
In pursuit of ambidexterity: Managerial reactions to innovation–efficiency tensions

human relations

1–32

© The Author(s) 2016

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/0018726715625343

hum.sagepub.com



Angeliki Papachroni

Heriot-Watt University, UK

Loizos Heracleous

University of Warwick, UK

Sotirios Paroutis

University of Warwick, UK

Abstract

Whereas tensions arising from the pursuit of ambidexterity have been documented, how these are interpreted and managed by actors themselves remains largely unexplored. Based on in-depth case research in a large Scandinavian-based telecommunications organization pursuing ambidexterity, we identify a path-dependent process of tension interpretation and tension management at different levels of the organization. Our findings suggest that, in the context of an ambidextrous strategy, actors are actively involved in managing arising tensions based on their differing interpretations of these tensions (where ambidextrous demands are seen as complementary, conflicting or interrelated). We find that these interpretations are influenced by actors' strategic orientation and organizational level. Our study extends understanding of the pursuit of ambidexterity in practice, offering a pluralist, path-dependent perspective of how actors perceive and deal with ambidexterity tensions.

Keywords

case study, exploitation, exploration, organizational tensions, tension management

Corresponding author:

Angeliki Papachroni, School of Management and Languages, Heriot-Watt University, Esmée Fairbairn Building, Gait 12 Heriot-Watt University, Edinburgh, EH14 4AS, UK.

Email: A.Papachroni@hw.ac.uk

Introduction

A persistent challenge in organizational theory is the ability of a firm to both exploit its current capabilities and explore new ones in order to ensure both efficiency as well as growth (Duncan, 1976; March, 1991; Raisch et al., 2009). Whereas trade-offs between these two goals have often been considered insurmountable, research on organizational ambidexterity has shown that the simultaneous pursuit of exploration and exploitation is both feasible and beneficial to organizational performance (He and Wong, 2004; Jansen et al., 2009; Tushman and O'Reilly III, 1996). Based on the metaphor of ambidexterity, as the capability of being equally dexterous in different and often conflicting tasks, scholars argue that ambidextrous organizations can meet their innovation goals without negatively affecting the competitive performance of their existing business (O'Reilly III and Tushman, 2004). Ambidextrous organizations are accordingly defined as those capable of 'simultaneously exploiting existing competencies and exploring new opportunities' (Raisch et al., 2009: 685).

Following March's (1991) seminal article viewing exploration and exploitation as opposing learning processes, researchers have proposed structural or contextual configurations aiming to resolve the attendant tensions in organizations that pursue ambidexterity. Resulting studies, however, offer limited understanding of the processes of ambidexterity in practice (Nosella et al., 2012; Raisch et al., 2009). The question of how tensions of ambidexterity are managed by actors remains largely unexplored in terms of a processual, fieldwork-based perspective (Bledow et al., 2009; Cantarello et al., 2012). Gaining a deeper understanding of ambidexterity processes in practice, and how actors experience these processes, has been argued by scholars to be central for further development of this field (O'Reilly III and Tushman, 2011). Following this call, our research question is:

Research question: How do individuals at different organizational levels interpret and manage tensions stemming from the pursuit of ambidexterity?

Following March's (1991) view of exploration (as related to innovation) and exploitation (as related to efficiency) we explore the conflicting demands of innovation and efficiency that arise from the pursuit of ambidexterity in Telco, a large Scandinavian-based telecommunications organization. Pursuing a corporate strategy of both innovation and efficiency was a challenging balancing act for Telco, as innovation involves creative thinking and exploratory, non-routine actions, whereas efficiency depends on routine, standardized processes giving rise to exploitation of skills and knowledge (Bledow et al., 2009). The complexity is increased given that innovation can have differential magnitude (from radical to incremental) and involves both an actor (an individual, a group, an organization) in relation to the environment in which the actor operates (Gupta et al., 2007). The pursuit of both innovation and efficiency, also referred to as 'ambidextrous strategy' (Sarkees and Hlland, 2009) in Telco was thus inextricable from the need to manage resultant tensions arising at different levels (Turner et al., 2013).

We explore tensions that arise from the simultaneous pursuit of innovation and efficiency at two organizational levels (senior management and middle management/

operations). Our findings suggest that, when following an ambidextrous strategy, actors are actively involved in managing arising tensions through a process of tension interpretation based on their strategic orientation and organizational level. Different perceptions of the relationship between innovation and efficiency (these being complementary, conflicting or interrelated), result in different management approaches (integration, temporal balancing or separation). By identifying a path-dependent process of how tensions of ambidexterity are interpreted and managed by different organizational groups, we contribute to the debate of how ambidexterity is pursued in practice, and how organizations attempt to build an ambidextrous capability (Bledow et al., 2009; Cantarello et al., 2012). This study adds value by demonstrating the emergence of tensions and the nested nature of the exploration and exploitation tensions. Furthermore, our findings showcase how the overarching context the firm and individual actors are embedded in impacts the interpretation and management of exploration and exploitation tension. As literature on ambidexterity is shifting towards the importance of agency in the pursuit of ambidexterity (Mom et al., 2009; Nosella et al., 2012; Simsek, 2009), improving our understanding of how ambidexterity tensions are experienced and managed in practice through a path-dependent process is a significant step, both in advancing theory and towards achieving ambidexterity. The following section discusses the main approaches to ambidexterity proposed by the literature as well as the underlying assumptions of these propositions.

Approaches to ambidexterity

Whereas the term ambidexterity was originally employed by Duncan (1976), growth in interest in this concept has been spurred by March's (1991) article describing exploration and exploitation as two fundamentally incompatible activities leading to organizational tensions as they compete for scarce resources. However, March (1991) underlined the need for a balance between the two for superior organizational performance, and in later work suggested that firms overemphasizing either exploration or exploitation risk falling into failure or success traps (Levinthal and March, 1993).

Structural separation

Based on the premise that the culture of incremental innovation often creates institutional hostility towards discontinuous innovation and that both are competing for scarce resources, Tushman and O'Reilly III (1996) argue for separate structures within the same organization to accommodate what are argued to be opposing competencies, systems and practices of exploration and exploitation. Exploratory units are conceived as small, decentralized and with loose processes, in contrast to exploitative units, which are described as larger, centralized and with tighter processes (Benner and Tushman, 2003; Tushman and O'Reilly III, 1996). O'Reilly III and Tushman (2004) emphasize the role of the top management team as the 'corporate glue' that holds the organization together by managing the tensions that arise between exploitation (incremental innovation) and exploration (discontinuous innovation).

In an effort to respond to the need for integration mechanisms between structurally separated units, further research has focused on social and behavioural integration of the

top management team in ensuring strategic coherence and balanced resource allocation (Lubatkin et al., 2006). Shifting the focus on integration to middle management, Jansen et al. (2009) argue for the use of cross-functional interfaces (such as liaison personnel, task forces and teams) as a means of enabling knowledge exchange within units that manage exploration and exploitation. At the group level, Fang et al. (2010) argue that exploration and exploitation can be successfully managed through semi-autonomous subunits with a small fraction of cross-group links such as inter-team liaison roles, personnel rotation or interdivisional task forces.

Parallel structures

Raisch and Birkinshaw (2008) also underline the use of parallel structures as an alternative structural approach to spatial separation. Parallel structures, in the form of secondary structures such as project teams or networks, allow organizations to switch between structures according to needs for exploration or exploitation in the context of a single business unit. Parallel structures have also appeared in the literature in the form of collateral organizations (Zand, 1974) or shadow organizations (Goldstein, 1985). Whereas parallel structures are considered a useful solution to the threat of isolation between structurally separated units (Devins and Kähr, 2010), the concept has not been further explored in the context of organizational ambidexterity.

Temporal balancing

Other approaches to managing exploration and exploitation tensions suggest the use of temporal separation whereby an organization sequentially shifts between phases of exploration and exploitation (Jansen et al., 2005). Temporal balancing, defined as long periods of stability punctuated by short revolutionary changes (Devins and Kähr, 2010), is advocated in cases of major disruptions in a firm's competitive environment (Volberda, 1996) or, more recently, as an alternative to the simultaneous approach to balancing exploration and exploitation (Geerts et al., 2010; Siggelkow and Levinthal, 2003). The organizational structure during temporal balancing is argued to shift from a mechanistic structure (focusing on centralization) to an organic structure (allowing decentralization) as organizations move from exploitative to explorative phases, respectively (Devins and Kähr, 2010). The concept of punctuated equilibrium envisages organizations' movement between periods of exploration and periods of exploitation (Gupta et al., 2006; Simsek, 2009), adopting a discontinuous approach to how organizations respond to change (Güttel and Konlechner, 2009). Similarly, Burgelman (1991), in his research at Intel Corporation, argued for a sequential approach to exploring and exploiting, whereas Boumgarden et al. (2012) refer to 'organizational vacillation' to describe firms' dynamic capability of temporally and sequentially alternating between periods of exploration and exploitation. These findings highlight the crucial role of time in relation to how organizational ambidexterity is conceptualized, and the importance of longitudinal data for exploring how exploration and exploitation tensions evolve over time (Uotila et al., 2009).

Contextual approach

Building on Ghoshal and Bartlett (1994), the contextual approach conceives of ambidexterity as emerging through a business unit's organizational context, involving the combination of performance management with stretching targets combined with supportive values and processes to help individuals reach these targets (Gibson and Birkinshaw, 2004). Whereas in their study Gibson and Birkinshaw (2004) define ambidexterity as an organizational capability that can be built within the same unit – arguing that a unit can become ambidextrous – the behaviours identified as ambidextrous relate more to certain managerial tasks rather than to everyday behaviours and challenges that organizational actors have to deal with. Jansen et al. (2005) support empirically the argument that organizational units can overcome tensions and pursue exploration and exploitation simultaneously with a positive relation to performance. Brion et al. (2010) further underline the role of risk-taking and creativity in creating an organizational context that balances both short-term focus and long-term adaptability. Güttel and Konlechner (2009) finally describe an approach to contextual ambidexterity based on the existence of an integrative frame of reference between top management teams and employees that provide a social foundation for moderating conflicts.

The role of individuals: The missing link?

Research on organizational ambidexterity has acknowledged the central role of individuals. According to Birkinshaw and Gibson (2004), ambidextrous behaviour is characterized by the following: individuals' ability to take initiative and recognize opportunities outside one's field of expertise; the search for cooperation; the ability to hold multiple roles; and the ability to identify potential synergies. In a similar vein, Mom et al. (2009) define ambidextrous managers as multitaskers, able to host contradictions and to refine and renew their knowledge, skills and expertise.

Focusing on the cognitive mechanisms for managing contradictory demands at the individual level, Eisenhardt et al. (2010: 1263) argue that organizational actors can accomplish what they call 'cognitively sophisticated, single solutions' while simultaneously holding dual, contradictory tensions. Smith and Tushman (2005) argue for the development of paradoxical cognition that can enable senior managers to deal with the contradictions of explorative and exploitative innovation. O'Reilly III and Tushman (2008) define ambidexterity as the paradoxical capabilities of senior management, manifested as a set of senior team decisions including structure and linking mechanisms, culture and senior team processes (see also Lewis et al., 2014; Smith et al., 2010). Finally, Adler et al. (1999) identified 'switching' as a coping mechanism used by employees in the Toyota production system that allowed them to perform tasks that were either systematic and predictable or flexible and novel. Whereas these studies shed some light on the role of individuals in ambidextrous organizational settings, key issues relating to how tensions from the pursuit of ambidexterity are experienced in practice remain largely unexplored.

Exploration–exploitation tensions: Contradictory or complementary?

Based on March's (1991) work, research on ambidexterity has typically viewed exploration and exploitation as two ends of a continuum, where the poles compete for scarce resources and ambidexterity involves opposing organizational capabilities. However, further research questioned the inherent contradiction between exploration and exploitation, suggesting that rather than being two ends of a continuum, they can be seen as orthogonal to each other depending on the focus on a single or multiple levels of analysis (Gupta et al., 2006). In this context, exploration and exploitation can be viewed as inter-related processes, where organizations can maintain a high level of both activities and no pursuit of balance between the two is needed (Lubatkin et al., 2006).

Cao et al. (2009) explore this fundamental conceptual difference when they distinguish between the balanced and the combined views of ambidexterity and underline the potentially positive effects of exploitation on exploration, as a 'high degree of exploitative effort can often improve a firm's effectiveness in exploring new knowledge and in developing resources that support new products and markets' (Cao et al., 2009: 84). Lavie et al. (2010) also highlight this potentially positive relationship between exploration and exploitation in terms of knowledge application where the newly acquired knowledge (exploration) soon becomes exploited (exploitation) as the organization integrates it in its main operations.

The view from paradox

The paradox perspective has been explored and developed by ambidexterity scholars as a useful lens for understanding the complexity of organizational life by overcoming simplified polarizations (Andriopoulos and Lewis, 2009, 2010; Ingram et al., 2008; Martini et al., 2013). The paradox perspective suggests that tensions may be viewed as persistent, opposing but interconnected poles, as dualisms rather than dualities, encouraging reframing of paradoxical tensions to accomplish synthesis or transcendence (Papachroni et al., 2015). Paradoxes are defined as 'contradictory yet interrelated elements that exist simultaneously and persist over time' in states of dynamic equilibrium (Smith and Lewis, 2011: 382). Andriopoulos and Lewis (2009), for example, identify three paradoxes of innovation that consist of competing poles that exist in dynamic equilibrium. They provide evidence that tensions of ambidexterity operate across organizational levels, and that a mix of integration and differentiation strategies can be pursued to manage such tensions. These differing perspectives on the relationship between exploration and exploitation raise some interesting questions about whether there is a necessary conflict within these two processes and under which circumstances. Further, this discussion raises the question of how agents themselves perceive the relationship between exploration and exploitation, and under what circumstances they might perceive it as a relationship of complementarity, separation or conflict.

Method

In order to explore how tensions stemming from the pursuit of ambidexterity are interpreted and managed by actors we adopted a case study approach. We selected Telco,

a large Scandinavian-based telecommunications company, through theoretical sampling. Apart from providing theoretically relevant results (Yin, 2009), theoretical sampling is 'transparent' in the sense that it makes the subject of enquiry 'easily visible' (Eisenhardt, 1989). In order to meet the dual demands of efficiency and innovation faced in common with other high technology firms (Chandrasekaran et al., 2012), the organization had been undergoing a restructuring process and was by the time of the research in the midst of change. A key goal was to accomplish a shift towards making innovation a priority within the whole organization.

We conducted the research in two phases, spanning a period of 22 months: Phase A took place from November 2010 to July 2011 and phase B from September 2011 to September 2012. We carried out 30 semi-structured interviews with executives from various levels of the organization both at UK local offices as well as in the company's headquarters in Scandinavia. Participants were responsible for key areas of the Global Services segment of the organization (such as operations, strategy, communications and new business development). Global Services was Telco's largest business unit, accounting for more than 40% of total net sales (Telco Annual Report, 2012). We employed a 'snowball' technique where each interviewee proposed other members of the organization who could offer further insights. Interviews lasted an average of 60 minutes each and the discussion was based on an interview structure that addressed key themes of the research. We also analysed publicly available archival data covering the company's history and strategy for the previous 10 years, and internal documents such as company reports and marketing material. Visits to the local offices as well as the Global Headquarters allowed for non-participant observation and provided useful insight on Telco's working environment and culture.

Data analysis

Following the premise that new theory could be developed by paying careful attention to the contrast between 'the daily realities (what is actually going on) of substantive areas' (Glaser and Strauss, 1967: 239) and the interpretations of those daily realities by actors, we focused our analysis on actors' interpretive processes (Suddaby, 2006), in particular how they interpreted and managed tensions of innovation and efficiency. We employed grounded theory as a method of analysis (Bamford, 2008; Galunic and Eisenhardt, 2001; Lee et al., 2000; Rindova and Kotha, 2001), in three stages as outlined below.

Stage 1. In order to stay as true to actors' first-order perspectives as possible, we analysed each interview in depth employing open coding (Corbin and Strauss, 2008). We identified a large number of codes (themes related to new strategy, leadership, change efforts, organizational processes prior and following the new strategy, innovation and efficiency goals, perceptions around of the new strategy and goals, management strategies, organizational culture and organizational structure). We repeated the process of open coding until saturation was reached – that is, no further themes were identified. Through the use of NVivo software we categorized the large number of initial codes into broader themes (tree nodes). Gradually these categorizations were refined in an emergent fashion into first-order categories, constituting second-order themes, in turn constituting aggregate theoretical dimensions (Gioia et al., 2013). Upon concluding this first stage of analysis

we wrote a detailed case narrative, describing the change efforts that were taking place at the time, the new strategy that was being introduced, and other relevant contextual factors (organization's history, culture and embedded values) that informed subsequent analysis in terms of the management of innovation–efficiency tensions. At this stage, similarities and differences between organizational actors' interpretations, actions and their organizational level had begun to emerge.

Stage 2. Building on insights from the first stage of analysis, the second stage aimed at further exploring in depth the dimensions and properties of emergent categories and concepts. At this stage we conducted axial coding that involved linking themes to contexts, to consequences, to patterns of interaction and to causes (Corbin and Strauss, 2008). We identified different interpretations of tensions in the context of particular aspects of Telco's strategic orientation (defending existing business, growing existing business and exploring new opportunities for growth) and organizational level (operations/middle management and senior management). Exploring further interconnections between concepts allowed a higher-order categorization of initial codes into main themes and an emerging view of how these themes were interrelated. The insights and emergent themes from the two stages of data analysis informed the second phase of data collection where we clarified, enriched and validated findings with key informants.

Stage 3. At this final stage of analysis we were able to more clearly link different interpretations of ambidexterity tensions with how actors attempted to manage these tensions, each adding a piece of the puzzle of how organizational tensions can co-exist and interact within and across organizational levels. We conducted selective coding that focused on the interrelations of key themes by selecting core categories, systematically relating them to other concepts, validating those relationships and filling in categories that needed further refinement and development (Corbin and Strauss, 2008). We compared findings to pre-existing theory leading to more theoretically informed analysis. At this point our analysis was organized around two main axes: tension interpretation (how tensions were interpreted at each level) and tension management (how these were managed by actors).

In order to examine the robustness of our coding structure, we used a negotiated agreement approach because our research is exploratory in nature and employs primarily semi-structured interviews (Campbell et al., 2013; Garrison et al., 2006; Morrissey, 1974). Two coders in addition to the initial coder were trained in the coding scheme and coded a sample of our dataset. The initial agreement level of 75.5% using negotiated agreement was raised to 93.3%, which is in line with acceptable levels in this kind of research (Garrison et al., 2006). The following section presents our findings.

In pursuit of ambidexterity: The case of Telco

Telco is one of the leading suppliers of telecommunication equipment, multimedia and related services across the world, with over 100,000 employees. The company operates within an environment of intense competition in all of its segments (network equipment,

professional services, multimedia). Faced with increased competition and diminishing profit margins in offering standalone products in mature markets, one of the biggest challenges for Telco has been how to balance the need for efficiency while at the same time exploring new opportunities for growth. This dual demand was expressed by the company's strategy: to capitalize on existing competencies to find new opportunities for growth while maintaining operational efficiency (Telco Annual Report, 2010). However, this dual demand added a level of complexity within the organization in terms of how it was communicated and perceived. As a senior manager noted:

Leading a large organization is all about simplicity, one message, not more. These are two messages right there conflicting and people sense that and then yes that creates frustration and pockets in the organization. So not everybody can be happy every day with that type of added complexity. It's a little bit more difficult to explain in the organization and have the organization to work smoothly in that manner.

A series of strategic decisions reflected the need for operational excellence as well as the pursuit of new opportunities for growth. In 2010, Telco underwent a profound organizational restructuring ('regionalization') that meant consolidation of 23 market units into 10 regions across the world in an effort to increase efficiencies and explore new opportunities for growth by having a more customer-focused approach (see Table 1).

This restructuring also reflected Telco's efforts to consolidate its shift from a purely technology- and product-driven company towards a service organization, in a position to provide wide-ranging communication solutions to customers. In 2010, Telco was one of the 10 biggest IT services providers in the world by revenue (Telco Annual Report, 2010). Whereas the company's strong position in the market had been based on operational excellence, reliability and efficiency, increasing competitive pressures necessitated the pursuit of new product-markets, a solution orientation, and new ways of doing things. Market- and insight-driven, process innovation therefore became a key strategic priority. Contrary to technological innovation, this type of innovation was no longer the sole responsibility of the Research and Development (R&D) department but was promoted throughout all levels of the organization, through the company strategy as well as a series of internal processes. Innovation was put forward as a key strategic priority for the whole organization, supported by the company mantra 'innovate everyday' and an internal communications strategy evolving around the key message. With this organized attempt to build a distributed innovation capability, the top management team aimed at promoting employee engagement and making innovation everyone's responsibility through a layered model of innovation, where each level was responsible for addressing the opportunities arising within its scope.

This new approach to innovation (also supported by the organizational restructuring that decentralized responsibility for innovation across the regions) demanded a view of innovation as distributed across the organization rather than simply arising from R&D efforts. However, shifting towards a new type of innovation within a traditional engineering-focused organization was a challenge for Telco. As the Global Director for New Business Development and Innovation explained:

In the past possibly there have been parts of the organization responsible for innovation ... But suddenly it's not only the R&D because everybody needs to do that. And, yes, then it becomes a challenge because you're kind of shifting a little bit the culture ... the heroes in a technology-driven company are the kind of core engineers but now we need to celebrate other heroes that are doing process innovation or sales channel innovation or listen to the customers ... So innovation suddenly becomes much broader in scope.

Table 1. The restructuring of Telco.

Strategic intent	Interpretation of intent	Illustrative quotes
Increase efficiencies	Increased commonalities and simplified organizational processes.	One is to get greater efficiency through being able to share resources on a regional basis, improve the common ways of working across the regions, across the countries, reduce the number of interfaces into the global organizations to try and simplify a lot, one common core, one common resourcing or one common way of working globally.
	More efficient use of resources	The philosophy around it was to try to coordinate better across the countries ... Essentially they were country units and the feeling was that there was a lot of duplicated resource and they could combine those countries together into a region and therefore reduce the duplication and effectively free up resource to be used in the different areas.
Explore new opportunities for growth	Closer to the customer.	So then there's the realization that we need to get close to the market, we need to make faster decisions and be closer to our customers' need and feed those things back in so we said okay, now we're going to go out to like 10 strong regions.
	New go to market approaches	We're moving from a lot of the market units that are kind of the sales outlets to regions that have a little bit more critical mass to be able to do the focus on innovation based on insights and the markets around them, finding partners, working closer with the customers and so on. So that is kind of one part of our innovation strategy if you like the regionalization, creating larger more stronger units out there that could drive innovation forward. Look at market trends, look at their customers, understand what capabilities we have and then to work out propositions which are compelling and differentiate Telco in the market.

Being efficient today while also fostering product and process innovations for long-term growth in a competitive environment, where the convergence of technologies and platforms, the growing need for mobility and the technological advances fundamentally change the ways in which businesses and consumers interact with digital content, was a challenging task. Dealing with the conflicting demands of encouraging innovation while maintaining focus on current business tasks became a strategic priority for all organizational levels. As the Director for New Business Development and Innovation describes:

There is no easy way to say that okay over here we're focusing on efficiency and over here they're innovating. It's kind of a complex relationship here between efficiency on one hand, and innovation and looking into new things on the other hand. So there's always innovation in efficiency and there is efficiency in innovation.

This complex relationship between innovation and efficiency shifted our attention towards individuals' understandings and interpretations at different organizational levels.

Interpreting ambidexterity tensions at different levels

The organizational restructuring and the new strategy that was introduced to Telco acted as a trigger for the emergence of latent tensions of innovation and efficiency throughout the organization (Smith and Lewis, 2011). Our initial analysis revealed that actors demonstrated a variety of interpretations of the innovation–efficiency tension, ultimately influencing how ambidexterity was pursued in practice. These interpretations resulted from actors' efforts to cope with the tensions through reconceptualizing them. This process was shaped by where the actors were situated in the organization and their strategic orientation (see Figure 1).

At the more operational levels, where actors engaged in delivering to customers within tight deadlines and specifications, service, business model or strategic innovation seemed alien, unattainable goals. The pragmatic response was to interpret innovation as higher levels of operational excellence and efficiency (what has been labelled as process innovation in the literature), to address the needs of existing customers. Innovation here was seen as a means to higher efficiency, with the two poles seen as complementary. At higher organizational levels, where actors had the opportunity as well as the pressure to be more strategic, innovation was interpreted more expansively, as involving new types of organizational configurations that can open new avenues for business growth. An appreciation of the level of investment and managerial energy needed to accomplish these kinds of innovation, however, led to the view at the senior management level that the two poles were conflicting or interrelated rather than complementary. As a result of our analysis three main relationship types between innovation and efficiency were identified:

- *Complementary (operations/middle management level)*: Through conceptualizing innovation as a process of continuous improvement, at this level the relationship between innovation and efficiency was considered complementary – ‘a means to an end’ – and was embedded within everyday practice.

- *Conflicting (senior management)*: Here innovation and efficiency were perceived as conflicting with each other, based on the need for competing resources and a tension between the present and a future orientation. There was a perception of high levels of tension, which was resolved through temporal separation.
- *Interrelated (senior management)*: Here both activities were perceived as distinct but equally necessary. There was a perception of moderate tension, which was managed through structural separation (parallel structures).

These three relationship types corresponded to three main strategic orientations within Telco. Firstly, defending existing business (at the operations/middle management level); secondly, growing existing business; and thirdly, exploring new opportunities for growth (at the senior management level).

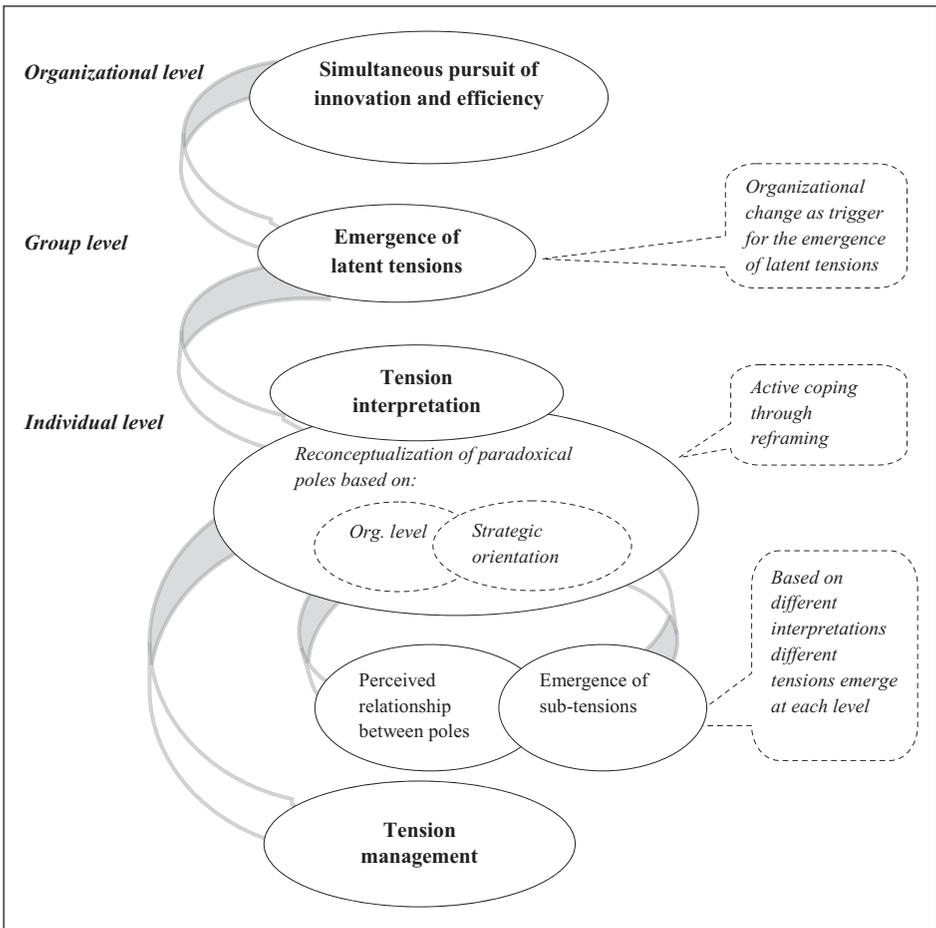


Figure 1. Path-dependent process of managing tensions of ambidexterity.

Middle management/operations level: Tensions of innovation and efficiency as complementary

Emergence of latent tensions

At the middle management/operational level of Telco, employees were responsible for delivering complex professional services for the ICT sector and were continuously urged to increase the levels of efficiency through constant monitoring and tight targets. At the same time, faced with intense competition and increasing demands from the customers, innovation emerged as a key theme within the organization as a way for delivering greater value to the customer. However, the lack of clear definition in terms of what innovation meant for the middle management/operational level of the organization led to tensions around the scope and type of innovation that was now demanded:

One of the problems that we have here is if you look at our business, if you say to people I need to innovate some of the ideas, they kind of go ‘I need to think of something radical, I need something radically different’. (Managed Services Chief Operating Officer)

Within this context, organizational actors perceived efficiency and innovation as incompatible because ‘innovate everyday’ was in contrast to the organizational processes of billability in terms of accounting for one’s time and focus on efficiency. Indeed, the lack of incentives and of a supportive organizational context that would enable flexibility and pursuit of differentiation created a hostile environment towards innovation:

There’s no time, so we don’t set aside any time for it, we just hope our people will bother to go and put their ideas into this system ... And to have engagement you have to have a culture of innovation and we don’t have that. We do not have that at all because we work for the customer, priority is the customer, we are billable ... you have to time report. (Innovation Program Manager)

Although market- and insight-driven innovation was considered a key strategic priority, this was in tension with Telco’s deeply rooted cultural values of viewing innovation as primarily technology-oriented, to be carried out by the R&D department. This tension in terms of the nature of innovation often led to frustration and singular focus towards efficiency as organizational actors felt far away from true innovation (‘this is not R&D’, ‘we don’t built products’) and considered innovation as having little or no relevance to their working reality:

It’s kind of difficult because we need the leadership team to really drive what is that key message that we are meant to be saying and ‘innovate everyday’. I think it’s quite tough for some Telco businesses ... So the brand that they [leadership team] want and the innovation they want don’t actually tie up with your day-to-day reality. (Internal Communications Manager)

Tension interpretation

Whereas the formal organizational process for innovation had limited success owing to the lack of clear scope and supportive organizational context, another type of innovation was

taking place within the middle management and operational level. This type of innovation emerged through the need to overcome internal tensions and confusion, and was more narrowly defined as any idea or process that would enhance efficiency. This conceptualization of innovation was very much goal-oriented, driven by the need to defend existing business by providing solutions to the customers that were both innovative and cost-efficient. Innovation therefore was seen as a means to an end – as a tool towards operational excellence that was considered vital for defending existing business. Innovation as a process of continuous improvement emerged in addition to the traditional view of innovation in Telco as linked to technology and R&D. Rather than searching for entirely new offerings, innovation was enacted as based on existing competencies for existing customers:

In the service organization, innovation is how you do things quicker, with less effort, minimizing risk to continuously improve ... in that context, innovation is more about how can we do things better, smarter, quicker, deliver better quality, less people, lower cost, improved customer service, all of those sort of drivers, so as much ... there is rather ... it's a rather quite focused context. (Head of Design and Integration, Managed Services)

The tension of pursuing innovation while maintaining efficiency was at the middle management/operational level resolved through transforming it into a more workable entity consistent with actors' everyday work life, and based on the linkages between the two poles (Andriopoulos and Lewis, 2009; Lewis, 2000). Innovation in this context (mostly in the form of process innovation) was perceived as *complementary* to efficiency:

They complement each other. Some of the best innovations I have seen is how people have chopped time off so they have said this takes four days, I can get it done in two days and yes, so they are totally complementing each other. I think people begin to understand that because the culture here is if it takes longer, you're not doing it right. (Device Application Engineer)

Tension management: Integration

This complementary relationship between continuous improvement and operational efficiency was integrated within everyday practice:

So to make that work, it's not just through something called innovation scheme, which is a bit radical, standup, I've got a great idea, stuff. It's also through day-to-day and the way you work. It's a process of continuous improvement. And there are big leaps and small leaps but it's all new ideas incorporated and integrated and getting people working together to flush out the better ways of doing things to optimize things. (Managed Services Chief Operating Officer)

Viewing innovation as part and parcel of everyday work, however, made it difficult to define, capture and measure. In this context, most innovations taking place at the middle management/operational level were either tacit or not considered worthy of communication.

Senior management: Tensions of innovation and efficiency as conflicting

Emergence of latent tensions

At the senior management level, the tension between innovation and efficiency emerged from having both a present and a future orientation, competing in the present but having an eye on the future in terms of growing the existing business (Abell, 1999). This dual orientation was particularly challenging as this zooming in and out depended upon managers taking some distance from everyday operations that would allow them to explore possible opportunities for the future. However, such a perspective on innovation was seen to be in conflict with everyday operations that followed tight processes for maintaining internal efficiencies:

If you're too focused on the present then the first thing that will get dropped will be any form of innovation, because you're on the treadmill and the process says what should cost this week and what should cost next week and the week after, don't give me any of that innovation shit just get on with doing what you're supposed to. (Vice President, Managed Services)

This central tension between short- and long-term orientation was manifested as a number of sub-tensions (tensions that were seen as pertinent by a particular organizational level) that derived from the need to respond to demands from multiple stakeholders. These sub-tensions were the need to balance proactiveness and reactivity (in Telco's relationship with customers), dealing with both structure and freedom (in managing the internal demands for both innovation and efficiency), and managing the relationship between predictability and uncertainty (in terms of gaining trust and credibility within the organization in order to justify the different resource allocation or investment for innovation and implement the necessary changes).

Tension interpretation

At the senior management level there was a higher level of complexity as the aim was that new organizational configurations, or new knowledge, would be adapted to growing business with existing customers and markets. Innovation here was interpreted as service innovation or business model innovation to grow existing business. This approach to innovation was mostly linked with a notion of continuous *change*, contrary to continuous *improvement* that characterized innovation at the operations/middle management level. Indeed, the focus on growth through business model or service innovation was seen as incompatible with the interpretation of innovation as the pursuit of efficiency at the operational level. Senior managers faced with the task of growing existing business described the relationship between efficiency and innovation as conflicting, based on scarce resources and the need for different capabilities to pursue each goal. In this context, reconfiguring competencies and organizational models was considered conflicting to maintaining focus and pursuing efficiency:

It is a paradox. I view it every day in my work. It's how I call it the short-term goal and the long-term goal; there is always a conflict there. When profitability is under pressure you focus on efficiency and not so much innovation and that's what we are struggling with now. (Regional Manager Strategy and Regulatory Affairs)

Tension management: Temporal separation

Senior managers who pursued innovation activities within an efficiency-oriented environment managed the tensions between the opposing processes through temporal separation, locating efficiency and innovation in different time frames (periods of focus on efficiency followed by periods of higher focus and investment on innovation):

I think it's all about balance and sometimes you have to lean more to one way than the other. I mean you got to have that kind of efficiency and drive ... to drive something sustainable. And at the same time, you need to focus on innovation so you're probably doing different pockets in different times. (Customer Unit Head, UK and Ireland)

The process of implementation was also described as sequential (brainstorming, selecting, implementing):

So I don't think we'd ever be in a position where we'd just be willy-nilly changing our day-to-day deliveries just because someone's had a great idea. So I think we can innovate and come up with loads and loads of ideas, pick the top two or three and implement them, become more efficient ... like a circle, isn't it? (Vice President, Managed Services and Outsourcing)

At the same time, this sequential process was also influenced by broader organizational constraints, such as resource allocation and corporate strategy:

It all happens in cycles ... there were times where there was some budget available for long-term investment for innovation and then suddenly, when the crisis hit, somebody said we cut everything. So it's either running or standing still. In cycles. Sometimes there is a willingness to invest a lot and sometimes there is willingness to invest nothing. So initiatives get killed and everything you have invested in is gone. (Regional Manager Strategy and Regulatory Affairs)

Senior management: Tensions of innovation and efficiency as interrelated

Emergence of latent tensions

Based on this different conceptualization of innovation at the senior management level, as exploring opportunities for growth, a central tension emerging from the analysis was the issue of scope. The tension arose from the need to simultaneously balance the exploitation of current operations with an exploration of future ones. Telco explored new opportunities for growth through selling ICT services and technology outside its traditional markets, for example to the government, transport or security sectors. Shifting

attention towards these markets reflected the organization's pursuit of becoming a communication solutions provider – a newly introduced vision for the company at the time of the study. Heavy dependence on traditional markets, however, made this shift a challenging one. A senior manager described the internal barriers:

[O]rganizations like Telco that have been traditionally involved in a particular industry segment for as long as they have, gained dependency from that industry segment ... The major challenge is convincing the organization that there is a business there ... they are uncomfortable with new things. They don't understand how a new organization like the Red Cross could even use communication. (Director, Strategy and Business Development, UK-Ireland)

A number of sub-tensions emerged from the need to balance current and future operations at the senior management level. These were the need to find a balance between integration and separation of the different business units and to deal with issues of reintegration and internal antagonism. Second, a tension between new competencies needed to compete in new sectors, versus traditional competencies and their historical legitimacy.

Tension management: Structural separation

In pursuing new opportunities for growth Telco maintained a balance between structure and freedom, which we label 'controlled exploration'. Here, both activities were perceived as distinct but equally necessary. There was a perception of moderate tension, which was managed through structural separation (parallel structures). More specifically, a specific number of market opportunities to be explored were determined by Telco's Global Leadership Team. In order to accommodate tensions between traditional and new business areas, Telco initially pursued innovation opportunities through structural separation. This separation aimed to provide the necessary conducive organizational context for new opportunities to be explored before they got choked by the traditional way of doing business. As a senior manager explained: 'If you want something else to happen you must protect it from that normal business, if it's radical and if it's new and if it's different' (Global Director, New Business Development and Innovation).

This process towards innovation allowed the company to both explore new opportunities and also maintain control through pursuing a specific number of market opportunities where it could have a quick return on investment. These were explored through pilot projects that operated within a specific timeframe and with a goal of assessing an opportunity that would at a later point be integrated into the operations of the main organization. However, this structural separation was based on parallel structures that were not fully isolated from the rest of the organization. Close collaboration was pursued between the top management team charged with the responsibility of strategic co-ordination, and the regions. For this purpose, pilot directors were not based at headquarters but were spread throughout the regions and worked closely with regional senior management. As a pilot project director explained:

So we have monthly calls with all the regions where we go through and we say that's interesting, that could be part of the pilot. Maybe I can support it, maybe, I cannot support it ... can you pursue it on your own? Good, you're blessed, you know, but you're within these seven vertical

markets, you're okay, they are not in violation with the CEO's order of not doing anything else outside the pilot. (Services Sales Director)

As these parallel structures did not operate in complete isolation from the rest of the organization, a new tension was emerging from the need to pull the necessary resources from the organization during the exploration phase, and introducing new areas for growth within a conservative cultural environment during the implementation phase. Whereas exploring new vertical markets was a clear strategic priority at the top management level, lower levels of the organization had little or a blurred idea about what this new strategy was or how it could be achieved, especially in their organizational environment, dominated by the need for efficiency and operational excellence. In this context, a key issue for senior management was managing organizational inertia and also strong internal silos.

Discussion

As Andriopoulos and Lewis (2009) and Simsek (2009) argue, a multilevel approach would be vital in reinforcing and sustaining organizational ambidexterity. Tensions of ambidexterity, however, are usually explored at the organizational or business unit levels without examining further how different levels of the organization might interpret and balance these tensions (Birkinshaw and Gupta, 2013; Raisch and Birkinshaw, 2008). As a result, key issues regarding how ambidexterity is achieved and sustained in practice, at different organizational levels, have remained largely unexplored (Cantarello et al., 2012; Nosella et al., 2012).

Nested tensions of ambidexterity

Our study complements Andriopoulos and Lewis' (2009) findings by extending our understanding of how actors interpret and deal with ambidexterity tensions. In the case of Telco, our findings suggest that the pursuit of ambidexterity at the organizational level spurs the emergence of latent tensions in different organizational levels, supporting the view of ambidexterity as a 'nested system' of tensions that occur across levels (Andriopoulos and Lewis, 2009; Birkinshaw and Gupta, 2013; Jarzabkowski et al., 2013). Whereas Andriopoulos and Lewis (2009) viewed ambidexterity as the accomplishment of both incremental and radical innovation, we operationalize ambidexterity as the interrelationship between innovation and efficiency. Further, whereas Andriopoulos and Lewis (2009) found that integration and separation tactics are used to deal with nested ambidexterity tensions, we found that actors' interpretations of these tensions (influenced by their strategic orientation and organizational level) shape how they deal with the tensions. Another key finding emerging from our research was that senior management is facing strategic tensions of innovation and efficiency, whereas lower organizational levels deal with the operational tensions of these dual demands. This finding corroborates the work of Bledow et al. (2009), who argue that both the pursuit of radical, as well as incremental, innovation gives rise to tensions and challenges to the established organizational logic at different levels of the organization.

Farjoun (2010) also argues against the neat separation of duality tensions of stability and change, posing that individuals engaged in routine tasks exercise some degree of experimentation, while those engaged in creative tasks also employ routines. In a similar note, Rosing et al. (2011) highlight the presence of exploration within exploitation and vice versa. This multiplicity of tensions across levels reveals a complex picture of co-existing ambidexterity tensions within a single organizational context, challenging traditional views of ambidexterity that focus on a single level of analysis of such tensions (Raisch et al., 2009).

Approaches to resolving the tensions of ambidexterity vary from structural separation (Tushman and O'Reilly, 1996) to integration within the same unit (contextual approach) (Birkinshaw and Gibson, 2004). Tactics of differentiation (Jansen et al., 2009), integration (Smith and Tushman, 2005) or alignment and adaptability (Gibson and Birkinshaw, 2004) have been proposed, but what is currently unexplored is whether these mechanisms can co-exist within a single organizational context (Chandrasekaran et al., 2012). At the individual level, insights into the nature of managerial capability, as a means to understand and achieve ambidexterity, have been scarcely researched, despite the importance of this theme (Turner et al., 2013). Birkinshaw and Gibson (2004) suggest that actors can take their own decisions on a daily basis with respect to either pursuing exploration or exploitation, to accomplish organizational ambidexterity. Our findings complement this view, by suggesting that such pursuit involves tensions that actors interpret in ways that are influenced by their organizational level and strategic orientation – also, that actors do not habitually change their daily behaviour to deal with these pressures; rather, they cope by interpreting them within their already established paradigm.

A path-dependent process of managing tensions of ambidexterity

Rather than a unitary ideal of balance of the two poles of innovation and efficiency, our data show a path-dependent set of interpretations and actions with respect to the pursuit of ambidexterity. As shown in Tables 2, 3 and 4, a specific strategic orientation is associated with a specific view of the dimensions of ambidexterity (nature of innovation and its relationship with efficiency), which, in turn, entail different approaches to managing tensions. These findings elaborate previous work on the connection between actors' sensemaking and actors' responses to tensions (Jay, 2013; Smith and Lewis, 2011) by developing particular paths from varied interpretations to approaches to managing tensions. This path-dependent interpretation corroborates Ford and Ford's (1994) suggestion that the framing of paradox defines the response to paradox.

By focusing on actors' first-order interpretations, as recommended by Cantarello et al. (2012), we found that key dimensions of ambidexterity do not have a unitary meaning but that how they are perceived is shaped by the actors' context (Paroutis and Heracleous, 2013). In that context, innovation was interpreted as process innovation in pursuit of higher efficiency at the middle management and operations levels, whereas at the senior management level innovation was related to business model, service or strategic innovation. These conceptualizations were related to three main strategic orientations within the organization. Firstly, defending existing business (at the operations and middle

Table 2. Efficiency and innovation at the operations/middle management level: Defending existing business.

Themes	Org. level: Operations/ middle management	Illustrative quotes
Strategic orientation	Defend existing business	So efficiency is too narrow, but innovation delivers an improved business outcome. And a business outcome is measured by a whole range of factors. And if we just had efficiency and the customer got fed up and left us, that's not a very good option. Is it? So it's kind of getting that real balance in our business.
Innovation seen as	Doing things better to exploit existing competencies so as to solidify business with existing customers and in current markets	Innovation will encapsulate everything that we do. So it's actually all the changes and the things that we're doing and the improvements we're making. Innovation is more about how can we do things better, smarter, quicker, deliver better quality, less people, lower cost, improved customer service. Our innovation is about being efficient; it is about increasing revenue, it is about being operationally excellent.
Perceived relationship between innovation and efficiency	Complementary	Innovation would be more or less the tool. It's like how can you become efficient? They complement each other. Some of the best innovations I have seen is how people have chopped time off so they have said this takes four days, I can get it done in two days and yes, so they are totally complementing each other. I mean you can certainly have innovations that increase efficiency ... this tool that I'm working on hopefully will make it more efficient because we can do a lot of freely, so I think innovation can push efficiency.
Tension management	Integration	That's the whole point, it's every day. So innovate every day would be kind of a key thing to our success. The value-add we bring to our customers, one of the value-adds we bring to our customers can be described as the innovation that we bring every day.

management level); secondly, growing existing business; and thirdly, exploring new opportunities for growth (at the senior management level). On a similar note, Andriopoulos and Lewis (2009) have referred to the nested tensions of innovation (strategic intent, customer orientation, personal drivers). The role of strategic orientation

Table 3. Efficiency and innovation at the senior management level: Growing existing business.

Themes	Org. level: Senior management	Illustrative quotes
Strategic orientation	Growing existing business	In today's climate the one thing you've got to do is make the customers absolutely delighted; otherwise they will go somewhere else. So efficiency is too narrow, but innovation delivers an improved business outcome. And a business outcome is measured by a whole range of factors. And if we just had efficiency and the customer got fed up and left us, that's not a very good option. Is it? So it's kind of getting that real balance in our business.
Innovation seen as	Reconfiguring existing or developing new competencies, to expand business with existing customers in current markets	Innovation, is really thinking outside the box, not a day-to-day problem but more about looking at the customer's infrastructure from a distance and trying to come up with ways to make the infrastructure run faster and quicker, better, cheaper, more efficiently by investing in tools or equipment or whatever.
Perceived relationship between innovation and efficiency	Conflicting	If you're too focused on the present then the first thing that will get dropped will be any form of innovation, you know, because you're on the treadmill and the process says what should cost this week and what should cost next week and the week after, don't give me any of that innovation shit just get on with doing what you're supposed to. The interesting point is how do you balance the risk against innovation and how do you balance the efficiency against innovation because innovation implies you have a failure rate. You have things that do not work and that costs money and time.
Tension management	Temporal balance, separation	You can never stop thinking for the new, and you can never, only think for the new and not for the efficiency of things, but of course sometimes there's a different pull there, I mean if you've got a crisis where you nearly got into the wall I think it's very hard to come out with new idea that will get you out of the problem. I think too often it's the kind of sequential thing. It all happens in cycles ... there were times where there was some budget available for long-term investment, for innovation and then suddenly when the crisis hit, somebody said we cut everything. So it's either running or standing still. In cycles.

Table 4. Efficiency and innovation at the senior management level: Exploring new avenues for growth.

Themes	Org. level: Senior management	Illustrative quotes
Strategic orientation	Explore new opportunities for growth	So to me that's closer to my mission of innovation to explore the potential of Telco's current assets with a new customer group ... Currently we explore seven sub-segments outside our core business.
Innovation seen as	Reconfiguring existing competencies or exploring new ones to gain new customers and penetrate new markets	We are working with innovation set forth outside the scope and the capabilities of the existing business units in the organization. Innovation is a central theme on a number of different levels, innovation in applicability of ICT in the given areas, innovation in the types of business models that are not traditional from both the vendor point of view, so the client's point of view, and also from the our point of view as well. It's not supposed to be reinventing the wheel, but it's duplicating it with a different notch to it that is applicable for a different market. It is applying that knowledge base and that traditional product base to a completely new area of business.
Perceived relationship between innovation and efficiency	Interrelated	A good businessman, whether it's running a corner shop or in Telco, is always looking for new ideas, but making sure that they can run the existing business on good solid numbers and again, you know, gain any little benefit to be competitive so you know both are essential, but they're two different things. The efficiency element could come around time usage, how much time should be spent on particular projects or how much time should be spent on, you know, background research or engagement with particular customers or attending particular conferences, that's where I have seen maybe efficiency may come into play. I am not sure if I draw a direct correlation between efficiency and innovation.
Tension management	Structural separation, parallel structures	We identify the opportunity and help formulate that into a structure and then pull the necessary people from the different parts of the organization that could contribute to the end result, which is essentially a solution. You definitely need a greenhouse phase otherwise you know it's 'weed', I mean something that turns up in a place where it shouldn't be. Even if it's a beautiful flower, you know, in field of barley if it doesn't belong there you take it out, it doesn't belong there ... So if you want something else to happen you must protect it from that normal business, if it's radical and if it's new and if it's different.

is explored by Auh and Menguc (2005), who focused on the distinction between defenders and prospectors and the impact of pursuing exploration or exploitation strategies on firm performance. They found that exploration was more positively related to firm performance for prospectors than exploitation, and vice versa in the case of defenders. Our findings extend this argument by proposing that different strategic orientations can co-exist within a single organization, leading subsequently to differential managerial approaches to innovation–efficiency tensions.

The theory of paradox suggests that in order to reduce anxiety and frustration, actors suppress one side of the polarity by essentially choosing one side over the other. As Lewis explained, ‘most actors accentuate contradictions by interpreting data (e.g., their own and others’ feelings, organizational practices, environmental cues) through simple, bipolar concepts, constructing logical, internally consistent sets of abstractions that separate opposites’ (Lewis, 2000: 762). In that context, research on paradox theory has identified techniques like splitting, projection, repression, reaction formation and ambivalence (Lewis, 2000), and ambidexterity literature has proposed structural separation of exploration and exploitation units to resolve tensions. Our findings from Telco, however, suggest that instead of suppressing the relatedness of contradictions, employees engage in an active form of coping ‘in which managers recognize and accept the simultaneous existence of contradictory forces’ (Smith and Tushman, 2005: 526), which is noted as an ‘acceptance’ approach by Lewis (2000). Following the pursuit of ambidexterity at the organizational level, actors can conceptualize more complicated interrelationships (Dameron and Torset, 2014; Smith, 2014) between innovation and efficiency (these perceived in our case as complementary, conflicting or interrelated).

Highlighting the interpretations of organizational actors, this research shifts the focus of ambidexterity from an organizational structure or temporal issue to something people do as they are confronted with conflicting pressures. The identified process of reframing brings forward the role of organizational actors in managing tensions of ambidexterity, based on their organizational level and strategic orientation. Whereas this process of reframing is used as a coping mechanism for re-conceptualizing tensions, it does not assume that tensions are resolved; instead, latent tensions of innovation and efficiency emerge, confirming the perpetual nature of organizational contradictions (Luscher et al., 2006). In this sense, tensions exist in an ongoing manner in a state of dynamic equilibrium, confirming the usefulness of paradox as a way to conceptualize how actors interpret and deal with tensions of ambidexterity (Smith and Lewis, 2011).

Integration and separation strategies

The issue of the relationship between exploration and exploitation (whether exploration or exploitation are considered two ends of the same continuum and in that sense inherently contradictory, or as theoretically independent constructs that are not necessarily conflicting: Gupta et al., 2006; Lubatkin et al., 2006) remains a key issue in the study of ambidexterity. Our findings suggest that approaches to how tensions are managed are based on how tensions are perceived.

At the operational and middle management levels, actors pursue *integration* as a mode of balancing. As a result, within their everyday practice, employees pursue ideas that lead to operational efficiency by minimizing cost and enhancing efficiencies. This results in a continuous adaptability of processes that can respond to change and customer demands, a process that has been referred to as dynamic efficiency (Adler et al., 2009). At the senior management levels of Telco, where the existing organizational scope and resource commitments are seen as constraints to business model, service or strategic innovation, the balancing mode becomes *separation*, either temporally or in terms of setting up parallel but interrelated structures to pursue new avenues for growth. Research findings, thus, support the idea that the pursuit of ambidexterity is based on both dialectic and dichotomous approaches to managing tensions (Bledow et al., 2009) at different levels of the organization. These approaches build on both integration and separation strategies in the context of maintaining a dynamic equilibrium between tensions, as the paradox perspective suggests (Andriopoulos and Lewis, 2009; Chandrasekaran et al., 2012; Smith, 2014). Our findings complement these studies by suggesting that this mix of integration and separation strategies is dependent upon actors' organizational level and strategic orientation that, in turn, define the context within which tensions are interpreted and managed. Cantarello et al. (2012) recognize the existence of both integration and separation strategies in the pursuit of ambidexterity; however, they suggest a sequential model of integration and separation throughout the organization, similar to Smith and Tushman's (2005) mix of integration and separation as sequential cognitive activities of the senior management team.

Overall, our findings empirically demonstrate a dynamic alignment of tensions appearing at different organizational levels (Smith and Lewis, 2011). These findings are closely related to Simsek's definition of ambidexterity as a 'dynamic balance that stems from purposefully steering and prioritizing each dimension to its inherent optimum as conditions demand' (Simsek, 2009: 618). Influenced by the concept of dynamic capabilities, dynamic ambidexterity argues that organizations are prone to change their ambidextrous configuration according to opportunities and threats that arise from their internal and external environment without achieving a lasting balance between exploration and exploitation (Simsek, 2009; Smith, 2014). Similarly, literature on dynamic capabilities argues for the ability of organizations to create and recombine their resources in novel ways in order to manage tensions between efficiency and flexibility, or stability and change (Eisenhardt et al., 2010; Martin, 2011; Schreyögg and Kliesch-Eberl, 2007; Teece et al., 1997).

Structural and contextual ambidexterity

By bringing together both levels of analysis (the individual and the organizational context within which actors operate), this research contributes further to the literature on contextual ambidexterity, which has scarcely been empirically researched (Gibson and Birkinshaw, 2004; Güttel and Konlechner, 2009). Contextual ambidexterity suggests that individuals can decide by themselves whether to focus on exploratory or exploitative activities at different points in time (Birkinshaw and Gibson, 2004). What we find is a more complex and pluralist picture, suggesting that the way individuals respond depends

on their position in the organization and on how they interpret ambidexterity tensions. Our research thus follows calls that highlight the key role of individuals across levels for the pursuit of ambidexterity (Cantarello et al., 2012; Lin and McDonough III, 2011; McCarthy and Gordon, 2011; Mom et al., 2009). Our findings suggest that whereas Telco primarily followed an approach of contextual ambidexterity (by not separating exploration and exploitation in different organizational units), separation strategies were still being pursued in instances of business model or strategic innovation. In this sense, our findings agree with propositions that contextual and structural ambidexterity are not necessarily mutually exclusive, but can co-exist within a single setting, being employed simultaneously or sequentially. As a result, the pursuit of ambidexterity cannot be treated monologically, as if it only has one meaning, or one way of managing tensions. Instead, our research supports scholars who argue for a multi-domain analysis of ambidexterity in order to gain a clearer picture of how ambidexterity is achieved and sustained in practice (Gupta et al., 2006; Raisch and Birkinshaw, 2008; Turner and Lee-Kelley, 2012).

Practical implications

The pursuit of ambidexterity has become an imperative for most organizations, and successful ambidextrous organizations have developed ways of dealing with the opposing tensions (Heracleous, 2013; Heracleous and Wirtz, 2010). The more we know about how actors interpret and deal with ambidexterity pressures in practice, the more useful ideas and tactics we can disseminate to managers who have to deal with these issues. Our findings show that different levels of the organization may interpret the dimensions of ambidexterity in a way that agrees with their organizational context and everyday work pressures (for example, the different interpretations of innovation in Telco), and that these interpretations will also shape whether they view ambidexterity poles as complementary, conflicting or interrelated. Senior managers therefore can be more proactive and anticipatory in their thinking about how to pursue organizational ambidexterity. They can consider questions such as: How will the poles of ambidexterity be interpreted, given a specific strategic orientation? What will the differences be between senior versus middle and operational levels in these interpretations? What are the likely modes of balancing pursued, given the differences in interpretations? Ambidexterity is a complex organizational capability, not easily achieved. Being able to anticipate both the path-dependence of interpretations and actions, as shown in our data (see Table 5), as well as the likely ways in which actors will view and deal with ambidexterity pressures, would be valuable for senior managers aiming to make their organizations more ambidextrous.

Limitations and recommendations for further research

With respect to limitations, our research focused on one in-depth case study, at a particular juncture in its history. Being a single case study, we aim for generalization to theory rather than statistical generalization (Yin, 2009). Related to our study's timeframe, even though we examined a period of 22 months, it is possible that a longer, historical timeframe could have revealed additional relevant information, and justified a shift in our

Table 5. Research findings and implications for theory.

Research question: How do individuals at different organizational levels perceive and manage tensions arising for the pursuit of ambidexterity?

Findings	Dominant understanding	Implications for theory
<p><i>Emergence of latent tensions</i></p> <ul style="list-style-type: none"> • Org. change as trigger for the emergence of latent tensions in different groups <p><i>Tension interpretation</i></p> <ul style="list-style-type: none"> • Different conceptualizations of the tensions at different levels based on org. level and strategic orientation <p><i>Tension management</i></p> <ul style="list-style-type: none"> • Mix of integration/separation strategies within organizations in order to manage tensions/different modes of balance therefore co-exist within a single organization • The management of the tensions is based on the perceived nature of the relationship between poles of the tension: <ol style="list-style-type: none"> a. Conflicting separation b. Complementary integration c. Interrelated separation 	<ul style="list-style-type: none"> • Tensions usually explored at firm level or business unit level • Uniform understanding of tensions • Integration or separation strategies are mainly proposed • Paradoxical cognition is mainly attributed to the management of the tensions 	<ul style="list-style-type: none"> • Ambidexterity as a system of tensions: <ol style="list-style-type: none"> a. Organizational ambidexterity entails the simultaneous presence of multiple tensions across levels. b. Conceptualizations of exploration and exploitation as inherently contradictory or interrelated constructs depends on the manifestation of the tensions that arise at each level. • Path-dependent process of managing tensions (actors' pragmatic approach within a supportive organizational context): <ol style="list-style-type: none"> a. No single mode of balancing is adequate for the entire organization; one universal mode of balancing cannot be applied. b. Appropriate tactics to resolve tensions have to take account of how actors view these tensions, because the management approach they pursue depends on their interpretations of tensions.

interpretations of our data. For example, it is possible that a decades-long historical focus could have supported an explanation consistent with temporal balancing, even though such an explanation would be complementary rather than compete with our findings.

The issue of simultaneity is a complex and unresolved topic in ambidexterity literature, with some scholars adopting the view that ambidexterity presupposes simultaneous pursuit of exploration and exploitation, and others who argue that organizations would benefit more from a shift between poles over time (Laplume and Dass, 2009). Research combining a historical perspective, with in-depth examination of particular periods, could shed light on the circumstances under which a simultaneous or sequential approach to organizational ambidexterity occurs, or whether some organizational levels follow a simultaneous and others a sequential approach.

Our research focus has been on how individuals within specific organizational groups interpreted and managed tensions, rather than on the formal organizational structures, policies and processes put in place in pursuit of ambidexterity (Wang and Rafiq, 2014). Further research of these dimensions, along the lines of studies of Toyota (Adler et al., 1999) and Apple Inc. (Heracleous, 2013), could complement current understandings and provide evidence on how ambidexterity is built within organizations as a capability. Our findings contribute to a growing stream of literature that argues for a more holistic and fine-grained approach to the study of ambidexterity. However, additional multi-case and cross-sectional evidence could assist in substantiating the insights of our research. Longitudinal studies could also explore whether these tension interpretations are subject to change over time and whether other contextual factors influence the interpretation and management of ambidexterity tensions, such as organizational size or environmental velocity.

Conclusion

Whereas literature on ambidexterity has proposed solutions that aim to accommodate and ultimately resolve tensions, research findings suggest that single-level or single-mode approaches do not sufficiently address the complexity and dynamism of ambidexterity processes. Shifting the level of focus from the organizational level and the different structural or contextual approaches to managing tensions, we found that the pursuit of ambidexterity is based on a continuous and dynamic effort of recognizing and managing different tensions at different levels. Our findings offer a more fine-grained and multilayered approach to ambidexterity, which pays attention to how organizational actors perceive and manage these tensions.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Supplemental material

The online Appendix provides an overview of data sources and is available at <http://hum.sagepub.com/supplemental>.

References

- Abell DF (1999) Competing today while preparing for tomorrow. *Sloan Management Review* 40(3): 73–81.
- Adler P, Benner MS, Brunner DJ, et al. (2009) Perspectives on the productivity dilemma. *Journal of Operations Management* 27(2): 99–113.
- Adler PS, Goldoftas B and Levine D I (1999) Flexibility versus efficiency? A case study of model changeovers in the Toyota production system. *Organization Science* 10(1): 43–68.
- Andriopoulos C and Lewis MW (2009) Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organization Science* 20(4): 696–717.
- Andriopoulos C and Lewis MW (2010) Managing innovation paradoxes: Ambidexterity lessons from leading product design companies. *Long Range Planning* 43(1): 104–122.
- Auh S and Menguc B (2005) Balancing exploration and exploitation: The moderating role of competitive intensity. *Journal of Business Research* 58(12): 1652–1661.

- Bamford D (2008) The use of grounded theory in change management research. *Journal of Change Management* 8(2): 111–121.
- Benner MJ and Tushman ML (2003) Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review* 28(2): 238–256.
- Birkinshaw J and Gibson C (2004) Building ambidexterity into an organization. *MIT Sloan Management Review* 45(4): 47–55.
- Birkinshaw J and Gupta K (2013) Clarifying the distinctive contribution of ambidexterity to the field of organization studies. *Academy of Management Perspectives* 27(4): 287–298.
- Bledow R, Frase M, Anderson N, et al. (2009) A dialectic perspective on innovation: Conflicting demands, multiple pathways, and ambidexterity. *Industrial & Organizational Psychology* 2(3): 305–337.
- Boumgarden P, Nickerson J and Zenger TR (2012) Sailing into the wind: Exploring the relationships among ambidexterity, vacillation, and organizational performance. *Strategic Management Journal* 33(6): 587–610.
- Brion S, Mothe C and Sabatier M (2010) The impact of organisational context and competences on innovation ambidexterity. *International Journal of Innovation Management* 14(02): 151–178.
- Burgelman RA (1991) Intraorganizational ecology of strategy making and organizational adaptation: Theory and field research. *Organization Science* 2(3): 239–262.
- Campbell JL, Quincy C, Osserman J and Pedersen OK (2013) Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological Methods & Research* 42(3): 294–320.
- Cantarello S, Martini A and Nosella A (2012) A multi-level model for organizational ambidexterity in the search phase of the innovation process. *Creativity & Innovation Management* 21(1): 28–48.
- Cao Q, Gedajlovic E and Zhang H (2009) Unpacking organizational ambidexterity: Dimensions, contingencies, and synergistic effects. *Organization Science* 20(4): 781–796.
- Chandrasekaran A, Linderman K and Schroeder R (2012) Antecedents to ambidexterity competency in high technology organizations. *Journal of Operations Management* 30(1/2): 134–151.
- Corbin J and Strauss AL (2008) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques* (3rd edn). Thousand Oaks, CA: SAGE.
- Dameron S and Torset C (2014) The discursive construction of strategists' subjectivities: Towards a paradox lens on strategy. *Journal of Management Studies* 51(2): 291–319.
- Devins G and Kähr C (2010) Structuring ambidextrous organizations: Exploitation and exploration as a key for long-term success. In: Stadler L, Schmitt A, Klarner P and Straub T (eds) *More than Bricks in the Wall: Organizational Perspectives for Sustainable Success*. Wiesbaden: Springer-Gabler, 60–67.
- Duncan RB (1976) The ambidextrous organization: Designing dual structures for innovation. In: Kilmann RH, Pondy LR and Slevin DP (eds) *The Management of Organization Design: Strategies and Implementation*. New York: North Holland, 167–188.
- Eisenhardt KM (1989) Building theories from case study research. *Academy of Management Review* 14(4): 532–550.
- Eisenhardt KM, Furr NR and Bingham CB (2010) Microfoundations of performance: Balancing efficiency and flexibility in dynamic environments. *Organization Science* 21(6): 1263–1273.
- Fang C, Lee J and Schilling MA (2010) Balancing exploration and exploitation through structural design: The isolation of subgroups and organizational learning. *Organization Science* 21(3): 625–642.
- Farjoun M (2010) Beyond dualism: Stability and change as a duality. *Academy of Management Review* 35(2): 202–225.

- Ford JD and Ford LW (1994) Logics of identity, contradiction, and attraction in change. *Academy of Management Review* 19(4): 756–785.
- Galunic DC and Eisenhardt KM (2001) Architectural innovation and modular corporate forms. *Academy of Management Journal* 44(6): 1229–1249.
- Garrison DR, Cleveland-Innes M, Koole M and Kappelman J (2006) Revisiting methodological issues in transcript analysis: Negotiated coding and reliability. *Internet and Higher Education* 9(1): 1–8.
- Geerts A, Blindenbach-Driessen F and Gemmel P (2010) Achieving a balance between exploration and exploitation in service firms: A longitudinal study. *Academy of Management Proceedings* 2010(1): 1–6.
- Ghoshal S and Bartlett CA (1994) Linking organizational context and managerial action: The dimensions of quality of management. *Strategic Management Journal* 15: 91–112.
- Gibson CB and Birkinshaw J (2004) The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal* 47(2): 209–226.
- Gioia DA, Corley KG and Hamilton AL (2013) Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods* 16(1): 15–31.
- Glaser B and Strauss A (1967) *The Discovery of Grounded Theory*. Chicago: Aldine Publishing Co.
- Goldstein SG (1985) Organizational dualism and quality circles. *Academy of Management Review* 10(3): 504–517.
- Gupta AK, Smith KG and Shalley CE (2006) The interplay between exploration and exploitation. *Academy of Management Journal* 49(4): 693–706.
- Gupta AK, Tesluk PE and Taylor MS (2007) Innovation at and across multiple levels of analysis. *Organization Science* 18(6): 885–897.
- Güttel WH and Konlechner SW (2009) Continuously hanging by a thread: Managing contextually ambidextrous organizations. *Schmalenbach Business Review (SBR)* 61(2): 150–172.
- He ZL and Wong PK (2004) Exploration vs. Exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science* 15(4): 481–494.
- Heracleous L (2013) Quantum strategy at Apple Inc. *Organizational Dynamics* 42(2): 92–99.
- Heracleous L and Wirtz J (2010) Singapore Airlines' balancing act. *Harvard Business Review* 88(7/8): 145–149.
- Ingram AE, Lewis MW, Andriopoulos C and Gotsi M (2008) Innovation tensions and organizational ambidexterity: Toward a collective paradox frame. *Academy of Management Proceedings* 2008(1): 1–6.
- Jansen JJP, Van Den Bosch FAJ and Volberda HW (2005) Exploratory innovation, exploitative innovation, and ambidexterity: The impact of environmental and organizational antecedents. *Schmalenbach Business Review (SBR)* 57(4): 351–363.
- Jansen JJP, Van Den Bosch FAJ and Volberda HW (2009) Structural differentiation and ambidexterity: The mediating role of integration mechanisms. *Organization Science* 20(4): 797–811.
- Jarzabkowski P, Lê JK and Van de Ven AH (2013) Responding to competing strategic demands: How organizing, belonging, and performing paradoxes coevolve. *Strategic Organization* 11(3): 245–280.
- Jay J (2013) Navigating paradox as a mechanism of change and innovation in hybrid organizations. *Academy of Management Journal* 56(1): 137–159.
- Laplume AO and Dass P (2009) Adaptive ambidexterity: Simulating Burgelman and Grove's (2007) model of strategic dynamics. *Academy of Management Proceedings* 2009(1): 1–6.
- Lavie D, Stettner U and Tushman ML (2010) Exploration and exploitation within and across organizations. *Academy of Management Annals* 4: 109–155.

- Lee MD, MacDermid SM and Buck ML (2000) Organizational paradigms of reduced-load work: Accommodation, elaboration, and transformation. *Academy of Management Journal* 43(6): 1211–1226.
- Levinthal DA and March JG (1993) The myopia of learning. *Strategic Management Journal* 14: 95–112.
- Lewis MW (2000) Exploring paradox: Toward a more comprehensive guide. *Academy of Management Review* 25(4): 760–776.
- Lewis MW, Andriopoulos C and Smith WK (2014) Paradoxical leadership to enable strategic agility. *California Management Review* 56(3): 58–77.
- Lin H-E and McDonough III EF (2011) Investigating the role of leadership and organizational culture in fostering innovation ambidexterity. *IEEE Transactions on Engineering Management* 58(3): 497–509.
- Lubatkin MH, Simsek Z, Yan L and Veiga JF (2006) Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioral integration. *Journal of Management* 32(5): 646–672.
- Luscher LS, Lewis M and Ingram A (2006) The social construction of organizational change paradoxes. *Journal of Organizational Change Management* 19(4): 491–502.
- McCarthy IP and Gordon BR (2011) Achieving contextual ambidexterity in R&D organizations: A management control system approach. *R&D Management* 41(3): 240–258.
- March JG (1991) Exploration and exploitation in organizational learning. *Organization Science* 2(1): 71–87.
- Martin JA (2011) Dynamic managerial capabilities and the multibusiness team: The role of episodic teams in executive leadership groups. *Organization Science* 22(1): 118–140.
- Martini A, Laugen BT, Gastaldi L and Corso M (2013) Continuous innovation: Towards a paradoxical, ambidextrous combination of exploration and exploitation. *International Journal of Technology Management* 61(1): 1–22.
- Mom TJM, Van den Bosch FAJ and Volberda HW (2009) Understanding variation in managers' ambidexterity: Investigating direct and interaction effects of formal structural and personal coordination mechanisms. *Organization Science* 20(4): 812–828.
- Morrissey ER (1974) Sources of error in the coding of questionnaire data. *Sociological Methods and Research* 3(2): 209–232.
- Nosella A, Cantarello S and Filippini R (2012) The intellectual structure of organizational ambidexterity: A bibliographic investigation into the state of the art. *Strategic Organization* 10(4): 450–465.
- O'Reilly III CA and Tushman ML (2004) The ambidextrous organization. *Harvard Business Review* 82(4): 74–81.
- O'Reilly III CA and Tushman ML (2008) Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in Organizational Behavior* 28: 185–206.
- O'Reilly II CA and Tushman ML (2011) Organizational ambidexterity in action: How managers explore and exploit. *California Management Review* 53(4): 5–22.
- Papachroni A, Heracleous L and Paroutis S (2015) Organizational ambidexterity through the lens of paradox theory: Building a novel research agenda. *Journal of Applied Behavioral Science* 51(1): 71–93.
- Paroutis S and Heracleous L (2013) Discourse revisited: Dimensions and employment of first-order strategy discourse during institutional adoption. *Strategic Management Journal* 34(8): 935–956.
- Raisch S and Birkinshaw J (2008) Organizational ambidexterity: Antecedents, outcomes, and moderators. *Journal of Management* 34(3): 375–409.
- Raisch S, Birkinshaw J, Probst G and Tushman ML (2009) Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization Science* 20(4): 685–695.

- Rindova VP and Kotha S (2001) Continuous ‘morphing’: Competing through dynamic capabilities, form, and function. *Academy of Management Journal* 44(6): 1263–1280.
- Rosing K, Frese M and Bausch A (2011) Explaining the heterogeneity of the leadership-innovation relationship: Ambidextrous leadership. *Leadership Quarterly* 22(5): 956–974.
- Sarkees M and Hulland J (2009) Innovation and efficiency: It is possible to have it all. *Business Horizons* 52(1): 45–55.
- Schreyögg G and Kliesch-Eberl M (2007) How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strategic Management Journal* 28(9): 913–933.
- Siggelkow N and Levinthal DA (2003) Temporarily divide to conquer: Centralized, decentralized, and reintegrated organizational approaches to exploration and adaptation. *Organization Science* 14(6): 650–669.
- Simsek Z (2009) Organizational ambidexterity: Towards a multilevel understanding. *Journal of Management Studies* 46(4): 597–624.
- Smith WK (2014) Dynamic decision making: A model of senior leaders managing strategic paradoxes. *Academy of Management Journal* 57(6): 1592–1623.
- Smith WK and Lewis MW (2011) Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review* 36(2): 381–403.
- Smith WK and Tushman ML (2005) Managing strategic contradictions: A top management model for managing innovation streams. *Organization Science* 16(5): 522–536.
- Smith WK, Binns A and Tushman ML (2010) Complex business models: Managing strategic paradoxes simultaneously. *Long Range Planning* 43(2): 448–461.
- Suddaby R (2006) From the editors: What grounded theory is not. *Academy of Management Journal* 49(4): 633–642.
- Teece DJ, Pisano G and Shuen A (1997) Dynamic capabilities and strategic management. *Strategic Management Journal* 18(7): 509–533.
- Turner N and Lee-Kelley L (2012) Unpacking the theory on ambidexterity: An illustrative case on the managerial architectures, mechanisms and dynamics. *Management Learning* 44(2): 179–196.
- Turner N, Swart J and Maylor H (2013) Mechanisms for managing ambidexterity: A review and research agenda. *International Journal of Management Reviews* 15(3): 317–332.
- Tushman ML and O’Reilly III CA (1996) Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review* 38(4): 8–30.
- Uotila J, Maula M, Keil T and Zahra SA (2009) Exploration, exploitation, and financial performance: analysis of S&P 500 corporations. *Strategic Management Journal* 30(2): 221–231.
- Volberda HW (1996) Toward the flexible form: How to remain vital in hypercompetitive environments. *Organization Science* 7(4): 359–374.
- Wang CL and Rafiq M (2014) Ambidextrous organizational culture, contextual ambidexterity and new product innovation: A comparative study of UK and Chinese high-tech firms. *British Journal of Management* 25(1): 58–76.
- Yin R (2009) *Case Study Research Design and Methods* (4th edn). Thousand Oaks, CA: SAGE.
- Zand D (1974) Collateral organization: A new change strategy. *Journal of Applied Behavioral Science* 10(1): 63–89.

Angeliki Papachroni is a Research Associate in Strategic Management at Heriot-Watt University, Edinburgh, UK. Her research focuses on issues around dual strategies, strategy implementation, paradox management and organizational tensions. She holds a PhD in Strategy and Organizational Ambidexterity from Warwick Business School. Her work on paradoxes and organizational ambidexterity is published in *Journal of Applied Behavioral Science*. Other contributions include

strategic teaching case studies on leading companies published in strategy books and chapters on qualitative research published in research methods books. [Email: A.Papachroni@hw.ac.uk]

Loizos Heracleous is Professor of Strategy at Warwick Business School and Associate Fellow at Green Templeton College at Oxford University. He earned his PhD at the University of Cambridge. His research interests revolve around organizational aspects of strategy, organization change and development, discourse analysis and corporate governance. He uses qualitative and discourse analytic approaches in his work. His research has been awarded three times by the US Academy of Management and has been published in six books and over 60 articles, in journals that include *Academy of Management Journal*, *Academy of Management Review*, *MIS Quarterly*, *Strategic Management Journal*, *Harvard Business Review*, *Journal of Management Studies*, *Organization Studies* and *Human Relations*. [Email: Loizos.Heracleous@wbs.ac.uk]

Sotirios Paroutis is Associate Professor of Strategic Management and Assistant Dean at Warwick Business School, UK. His research interests lie at the intersections of strategy practices and processes in challenging and complex organizational settings in the UK and globally. He uses qualitative and quantitative methods to examine the discursive, cognitive and visual activities organizational actors employ when dealing with strategic paradoxes. His work has been recognized with the 2013 JMS best paper award and has appeared in outlets such as *Strategic Management Journal*, *Journal of Management Studies*, *Human Relations*, *Business History*, *California Management Review* and *British Journal of Management*. [Email: Sotirios.Paroutis@wbs.ac.uk]