutionalised mentoring and support programmes for project managers.	Performative elements of the reconfiguring routines of dynamic capabilities at the project level embody many courses of action and behaviors when specifying how to implement actual improvements to firm-level operational capabilities. Example: Project manager improvises when implementing changes to parts of a project management methodology for a particular project.

Table 3: Illustrative Interview Quotes for Ostensive and Performative Routine Elements of Dynamic Capabilities

	Dynamic Capabilities					
	Sensing routines		Seizing routines		Reconfiguring routines	
	Ostensive elements	Performative elements	Ostensive elements	Performative elements	Ostensive elements	Performative elements
Firm-level	"Most of the information we get is from our reporting systems. They are reporting on performance of individual projects. What I'm doing is aggregating the perimeters for those individual projects up to an organizational level to see where we need to improve." YCOM2.1 (04.04.2012)	"People that can execute a good project in this company have wide, large networks and talk often to them. That's how things get done. There's a lot of formal process obviously, but you can't beat the pickup the phone and hey, I'm in this situation. Yes, such and such did that six months ago and this is what you need. That sort of stuff." XCOM2.2 (21.06.2012)	"[…] We used to follow PRINCE2; then we all moved away from PRINCE2 to the PMBOK because the leaders in the organization felt that was a better approach." YCOM2.3 (04.04.2012)	"Our [firm-level] learning becomes about writing those rules; not understanding those rules. The most experienced people understand the rules and can work with them, rather than just comply to them. That's a tacit knowledge thing, not an explicit knowledge thing in the organization." YCOM1.1 (29.09.2011)	"There were … specific initiatives …, this was a continuous improvement and that meant that the same initiatives, good or bad, were building on each other and we were getting better plus the fact it takes a long time." YCOM2.1 (04.04.2012)	"The process [for the capability development improvement program (CDIP)] is being developed a little bit on the fly, and it's a learning by doing kind of approach. A lot of it is in J. C's head" YCOM2.2 (04.04.2012)
Project-level	"There's also when a project manager finishes a project they do what we call a project completion report which says from a project management point of view how did it all go. Two slightly different focuses, one business value, did we deliver, how is it working as a team, project management, how did it go?" XCOM1.2 (02.06.2010)	"It's like how most knowledge gets transferred, word of mouth. Someone going to remember we've done a project and we did it this way. That's how I've seen it happen." XCOM1.4 (02.06.2010)	"Different parts of the organization use different change methodologies. We've had Six Sigma, PMI versions of PMBOK, Prince, have all been adopted [recently] in various parts of the company." XCOM1.1 (02.06.2010)	"One of the reasons the process isn't followed is actually the process is no bloody good, and the people who know the job recognize that it's no good and they take a deliberate decision to not follow it. They've said to people they've highlighted that this really isn't any good, so I'm not going to follow it. The organization needs to be responsive to that as well." YCOM2.3 (04.04.2012)	"I don't know how you would get in there to get them to learn from other people's mistakes. That I think is a challenge. I think the only way you can do it is you mentor, by mentoring really. Where you actually have somebody that says, hey, don't do that. Trips and traps." XCOM1.6 (02.06.2010)	"What I say is, we've got all these great buckets of tools to draw from. […] Six Sigma is just a set of tools in theory. You pick and pack what works for you to get your project executed in the way that you want to execute it. When you have new tools you pick some of those" XCOM1.4 (02.06.2010)

Figure 1: Timeline of primary data collection