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DYNAMIC MANAGERIAL CAPABILITIES IN MICRO-ENTERPRISES: STABILITY, VULNERABILITY AND THE ROLE OF MANAGERIAL TIME ALLOCATION

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ABSTRACT

This paper analyses how dynamic capabilities are enacted in micro-enterprises and what role different parties and managerial time allocation play in this enactment. Drawing upon three in-depth case studies of micro-enterprises, we make three theoretical contributions. First, after arguing that micro-enterprises are likely to enact individual or group level dynamic managerial capabilities rather than organisation-level dynamic capabilities, we counter Teece's warnings about the vulnerable nature of dynamic managerial capabilities. Second, we identify how managers' allocation of their own time is a core micro-foundation of dynamic managerial capabilities and show how failure to allocate time to capability enactment can lead to capability vulnerability. Third, we introduce the notion of 'self-damaging dynamic managerial capabilities'; these being capabilities that damage established micro-foundations.

INTRODUCTION

Dynamic capabilities are 'the capacity of an organization to purposefully create, extend, or modify its resource base' (Helfat et al., 2007: 4). As they can be a source of performance improvement (Helfat et al., 2007), they are strategically valuable for enterprises that enact them successfully. In this paper, we contribute to contemporary debates about the enactment and micro-foundations of dynamic capabilities by critically evaluating: 'How are dynamic capabilities enacted in micro-enterprises and what role do different parties and managerial time allocation play in this enactment?'. To address this research question, we draw upon an interpretivist ontology using in-depth case studies.

Teece et al (1997) introduced dynamic capabilities over two decades ago as a source of sustainable competitive advantage in dynamic industries. Since then, the concept has undergone development to be applied to less dynamic industries (Eisenhardt and Martin, 2000; Ambrosini et al., 2009), and has been extended to the individual and group-level in the form of dynamic managerial capabilities (Adner and Helfat, 2003; Shilke et al., 2018). One important development is the growing interest in the micro-foundations underpinning

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3 dynamic capabilities (Vogel and Guttel, 2013). Micro-foundations are constituent
4 component units (for example, skills, processes, individual agent behaviour) that underpin
5 and enable dynamic capabilities (Barney & Felin, 2013). Micro-foundation research has
6 made important steps in unpacking dynamic capabilities, which have been criticised for
7 being a black box concept (Pavlou and El Sawy, 2011). Nevertheless, there is much work still
8 to do in this area.
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15 Indeed, there is little evidence of how dynamic capabilities are enacted and of their micro-
16 foundations in micro-enterprises (Kevill, 2014). Micro-enterprises offer a notable
17 contribution to the UK economy, accounting for nearly £900bn of annual turnover
18 (Department for Business, Energy & Industrial Strategy, 2019). Given the economic
19 contribution of micro-enterprises and the performance advantages that can ensue from
20 dynamic capabilities (Helfat et al., 2007), it is critical to explore their enactment and the key
21 micro-foundations that enable them in these firms. In this paper, we focus specifically on
22 the micro-foundational role of different parties (those who enact dynamic capabilities) and
23 managerial time allocation. This is because, as we argue below, these factors are salient to
24 micro-enterprises, are particularly helpful for assessing the applicability of the concept to
25 the micro-enterprise context, and they offer the opportunity to extend theoretical
26 understanding of dynamic capabilities.
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38 We commence the paper by conceptualising dynamic capabilities and questioning the
39 concept's applicability to micro-enterprises. We frame our arguments around issues of
40 enactment, micro-foundations, stability and vulnerability of such capabilities. We then
41 explain the research methods adopted, followed by our empirical findings. Next, we outline
42 our theoretical contributions, disputing the applicability of the dynamic capability concept
43 to the micro-enterprise context and challenging Teece's theorising regarding the
44 vulnerability of dynamic managerial capabilities. We also present managerial time allocation
45 as a micro-foundation of dynamic managerial capabilities and introduce the notion of 'self-
46 damaging dynamic managerial capabilities'.
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LITERATURE ANALYSIS

Dynamic Capabilities

Dynamic capabilities are the ability of an organisation to change to either initiate or respond to transformations in its external environment (Helfat et al., 2007; Teece, 2014). In this paper, we emphasise the situated nature of dynamic capabilities, and prioritise the social practices, understandings, and engagements constituting a specific capability (Antonacopoulou, 2008; Jarzabowski and Wilson, 2006). Competitive advantage does not flow automatically from the possession of an intangible asset (Boisot, 1998), such as a capability, but from when the activities underpinning it are carried out (Helfat and Winter, 2011).

We also follow Helfat and Peteraf's (2003) lifecycle approach, which suggests that regular enactment of a capability will allow it to mature and result in its stability. Reduced enactment of a capability would lead to its deterioration, making it vulnerable to retrenchment or, in some extreme cases, its retirement (death). The lifecycle approach also proposes that exogenous and endogenous forces can stimulate capability development through redeployment, renewal or recombination or can lead to retrenchment or retirement of the capability (Helfat and Peteraf, 2003).

Dynamic capabilities which have matured and become embedded in organisational practices have three characteristics that make them identifiable within organisations: they have a change-oriented purpose that is strategically and economically important for the organisation (Helfat and Winter, 2011; Teece, 2007), they lead to repeatable change (Helfat et al., 2007; Teece, 2007), and they have both routine and non-routine elements (Teece, 2012). These characteristics are elaborated in Table 1.

[INSERT TABLE 1 HERE]

The first identifying characteristic suggests that dynamic capabilities are change-oriented. Change is central to the concept and distinguishes dynamic capabilities from the operational capabilities which enable the organisation to perform its basic functional activities (Winter, 2003). The consensus that dynamic capabilities lead to change is well-established (Winter, 2003) and supported by empirical studies (Shilke et al., 2018). Nevertheless, in line with our

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3 argument above, whilst these capabilities lead to change if enacted, they can remain latent
4 if not fully utilised to respond to the strategic environment (Pablo, 2007; Easterby-Smith et
5 al, 2009). Furthermore, the impact of dynamic capabilities on successful change can be
6 hindered by inappropriate cognitive representations of the need to change, the appropriate
7 method to change, and the organisation's external environment (Ambrosini et al., 2009;
8 Tripsas and Gavetti, 2000).

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15 The second and third characteristics in Table 1 concern the repeatable and routine nature
16 of dynamic capabilities, something that has engendered debate in extant literature.
17 Routines refer to 'repetitive patterns of interdependent organizational actions' (Parmigiani
18 and Howard-Grenville, 2011: 414). They include common practices; those practices that are
19 enacted repeatedly. Even though Winter (2003) conceptualises dynamic capabilities as
20 highly patterned and routine in nature, the enactment of those routines in practice will
21 typically involve *some* improvisational and non-routine elements resulting from individual
22 agency and contextual considerations (Feldman and Pentland, 2003). Indeed, Teece (2012)
23 argues that dynamic capabilities are likely to include more creative, entrepreneurial and
24 non-routine behaviours acting alongside routine behaviours. Since even Winter (2003)
25 acknowledges that his solely routine conceptualisation of dynamic capabilities is unlikely to
26 be found in organisations, we join Teece (2012) in arguing that dynamic capabilities in
27 practice encompass both routine and non-routine elements.

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40 Our conceptualisation of dynamic capabilities as both routine and non-routine has
41 implications for how we position ourselves in the debate on the heterogeneity of dynamic
42 capabilities across different organisations. Whilst Eisenhardt and Martin (2000: 1105)
43 position dynamic capabilities as best practices that 'have significant commonalities across
44 firms', Teece et al (1997) see them as largely idiosyncratic. Since the enactment of dynamic
45 capabilities incorporates some non-routine elements, certain practices and engagements
46 underpinning these capabilities may never be replicated. This brings into question the
47 usefulness of the best practice approach and further supports the importance of
48 understanding dynamic capabilities from a Teecean perspective.

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The Teecean perspective disaggregates dynamic capabilities into their component
capabilities (sensing, seizing and transforming) (Teece, 2007). Sensing refers to an

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3 organisation's ability to sense opportunities or threats within the external environment to
4 either neutralise threats or create opportunities and includes activities such as the scanning
5 and assessment of opportunities (Teece, 2007). Seizing involves deciding on suitable
6 investments, orchestrating assets, and designing business models to capture sensed
7 opportunities. Transforming refers to repeated adaptation and transformation of the
8 organisation, which involves recombining and reconfiguring the resource base of the
9 company (Helfat & Martin, 2015). Decomposing dynamic capabilities in this way helps
10 understand their micro-foundations, which is crucial to our study. Following from this and
11 our arguments above, we adopt the Teece perspective on dynamic capabilities in this
12 study.ⁱ

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23 Despite the conceptualisation of dynamic capabilities becoming more refined since its
24 inception, it is still criticised theoretically for being black box in nature (Pavlou and El Sawy,
25 2011). This stems from little consideration being given to what these capabilities look like
26 when enacted *in situ* and to a lack of focus on their micro-foundations during early
27 theorising. Whilst disagreement exists about the precise meaning of micro-foundations
28 (Barney & Felin, 2013), there is strong consensus that they are the constituent components
29 (Felin et al., 2012) 'rooted in individual characteristics and behaviours' (Foss, 2011: 1414)
30 that 'make the realization of...capabilities possible' (Abell et al., 2008: 492). They can include
31 individual-level factors like self-efficacy (Kevill et al., 2017) and entrepreneurial initiatives
32 (Mahringer & Renzl, 2018) but also interactional factors such as trust (Fainschmidt & Frazier,
33 2017), residing in processes and practices. By attempting to explicate how such factors
34 influence the enactment of dynamic capabilities, the micro-foundational approach goes
35 some way to bridging the micro-macro gap. Since all organisations are made up of
36 individuals, the micro-foundational approach seeks to re-focus attention on that which has
37 previously been lost as a result of a dominant focus on higher order organisational routines
38 and capabilities (Molina-Azorin, 2014; Vahlne and Jonsson, 2017).

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53 How dynamic capabilities are enacted and the micro-foundations underpinning them have
54 traditionally been analysed within large organisations (Koryak et al., 2015), ignoring micro-
55 enterprises which are an important segment of the business population. Whilst a
56 heterogeneous category, micro-enterprises share a number of characteristics in terms of
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3 size, limited market share, resource scarcity and an owner-manager undertaking the
4 majority of managerial tasks with, in some cases, support from small generic management
5 teams (Gherhes et al., 2016; Jaouen and Lasch, 2015; Martín-Tapia et al., 2010). These
6 characteristics make micro-enterprises vulnerable to the effects of market shifts and loss of
7 key customers (Kelliher et al., 2018). Thus, dynamic capabilities in micro-enterprises would
8 strengthen their market sustainability and competitiveness, and so, investigating these
9 capabilities has practical importance. Investigating dynamic capabilities in this under-
10 researched context also has theoretical benefits, offering the potential to illuminate new
11 insights into enactment and micro-foundations that are unacknowledged in prior theorising
12 focused on larger firms. This would further help to unpack dynamic capabilities.

23 **Dynamic Capabilities and Micro-Enterprises**

24 The small body of literature that does investigate dynamic capabilities in micro-enterprises
25 is typically fragmented and lacks focus. In most cases, these studies include organisations of
26 differing sizes in their samples (Alegre et al., 2011; Arend, 2014; Vickers and Lyon, 2014),
27 thus losing focus on the specific context of the micro-enterprise. Several studies also focus
28 on the effects of dynamic capabilities in micro-enterprises (Alegre et al., 2011; Arend, 2013;
29 Uhlener et al., 2013), often relying on conceptualisations of dynamic capabilities developed
30 for larger firms due to limited understanding about the nature of these capabilities in micro-
31 enterprises. Greater understanding of the enactment and micro-foundations of dynamic
32 capabilities in the micro-enterprise context would provide a gateway to future empirical
33 research into the effects of these capabilities in these firms.

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44 However, it is first important to take a step back to consider whether current
45 conceptualisations of dynamic capabilities are applicable to the micro-enterprise context at
46 all. In this vein, an exploration of dynamic capabilities within micro-enterprises provides a
47 pathway for further inquiry. A particular concern revolves around units of analysis. Dynamic
48 capabilities have traditionally been conceptualised at the organisational level (Teece et al.,
49 1997) with early theorising paying little attention to the micro-foundational role of
50 individuals (Helfat et al., 2007). Zahra et al (2006), however, emphasise the role of the
51 manager within smaller organisations, suggesting that the creation of dynamic capabilities
52 is often through internal workings. The concept of dynamic managerial capabilities – ‘the
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3 capacity of managers to purposefully create, extend, or modify the resource base of an
4 organization' (Helfat et al, 2007: 24) – was introduced by Adner and Helfat (2003) to remedy
5 the lack of focus on individuals in dynamic capabilities research. Research into dynamic
6 managerial capabilities has focussed largely on the role that social capital, human capital,
7 and managerial cognition play as micro-foundations of these capabilities (Helfat and Martin,
8 2015). Like dynamic capabilities research more generally, there is little extant research into
9 the enactment of dynamic managerial capabilities in situ and their wider micro-foundations.
10 Nevertheless, by acknowledging that managers can act as important micro-foundations of
11 organisation-level dynamic capabilities, the dynamic managerial capability concept has
12 helped to unpack dynamic capabilities. We may, however, not yet have the complete picture
13 due to the extant focus on larger organisations.

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16 In micro-enterprises, there are a limited number of individuals and the owner-manager /
17 management team is typically dominant (Jaouen and Lasch, 2015), meaning the links
18 between the individual, group and organisational levels become blurred. This questions
19 whether the theorised relationships between dynamic capabilities at different analytical
20 levels applies in the micro-enterprise context. Whilst some studies have helpfully shown that
21 managers can be important micro-foundations of dynamic capabilities in micro-enterprises
22 (Evers, 2011; Kelliher et al., 2018; Schlemmer and Webb, 2008), little empirical consideration
23 has been given to the unit(s) of analysis at which the capabilities reside. To address this,
24 research should investigate the micro-foundational role played by different parties in the
25 enactment of organisational change initiatives in micro-enterprises. Understanding the roles
26 played by these parties enables the units of analysis and the relationships between dynamic
27 capabilities at different analytical levels to be deciphered. This helps open the black box of
28 dynamic capabilities and helps assess the fit of the concept to the micro-enterprise context.

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31 One possibility is that, due to resource scarcity, dynamic capabilities in micro-enterprises
32 may reside in only a small number of individuals, which may make these capabilities more
33 vulnerable than those in their larger counterparts. This vulnerability stems from the
34 possibility of the individuals that are key to dynamic capability leaving the organisation
35 (Teece, 2014), meaning that the capability retires (dies). This provides impetus for
36 uncovering the micro-foundational role played by different actors in the enactment of
37 dynamic capabilities, as this could illuminate the degree to which these capabilities are
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3 stable or vulnerable in nature. This could be a critical determinant of the competitive
4 advantage of micro-enterprises and is thus worthy of investigation.
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8 Another scarce resource in micro-enterprises is time (Kelliher and Reinl, 2009; Levesque and
9 Stephan, 2019). Dynamic capabilities are likely to require significant time investment to
10 develop and enact (Winter, 2003). Following the lifecycle approach, the time invested to
11 their enactment will have a direct impact on the extent to which dynamic capabilities are
12 stable (or vulnerable to retrenchment or retirement) (Helfat and Peteraf, 2003). This
13 suggests that managers' allocation of their own and others' time may be an important micro-
14 foundation of dynamic capabilities, especially to understand why certain capabilities face
15 retrenchment and retirement in the long-term. However, extant research has given little
16 attention to the issue of time allocation – the time allocated by managers to complete
17 activities at work – and its micro-foundational role. Investigating the temporal aspect of
18 capability enactment will develop theoretical understanding of the micro-foundations of
19 dynamic capabilities while responding to calls for more research into time in entrepreneurial
20 contexts (Lévesque and Stephan, 2019). The scarcity of resources, such as time and people,
21 in micro-enterprises also provides researchers with the opportunity to investigate potential
22 feedback loops from dynamic capabilities to such scarce micro-foundations.
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35 36 37 **METHODOLOGY**

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39 Our data collection and analysis spanned two years, involving several stages which are
40 explained below and summarised in Appendix A1. Our study was exploratory and inductive,
41 favouring in-depth qualitative research to generate rich understanding to extend prior
42 theorising (Woldesenbet et al., 2011). We evaluated the quality of our study against Tracy's
43 (2010) eight criteria for excellent qualitative research (see Table 2).
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53 54 **Initial Interviews**

55 The intangible nature of dynamic capabilities (Easterby-Smith et al., 2009) makes them
56 difficult to identify without in-depth research. Hence, to begin, we needed to identify micro-
57 enterprises that appeared to have dynamic capabilities. We therefore undertook qualitative
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3 interviews with owner-managers from 12 micro-enterprises. We asked about past and
4 future organisational developments to identify those that may be underpinned by a dynamic
5 capability. We also investigated the nature and background of the enterprise to gain
6 contextual understanding.
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11 This data was analysed using a directed content analysis approach (Hsieh and Shannon,
12 2005: 1281), culminating in cross-case analysis to determine which enterprises were most
13 likely to have dynamic capabilities. At this stage, we used the first two characteristics in Table
14 1 to identify dynamic capabilities, as these were easily accessible through initial interviews.
15 As such, we sought organisations that had undertaken a number of similar developments
16 that were strategically and economically important to them.
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24 **Research Sample**

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26 The initial interviews enabled us to identify three relevant firms (Table 3). At this point, we
27 had only identified that the changes *may* be underpinned by dynamic capabilities, so we
28 labelled them 'potential dynamic capabilities'. To determine whether they were dynamic
29 capabilities, further in-depth research was required to understand *praxis* (the actions
30 undertaken *in situ*) involved in the enactment of the changes. This would help understand
31 whether the repeatable changes were enacted in similar ways, satisfying the third
32 characteristic that dynamic capabilities are routine to some degree.
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45 **Further Data Collection**

46 Most of the data collection was undertaken with the Owner-Manager who drives the
47 strategic development in each organisation, to access deep understanding of their
48 enterprise and its capability.
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52 Following the initial interviews, qualitative shadowing was undertaken in IT Ent and
53 Merchandising Entⁱ. The researcher followed the Owner-Manager throughout their working
54 day (Czarniawska, 2007) to observe their behaviour and access their perceptions through a
55 running commentary (McDonald, 2005). Whilst the Owner-Manager was the main
56 shadowee, a small amount of time was spent shadowing other individuals in the
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3 organisations to gain a more holistic understanding. Qualitative shadowing was undertaken
4 to gain insight into the operations of the organisation and the context within which the
5 potential dynamic capability resided, rather than to shed light on the capability itself. This
6 was important since dynamic capabilities 'become tailored to the settings in which they
7 function' (Helfat et al., 2007: 7). For example, while through interviews we probed the
8 dynamic capabilities with the actors who played a role in their enactment, the qualitative
9 shadowing helped reveal that this enactment was embedded alongside busy day-to-day
10 operational work allowing us to gain insight into the wider context these capabilities resided
11 in.
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21 Next, an interview gathering the life story (Lieblich et al., 1998) of the enactment of the
22 capability was conducted with the Owner-Manager. Here 'life story' refers to a chronological
23 recounting of all the organisational developments enabled by that capability over time. In
24 each enterprise we concentrated on one capability, satisfying the advice of Shilke et al (2018:
25 413) to 'zoom in on a particular instance of dynamic capabilities' in organisations. Asking the
26 Owner-Manager to tell the story of each organisational development facilitated rich
27 understanding of the enactments, engagements and interactions underpinning each
28 development. Similar to Corner and Wu (2011), we utilised this knowledge to identify
29 patterns across different enactments of the capability to see if they had a routine element
30 and to better understand the practices.
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40 The capabilities we researched had been enacted on several occasions over an extended
41 time period. Life story interviews enabled chronological information spanning these
42 enactments to be provided in an accessible and timely manner (Elliott, 2005; Riessman,
43 2008). To mitigate lapses in memory (Golden, 1992) and post-event rationalisation, we
44 undertook similar life story interviews with multiple individuals in IT Ent and Merchandising
45 Ent, which helped corroborate key insights provided by the Owner-Manager (De Massis and
46 Kotler, 2014; Eriksson, 2013) and added credibility to our findings (Tracy, 2010). Conducting
47 repeat interviews with the Owner-Managers also enabled us to assess consistency of
48 accounts of organisational changes and address inconsistencies with them where necessary.
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57 Further interviews were later conducted with the Owner-Manager of Media Ent and
58 Merchandising Entⁱⁱⁱ. These interviews sought additional insights, clarifications, and enabled
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3 our preliminary findings to be checked with them. In total, 18 interviews and five days of
4 qualitative shadowing were undertaken (see Table 4), producing almost 400 pages of
5 interview transcripts and almost 50 pages of shadowing notes. Additional data was also
6 collected through short telephone conversations and emails with the Owner-Managers.
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16 **Data Analysis**

17 The Owner-Manager interviews were analysed manually over the course of a year. We used
18 an amended version of the holistic-content narrative analysis approach used by Lieblich et
19 al (1998). We amended the process to meet Tracy's (2010) criteria for excellent qualitative
20 research more fully. For example, a reflexive journal was used to record the researcher's
21 sensemaking (Marshall, 1995) and we incorporated an opportunity to check preliminary
22 findings with the Owner-Managers of Merchandising Ent and Media Ent, helping improve
23 the credibility of the findings (Tracy, 2010). Amendments were also made to fit the analysis
24 process to the specific characteristics of our study, such as to take account of both narrative
25 and non-narrative data collected.
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35 The analysis began with immersing ourselves in the interview data, reading repeatedly until
36 patterns and contradictions emerged organically. At first, the transcripts were read
37 uninterrupted, letting the data speak for itself (Lieblich et al., 1998). This involved reading
38 the transcripts 'carefully, empathically, and with an open mind' (Lieblich et al., 1998: 62),
39 with the reflexive journal being used to highlight and mitigate the researcher's impact on
40 the themes generated. Progressively, themes emerged from the data and were noted on
41 the interview transcript. As themes emerged more clearly, they were captured in global
42 impressions with regular revisiting of the interview data to ensure appropriate
43 interpretations. The global impressions were documents in which the themes were written
44 up using a combination of the researcher's commentary and interview extracts. Separate
45 global impressions were created for each Owner-Manager interview, with over 150 pages of
46 global impressions being produced.
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58 Attention then turned to understanding the praxis involved in the organisational
59 developments underpinned by the capabilities. These were captured in as much detail as
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3 possible, with individual practices being mapped against the organisational developments.
4 Here, we identified that the capabilities were dominated by one or two Owner-Managers
5 and that they had both routine and non-routine elements (Teece, 2012).
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10 Next, all global impressions were revisited to determine themes to be analysed further.
11 Themes were chosen based on factors such as their prominence / importance and their
12 potential to illuminate new insights not found in extant literature. The importance of themes
13 was determined by their relevance to the topic being studied and the organisational context
14 (Lieblich et al., 1998). These themes were then analysed more deeply in the Owner-Manager
15 interview transcripts and lengthy conclusions were written for each theme. This identified
16 interesting findings such as IT Ent and Merchandising Ent Owner-Managers struggling to
17 allocate time to capability enactment due to other demands upon them. Preliminary findings
18 were then presented to the Owner-Manager in Merchandising Ent and Media Ent, with
19 additional insights and feedback being drawn into the theme conclusions. The themes were
20 then analysed in the interviews with the business partner / employees in Merchandising Ent
21 and IT Ent, with the theme conclusions being added to accordingly.
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33 **FINDINGS**

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35 The enactment of each capability is made up of a cluster of common practices. Common
36 practices refer to practices that are enacted during more than one organisational
37 development. Information about the involvement of different actors in the common
38 practices are detailed in Table 5. Whilst these common practices show a routine element to
39 the capabilities, there was some variation in which practices were undertaken and how
40 practices were enacted during different organisational developments. This showed the
41 capabilities had both routine and non-routine elements (Teece, 2012).
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53 The following three sections present our key findings. Additional data to support the findings
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IT Ent

IT Ent has a capability to develop new services. This includes services that are new to IT Ent and the redevelopment of services they already offer. The capability has enabled the development of cloud services, managed services, and disaster recovery services. Dynamic capabilities have strategically and economically important consequences (Helfat and Winter, 2011; Teece, 2007) and, in line with this, the development of such services in IT Ent has been central to forming the enterprise's value proposition, which involves providing proactive and preventative services to clients rather than being a typical reactionary 'break/fix' IT company. The development of managed services has also allowed a recurring revenue model to be implemented, providing greater financial stability.

The enactment of the capability includes up to five common practices. Table 6 shows whether the individual practices are involved in sensing, seizing or transforming^{iv} and Figure 1 shows the parties that enact each practice.

[INSERT TABLE 6 HERE]

[INSERT FIGURE 1 HERE]

Although these are common practices, this does not mean each practice is involved in every development. Furthermore, where common practices are enacted in different service developments, the way in which they are enacted can vary. This suggests that whilst the capability is routine to some degree, there are also variances in the overall form it takes. The following interview extract illustrates the development of cloud services and disaster recovery services. In both instances, there is variability in how the process was enacted.

(Technical Director) had emailed me to say, "I want to start looking at putting something together where we can offer it to the client, a hosted solution", and now we're doing it...it's been a case of, "Right, well is there a path to it? How is it going to develop for the future?" and they tend to...evolve rather than being a snap decision of "We're going to do this". Disaster recovery was more of a snap decision.'

(Owner-Manager)

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3 The Owner-Manager and Technical Director dominate the enactment of the capability (see
4 Table 5), indicated by the larger circles being assigned to them in Figure 1. Both are involved
5 in sensing, seizing and transforming activities. The Technical Director, drawing on his
6 motivation and passion for technology, drives the technical side of new service
7 developments. The Owner-Manager, who retains the decision-making power regarding
8 whether new services will go ahead, focusses more on the business and customer elements
9 of the developments. Customers and suppliers play a largely passive role, since they merely
10 participate in practices that are driven by the Owner-Manager and / or Technical Director.
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19 Whilst the Owner-Manager and Technical Director both place importance on the longer-
20 term strategic development of IT Ent and play a dominant role in the capability, they are
21 also heavily involved in the day-to-day operational work. This results from a lack of staff and
22 the need to satisfy customer / operational requirements.
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27
28 'When you're a small company like ourselves and you've got the server experts and
29 myself and (Technical Director)...I've got to work in the company and I've one major
30 client who takes, I would say, seventy percent of our work up and I run that client so
31 I'm well right stuck in inside it, so I don't always have the time to step back.' (Owner-
32 Manager)
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39 This operational involvement limits the time available for the Owner-Manager and Technical
40 Director to engage in service development processes. This makes the capability vulnerable
41 since operational demands can divert attention and effort away from its enactment.
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47 '(Technical Director's) role (is) he's the one who understands the technologies. He
48 develops the technologies within the company and for the company. My role, in
49 effect, is to assess where he's up to and look at how it can fit within the company...I
50 can only do that part of it if I'm not working in the company. The difficult part is, like
51 at the moment, we've got so much pressure on I've ended up working back in the
52 company.' (Owner-Manager)
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3 Interestingly, whilst the operational involvement of the Owner-Manager and Technical
4 Director can limit their ability to enact the capability, proximity to customers that result from
5 their operational involvement allows them to determine which sensed opportunities are
6 worth seizing.
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10 11 12 **Merchandising Ent**

13
14 Merchandising Ent has a capability to develop niche marketing approaches for several
15 merchandising products, including clear acrylic keyrings, loop fobs, customised pencils, and
16 mouse mats. This niche marketing strategy is central to Merchandising Ent's business model,
17 with the niche products offering an important route to market. Up to eight common
18 practices are involved in the enactment of this capability. These practices, and the parties
19 involved in enacting them, can be seen in Figure 2. Table 7 indicates which practices are
20 involved in sensing and seizing^v.
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29 [INSERT TABLE 7 HERE]

30 [INSERT FIGURE 2 HERE]

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34 As indicated by the circle sizes in Figure 2, and the information in Table 5, the Owner-
35 Manager is central to the development of niche marketing. He is the key decision-maker
36 with strong business planning capabilities. He fully believes in the value of the niche
37 marketing approach and drives sensing and seizing of these developments. He is involved in
38 all eight common practices and is the key catalyst behind their enactment. The account of
39 his Business Partner (his wife) illustrates this: -
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47 'It's usually been (Owner-Manager's) remit. It's what he likes to do. I am one of his
48 employees when it comes to administering what he has in mind. He develops these
49 websites with the help of other outside sources.' (Business Partner)
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54 The employees' role in the development of niche marketing is very limited in that they are
55 mainly involved in being trained by the Owner-Manager to understand the developments.
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3 'These things are all done behind the scenes a lot of the time and I just remember
4 them all being introduced gently.' (Sales Processing Assistant)
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9 The developments of niche marketing also rely quite heavily on collaborations with the
10 product supplier and website developers. For example, although the product supplier is only
11 involved in one practice – the 'negotiating with product supplier' (seizing) practice – the
12 Owner-Manager would not niche market a product unless he receives concessions from the
13 supplier. Nevertheless, generally external organisations take a participative role in the
14 practices they are involved in, as opposed to the Owner-Manager's driving role.
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21 Despite his central role in enacting the capability and his commitment to niche marketing
22 new products, the Owner-Manager often finds himself heavily involved in day-to-day
23 operational work. This means niche developments can be held up, since he needs time for
24 sensing and seizing activities. When operational demands become too great, the potential
25 for capability enactment is reduced, suggesting the inherent vulnerability of the capability.
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32 'If a customer needs sorting out, or a technical issue in the office, or a member of
33 staff has a problem, then those three things tend to take a priority over and above
34 the working on the business, the management of the niches...the marketing, the
35 social media, and just the basic planning ahead that tends to get deferred for a more
36 current need.' (Owner-Manager)
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43 'The (niche website) is more or less finished but we've been so busy we've hardly
44 touched it, hardly done anything with it yet.' (Owner-Manager)
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48 Interestingly, successful niche marketing of the loop fobs (the second product to be niche
49 marketed) increased sales and associated workload to the extent that the Owner-Manager
50 did not stop to sense the need to niche market more products. Indeed, successful niche
51 marketing of a product can increase operational workload so much that it makes it difficult
52 for the Owner-Manager to allocate time to niche marketing subsequent products. In other
53 words, successful deployment of the capability can make future enactment of the capability
54 more vulnerable.
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5 'One of the things is, of course, by having each (niche development), as each one
6 starts to do business you do find that you've got less time again because there's more
7 things going on with the (niche website) that is working well...eventually your own
8 success is further diluting the time you've got to focus and do the next (niche
9 development) properly, to the extent by which the fourth (niche development) being
10 the mouse mats, probably never got the full launch and email that it warranted.'
11
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15
16 (Owner-Manager)
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20 **Media Ent**

21 Media Ent has a capability to develop new services, such as filmmaking services, website
22 development services, and niche photography and filmmaking services. These services are
23 complementary to the photography and creative design services that were originally offered
24 when the company was founded. This complementarity is part of the core strategy of Media
25 Ent, with the business model being based around cross-selling different services to
26 customers. Being a 'one-stop-shop' for customers is key to the value proposition,
27 distinguishing Media Ent from its main competitors. Up to four common practices are
28 involved in new service development. These practices are outlined in Table 8 and the parties
29 involved in enacting them are displayed in Figure 3.
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40 [INSERT TABLE 8 HERE]

41 [INSERT FIGURE 3 HERE]
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45 The enactment of these practices can be illustrated by the process involved in developing
46 website development services. The Owner-Manager sensed the opportunity through
47 customer requests and his observations whilst working for a customer ('Identifying
48 Opportunities through Customers'). Equipment did not need to be purchased because
49 Media Ent made use of computers they already had ('Utilising Existing Equipment for New
50 Services') and the Owner-Manager's wife applied her design skills for website design
51 ('Utilising Existing Skills for New Services'). However, the Owner-Manager perceived that the
52 level of website development skills required were not currently held within Media Ent.
53 Therefore, he took on a freelancer to fill this gap ('Building a Team'). The following interview
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3 extract explains the 'Identifying Opportunities through Customers' and 'Building a Team'
4 practices: -
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9 'We'd (been) doing some photography for a T-shirt company and I saw an
10 opportunity that we might be able to do the website, so pitched an idea (and) they
11 liked it and sanctioned the job...prior to that...I was in a coffee shop just here and I
12 bumped into a young programmer, quite a high-level programmer and he was very
13 keen...I gave him a couple of projects to do. (He) seemed very, very competent...So,
14 I asked him like, you know, "If we got some work would you be interested?" He said,
15 "Yes." So that's when I thought, "Right, let's pitch cause it looks like we've got the
16 team to do it.'" (Owner-Manager)
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25 As explained in Table 5, and illustrated by circle size in Figure 3, the Owner-Manager is the
26 main actor involved in service development in Media Ent and he generally drives the sensing,
27 seizing and transforming practices. The capability is motivated by the Owner-Manager's
28 personal value to always maximise his earning potential, something the capability enables
29 through the development of complementary services.
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35 Internal others are only involved in a participative, as opposed to driving, manner. For
36 example, when 'Building a Team' (seizing), the Owner-Manager actively searches for
37 freelancers, with these freelancers merely participating in the practice in a rather passive
38 way. Furthermore, by 'Identifying Opportunities through Customers' (sensing/
39 transforming), these external customers are involved in the practice, but it is the Owner-
40 Manager who senses opportunities for service developments. Often his proximity to these
41 customers facilitates this. The interview extract below illustrates this, where the Owner-
42 Manager proactively senses the opportunity for offering a niche photography service for
43 football screening events: -
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53 'They came to me for doing some promotional work, sorry, promotional videos...I
54 saw they had a photographer there but he wasn't very good and I said, "Look, I can
55 give you much better and plus because we're doing video I can give you a better
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3 price.” And before you know it, you know, I’m, you know, doing that as well.’ (Owner-
4 Manager)
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9 The Owner-Manager’s involvement in day-to-day operational work appears to facilitate
10 sensing, seizing and transforming activities by enabling him to spot opportunities, and
11 leverage his own skills and existing operational equipment to enact service development.
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15 16 **DISCUSSION**

17
18 The capabilities we identified were shaped by two common characteristics of micro-
19 enterprises; dominance of the Owner-Manager and the Owner-Manager’s operational
20 involvement. Following the advice of Shilke et al (2018), we now utilise our in-depth research
21 findings to draw theoretical generalisations to dynamic capabilities and related concepts.
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26 27 **Owner-Manager Dominance and the Stability of Dynamic Managerial Capabilities**

28
29 Dynamic capabilities operate at the organisational level (Shilke et al, 2018), with dynamic
30 managerial capabilities being practiced at the management team or individual manager level
31 (Adner and Helfat, 2003; Beck and Wiersema, 2013; Kor and Mesko, 2013). Whilst extant
32 research in micro-enterprises has given little consideration to the level at which capabilities
33 are enacted, the dominance of the Owner-Manager in the capabilities we studied raises the
34 question of whether these capabilities are dynamic managerial capabilities rather than
35 organisation-level dynamic capabilities. There are few guidelines for distinguishing the levels
36 at which dynamic managerial capabilities and dynamic capabilities sit (Kevill, 2014), but the
37 micro-foundations of dynamic managerial capabilities can provide some directions.
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46 The three currently accepted micro-foundations of dynamic managerial capabilities are
47 managerial cognition, human capital, and social capital (Helfat and Martin, 2015). Social
48 capital indicates that dynamic managerial capabilities, even at the individual level, involve
49 other actors beyond the individual, suggesting a ‘degree of dominance’ approach is adopted
50 to distinguish between dynamic managerial capabilities and organisation-level dynamic
51 capabilities (Kevill, 2014). This suggests that if an individual manager (or management team)
52 dominate and are the hub of the capability, then the capability is an individual-level (or
53 group-level) dynamic managerial capability. This is based on the premise that without the
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3 manager(s) there would not be the social ties that underpin the dynamic managerial
4 capability.
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8 In Media Ent and Merchandising Ent, the Owner-Manager is generally involved in all sensing,
9 seizing and transforming practices and drives capability enactment. Furthermore, internal
10 and external parties are involved only through their links with the Owner-Manager, as
11 demonstrated by the connections between different parties in Figures 2 and 3. In these two
12 enterprises, the Owner-Manager is therefore the dominant actor and hub through which
13 other parties are involved, fitting the above conception of an individual-level dynamic
14 managerial capability. In IT Ent, the key actors in sensing, seizing and transforming are the
15 Technical Director and Owner-Manager. These individuals are also the hub through which
16 external parties are involved in new service developments (see Figure 1). Following the
17 'degree of dominance' approach this capability is, therefore, a group-level dynamic
18 managerial capability.
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29 With an owner-manager or small management team dominating the strategic, operational,
30 and cultural side of micro-enterprises (Jaouen and Lasch, 2015; Kearney et al., 2019), the
31 lines between individual, group and organisation-levels become difficult to demarcate. At
32 first, this could question the applicability of the dynamic capability and dynamic managerial
33 capability concepts to the micro-enterprise context, given that these concepts are
34 distinguished by analytical level. Nevertheless, the very dominance of the individual or group
35 in micro-enterprises shows just how conducive the dynamic managerial capability concept
36 – which is also dominated by an individual or group – is to these organisations.
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45 However, whilst dynamic managerial capabilities in large organisations typically drive the
46 development and evolution of organisation-level dynamic capabilities, the dynamic
47 managerial capabilities we identified have remained at the individual / group levels. This is
48 likely to be common in micro-enterprises, given that they have a small headcount and tend
49 to be dominated by their manager(s) (Devins et al., 2005; Jaouen and Lasch, 2015). As such,
50 organisation-level dynamic capabilities are unlikely to evolve in such enterprises, suggesting
51 that the dynamic capability concept lacks applicability to the micro-enterprise context.
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3 The Teece perspective of dynamic capabilities acknowledges that 'certain dynamic
4 capabilities may be based on the skills and knowledge of one or a few executives' (Teece,
5 2012: 1395). Therefore, this allows for dynamic managerial capabilities not always extending
6 to the organisational level. Nevertheless, Teece (2012; 2014) argues this is dangerous since
7 the key individuals may leave the organisation, retiring or retrenching the capability to which
8 they are integral. He thus suggests that these capabilities should be developed into
9 organisation-level dynamic capabilities where possible (Teece, 2014), something that
10 requires time and financial investment (Salvato and Vassolo, 2018).
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19 Whilst Teece's argument is logical for many organisational contexts, we contend that it
20 becomes redundant in many owner-managed micro-enterprises. This is because owner-
21 managers are typically emotionally attached and strongly committed to the enterprises they
22 have created and invested substantial blood, sweat and tears into (Pierce et al., 2001;
23 Wahlgrén and Stewart, 2003). Self-identification with their enterprise and their attachment
24 and commitment also tend to strengthen the longer they owner-manage the enterprise
25 (Kammerlander, 2016). They have typically invested financial capital, which again provides
26 strong reasons for them to commit (Gibb, 2000). Therefore, these owner-managers are less
27 likely to leave their enterprises in the short-term. Indeed, the Owner-Managers in our study
28 displayed commitment through long-term tenure (IT Ent and Merchandising Ent) and / or
29 communicating longer-term visions for their enterprises. This reduces the risk associated
30 with micro-enterprises having dynamic managerial capabilities that remain at the individual
31 or group level, with Teece (2014: 339) himself acknowledging that the longevity of individual
32 / group-level capabilities 'depends on the tenure of entrepreneurs/managers/leaders' that
33 are central to them.
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47 A lack of organisation-level dynamic capabilities may even benefit micro-enterprises. As
48 acknowledged by Ambrosini et al. (2009) and Helfat and Peteraf (2003), depending on
49 managerial perceptions of the need to change, dynamic capabilities and dynamic managerial
50 capabilities may need to be refreshed. When current dynamic capabilities / dynamic
51 managerial capabilities are perceived to be insufficient to impact appropriately upon the
52 organisation's resource base, managers may decide to renew dynamic capabilities / dynamic
53 managerial capabilities to allow the organisation to change its resource base in new ways.
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60 Dynamic managerial capabilities residing at the level of the individual or the group are

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3 quicker to change than organisation-level dynamic capabilities (Salvato and Vassolo, 2018).
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5 Therefore, having dynamic managerial capabilities, rather than organisation-level dynamic
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7 capabilities, could support the flexibility advantage many micro-enterprises enjoy over their
8
9 larger counterparts.

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11 The preceding discussion contests Teece's concerns about the vulnerability of dynamic
12
13 managerial capabilities that do not evolve to the organisational level. We will now illuminate
14
15 how owner-manager operational involvement – a typical feature of micro-enterprises – does
16
17 provide some support for Teece's concerns on capability vulnerability, but for different
18
19 reasons than Teece had identified.

20 21 22 **Managerial Time Allocation as a Micro-Foundation and the Stability and Vulnerability of** 23 24 **Dynamic Managerial Capabilities** 25

26
27 In all three organisations, the Owner-Managers were heavily embedded in the day-to-day
28
29 operations. It is common for owner-managers in micro-enterprises to get 'sucked into'
30
31 operational work, not only because such activities provide fast, often positive, feedback
32
33 translating into increased customer demand and profit (Gupta et al, 2006), but also because
34
35 these firms are too small to have gatekeepers preventing interruptions from employees or
36
37 customers (Volery et al, 2015). The rhythm of operational work, therefore, becomes
38
39 zeitgeber ('time emitter' in German), dominating the rhythmic patterns of other work
40
41 (Bluedorn, 2002).

42
43 This operational involvement speeded the ability of Media Ent's Owner-Manager to sense,
44
45 seize and transform, since he could quickly spot and capture opportunities to use existing
46
47 skills and equipment to offer new services. However, whilst customer proximity resulting
48
49 from operational work supported the enactment of *some* dynamic managerial capability
50
51 practices (Kearney et al., 2017; Kelliher et al., 2018) in IT Ent and Merchandising Ent, the
52
53 more prominent impact of operational involvement was to limit time allocated to capability
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55 enactment, thus, slowing and constraining the capability in these enterprises.

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57 By focusing on the practices underpinning capability enactment, our findings here allow us
58
59 to develop a nuanced understanding of the interplay between operational work and
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3 dynamic managerial capabilities. They reveal that when the practices involved in the
4 dynamic managerial capability shared significant commonalities with those of the
5 operational work, the Owner-Managers' operational involvement supported the capability's
6 enactment. This can be seen in Media Ent where proximity to customers and knowledge of
7 operational skills and equipment capabilities supported all the dynamic managerial
8 capability practices. In cases such as this, where all or most dynamic managerial capability
9 practices share significant commonalities with operational practices, allocating time to
10 operational tasks also means allocating time to dynamic managerial capability enactment.
11 This creates opportunities to mature and stabilise the capability.
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21 Excessive operational involvement becomes detrimental when dynamic managerial
22 capability practices do not align closely with operational work, therefore requiring time to
23 be allocated away from these operational practices and towards dynamic managerial
24 capability enactment. This was the case for the majority of practices involved in the dynamic
25 managerial capabilities in IT Ent and Merchandising Ent. This suggests that whilst operational
26 work and dynamic managerial capabilities are not always mutually exclusive and co-
27 destroying, in the instances where they lack significant commonalities then operational
28 work can impede dynamic managerial capability enactment by limiting the time allocated to
29 enacting such capabilities.
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40 Scholars have provided some acknowledgment of time allocation as a micro-foundation of
41 dynamic capabilities, focussing predominantly on time investment required for *developing*
42 new and *changing* existing capabilities at the organisational level (Salvato and Vassolo,
43 2018). Our findings show the need for individuals to also allocate time to undertake practices
44 involved in *enacting* dynamic managerial capabilities, something that is crucial in maturing
45 and stabilising the capability. This aligns with Winter's (2003) argument that time is
46 necessary for enacting organisation-level dynamic capabilities and contributes theoretically
47 to dynamic managerial capabilities by showing that the three core micro-foundations of
48 such capabilities (cognition, human capital and social capital) also require managerial time
49 allocation in order to be deployed to enact organisational change. Indeed, individuals'
50 temporal perceptions, such as their conceptions of how much time they have and what is
51 urgent, have a major impact on their activities (Granqvist & Gustafsson, 2016) and how they
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3 allocate their time to various activities (Crossan et al, 2005), including those involved in
4 enacting dynamic managerial capabilities. As such, we propose 'managerial time allocation'
5 as a fourth core micro-foundation of dynamic managerial capabilities. This is an important
6 theoretical contribution that responds to the call by Shilke et al (2018) for researchers to
7 extend understanding of micro-foundations.
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13 Whilst operational work can lead to capability stability where operational practices share
14 significant commonalities with most, or all, of a dynamic managerial capability's practices,
15 our findings also provide some support for Teece's (2014) warning about the vulnerability
16 of dynamic managerial capabilities embedded in just one or a small number of managers.
17 However, in the micro-enterprise context this vulnerability can stem from factors outside of
18 those Teece considers. Whilst micro-enterprise owner-managers are less likely to leave their
19 enterprise in the short-term, they, and other key individuals, can become overwhelmed by
20 operational workloads that restrict their participation in capability enactment where
21 capability enactment does not share significant commonalities with the practices performed
22 in operational work. This can delay or slow the enactment of dynamic managerial
23 capabilities, and in the longer-term can result in delayed maturity or possible retrenchment
24 of the capability – something that may be less of an issue if these capabilities were not solely
25 situated in individual's practices and rather were embedded in organisation-level routines.
26 Therefore, whilst Teece's (2014) warnings about individual and group-level dynamic
27 managerial capabilities were based on a fear of key personnel leaving, the stronger danger
28 in micro-enterprises comes from key personnel perceiving themselves to be too busy and
29 deeply embedded in their operational roles, and hence not enacting the capability regularly
30 enough for maturity / stability to be realised. This extends Teece's theorising about the
31 stability and vulnerability of dynamic managerial capabilities by identifying temporal
32 conflicts as a potential source of vulnerability.
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53 **Self-Damaging Dynamic Managerial Capabilities**

54 In Merchandising Ent, we also found that the deployment of the dynamic managerial
55 capability increased sales. Whilst this demonstrates success, it also required more
56 operational involvement of the Owner-Manager to fulfil work generated by the extra sales.
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3 Since the practices involved in the dynamic managerial capability in Merchandising Ent share
4 few commonalities with operational tasks, this further depleted the time he allocated to
5 future enactment of the sensing and seizing activities involved in the niche marketing
6 developments. In that regard, this capability became a 'self-damaging dynamic managerial
7 capability' since it harmed one of its own key micro-foundations ('managerial time
8 allocation'). This shows one way in which dynamic managerial capabilities can influence their
9 own micro-foundations.

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17 Deciding how to allocate time and other resources between exploitative activities to ensure
18 current viability of a firm and explorative activities for future viability is a problem
19 confronted by all organisations (March, 1991). However, the tension between these two
20 competing demands is experienced at higher levels as the size of the organisation decreases
21 (Gupta et al, 2006). Ambidexterity helps organisations to navigate this tension (O'Reilly &
22 Tushman 2008) and could potentially counteract the impact of self-damaging dynamic
23 managerial capabilities.

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30 However, with their limited resource endowments micro-enterprises find ambidexterity
31 challenging to attain (Özşahin, 2019; Voss & Voss, 2013). In a micro-enterprise, the structural
32 complexity to separate out units to perform exploitative or explorative activities (structural
33 ambidexterity) (Benner & Tushman, 2003) is lacking. Also, the resources to instil higher-
34 order organisational context to motivate employees to balance exploitative and explorative
35 activities in their daily work (contextual ambidexterity) (Gibson and Birkinshaw, 2004) are
36 inadequate. Furthermore, the costs associated with alternating between periods of
37 exploration and exploitation by realigning organisational processes sequentially (cyclical
38 ambidexterity) (Birkinshaw et al, 2016) are too high. Micro-enterprises often do not even
39 have a top management team that would allow them to attain ambidexterity at the group-
40 level through 'behavioural integration' of its top managers' task processes around
41 exploitation versus exploration (Lubatkin et al, 2006). All of these suggest that the owner-
42 manager might be the key driver of ambidexterity in such contexts (Volery et al, 2015). When
43 the owner-manager lacks the competencies / behaviours to pursue the two disparate
44 activities of exploitation or exploration with equal dexterity, and when operational activities
45 do not share significant commonalities with dynamic managerial capability practices, it can
46 be expected that dynamic managerial capabilities can acquire a self-damaging nature.
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3 Introducing the notion of 'self-damaging dynamic managerial capabilities' is an important
4 theoretical contribution that responds to the call for more research into the feedback loops
5 between capabilities and their micro-foundations (Shilke et al., 2018). Furthermore, this
6 contributes to conversations on time in entrepreneurship research by providing new insights
7 into factors that can divert owner-manager's attention from strategic planning to present
8 day operational concerns (Lévesque and Stephan, 2019). Whilst the feedback loop we
9 identified can damage dynamic managerial capabilities in micro-enterprises, it is important
10 to note that it is not necessarily fatal to them. In Merchandising Ent, for example, whilst
11 successful deployment of the dynamic managerial capability slowed further capability
12 enactment, it did not stop it completely, with further niche marketing developments being
13 enacted at later dates.
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26 **CONCLUSION**

27 We undertook in-depth qualitative research to investigate 'How are dynamic capabilities
28 enacted in micro-enterprises and what role do different parties and managerial time
29 allocation play in this enactment?'. We assessed the degree to which the concept fits the
30 micro-enterprise context, unpacked the micro-foundations of dynamic managerial
31 capabilities, and also provided insights into the stability and vulnerability of these
32 capabilities in micro-enterprises.
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39 Three important theoretical contributions ensue. Firstly, after identifying that micro-
40 enterprises are likely to have dynamic managerial capabilities rather than organisation level
41 dynamic capabilities, we extended the Teece view by suggesting that vulnerabilities he
42 associates with dynamic managerial capabilities are less likely to apply in the micro-
43 enterprise context.
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49 Our second contribution relates to the operational involvement of owner-managers,
50 introducing 'managerial time allocation' as a new micro-foundation of dynamic managerial
51 capabilities. This responds to the call of Shilke et al (2018) to broaden understanding of the
52 micro-foundations of capabilities and responds to Lévesque and Stephan's (2019) call for
53 more attention to be given to time in entrepreneurship research. Here, we show that, in
54 some instances, Teece is right to highlight vulnerabilities of dynamic managerial capabilities,
55 but the reasons for the vulnerabilities in micro-enterprises are different than those that he
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3 identifies. A more likely vulnerability here is key personnel within the enterprise perceiving
4 themselves to be too busy with operational practices that conflict with dynamic managerial
5 capability practices, thus restricting their participation in capability enactment.
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9 Finally, we show that successful deployment of the dynamic managerial capability in
10 Merchandising Ent increased operational workloads and depleted time available to enact
11 the dynamic managerial capability in future. We thus coin the term 'self-damaging dynamic
12 managerial capabilities' to show how these capabilities can negatively impact one of their
13 own micro-foundations. This is our third theoretical contribution, which addresses Shilke et
14 al (2018) call for research into the feedback loops between these capabilities and their
15 micro-foundations. This is our third theoretical contribution, which addresses Shilke et
16 al (2018) call for research into the feedback loops between these capabilities and their
17 micro-foundations. This is our third theoretical contribution, which addresses Shilke et
18 al (2018) call for research into the feedback loops between these capabilities and their
19 micro-foundations. This is our third theoretical contribution, which addresses Shilke et
20 al (2018) call for research into the feedback loops between these capabilities and their
21 micro-foundations.
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24 **LIMITATIONS AND FUTURE RESEARCH**

25 Although not our purpose, the results of our study may be somewhat transferable to other
26 micro-enterprises, since these firms are typically dominated by one or two individuals
27 (Jaouen and Lasch, 2015) and typically have scarce time resource (Kelliher and Reinl, 2009).
28 Nevertheless, we can only infer this given the limited scope of our study. As such, we
29 recommend further deductive research that investigates whether our findings hold in a
30 broader range of micro-enterprises. We also encourage additional research exploring how
31 micro-enterprise owner-managers juggle different temporalities and resolve the paradox of
32 intertemporal choice through temporal leadership. This will advance our understanding of
33 the micro-foundational role of managerial time allocation and provide insights into how
34 practitioners can restrain self-damaging dynamic managerial capabilities. Furthermore,
35 whilst qualitative shadowing provided important contextual information to help understand
36 the dynamic managerial capabilities, our cross-sectional use of it made it difficult to observe
37 the enactment of the capabilities directly and to ascertain whether the organisational
38 context changed and shaped the capability differently over time. Future longitudinal
39 qualitative shadowing enhanced by other ethnographic tools, such as video diaries collected
40 from organisational actors, could allow researchers to capture in real-time the practices and
41 engagements underpinning dynamic managerial capabilities.
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ⁱ As well as David Teece, we draw heavily on the work of Constance Helfat, who also works from a Teeceian perspective (Peteraf et al., 2013)

ⁱⁱ Shadowing was not undertaken in Media Ent due to access restrictions.

ⁱⁱⁱ It was not possible to conduct further interviews with the owner-manager of IT Ent, due to his unavailability.

^{iv} In IT Ent, transforming activities led to the redevelopment of how cloud services were offered to customers. Such transformation activities inevitably involve sensing and seizing, and therefore, all common practices were enacted as transformative actions.

^v Transforming activities are not identified since no transformations were researched in Merchandising Ent.

For Peer Review

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APPENDICES

Appendix A1: Stages of Data Collection and Analysis

<u>Stage of Research</u>	<u>Purpose</u>
Stage 1: Interviews with owner-managers of 12 micro-enterprises.	To identify enterprises with potential dynamic capabilities. Enterprises that had undertaken several similar functional developments over time that were strategically and economically important to the firm were deemed to have potential dynamic capabilities. These criteria satisfied two of the three identifiable characteristics of dynamic capabilities: that they have a specific change-oriented purpose that is strategically and economically important to the firm, and that they underpin repeatable change.
Stage 2: Directed content analysis to identify firms with potential dynamic capabilities.	
Stage 3: Merchandising Ent, IT Ent and Media Ent selected for further research.	
Stage 4: Qualitative shadowing (3 Days in Merchandising Ent and 2 Days in IT Ent).	To understand the operations of the enterprise and the context in which the potential dynamic capability was based.
Stage 5: Life story interviews with individuals in Merchandising Ent, IT Ent, and Media Ent and a follow up interview with the Owner-Manager of Merchandising Ent.	To gain further insights into the micro-foundations of the capability and to investigate the praxis involved in the enactment of the capability. Understanding the praxis helped understand how the capabilities were enacted and illuminated whether common practices were evident across different enactments of the capability. This helped assess whether the third identifying characteristic of dynamic capabilities was evident: that the capabilities are routine to some degree. All three dynamic capabilities satisfied this third characteristic.
Stage 6: Narrative analysis of all interviews undertaken in Merchandising Ent, IT Ent and Media Ent. The analysis procedure used involved 1 extra face-to-face interview with the Owner-Manager of Merchandising Ent and 1 extra face-to-face interview with the Owner-Manager of Media Ent.	

Appendix A2: Illustrative Interview Extracts to Support Research Findings

<u>IT Ent</u>	
Owner-Manager and Technical Director Dominance in Sensing, Seizing and Transforming	'I'm the one who will sort of like make the decisions or let it flow but (Technical Director) is the one who's coming up with the exciting ideas - that's why we're into the (Managed Service Provider), that's why we're into the cloud, that's why we're doing DRs, you know, disaster recovery situation.' (IT Ent Owner-Manager)

	<p>'I put it down to (Technical Director's) vision of where we should, where technology's going, because he's keeping up with this and he can see its going down this path and this is where it's going to end up and develop needs to be put in, to me looking back and saying, "Right but how do we do this? How can we do this? You know what's the right method as a company?"' (IT Ent Owner-Manager)</p>
<p>Owner-Manager and Technical Director</p> <p>Involvement in Day-to-Day Operations</p> <p>Limiting Time Available for Sensing, Seizing and Transforming</p>	<p>'We're not big enough that I can just be a visionary, you know, or the steerer, I've got to do the day-to-day work. I have to do it. The company's not big enough that I can pull myself out of it full time.' (IT Ent Owner-Manager)</p> <p>'What's happened in the past is we talked and looked at how we would develop, where's technology leading, where's it going, and seeing if our company can follow that and fit within it...the clients need to move with technology and we need to move them with it...but you have to be specific with the right sort of client. It doesn't suit everybody and if you can't take the time to understand the technology properly you either just go in and say, "Oh everybody should do it." Or you go in and say, "Well, nobody should." So, you've got to understand the technology properly. To do that you've got to have the time.' (IT Ent Owner-Manager)</p>
<p>Operational Involvement/ Customer Proximity Enabling Seizing of Opportunities</p>	<p>'Well, we take the disaster recovery, I mean basically we had a client who had the need...we know about disaster recovery because we do backups and we know we can do it and we had a third party who could do it. The client had this need and so what we said is, "Well, how much is it going to cost us to implement it ourselves, what's our return on it, so what's our payback period?' (IT Ent Owner-Manager)</p> <p>'(Technical Director) will come up with this is where the technology's going to go and (will) sort of like lead that so, you know, he'll then start to develop (it) in my mind. I've got to see the need in the client, so I won't move until I see a need with a client because of the costs. Unfortunately, this game is very, very expensive.' (IT Ent Owner-Manager)</p>
Merchandising Ent	
<p>Owner-Manager Dominance in Sensing and Seizing</p>	<p>'Only I would know where to start and finish, how to put things together and move them forward, initially.' (Merchandising Ent Owner-Manager)</p> <p>'When [the niche marketing for different products was] initially developed, no, their influence was, as part of the initial development, was modest, you know, the ideas were put by them but to be fair they were concepts that the staff we have at the moment had very little knowledge or experience of, so they were more trying to take it in and understand it rather than influence and direct it.' (Merchandising Ent Owner-Manager)</p>
<p>Owner-Manager Involvement in Day-to-Day</p>	<p>'The other members of the team that we do have on board are very good dealing with customers and looking after the enquiries as they come in, so it seemed more of, not my role to a degree, being more useful in stimulating more enquiries for them. Problem is I do tend to get dragged into too many customer things as well.' (Merchandising Ent Owner-Manager)</p>

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<p>Operations Limiting Time Available for Sensing and Seizing</p>	<p>'You just try and squeeze in what you can when you can. You do start to make some critical time decisions, I mean, you do start to delegate certain things that you can delegate, try and pass on tasks to other people. I mean if any straightforward orders are coming through then you'd try not to get involved in dealing with them yourself, pass them on to somebody else to process and see through, but again even that can be challenging with people being part-time, people going off sick, and sometimes you just have to do it yourself.' (Merchandising Ent Owner-Manager)</p>
<p>Self-Damaging Dynamic Managerial Capabilities</p>	<p>'I think we were so busy managing the day-to-day growth of the (loop fobs), which was in itself quite a revolution. So we went from nowhere to number one in the search rankings within six months and that created a lot of enquiries and put a lot of time pressures on again, just processing orders and doing things and it probably took us too long to realise what we were on to and then when we went and commissioned the (customised pencils) and the (mouse mat) sites probably eighteen months to two years later...it was to try and build again because if you like the (loop fobs) had perhaps plateaued a little bit in some senses we'd almost missed the boat.' (Merchandising Ent Owner-Manager)</p>
<p>Media Ent</p>	
<p>Owner-Manager Dominance in Sensing, Seizing and Transforming</p>	<p>'If I offered the service I felt that there was an opportunity there...the opportunities fall to everyone but it's how or where you are, and have you got the ability to then capitalise on it or make something happen. I'm a doer. I'm a maker. You know, I don't leave things to chance. I don't leave things at all. If I want something I'll go and get it. If I see an opportunity, I'll take it. You don't need to offer it twice. So, because of me and the way I am, I guess that's why things keep on happening.' (Media Ent Owner-Manager)</p> <p>'There's so many, you know, services we've got but I think I've got the skill and I've got the knowledge and the experience in all those different areas to be able to do that and offer it. I don't think I would have done otherwise, you know, it's a lot.' (Media Ent Owner-Manager)</p>
<p>Operational Involvement/ Customer Proximity Enabling Sensing, Seizing and Transforming</p>	<p>'I initially did it because a friend of mine, it was a friend of a friend, she was a promoter for a nightclub (and) they were in desperate need of a photographer...before you know it I saw an, cause they said, "We want to do some promotional films and we (will) get so and so." I said, "No, you don't need to, I can do that for you." And I made them an offer, I said, "Look, you know, if you give me X amount of money every week, then every week I'll do pictures and I'll do photos." And it's built on from there really.' (Media Ent Owner-Manager)</p> <p>'Something new, it's been about a month or so now, just over a month, it's all stemmed from the (nightlife filmmaking and photography work). One of the, I think, owners of the nightclub, they're also owners of a new hotel which has just been built...now every (FOOTBALL TEAM) home game they open it up to the public as a pub environment...they came to me for doing some promotional videos. I looked saw an opportunity to add photography and I, again, I did that.' (Media Ent Owner-Manager)</p>

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TABLES AND FIGURES

Table 1: Identifying Characteristics of Dynamic Capabilities (Adapted from the work of Helfat et al. (2007), Helfat and Winter (2011), Teece (2007), Teece (2012))

	<u>Characteristic</u>	<u>Explanation</u>
1	Specific Change-Oriented Purpose that is Strategically and Economically Important	Each dynamic capability has a specific functional purpose, such as new product / service development, organisational acquisitions, or diversification (Helfat and Winter, 2011). Dynamic capabilities enable change that is strategically and economically important to an organisation (Helfat and Winter, 2011; Teece, 2007)
2	Repeatable	Dynamic capabilities enable repeatable changes (Helfat et al., 2007; Teece, 2007). For example, a dynamic capability to develop new services would lead to the development of several new services over time.
3	Routine and Non-Routine Elements	The changes underpinned by a dynamic capability are undertaken in similar ways (Helfat et al., 2007), meaning there is a routine / patterned element to the changes as evidenced through common practices being enacted. Dynamic capabilities include both routine and non-routine elements (Teece, 2012).

Table 2: Achieving Tracy's (2010) Criteria for Excellent Qualitative Research

Criteria	Description from Tracy (2010)	How Our Study Achieves Against the Criteria
Worthy topic	'Good qualitative research is relevant, timely, significant, interesting, or evocative' (p. 840).	<ul style="list-style-type: none"> • Extant literature thoroughly reviewed to identify theoretical gaps. • Phenomena studied is important, as a potential source of performance improvement.
Rich rigour	Using appropriate theoretical constructs; collecting and analysing abundant data following suitable processes; selecting appropriate samples and contexts for study.	<ul style="list-style-type: none"> • Selected cases suitable for research foci. • Collected in-depth data to generate rich insights about research foci. • Used established interviewing and data analysis procedures.
Sincerity	'The research is marked by honesty and transparency about the researcher's biases, goals, and foibles as well as about how these played a role in the methods, joys, and mistakes of the research' (p. 841).	<ul style="list-style-type: none"> • Kept a reflexive research diary during qualitative shadowing and a reflexive journal during data analysis to achieve self-reflexivity. • Provided detailed record of data collection / analysis undertaken and challenges faced (for example, changing theoretical focus).
Credibility	' <i>Credibility</i> refers to the trustworthiness, verisimilitude, and plausibility of the research findings' (emphasis in original) (p. 842).	<ul style="list-style-type: none"> • Used reflexive journal as an audit trail to evidence steps undertaken in data analysis. • Checked findings with two owner-managers to establish trustworthiness. • Conducted interviews with multiple individuals to corroborate findings. • Shared interview excerpts with readers to demonstrate plausibility.
Resonance	' <i>Resonance</i> ...refer(s) (to) research's ability to meaningfully reverberate and affect an audience' (emphasis in original) (p. 844).	<ul style="list-style-type: none"> • Provided direct testimony and rich description (in Findings and Appendix A2) to help readers see if and how 'the story of the research overlaps with their own situation' (p. 845).
Significant contribution	'"Does the study extend knowledge?" "Improve practice?" "Generate ongoing research?" "Liberate or empower?"' (p. 845).	<ul style="list-style-type: none"> • Extended theoretical understanding of vulnerability of dynamic managerial capabilities and introduced managerial time allocation and self-damaging dynamic managerial capabilities.
Ethical	'Ethics are not just a means, but rather constitute a universal end goal of qualitative quality itself' (p. 846).	<ul style="list-style-type: none"> • Institutional ethical guidelines followed. • Situational ethical considerations made once in the field (Tracy, 2010) to safeguard relationship with research

		participants and minimise disruption to business operations.
Meaningful coherence	'Meaningfully coherent studies (a) achieve their stated purpose; (b) accomplish what they espouse to be about; (c) use methods and representation practices that partner well with espoused theories and paradigms; and (d) attentively interconnect literature reviewed with research foci, methods, and findings' (p. 848).	<ul style="list-style-type: none"> • Situated the study's research foci within extant literature. • Selected appropriate research paradigm fitting the study's aims and objectives. • Used data collection methods (qualitative shadowing and interviewing) that suited the research paradigm and revealed findings responding to the research foci and purpose of the study.

Table 3: Company Information

Organisation	Area of Operation	Length of Operation*	People*	Potential Dynamic Capability
Merchandising Enterprise (Merchandising Ent)	Sells promotional items (for example, branded pens, pencils, rubik's cubes) to organisations	15 years	4 (2 Owner-Managers)	Development of niche marketing approaches for a number of different products
IT Enterprise (IT Ent)	Provides IT services, such as disaster recovery, managed services and cloud services to organisations	14 years	5 (1 Owner-manager)	Development of service offerings
Media Enterprise (Media Ent)	Offers creative design, website development, and a range of photography and filmmaking services to organisations	4 years	2 (2 Owner-managers)	Development of service offerings

*At the time data collection ended

Table 4: Data Collection Undertaken

<u>Organization</u>	<u>Research Participant</u>	<u>Number of Interviews</u>	<u>Total Duration of Interviews</u>	<u>Qualitative Shadowing</u>	<u>Data Collection Period</u>
Merchandising Ent	Owner-Manager	5	4 hours 30 minutes	3 days	2 years
	Partner	1	25 minutes		
	Sales Processing Assistant	1	50 minutes		
	Marketing and Sales Processing Assistant	1	1 hour 10 minutes		
IT Ent	Owner-Manager	3	4 hours 35 minutes	2 days	1 year
	Technical Director	1	1 hour 20 minutes		
	Engineer 1	1	25 minutes		
	Engineer 2	1	30 minutes		
	Administrator	1	45 minutes		
Media Ent	Owner-Manager	3	2 hours 55 minutes		1.5 years
TOTAL =		18	17 hours 25 minutes	5 days	

Table 5: Involvement of Different Actors in the Capabilities

<u>Organization</u>	<u>Party</u>	<u>Number of Common Practices Involved In</u>	<u>Overall Driver Role or Overall Participant Role</u>
Merchandising Ent	Owner-Manager	8	Driver
	Partner	1	Participant
	Employees	1	Participant
	Product Suppliers	1	Participant
	Website Developers	3	Participant
IT Ent	Owner-Manager	3	Driver
	Technical Director	3	Driver (2) Participant (1)
	Customers	1	Participant
	Suppliers	1	Participant
Media Ent	Owner-Manager	4	Driver
	Partner	1	Participant
	Freelancers	1	Participant
	Customers	1	Participant

Table 6: Sensing, Seizing and Transforming Practices in IT Ent

Recognising, and Responding to, Customer Needs	Sensing / Transforming
Tracking Technology and Generating Ideas	Sensing / Transforming
Considering Application of Technology and Considering Finances	Sensing / Transforming
Making Investment	Seizing / Transforming
Implementing	Seizing / Transforming

Table 7: Sensing and Seizing Practices in Merchandising Ent

Searching for, and Selecting, Suitable Product for Niche Marketing	Sensing
Choosing URL Name	Seizing
Selecting Website Developer	Seizing
Liaising with Website Developer about the Website Design	Seizing
Making Provisions for SEO Management	Seizing
Negotiating with Product Supplier	Seizing
Training Internal Others	Seizing
Emailing Existing Customers During Website Launch	Seizing

Table 8: Sensing, Seizing and Transforming Practices in Media Ent

Identifying Opportunities through Customers	Sensing / Transforming
Utilizing Existing Skills for New Services	Seizing / Transforming
Utilizing Existing Equipment for New Services	Seizing / Transforming
Building a Team	Seizing

Figure 1: IT Ent’s Capability Enactment

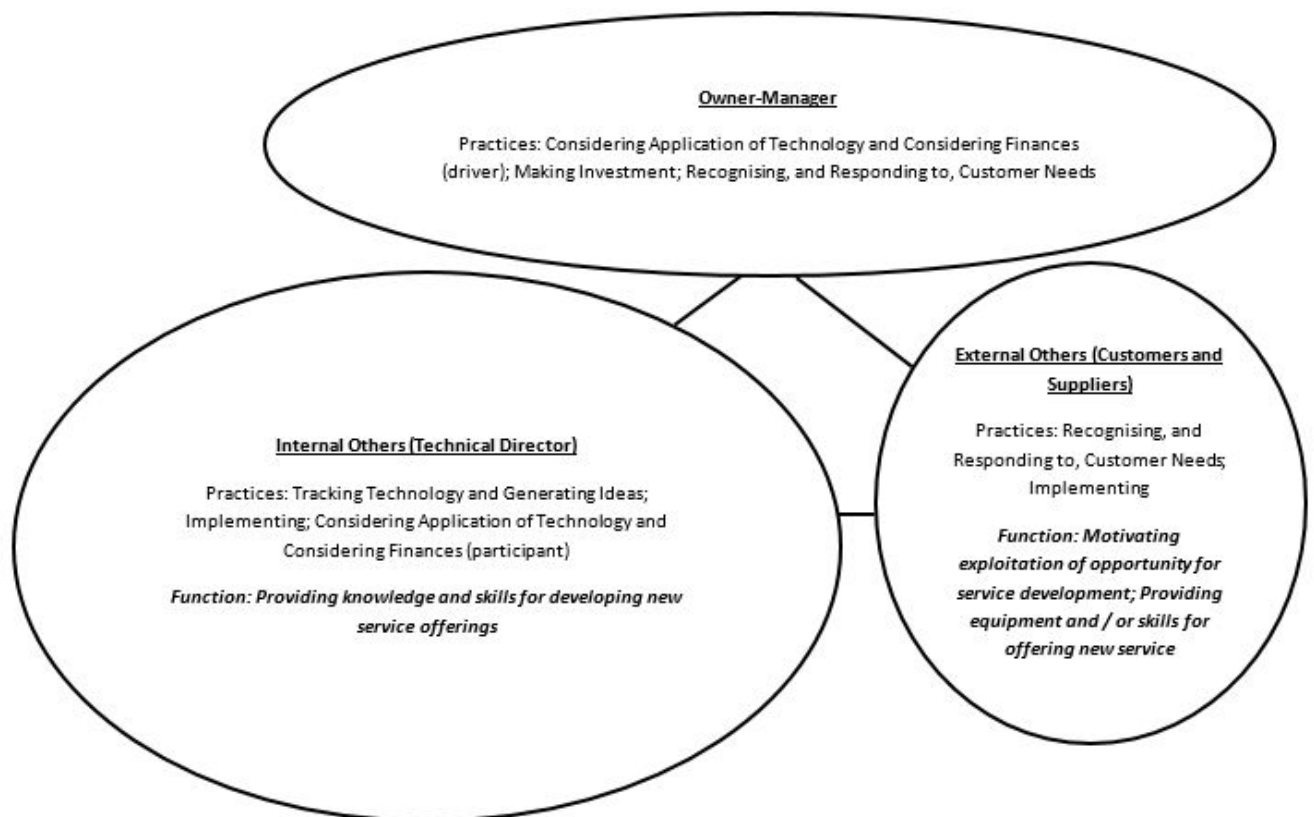


Figure 2: Merchandising Ent’s Capability Enactment

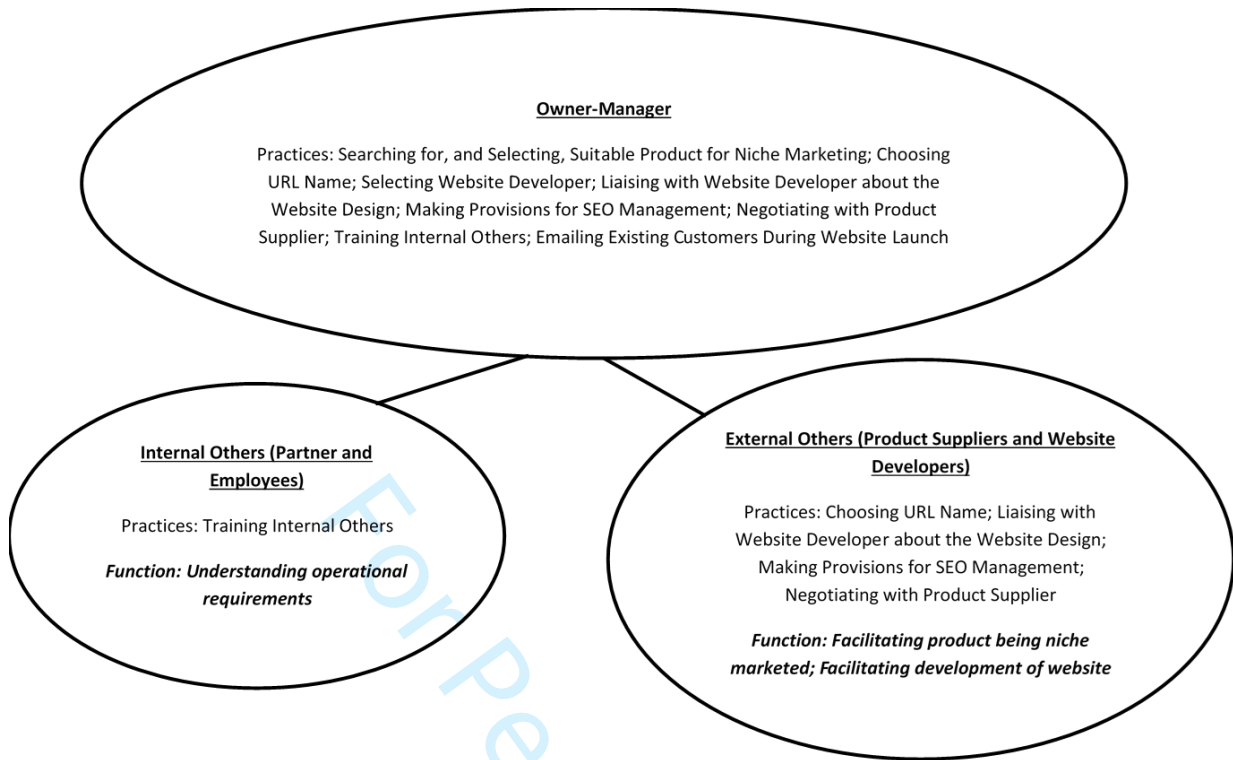


Figure 3: Media Ent’s Capability Enactment

